Chapter-III

Development of Telecom Industry

In India
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Development of Telecom Industry in India

The preceding chapter thoroughly dealt with the conceptual framework, historical background, mechanisms, nature and scope of Human Resource Development in India. Moreover, the Researcher has also discussed the role of government in implementing HRD policies, outcomes of HRD along with its critical perceptions. The present chapter has been drafted to portray the present scenario of the Telecom Industry in India.

Introduction

Indian telecommunications industry is one of the fastest growing telecom markets in the world. India’s telecommunication market is the fourth largest in the world in terms of wireless subscribers and fifth largest in terms of the total telecom subscribers. Its speed of growth is ongoing with leading players lapping up mobile subscribers by millions. The mobile sector has grown from around 10 million subscribers in the year 2002, to reach 150 million by early 2007 registering an average growth of over 90 per cent. Presently, the Indian telecommunication market is valued at around $100 billion (Rs. 4,00,000 crores). The two major causes that have accelerated this growth are low tariffs and the falling handset prices. Other reasons that have helped the telecom industry are the regulatory change and reforms that have been pushed by the successive Indian governments (www.quippoworld.com).

Telecom Industry in India has registered a phenomenal growth during last few years, propelled largely by the unprecedented growth of the mobile telephony and infrastructure which not only is beneficial for the telecom sector but has a multiplier effects over the entire economy. Moreover, the new corporation i.e. the 3G system is again boosting up the telecom market in an elite manner. The revenue earned from the mobile gaming sector is nearly about $250 million in the year 2010. India is the world’s second-largest telecom market. In 2010, India accounted for about 14.9 per cent of the global wireless subscriber base. With increasing focus on MVAS and network rollouts in the untapped rural and semi-rural areas, the Indian telecom market is braced for significant future growth. The total subscriber base (including Wireline and wireless) reached
723.3 million in September 2010. The wireless segment has been registering monthly mobile additions of about 15 to 2011 million subscribers.

According to TRAI, the total subscriber base grew from Financial Year (FY) 2000 through Financial Year (FY) 2010 at a compound annual growth rate (CAGR) of 36.1 per cent to reach 621.3 million subscribers. In the past decade, the total Teledensity has risen above 50 per cent with the mobile segment leading this growth. Such phenomenal growth can be attributed primarily to the country’s large population, high economic growth, and hyper-competition in the sector, affordable handsets, reduced tariffs, infrastructure sharing and the introduction of positive and enabling regulatory reforms. The telecom revolution in the country has impacted both the urban and rural population. However, urban subscribers account for more than 65 per cent of the overall subscriber base, leading toward a huge urban–rural digital divide. As on September 2010, wireless subscribers constitute the majority of the total subscriber base, accounting for 95.1 per cent whereas Wireline subscribers account for 4.9 per cent. The capital cost to provide mobile service varies in the range of US$50–US$90 per subscriber in comparison with US$200–US$350 per subscriber for Wireline. Lower costs and the additional benefit of mobility that is associated with wireless subscribers have led to the stagnation of the Wireline subscriber base (www.ey.com).

The advantages of the advent of telecommunications are manifold and explicitly verifiable from the phenomenal success of the sector. Urban and rural subscriber base, September 2010 were Telephone subscribers (Wireless: 826.25 million and Landlines: 34.87 million) in February, 2011, Cell phones: 791.38 million (February, 2011), Monthly cell phone addition: 20.20 million February, 2011, Tele-density: 69.29 per cent in February, 2011 while the Projected Teledensity is around one billion i.e. 84 per cent of the total population in 2012. The future progress of telecom in our country is very encouraging. The addition of over 18 million connections per month puts the telecom sector on strong footing at a global platform.

Telecommunication system of the country is providing the cheap call rates at a global level. Moreover, it is about to undertake certain measures which would further reduce the call rates. Since the government and the private sector is joining hands the condition of the telecom
sector has improved a lot and on its way of growth and development. The present status of telephone users has increased up to 826.25 million in the year 2011 (www.mapsofindia.com).

Chart 3.1: Subscriber Base and Teledensity in India (Wireless and Wireline)

Source: Telecom Regulatory Authority of India (TRAI)

Over the past two decades, India has grown rapidly from a “command and control” economy to a market-based economy. India is now closely integrated with the global economy and is considered one of the pillars of global economic growth. The Telecom Regulatory Authority of India has divided India into various cellular zones such that within each zone, the call is treated as a local call, while across zones, it becomes a long-distance call. A cellular zone (or telecom circle) is normally the entire state, with a few exceptions like Mumbai, Chennai & Kolkata (which are different zones than their respective states), Goa (which is a part of the Maharashtra zone), Chhattisgarh (which is part of Madhya Pradesh), Jharkhand (which is a part of the Bihar zone) or Uttar Pradesh (divided into multiple zones). Delhi is a unique circle because it includes towns from Haryana and Uttar Pradesh as well. These are the officially recognized circles as stated by the India Department of Telecommunications (DoT) (encyclopedia.wikipedia.org/wiki).
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Today, it is the fastest growing market in the world. Telecom sector accounts for 1 per cent GDP of India in the year 2008 and contributes 30 per cent to India’s total service tax revenues, and gives direct employment to more than 4,00,000 million people (www.cci.in).

History of Telecommunication Industry in India

Telecom in the real sense means the transfer of information between two distant points in space. The popular meaning of telecom always involves electrical signals and as a result, people often exclude postal or any other raw telecommunication methods from its meaning. History of Indian telecommunications started in 1851 when the first operational landlines were laid down by the government near Kolkata (seat of British Power) and Diamond Harbor. Dr. William O’Shaughnessy, who pioneered the telegraph and telephone in India, belonged to the Public Works Department and worked towards the development of telecom throughout this period. A separate Telephone services were introduced in 1881, was opened in 1854 when telegraph facilities were opened to the public (en.wikipedia.org).

In 1883, telephone services were merged with the postal system. Indian Radio Telegraph Company (IRT) was formed in the year 1923. Post-independence in the year 1947, all the foreign telecommunication companies were nationalized to form the Posts, Telephone and Telegraph (PTT), a monopoly run by the government’s Ministry of Communications. Telecom Sector was organized as a strategic service and the government considered it best to bring it under the roof of state’s control. The first wind of reforms in telecommunications sector began to flow in 1980s, when the private sector was allowed in manufacturing telecom equipment’s. In 1985, Department of Telecommunication (DoT) was established as an exclusive provider of domestic and long distance service that would be its own regulator (separate from the postal system). In 1986, two wholly government-owned companies were created; the Videsh Sanchar Nigam Limited (VSNL) for international telecommunications and Mahanagar Telephone Nigam Limited (MTNL) for service in Metropolitan areas. MTNL was launched to serve Delhi and Mumbai and VSNL to operate international telecom services. In 1990s, telecommunications sector benefited from the general opening up of the economy. Also, examples of telecom revolution in many other countries, which resulted in better quality of service and lower tariffs,
led Indian policy makers to initiate a change process finally resulting in opening up of the telecom service sector for the private sector. National Telecom Policy (NTP) 1994 was the first attempt to give a roadmap for the Indian Telecom sector (www.scribd.com).

