CHAPTER - I

INTRODUCTION

1.1 MOTIVATION OF THE RESEARCH

It is a well known fact that the growth and development of a country is solely dependent on the infrastructure facilities possessed by it. The paramount contributors to a country’s infrastructure developments are

- Power
- Telecommunication
- Transportation
- Information Technology

These are called lifelines of a country. In that the role of Telecom services has a significant impact on the socio economic development. Thus the telecom infrastructure forms a crucial factor in realizing the socio economic objectives in a developing country like India. The Government of India recognizes that the telecom sector is one of the prime movers of the economy and its regulatory and policy initiatives have also been directed towards establishing a world-class telecommunications infrastructure in India. In fact a major part of the GDP of the country is contributed by this sector.

The telecommunications initiative in the country is lead by the Ministry of Communications through the Department of Telecommunication & Department Telecom Services and its undertakings for provision of basic telephone services, national and international long distance communications, manufacture of complete range of telecom equipment, research and development, and consultancy services. The Telecom Commission performs the Executive and Policy making functions. The Telecom Regulatory Authority of India performs the functions of an independent regulatory body (Source: http://www.asiatradehub.com/india/telecom2.asp).
India's telecom sector is primarily state-owned. The Ministry of Communications controls the industry. The Ministry has a Telecom Commission that operates a four-member committee. The member (services) controls the service organisations like Videsh Sanchar Nigam Limited (VSNL), Mahanagar Telephone Nigam Limited (MTNL) and Telecommunications Consultants India Limited (TCIL) besides the Department of Telecommunications (DoT). DoT is responsible for planning, technology, development, production and financing the development of telecommunication facilities in India.

The DoT owned and operated the entire national telephone network except in Mumbai and New Delhi where it was operated by MTNL until the entry of private operators into the telecom sector in the nineties.

VSNL provides international access to the Indian consumers and connects incoming calls through the DoT and MTNL network. VSNL had a monopoly status granted to it by the government upto the year 2004. The Government invited private sector participation in a phased manner from 1990 onwards, starting with value added services like Paging Services and Cellular Mobile Telephone Services (CMTS) and hanceforth for Fixed Telephone Services (FTS).

On October 1, 2000 the Department of Telecommunication which was function under Government of India, was converted into a corporation with a new name of Bharat Sanchar Nigam Limited (BSNL). Today, BSNL is the No. 1 Telecommunications Company and the largest Public Sector Undertaking of India with an authorized share capital of $ 3600 million and net worth of $ 13.85 billion. BSNL is number one of India in all services in its license area. The company offers a broad spectrum of most transparent tariff schemes designed to suit every customer. BSNL is a 100% government owned company and India’s largest Broadband service provider. The company has the credit of pioneering the launch of High quality Video Telephony service with LI certification. The company is market leader in broadband segment with over 70% market share and its broadband network reaches almost all villages and towns.
The company has India’s finest Robust dual-homed MPLS Core network over which this video Telephony service is delivered. BSNL has installed Quality Telecom Network in the country with a focus towards improving the quality and augmenting the network, introducing new telecom services with ICT applications in villages & winning customer’s confidence. Today, it has about 119.99 million line basic telephone capacity, 8.83 million WLL capacity, 94.79 million GSM capacity, 37,885 fixed exchanges, 68.162 GSM BTSs, 12,701 CDMA Towers, 197 Satellite Stations, 6,86,644 RKM of OFC, 50,430 RKM of microwave network connecting 623 districts, 7730 cities/towns & 5.8 lakhs villages.

BSNL is number one of India in all services in its license area. It has 98.28 million cellular & 5.06 million WLL customers as on 31.07.2011. 3G facility has been given to all 2G connections of BSNL. In basic services, BSNL is miles ahead of its rivals, with 24.58 million wireline phone subscribers i.e. 71.93% share of the wireline subscriber base.

With the entry of private operators into both fixed and mobile services competition has increased. There are six large operators with an all-India presence--BSNL, Reliance Infocomm, Bharti Tele-Ventures, Tata Teleservices, Hutchison-Essar, Idea Cellular--and a number of smaller regional players such as MTNL (Mumbai and Delhi), Aircel (Tamil Nadu), Hexacom (Rajasthan), Spice Communications (Punjab and Karnataka) and BPL Mobile (Mumbai, Kerala, Gujarat and Tamil Nadu).