With the economic liberalization in the 1990s, the telecom market in India was also benefited to a great extent. The service was improved and the tariffs were also significantly lowered. In the year 1997, the government set up the Telecom Regulatory Authority of India (TRAI) to provide a comprehensive telecom service in the country. In 1999, modification was brought to the policy and the cellular services were introduced. New National Telecom Policy (NTP) was adopted in 1999 and cellular services were also launched in the same year. NTP 1999 enabled the telecom sector to reach an average subscriber growth rate of more than 35 per cent, primarily due to initiatives taken by the regulator and service providers.

In the month of January 2000, the Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT) had been established to take over the adjudicatory and disputes functions from TRAI. In the year 2002, the Universal Service Support Policy came into effect, providing statutory status to the USOF in December, 2003. The fund has been introduced to provide access to telegraph services to people in rural and remote areas at affordable prices. In May 2003, the Calling Party Pays (CPP) regime was introduced, through which all local incoming calls were made free. During the same year, the Government of India introduced the Unified Access Service (UAS) licensing regime, which permitted an access service provider to offer both fixed and/or mobile services under the same license, using any technology. The Government of India subsequently issued licenses in November 2003, January 2004, December 2006, March 2007 and January 2008. In the month of July 2010, telecom towers were accorded “Infrastructure Status” by the Reserve Bank of India (RBI), as these constitute an essential and possibly the most expensive component in the entire telecom service delivery infrastructure (www.ey.com).
### Table 3.1: Evolution of the Telecom Industry - Important Milestones

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>Manufacturing of subscriber terminal equipment opened to private sector.</td>
</tr>
<tr>
<td>1985</td>
<td>Telecom was constituted into a separate department with a separate board.</td>
</tr>
<tr>
<td>1986</td>
<td>MTNL and VSNL created as corporations.</td>
</tr>
<tr>
<td>1988</td>
<td>Government introduces in-dialing scheme. PABX services only within a building, or in adjoining buildings.</td>
</tr>
<tr>
<td>1989</td>
<td>Telecom Commission formed.</td>
</tr>
<tr>
<td>1991</td>
<td>Telecom equipment manufacturing opened to private sector. Major international players like Alcatel, AT&amp;T, Ericsson, Fujitsu, and Siemens entered equipment manufacturing market.</td>
</tr>
<tr>
<td>1992</td>
<td>VAS sector opened for private competition.</td>
</tr>
<tr>
<td>1993</td>
<td>Private networks allowed in Industrial areas.</td>
</tr>
<tr>
<td>1994</td>
<td>Licenses for radio paging (27 cities) issued.</td>
</tr>
<tr>
<td>Sep 1994</td>
<td>Broad Guidelines for private operator entry into basic services announced.</td>
</tr>
<tr>
<td>Nov 1994</td>
<td>Licenses for cellular mobiles for four metros issued.</td>
</tr>
<tr>
<td>Dec 1994</td>
<td>Tenders floated for bids in cellular mobile services in 19 circles, excluding the four metros, on a duopoly basis.</td>
</tr>
<tr>
<td>Jan 1995</td>
<td>Tenders floated for second operator in basic services on a circle basis.</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1995</td>
<td>Cellular tender bid opened.</td>
</tr>
<tr>
<td>Aug 1995</td>
<td>Basic service tender bid opened; the bids caused lot of controversy. A majority of bids were considered low.</td>
</tr>
<tr>
<td>Dec 1995</td>
<td>LOIs issued to some operators for cellular mobile operations in circle.</td>
</tr>
<tr>
<td>Jan 1996</td>
<td>Rebidding takes place for basic services in thirteen circles. Telecom Regulatory Authority of India (TRAI) formed by ordinance.</td>
</tr>
<tr>
<td>Oct 1996</td>
<td>LOIs being issued for basic services.</td>
</tr>
<tr>
<td>March 1997</td>
<td>The TRAI Act was passed in Parliament.</td>
</tr>
<tr>
<td>June 1998</td>
<td>Several VASs available through private operators becomes operational.</td>
</tr>
<tr>
<td>March 1999</td>
<td>Announcement of National Telecom Policy</td>
</tr>
<tr>
<td>Jan 2000</td>
<td>Amendments made to the TRAI Act.</td>
</tr>
<tr>
<td>Aug 2000</td>
<td>Announcement of Domestic Long Distance Competition Policy.</td>
</tr>
<tr>
<td>Oct 2000</td>
<td>Planned Corporatization of DoT.</td>
</tr>
</tbody>
</table>

Source: www.bsnl.co.in

Emergence as a Major Player

Indian telecom industry, like any other industrial sector in the country has gone through many phases of growth and diversification. Starting from the era of telegraph and telephone system in the 19th century, the field of telephonic communication has now expanded to make use of advanced technologies like GSM, CDMA and WLL to the great 3G technology in mobile phones. Day by day, both the public player and the private players are putting in their efforts and
resources to improve the technology in telecommunication so as to give the best of their services to the customers. In 1990s, the telecommunication sector was opened up by the government for private investment as a part of Liberalization-Privatization-Globalization (LPG) policy. Therefore, it became necessary to separate the government’s policy wing from its operations wing. The government of India corporatized the operations wing of Department of Telecommunication (DoT) on 1st October, 2000 and named it as Bharat Sanchar Nigam Limited (BSNL). Many private operators such as Reliance Communications, Tata Indicom, Vodafone, loop mobile, Airtel, Idea, etc., successfully entered the high potential Indian Telecom Market. The Indian government was composed of many fractions (parties) which had different ideologies. Some of them were willing to throw open the market to foreign players (the centrists), and others wanted that the regulations should be in the hands of the government and the entry of foreign players should be restricted. Considering all these issues the liberalization in telecommunication sector had been very difficult to take up. In 1981, it was initiated when the Prime Minister, Indira Gandhi signed contracts with Alcatel CIT of France to merge with the state owned Telecom Company (ITI), in an effort to set up 50,00,000 lines per year. But soon the policy had been dropped because of the political opposition. She invited Sam Pitroda- a US based NRI to set up a Centre for Development of Telematics (C-DoT); however the plan failed due to some political reasons.

During this period after the assassination of Indira Gandhi, under the leadership of Rajiv Gandhi many public sector organizations were set up like the Department of Telecommunications (DoT), VSNL and MTNL. Many technological developments took place in this regime but still the foreign player’s entry had been prohibited. In 1994, Narsimha Rao led government introduced the National Telecommunication Policy (NTP) which brought several changes in the ownership, service and regulation of telecommunications infrastructure. They were also successful in establishing joint ventures between states owned telecom companies and international players. But the foreign firms were eligible up to 49 per cent of the total stake. MNCs were just involved in technology transfer and not policy making. After 1995, the government set up Telecom Regulatory Authority of India (TRAI) which reduced the
interference of government in deciding tariffs and policy making. The DoT opposed this practice.

The political powers changed in 1999 and under the ruling of the new government of Atal Bihari Vajpayee, more reforms and liberalization policies were introduced. They split DoT in two-one policy maker and the other service provider (DTS) which was later named as BSNL. The proposal of raising the stake of foreign investors from 49 per cent to 74 per cent had been rejected by the opposite political party and leftist thinkers. Domestic business groups wanted the government to privatize VSNL. Finally in April, 2002, the government decided to cut its stake of 53 per cent to 26 per cent in VSNL and to throw it open for sale to private enterprises. TATA finally took 25 per cent stake in VSNL (http://www.thunderbird.edu).

Major Services and Market Potentiality of Telecom Industry in India

Telecommunication sector in India is primarily subdivided into two segments namely-Fixed Service Providers (FSPs) and Cellular Services. Telecom Industry in India constitutes some essential telecom services like Telephone, Radio, Television and Internet. Indian Telecom Industry is specifically emphasizing on latest technologies like GSM (Global System for Mobile Communications) and CDMA (Code Division Multiple Access), PMRTS (Public Mobile Radio Trunking Services), Fixed Line and WLL (Wireless Local Loop). In India, there is a prospering market specifically in GSM mobiles service and the number of its subscribers is increasing day by day. From economic perspective also the Indian Telecom Industry plays a dominant role in contributing towards the nation’s development. The Government of India also took great interest in formulating certain policies and regulations for hastening the infrastructural growth of this Industry. Indian Telecom market provides a tele-density of 8.5 per cent as registered in the year 2004 which has been increased up to 69.29 per cent in February, 2011. A number of leading multinational telecommunication companies are approaching and showing their interest in investing in Indian telecom sector (www.economywatch.com).

With the dawn of new entrants in market the competition has been augmented especially in the recent past. The market share of telecom companies replicates the fragmented nature of the industry, with as many as 15 players.
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Chart 3.2: Market Share of Telecom Companies (as on Sept 30, 2010)

In the above figure, it is clearly shown that on September, 30, 2010 the market share of these players were: Bharti Airtel led the market with 20.8 per cent share, Reliance with 17.1 per cent, the share of Vodafone was 16.8 per cent, share of BSNL counts to be 11.4 per cent, Tata shared 11.5 per cent of the total share, Idea having the share of 10.8 per cent, and the share of Aircel has been 6.8 per cent, with the remaining share being held by other small operators, according to TRAI database.

The rapid growth in Indian telecom services has prompted major global manufacturers of telecom equipment to consider investing in India, paving the way for extensive provision of modern communication services in rural areas and also provide a strong boost to government revenues. In this connection, further the trends of growth in The growth in subscriber base has been facilitated mainly by the increase in network coverage and decline in tariffs and handset prices. Average Revenue per User (ARPU) has also been shown which exhibit a declining trend.
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Graph 3.3: Trends in Average Revenue per Users (ARPU)

![Graph showing trends in ARPU for GSM and CDMA operators from June 2006 to June 2010.]

Source: Telecom Regulatory Authority of India (TRAI) Database

The figure shown above intends to bring out the pressure on ARPUs for GSM and CDMA operators over the last four years.

Present Status of the Telecom Industry in India

Telecommunications is one of the few sectors in India, which has witnessed the most fundamental structural and institutional reforms since 1991. In recent times, the country has emerged as one of the fastest growing telecom markets in the world, particularly by the unprecedented growth in mobile telephony. This high growth rate has been achieved in major part due to sharp fall in tariffs. The rapid growth in Indian telecom services has prompted major global manufacturers of telecom equipment to consider investing in India, paving the way for extensive provision of modern communication services in rural areas and also provide a strong boost to the government revenues. With the successfully concluded auctions of the 3G and BWA spectrum, this growth is set to become even more pronounced. Indian telecom network has
787.29 million connections as on 31st December 2010 with 752.20 million wireless connections, Indian telecom has become the second largest wireless network in the world after China.

The future progress of telecom in our country is very encouraging. The addition of over 18 million connections per month puts the telecom sector on strong footing. The target of 600 million telephones by the end of 11th five year plan has been achieved in February, 2010. With such a pace of expansion the Department is certain to achieve the 11th plan targets. Therefore, the present scenario of the Indian telecom sector could be summarised in the following manner:

**Table 3.2: Present Status of Indian Telecom Sector**

- Indian Telecom market is one of the fastest growing markets in the world
- With its 787.29 million Telephone connection as on 31st December 2010, it is the second largest network in the world after China.
- It is second largest wireless network in the world.
- Over 18 million connections are being added every month.
- The target of 600 million telephones by the end of 11th five year plan has been achieved in February, 2010 itself.
- Wireless telephones are increasing at faster rate. The share of wireless telephones as on 31st December 2010 is 95.54 per cent of the total phones.
- The share of private sector in total telephone is 84.60 per cent.
- Overall tele-density has reached 66.17 per cent. Urban tele-density is about 148 per cent, whereas rural tele-density is at 31.22 per cent which is also steadily increasing.
- Broadband connections increased to 10.74 million by November, 2010.

Source: www.dot.gov.in (Annual Report 2010-2011, Department of Telecommunications,(DoT))
**Growth of the Telecom Industry in India**

Indian Telecommunication journey has travelled long way since the age of bullock carts to the age of cyber mart today. The prodigious growth in the field of telecommunication has transformed the ways; we think, work and act. The opening of the sector has not only led to rapid growth but also helped a great deal towards maximization of consumer benefits, as tariffs have been falling across the board as a result of unrestricted competition. The Indian Telecom sector has witnessed an incessant rising trend during the year 2010, on the back of rollout of newer circles by operators, successful auction of Third Generation (3G) and Broadband Wireless Access (BWA) spectrum, Network rollout in semi-rural areas and increased focus on the Value Added Services (VAS) market. From a meager number of 22.8 million telephone subscribers in 1999, it has grown up to 621.28 million at the end of March, 2010.

According to the data released by Telecom Regulatory Authority of India (TRAI), the number of telephone subscribers in the country reached up to 806.13 million at the end of January, 2011 from 787.28 million in December, 2010, thereby registering a growth rate of 2.39 per cent. The Wireline started to decline from 40.92 million in the year 2004 to 36.96 million in March, 2010 and 35.09 million in December, 2010, albeit it is becoming stagnant now. With this, the overall Teledensity (Telephones per 100 people) has touched 67.67 per cent. The wireless subscriber base has increased to 771.18 million at the end of January, 2011 from 752.19 million in December, 2010, registering the growth of 2.52 per cent. The wireless sector has projected an impressive growth trajectory, growing at a CAGR of more than 75 per cent in the past decade in terms of the number of subscribers.