The telecommunications system in India is the 2nd largest in the world. The country is segmented into multiple zones, viz a viz circles (on the same lines of state boundaries). BSNL and several private operators manage to run local and long distance telephone services that were thrown open to private operators in the year 1990. Competition has paved way for the reduction in rates of calls across India and is proved to be one of the cheapest in the world. Tele-density which was 2% during 1999 has now reached 79.58 as on 30th June, 2012. The growth of Indian telecommunication sector reflects the success of the government initiatives including the liberalization of this sector.
The total number of telephone customers in India increased from 951.34 million to 965.52 million between end of Mar-12 and Jun-12, registering a growth of 1.49% over the previous quarter as against 2.68% during the QE Mar-12. This reflects year-on-year (Y-O-Y) growth of 8.98% over the same quarter of last year. The important measure of overall Tele-density in India is 79.58 as on 30th June, 2012. Wherein when we analyse the same with respect to next two quarters it comes to decrease in telephone subscribers in India from 937.70 Million to 895.51 Million at the end of December-12 registering a decline in growth of 4.50% over the previous quarter as against 2.88% during the QE September-12. Also the overall Tele-density in India has declined from 77.04 to 73.34 as on 30th June, 2012. (Courtesy http://www.trai.gov.in, Telecom Performance Indicator Report by TRAI till December 2012)

Thus this is a wakeup call for all those in Telecom business including BSNL to do something to have control over this trend of declining subscriber base and the teledensity which are one among the indicators of economic development of any country. As a duty bound and sincere researcher, the recent happenings in the field of telecom has induced and motivated the researcher to undertake a study of this kind to endeavour to bailout the telecom companies by way of studying the determinants which serve as the influencing factors of customer preference towards availing telecommunication services in India.

1.2 GLOBAL TRENDS IN TELECOM

The world telecom industry is dominated by three major communication tools namely:

- Fixed-lines
- Mobile
- The Internet

The State of the market thus has been changing. This is mainly characterized by increasing competition, mainly due to numerous players in the telecom industry. The explosion in the telecom industry can be primarily attributed to increasing private sector participations. There also has been an increased independent regulation by these companies.
Fixed Line and Cellular Line Subscribers

Fixed-line market penetration remains comparatively low in most developing countries, at an average of 13 per cent by end of 2012 even though the developing world accounted for 58 per cent of the world’s 1.3 billion fixed phones lines in 2012. In fact, this segment of the market showed a decline in developed countries and just a slight raise in some developing countries. By and large, it is reasonable to say that fixed-line penetration worldwide has stagnated in 2007.

On the other hand Mobile penetration showed a continued growth rates to reach an estimated 69 per cent of the world’s population (some 4 billion subscribers) by the end of 2013. Moreover, by the beginning of the year, more than 70 per cent of the world’s mobile subscribers were in developing countries. Five years earlier, those subscribers had been less than 50 per cent of the world total.

Key highlights

- In 2012 the overall telecoms industry was valued at well over $3.5 trillion with steady growth ahead.
- On a regional level, Western Europe still has the largest share of broadband subscribers worldwide.
- DSL is the most popular broadband access technology worldwide, equating for around a 66% market share.

Despite the unsteady state of the global financial markets, the worldwide telecommunications industry is expected to continue expanding over the next five years as continuing growth of wireless services in emerging markets offsets the spending slowdown in the advanced economies, says a new market analysis report from The INSIGHT Research Corporation. According to the new industry market study, overall telecommunications services revenues are expected to grow at a compounded rate of nearly 10.3 percent over the next few years, reaching $2.7 trillion by 2013.
Wireless makes the strongest showing while Wireline follows a distant second. Nearly all of the growth in both sectors is expected to occur in broadband services, with wireless broadband service revenues expected to grow at a compounded rate of more than 70 percent over the forecast period, while wireline broadband services grow at under 10 percent over the same forecast horizon.