Meanwhile, Indian Global System of Mobile Communication (GSM) telecom operators added 14.69 million new subscribers in February, 2011 taking the all-India GSM Cellular base to 555.06 million, according to the Cellular Operators Association of India (COAI). With the successfully concluded auctions of the 3G and BWA spectrum, this growth is set to become even more pronounced. Indian telecom network has 787.29 million connections as on 31st December 2010 with 752.20 million wireless connections. The GSM subscriber base stood at 540.37 million at the end of January, 2011. The sector will witness up to US $ 55.95 billion investments
and the market will cross the US $ 100 billion mark in 5 years expecting an annual growth of 12-13 per cent in coming years, according to the consultancy firm Boston Consulting Group (BCG). The Indian telecom success story is built around the wireless segment (www.dot.gov.in).

Table 3.3: Growth of Telephones over the Years (in millions)

<table>
<thead>
<tr>
<th>States</th>
<th>Public Sector</th>
<th>Private Sector</th>
<th>Towers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajasthan</td>
<td>2,028</td>
<td>23,322</td>
<td>25,350</td>
</tr>
<tr>
<td>Gujarat, Daman and Diu</td>
<td>2,271</td>
<td>26,121</td>
<td>28,392</td>
</tr>
</tbody>
</table>

Infrastructure development plays a crucial role in the development of the wireless sector. The high level of growth in the Indian wireless telecommunications market will continue to drive huge investment in infrastructure as well as a speedy rollout of networks into new areas. As in March 2010, there were 4, 25,455 telecom towers in the country. In July 2010, telecom towers were accorded Infrastructure Status by the RBI. This constitutes an essential and possibly the most expensive component in the entire telecom service delivery infrastructure. The Government of India provides certain benefits specifically to infrastructure companies. The tax benefit encourages the participation of private sector through investment. Extending Infrastructure Status to telecom towers and the resultant income tax benefits should certainly encourage tower companies to expeditiously set up more towers in underserved areas.
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<table>
<thead>
<tr>
<th>State/Union Territory</th>
<th>Total Subscribers</th>
<th>Total Revenue (in Rs.)</th>
<th>Total Revenue Share (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maharashtra and Goa</td>
<td>3,608</td>
<td>41,494</td>
<td>45,102</td>
</tr>
<tr>
<td>Karnataka</td>
<td>2,154</td>
<td>24,766</td>
<td>26,920</td>
</tr>
<tr>
<td>Madhya Pradesh &amp; Chhattisgarh</td>
<td>1,854</td>
<td>21,323</td>
<td>23,177</td>
</tr>
<tr>
<td>West Bengal, Orissa, Sikkim, Andaman &amp; Nicobar</td>
<td>3,337</td>
<td>38,371</td>
<td>41,708</td>
</tr>
<tr>
<td>Assam and Arunachal Pradesh</td>
<td>720</td>
<td>8,275</td>
<td>8,995</td>
</tr>
<tr>
<td>Delhi, Haryana and Chandigarh</td>
<td>2,008</td>
<td>23,090</td>
<td>25,098</td>
</tr>
<tr>
<td>Uttar Pradesh and Uttarakhand</td>
<td>4,577</td>
<td>52,630</td>
<td>57,207</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>2,752</td>
<td>31,644</td>
<td>34,396</td>
</tr>
<tr>
<td>Punjab and Himachal Pradesh</td>
<td>1,512</td>
<td>17,387</td>
<td>18,899</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>488</td>
<td>5,614</td>
<td>6,102</td>
</tr>
<tr>
<td>Tamil Nadu and Pondicherry</td>
<td>3,071</td>
<td>35,321</td>
<td>38,392</td>
</tr>
<tr>
<td>Bihar and Jharkhand</td>
<td>1,794</td>
<td>20,634</td>
<td>22,428</td>
</tr>
<tr>
<td>Nagaland, Meghalaya, Manipur, Mizoram and Tripura</td>
<td>369</td>
<td>4,242</td>
<td>4,611</td>
</tr>
<tr>
<td>Kerala and Lakshadweep</td>
<td>1,494</td>
<td>17,184</td>
<td>18,678</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34,037</strong></td>
<td><strong>3,91,418</strong></td>
<td><strong>4,25,455</strong></td>
</tr>
</tbody>
</table>


The development of the telecom infrastructure depends on four key factors: rollout, competition, price, and safety and aesthetic concerns. The rollout of services by operators takes place only on the back of robust telecom infrastructure. Competition will give further impetus to the development of infrastructure. Falling prices of telecom services will help to increase their affordability, and the demand for more services will translate into the development of more telecom infrastructure. Finally, as the safety and aesthetic issues related to the setup of towers are addressed, the rollout of infrastructure will become easier. The National Telecom Critical Infrastructure Policy is expected to address these concerns as well as the issues affecting telecom
providers on the state level, including ROW related issues, hurdles to the erection of cellular
towers and Value Added Tax (VAT) levies on broadband services delivered through fiber media.
The policy should clearly delineate the role of the Central Government and the states to help
catalyze telecom sector growth.

**Changes in Structure of Composition of Telecom Sector Wireline vs. Wireless**

Since Wireline and wireless together compile the composition of telecommunication hub, thus they both have to be studied in detail for administering their contribution in the growth of the sector. The growth of wireless services has been substantial, with wireless subscribers growing at a Compounded Annual Growth Rate (CAGR) of 57.1 per cent since 2004. Wireless subscribers have overtaken Wireline subscribers. On the contrary, the share of fixed wireline has steadily declined. The year also witnessed two more telecom companies crossing the 100 million mark in terms of wireless connections. Bharti Airtel was the first Indian Operator to achieve the landmark in 2009. It was followed by Vodafone and Reliance Communication in the year 2010. Wireless phones have increased as they are preferred because of their convenience and affordability. As a result telephones today have come within the reach of a common man.

In the present era of advancement, people prefer wireless technology over Wireline technology because of convenience and its portability. The share of wireless phones has increased from 46.54 per cent in 2004 to 95.54 per cent in December; 2010. The Wireline started to decline from 40.92 million in the year 2004 to 36.96 million in March, 2010 and 35.09 million in December, 2010, albeit it is becoming stagnant now. With this, the overall Teledensity (Telephones per 100 people) has touched 67.67. The wireless subscriber base has increased to 771.18 million at the end of January, 2011 from 752.19 million in December, 2010, registering an incessant growth of 2.52 per cent. As a result telephones today have come within the reach of a common man.
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Chart 3.4: Growth Percentage of Wireless and Wireline Phones in 2004

![Diagram showing percentage share of wireline and wireless phones in March 2004.]

Source: Annual Report, 2010-2011, Department of Telecommunications

Chart 3.5: Growth Percentage of Wireless and Wireline Phones in 2010

![Diagram showing percentage share of wireline and wireless phones in December 2010.]

Source: Annual Report, 2010-2011, Department of Telecommunications
Gross Revenues of the Telecom Sector and Contribution to GDP

Telecommunication Industry is a boon for the socio-economic growth of a country. It is one of the main architects of the accelerated growth and progress of different segments of the economy. Narrowing access gaps and removing barriers to information dissemination are prerequisites for promoting equitable and sustainable development as well as political and social cohesion. Increasing connectivity is highly instrumental in improving governance, business communication, and security, response to emergencies and in the overall strengthening of the socio-cultural ethos of the country.

The revenues of the Indian telecom sector have increased by almost fivefold from US$7 billion in Financial Year 2000 to US$35 billion in Financial Year 2009. The growth in revenues has been driven by favorable factors such as the availability of cheaper mobile handsets, lower tariffs, the increase in mobile penetration in both urban and rural areas and the adoption of VAS. In addition, infrastructure sharing has enabled operators to improve margins by bringing down costs significantly. India’s telecom sector is a voice-centric market characterized by high MoU and ARPU.

Chart 3.6: Indian telecom sector gross revenues

Source: TRAI; Ernst & Young analysis, www.ey.com
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It could be seen that the gross revenue has increased from the 7 US $ in financial year 1999-2000 to 17 US$ in the financial year 2004-2005, which further increases up to 35 US$ on 31st March 2009, to 33US$ in the financial year ending 2009-2010. The Indian economy is expected to sustain an 8 per cent or a higher growth rate in the future. According to an ICRIER study, a 10 per cent increase in mobile penetration results in a 1.2 per cent increase in GDP. Therefore, Teledensity plays a foremost role in accelerating the GDP of any economy (www.livemint.com)

Graph 3.7: Contribution of telecom to GDP

![Graph showing the contribution of telecom to GDP]

Source: TRAI; Ernst & Young estimates

The contribution of the telecom sector also has a multiplier effect on growth, because of the associated individuals and businesses. Further, the Government of India aim to reach rural teledensity of 40 per cent by the year 2014 from the current levels and achieve broadband coverage of all 250,000 village panchayats under the Bharat Nirman Program, and is expected to enhance the contribution of the telecom sector to India’s GDP (www.bharatnirman.gov.in).

FDI in Indian Telecom Sector

Foreign Direct Investment (FDI) in India has also been increasing especially in the recent past due to privatization and globalization of world economies. The telecom sector has
been among the sectors that have witnessed a substantial growth in FDI. The telecom sector has an extensive impact over nation’s economic development, social stability and national security. Hence, the balance between economic gains from foreign investment and national telecommunications sovereignty presents a challenging task. FDI in telecom industry has opened the doors for advanced technological skills and hefty amounts of funds, and has also boosted the market competition. Worldwide, major FDIs in the telecom sector is facilitated by two international organizations — The World Trade Organization (WTO) and the International Telecommunication Union (ITU). The WTO aims to promote foreign and domestic investment, and the ITU allocates global spectrum to particular services and manages scarce communications resources among countries for the benefit of trade liberalization and to prevent discrimination between domestic and foreign suppliers. Hence, both WTO and ITU emboldens the development of a global telecommunication infrastructure and supports the formation of an integrated global telecommunication market.

**Chart 3.8: FDI in Telecom Sector in India (in Millions)**

Source: Annual Report, Department of Telecommunications (DoT), 2010-11.
In India, in the last decade, FDI has increased at a CAGR of 28 per cent and has reached upto US $ 37.2 in March, 2010 (http://dipp.nic.in). Among all the other sectors, the Telecommunication sector is the only one which is attracting the highest FDI accounting for 8.1 per cent of the cumulative FDI equity inflows from the year ending March, 2000 to March, 2010. Over the past few years, a number of foreign ownership and equity regulation reforms have been introduced in the telecom sector. These reforms have led to an increase in FDI inflow in the sector. Despite of these increasing growth rate, there are certain limits for FDIs in the sector as prescribed. These limits are as follows:

- 100 per cent FDI is permissible in the case of infrastructure providers that offer dark fiber, ROW, duct space, tower, email, and voice mail:

- FDI of up to 49 per cent can be done on the Automatic Route (without prior government approval); beyond that, prior approval is required

- 74 per cent FDI is permissible in the case of basic, cellular, Unified Access Services (UAS), NLD/ILD, V-Sat, Public Mobile Radio Trunked Services (PMRTS), Global Mobile Personal Communications Services (GMPCS) and other VAS.

- 74 per cent FDI is permissible in the case of ISPs with gateways, ISPs not providing gateways, radio paging and end-to-end bandwidth.

From Financial Year, 2008 to Financial Year 2010, FDI equity inflows in the telecom sector increased at a CAGR of 42.3 per cent to reach US$2.6 billion. Higher levels of FDI in the telecom sector have intensified competition and strengthened market penetration. They have also opened up opportunities for telecom manufacturing and related business areas in the sector.

**Trends in Teledensity**

Teledensity is an important indicator of telecom penetration in the country. There has been phenomenal spurt in the growth of teledensity in the country with the evolution of new wireless technologies. The Teledensity which was 7.02 per cent in March 2004 has increased up to 53.46 per cent in March, 2010 and further raised up to 66.17 per cent in December, 2010.
Chapter-III: Development of Telecom Industry in India

There has been a noteworthy and a continuous improvement in the overall teledensity of the country. The rural teledensity which has been reported as 1.55 per cent in March 2004 has increased up to 24.56 per cent in March, 2010 and 31.22 per cent at the end of December 2010. The urban teledensity has increased from 20.79 per cent in March 2004 to 122 per cent in March, 2010 and stands at 147.52 per cent at the end of December, 2010.

For economic and social development of rural areas, rapid increase in rural teledensity is of utmost importance. With the introduction of wireless phones in rural areas, there is increasing trend in rural teledensity also. The Government is taking various measures under USOF for expansion of mobile network in remote rural areas. As the urban areas have got saturated, private service providers are also looking for further opportunities in rural areas. All these factors have led to increasing trend in rural teledensity.

According to TRAI, the total subscriber base grew from Financial Year (FY) 2000 through Financial Year (FY) 2010 at a compound annual growth rate (CAGR) of 36.1 per cent to reach 621.3 million subscribers. In the past decade, the total Teledensity has risen above 50 per cent, with the mobile segment leading this growth. Such phenomenal growth can be attributed primarily to the country’s large population, high economic growth, and hyper-competition in the sector, affordable handsets, reduced tariffs, infrastructure sharing and the introduction of positive and enabling regulatory reforms (www.dot.gov.in).
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Graph 3.19: Teledensity (Number of Telephones per 100 population)


**Regulatory Framework of Indian Telecom Sector**

The Indian Telecommunications Industry is backed by a strong Regulatory Framework to look after its operations and working, and also to ensure the efficient policy development so that the formulated policies should be executed out in a well-organized manner. A number of positive regulatory changes have driven growth in the said sector. The key feature of India’s regulatory regime is its transparency in industry information, an open approach and encouragement of consultation with stakeholders. The Government of India has put in considerable efforts to ensure that the authorities that have been given the charge of policy making should ensure the objective of maintaining the interest of the Industry along with the interest of the society at large.

The regulatory framework of Indian Telecom Sector comprises of the following key bodies:
1. The Department of Telecommunication (DoT)

The Department of Telecommunications (DoT) had been the foremost telecom service provider in India with its presence through the length and breadth of the country. Considering the overall development and country’s requirement, the telecom sector in India offers an epitome environment for investment. With the privatization of the telecom sector and its establishment as an independent regulator, the matter of separation of service providing functions of the DoT and ensuring a level playing field to various service providers had been fetching the attention of the Government. On these lines, the NTP-99 had articulated the idea to separate the policy and licensing functions of DoT from the service providing functions as a precursor to corporatisation and that the corporatisation of the DoT shall be done keeping in mind the interests of all stakeholders by the year 2001.

Accordingly, as a precursor to corporatisation, a new department, viz., Department of Telecom Services (DTS) had been shaped followed by establishment of Department of Telecom Operations by carving out service provision and operational functions from the licensor, i.e. the Department of Telecommunications. After finalisation of various financial and HRD aspects, the business of running telecom operations throughout the country except in the metros of New Delhi and Mumbai, the service providing functions of the Departments of Telecom Services (DTS) and Department of Telecom Operations (DTO) were transferred to the newly created company Bharat Sanchar Nigam Limited. The company was incorporated as a company having liability limited by shares on 15th September 2000 and it started the operations w.e.f. October 1st, 2000. The company has an authorized capital base of Rs.10,000 crore with paid up capital of Rs.5,000 crore (Report on Services Offered by Telecom Sector and BSNL data).

2. The Telecom Regulatory Authority of India (TRAI)

The Telecom Regulatory Authority of India was established under the TRAI Act, 1997 as an independent authority. It has been established to provide a ‘fair and transparent’ environment for policy making which could ensure an impartial competition among all the telecom players. TRAI has been reconstituted through the TRAI (Amendment) Act, 2000. The
amendments have been brought forward to remove certain difficulties that had arisen. The desired objectives of bringing about functional clarity, strengthening the regulatory framework and the disputes settlement mechanism have been attained by delineating a clear distinction between the regulatory and recommendatory functions of TRAI, by making it mandatory for Government to seek recommendations of TRAI in respect to specified matters and by the setting up a separate mechanism to settle the disputes. The reconstituted TRAI became functional with the joining of a Chairperson, two whole time Members and two part time Members and started working since March, 2000 (Report on Services Offered by Telecom Sector and BSNL data).

3. The Telecom Disputes Settlement and Appellate Tribunal (TDSAT)

The Telecom Disputes Settlement and Appellate Tribunal (TDSAT), has been set up in the year 2000, by the Central Government under the TRAI Act, 1997 to resolve all disputes between a licensor and a licensee; or between two or more service providers or even between a service provider and the group of consumers. It is an authority which has been established with the purpose of serving the role of a medium for settling the disputes arisen among two parties viz; service provider, consumers, licensors or licensee etc. It is an organization which have been brought into existence for the solitary purpose of settling the disputive matters that arise in the organization. In January, 2004 the jurisdiction of Telecom Disputes Settlement and Appellate (TDSAT) has been extended to include the broadcasting and cable services in addition with the telecommunication services. TDSAT exercises appellate jurisdiction over regulations, determinations, orders and directions of the TRAI. It also exercises the original jurisdiction (www.dot.gov.in).

4. The Ministry of Communications & Information Technology (MICT)

The Ministry of Communications & Information Technology (MICT) is a part of the Indian Government. The key departments of the ministry include the Department of Telecommunications (DoT), the Department of Information Technology, and the Department of Posts. The MICT formulates policies with respect to telecom, post, telegraph and other means of communication. The laws governing the telecom sector include the
Indian Telegraph Act, 1885; the Indian Wireless Telegraphy Act, 1933; and the Telecom Regulatory Authority of India Act, 1997.

5. The Telecom Commission

The Telecom Commission was set up in 1989 by the Government of India to deal with the different aspects of telecommunications department. The Telecom Commission consists of four full-time members that are ex-officio Secretary to the Government of India at DoT, and four part-time members that are secretaries to the Government of India of the departments concerned. The Telecom Commission is responsible for policy formulation, licensing, wireless spectrum management, administrative monitoring of public sector undertakings (PSUs), Research & Development (R&D) and standardization and validation of equipment, amidst other matters (www.ey.com).

6. Centre for Development of Telematics (C-DoT)

Centre for Development of Telematics (C-DoT) is the telecom research and development centre of the Government of India under administrative control of the Department of Telecommunications. C-DoT assists in developing a total telecom solution, technologies and applications for the fixed-line, mobile and packet-based converged networks and services. C-DoT has also developed certain technologies which are intensively software-based and are beneficial for the service providers for provisioning of services, and also for the operations and management of networks and services. C-DoT technologies have a noteworthy presence in the Indian telecom network directly as well as through its licensees.

C-DoT’s recent focus has been on development and deployment of Next Generation Networks, cost-effective rural wireless solutions, software based systems, optical and satellite transport and access technologies and solutions required for strategic sectors. C-DoT’s product portfolio includes fixed line PSTN systems, Advanced Intelligent Network solutions, Access Network products, Synchronous Digital Hierarchy (SDH) and Wavelength Division Multiplexing (WDM) systems, Satellite Communication systems, Network Management Systems, Operation Support Systems and Rural Wireless Access and Broadband Solutions based
on Cognitive Radio, SDR based GSM systems. C-DOT continues to support the legacy systems deployed in the field (www.dot.gov.in).

**Key Players in the Sector**

There are three types of players in telecom services:

- State owned companies (BSNL and MTNL)
- Private Indian owned companies (Reliance Infocomm, Tata Teleservices,)
- Foreign invested companies (Hutchison-Essar, Bharti Tele-Ventures, Escotel, Idea Cellular, BPL Mobile, Spice Communications)

A brief outlook of these companies has been presented below:

**Table 3.5: Bharat Sanchar Nigam Limited (BSNL)**

<table>
<thead>
<tr>
<th>Description</th>
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<td>Established in the year 2000</td>
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<td>It is the world’s 7th largest Telecommunication company providing comprehensive range of telecom services in India: Wireline, CDMA mobile, GSM Mobile, Internet, Broadband, Carrier service, MPLS-VPN, VSAT, VoIP services, IN Services etc. Within a span of five years it has become one of the largest public sector unit in India.</td>
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<td>It has a network of over 45 million lines covering 5000 Network towns with over 35 million telephone connections.</td>
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<td>Future Prospect BSNL plans to expand its customer base from present 47 millions lines to 125 million lines and infrastructure investment plan to the tune of Rs. 733 crores (US$ 16.67 million) in the next three years.</td>
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Source: www.bsnl.co.in
Chapter-III: Development of Telecom Industry in India

Table 3.6: Mahanagar Telephone Nigam Limited (MTNL)

- MTNL is established in the year 1986.
- It was set up by the Government of India to upgrade the quality of telecom services, expand the telecom network, introduce new services and to raise revenue for telecom development needs of India’s key metros. MTNL with a market share of about 13 per cent of the National telecom Network has a customer base of 5.92 million. The Government of India currently holds 56.25 per cent stake in the company.
- MTNL has formed a Joint Venture company in Nepal by the name of United Telecom Ltd. (UTL) in collaboration with Telecom Consultants India Limited (TCIL) in 2001 for providing WLL based basic services in Nepal. MTNL has set up its 100 per cent subsidiary Mahanagar Telephone Mauritius Limited (MTML) in Mauritius, for providing basic, mobile and international long distance services.

Source: www.cci.in

Table 3.7: Videsh Sanchar Nigam Limited (VSNL)

- Videsh Sanchar Nigam Limited (VSNL) has also been established in 1986.
- The Videsh Sanchar Nigam Limited (VSNL) - a wholly Government owned corporation. The company operates a network of earth stations, switches, submarine cable systems, and value added service nodes to provide a range of basic and value added services and has a dedicated work force of about 2000 employees. VSNL's main gateway centers are located at Mumbai, New Delhi, Kolkata and Chennai.
- The company has 52 subsidiaries in 21 countries as well as operations across four continents.
• VSNL acquired Nasdaq-listed Teleglobe International Holdings Ltd for $239 million in the year 2005. Videsh Sanchar Nigam Ltd also have acquired the Tyco Global Network, submarine cable system, for USD 130 million in 2005.

• The company plans to expand its wholesale voices services across the EU, to effectively enable enterprise customers and retail voice carriers to connect to India. VSNL is adding its capacity to meet the overwhelming demand for connectivity to India in the wholesale voice services domain. The company is also offering flexible agreements and charging methods to meet the growing demands of the wholesale voice market.

Source: www.cci.in

Table 3.8: Bharti

• Bharti Tele-Ventures Limited was established in 1985 and was incorporated on July 7, 1995 for promoting investments in telecommunications services. Its subsidiaries operate telecom services across India. Bharti’s operations are broadly handled by two companies: the Mobility group and the Infotel group.

• The mobile business provides mobile & fixed wireless services using GSM technology across 23 telecom circles while the Airtel Telemedia Services business offers broadband & telephone services in 94 cities.

• Bharti Telecom and British Telecom formed a 51per cent:49per cent joint venture, Bharti BT Internet for providing Internet services, in 1998. Bharti Tele-Ventures acquired an effective 32.36per cent equity interest in Bharti Mobile (formerly JT Mobiles), the cellular services provider in Karnataka and Andhra Pradesh circles in 1999 Bharti Telesonic entered into a joint venture, Bharti Aquanet, With SingTel for establishing a submarine cable landing station at Chennai in 2001.

• Bharti Airtel company is planning to set up 3000 more towers as part of enhancing their rural coverage and will now focus on rural and semi-urban areas.

Source: www.cci.in
### Table 3.9: Reliance Communication

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- Reliance Communication was established in the year 1999.

- Reliance Telecom's cellular services are available in 340 towns within its eight-circle footprint. Reliance Infocomm also offered for the first time in India, mobile data services though its R-World mobile portal. This portal leverages the data capability of the CDMA 1X network. Reliance Infocomm offers a complete range of telecom services covering mobile and fixed line telephony including broadband, national and international long distance services, data services and a wide range of value added services and applications aimed at enhancing productivity of enterprises and individuals.

- Reliance Communications has IP-enabled connectivity infrastructure comprising over 150,000 kilometers of fiber-optic cable systems in India, the US, Europe, Middle East, and the Asia Pacific region.

- Reliance Communication also have acquired the International wholesale telecommunications service provider. FLAG Telecom amalgamates with Reliance Gateway, a wholly owned subsidiary of Reliance Infocom in 2004.

Source: www.rcom.co.in

### Table 3.10: Tata Teleservices

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- Year of establishment of Tata Teleservices is 1996.

- Company Profile of Tata Teleservices is a part of the $12 billion Tata Group, which has 93 companies, over 200,000 employees and more than 2.3 million shareholders.

- Tata Teleservices’ bouquet of telephony services includes Mobile services, Wireless Desktop Phones, Public Booth Telephony and Wireline services. Other services include value added services like voice portal, roaming, post-paid Internet services, 3-way conferencing, group calling, Wi-Fi Internet, USB Modem, data cards, calling card services and enterprise services.
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- Tata Teleservices has extended its marketing network across 19 telecom circles that includes Andhra Pradesh, Chennai, Gujarat, Karnataka, Delhi, Maharashtra, Mumbai, Tamil Nadu, Orissa, Bihar, Rajasthan, Punjab, Haryana, Himachal Pradesh, Uttar Pradesh (E), Uttar Pradesh (W), Kerala, Kolkata, Madhya Pradesh and West Bengal.

- Tata Teleservices has acquired Hughes Tele.com (India) Limited [now renamed Tata Teleservices (Maharashtra) Limited] in 2002

- The company is also expanding its footprint, and has paid Rs. 4.17 billion ($90 million) to DoT for 11 new licenses under the IUC (interconnect usage charges) regime.

Source: www.cci.in

Table 3.11: Vodafone

- Vodafone acquired the majority stake in Hutch Essar in India, by buying out complete stake of Hutch in 2007, Essar is still minority stakeholder in the company.

- Vodafone Essar in India is a subsidiary of Vodafone Group Plc and commenced operations in 1994 when its predecessor Hutchison Telecom acquired the cellular licence for Mumbai.

- Vodafone Essar now has operations in 16 circles covering 86per cent of India's mobile customer base, with over 45.78 million customers.

- It has operations in 25 countries across 5 continents and 40 partner networks with over 200 million customers worldwide.

- Vodafone Essar is expecting to touch over 35 million customers across 400,000 shops and thousand of hutch’s own employees along with employees of its business associates.
• Vodafone Essar, under the Hutch brand, has been named the 'Most Respected Telecom Company', the 'Best Mobile Service' and the 'Most Creative and Most Effective ‘Advertiser of the Year’ in the country.

Source: www.cci.in

Table 3.12: Idea Cellular company

• Idea Cellular is part of the Aditya Birla Group, which is India's first truly a multinational corporation, has been established in the year 1995.

• Aditya Birla Nuvo Ltd. holds 35.7 per cent, Birla TMT Holdings Ltd. 44.9 per cent, Grasim 7.5 per cent, and Hindalco 10.1 per cent in Idea.

• Has a customer base of over 17 million, It has its operations in Delhi, Maharashtra, Goa, Gujarat, Andhra Pradesh, Madhya Pradesh, Chattisgarh, Uttaranchal, Haryana, UP-West, Himachal Pradesh and Kerala.

• In the year 2001, merged with Tata Cellular Limited, thereby acquiring original license for the Andhra Pradesh Circle and acquired RPG Cellular Limited and consequently backed the license for the Madhya Pradesh (including Chattisgarh) Circle.


• Idea also plans to enter rural and neglected circles as a strategy to gain more subscribers. Other advancements in the telecom industry will help to cut down costs - use of e-mail to send bills to customers; sharing cell sites; smaller base transmission stations that will mean lesser infrastructure requirements and expenses and independent tower operators.
Along with its plan to go for a national long distance licence, it will also look at international long distance in the near future.

Source: www.cci.in

The Indian telecom sector has been one of the fastest growing sectors in the Indian economy in the recent past. This has been witnessed due to strong competition that has brought down tariffs as well as simplification of policy environment that has promoted healthy competition among various players (www.cci.in).

KEY CONSTRAINTS AND CHALLENGES

Telecom industry being the most rapidly developing industry, even though it suffered from some major constraints. Few challenges which come across the telecom sector have been discussed below.

• RF spectrum being a limited resource, with competing and increasing demands, there is a need to have optimal and efficient use with greater sharing of this resource by all stakeholders. Therefore, effective RF spectrum planning has to be carried out for short term, medium term, and long term, taking into account the emerging new technologies.

• Although a teledensity of 18.31 per cent has been achieved, there exists a wide gap between urban teledensity (55.94 per cent) and rural teledensity (2.83 per cent). Considering the fact that 70 per cent of the population lives in rural areas in India, the real challenge will be to connect rural India.

• As voice-based connectivity (telephony) alone may not be the best economically viable option. Therefore, the connectivity should predominantly be data based having killer applications to make it sustainable on which voice services can also be provided.

• For an effective roll out the rural broadband connectivity would also need support through the USOF.
• To accelerate broadband connectivity, equipments need to be made available at an affordable price. In addition, local content in local languages need to be developed.

• The transformation of traditional public telecommunications networks into Internet Protocol (IP) based NGN will require significant technical, human, as well as financial resources. Further activities relating to migration to Internet Protocol version-6 will have to be given priority, in order to spread Internet much faster.

• Communication network needs to be adequately protected for which necessary network security related initiatives need to be put in place.

• The slow growth of telecom manufacturing sector is an area of major concern. The NTP 1999, sought to promote exports of telecom equipments and services. But till date export of telecom equipment remains minimal. Most of the state-of-the-art telecom equipment including mobile phones are imported from abroad. There is thus an immense potential for indigenous manufacturing in India (planningcommission.nic.in).

Privatization of Indian Telecommunication Industry

In the year 1881, telephone services were first introduced in India, and was opened to public in 1854 when telegraph facilities were also brought forward to public access. In 1883, telephone services were merged with the postal system. Indian Radio Telegraph Company (IRT) was formed in 1923. After independence in 1947, all the foreign telecommunication companies were nationalized to form the Posts, Telephone and Telegraph (PTT), a monopoly run by the government’s Ministry of Communications. Telecom Sector had beenstructured as a strategic service and the government considered it best to bring it under the roof of state’s control (en.wikipedia.org/).

The first wind of reforms in telecommunications sector began to flow in 1980s, when the private sector was allowed in manufacturing telecom equipment’s. In 1985, Department of Telecommunication (DoT) was established as an exclusive provider of domestic and long distance service that would be its own regulator (separate from the postal system). In 1986, two wholly government-owned companies were created; the Videsh Sanchar Nigam Limited (VSNL)
for international telecommunications and Mahanagar Telephone Nigam Limited (MTNL) for service in Metropolitan areas. MTNL was launched to serve Delhi and Mumbai and VSNL was launched to operate international telecom services. In 1990s, telecommunications sector benefited from the general opening up of the economy. This was a gateway to many foreign investors to get entry into the Indian Telecom Markets. After March 2000, the government became more liberal in making policies and issuing licenses to private operators. The government further reduced license fees for cellular service providers and increased the allowable stake to 74 per cent for foreign companies. Because of all these factors, the service fees finally reduced and the call costs were cut greatly enabling every common middle class family in India to afford a cell phone. Nearly 32 million handsets were sold in India. The data reveals the real potential for growth of the Indian mobile market (www.trai.gov.in).

The fruits of the liberalization efforts of the Government are evident in the growing share of the private sector in telecommunication industry of India. The private sector is now playing an imperative role in the expansion of telecom services. The share of private sector recorded to be 39.27 per cent against its share 65.32 per cent in the year 2007 which further raised to 75.53 per cent in 2008. The trend of rising the share of private sector was maintained with the growth rate of 79.16 per cent in 2009. The share of private sector in total telephone connections is now 84.60 per cent as per the latest statistics available for December, 2010 as against a mere 5 per cent in the year 1999.

Despite differences in competition regimes across the countries, the global trend is towards growing privatization and competition. India, with her commitment to reforms is already a part of this process. From the perspective of business organisation, as the global experience suggests, this process is likely to undergo an alternate cycle of differentiation and convergence. Convergent nature of technology may, by itself dictate mergers and acquisitions between companies in certain cases. Network operators and service providers will have to merge with content developers to add value to their services. This is likely to create temporary oligopoly in the market till competition intensifies with the emergence of more firms offering multiple services (planningcommission.nic.in).
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Graph 3.10: Private Network Growth percentage (Year Ending 31st March)

Source: Department of Telecommunications Annual Report, 2010-2011

It is clearly seen from the above chart, that the growth percentage of telecom sector in private sector is increasing at a steady rate, on 31st March 2004, the growth percentage was recorded at 39.27 per cent which moves up to 65.32 per cent till year ending March, 2007 and has reached upto 82.96 per cent in 31st March, 2010 which further increases upto 84.60 per cent in December, 2010. Hence, the privatization of Telecom Industry had proven to be a boost for the industry, and has contributed well in the growth percentage share of the Industry at a global level.

Conclusion

It is finally concluded that the growth and development in the telecom sector was also reported through various sources along with its origination. The fast track growth and development in the telecommunications industry in India has made it a key contributor in India’s progress and the global scenario and the present status of telecom sector is also been discussed at length to have a exhaustive portrayal of the telecom sector in India. The next chapter has been drafted by the researcher to present the profile of the two selected sample companies of Indian telecom sector, one from the public sector and the other from the private sector.
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