“The 2012 Telecommunications Industry Review: An Anthology of Market Facts and Forecasts” states that even amidst so much economic uncertainty the fact remains that telecommunications is a key input factor in economic growth. Telecommunications is a facilitator of socio-economic advancement and is a critical utility for economic development, much like water and energy. This fact is reflected in its growing share of world output and of household spending. By INSIGHT’s analysis, global telecommunications spending as a share of global GDP has risen from 2.5 percent in 1990 to 2.8 percent in 2012. In this report, INSIGHT Research looks at all of these factors (economic, demographic, technology) and provides our forecast of future industry demand and revenues. In aggregate, we project that global carrier revenue will grow from $2.2 trillion in 2013 to $2.7 trillion in 2018 at a compounded annual growth rate (CAGR) of 3.8 percent. INSIGHT Research’s carrier revenue projections by geographic region are provided in the following table.

Table - 1.1: Global Carrier Revenue by Region, 2013-2018 ($Billions)

<table>
<thead>
<tr>
<th>Region</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>CAGR</th>
</tr>
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<tbody>
<tr>
<td>NA</td>
<td>$547</td>
<td>$556</td>
<td>$570</td>
<td>$587</td>
<td>$609</td>
<td>$635</td>
<td>3.0%</td>
</tr>
<tr>
<td>EMEA</td>
<td>$661</td>
<td>$675</td>
<td>$693</td>
<td>$715</td>
<td>$742</td>
<td>$772</td>
<td>3.2%</td>
</tr>
<tr>
<td>AP</td>
<td>$832</td>
<td>$868</td>
<td>$907</td>
<td>$950</td>
<td>$996</td>
<td>$1,047</td>
<td>4.7%</td>
</tr>
<tr>
<td>LA</td>
<td>$175</td>
<td>$183</td>
<td>$191</td>
<td>$198</td>
<td>$206</td>
<td>$214</td>
<td>4.1%</td>
</tr>
<tr>
<td>Total</td>
<td>$2,214</td>
<td>$2,282</td>
<td>$2,361</td>
<td>$2,451</td>
<td>$2,552</td>
<td>$2,667</td>
<td>3.8%</td>
</tr>
</tbody>
</table>


The North America (NA) region is expected to have the slowest CAGR—barely reaching three percent annual growth over the forecast period. From 2013 to 2018 NA carrier revenue will grow from $547 billion to $635 billion at a CAGR of 3.0 percent.
Despite European economic conditions, the entire EMEA region—which includes developing economies in Africa and the Middle East—will do slightly better than NA. From 2013 to 2018 EMEA carrier revenue will grow from $661 billion to $772 billion at a CAGR of 3.2 percent. Asia and the Pacific Rim (AP) and Latin America and the Caribbean (LA) are the fastest-growing regions, driven by the economies of China, Korea, Mexico, and Brazil. Many of the countries in these regions have a combination of a rapidly expanding middle class and increased privatization of key industries. The resulting demand for telecommunications services, much of which is satisfied by wireless services, is reflected in their higher CAGR relative to the worldwide composite. From 2013 to 2018 AP carrier revenue will grow from $832 billion to $1,047 billion at a CAGR of 4.7 percent, while LA carrier revenue will grow from $175 billion to $214 billion at a CAGR of 4.1 percent.

There are notable differences between the regional growth projections, which we will examine throughout this report. The regional growth rates, which range from 3.0 percent to 4.7 percent, represent a mix of both wireless and wireline services. Increasingly, telecommunications users reach for a wireless device for voice, data, and video communications. This trend continues over the forecast period as measured in the different levels and growth rates shown in the following chart.

**Chart - 1.1: Global Wireline and Wireless Revenues, 2013-2018**

($Billions)

Wireless growth will continue to outpace the fixed wireline services as consumers and businesses shift more of their communications to mobile applications. From 2013 to 2018 Wireline carrier revenue will grow from $1.0 trillion to $1.1 trillion at a CAGR of 1.5 percent, while Wireless carrier revenue will grow from $1.2 trillion to $1.6 trillion at a CAGR of 5.5 percent. Wireless revenues passed wireline revenues a few years ago and by the end of the forecast period the wireless market will be 50 percent higher than the wireline market. The following figure reflects Insight’s forecast of US wireline and wireless spending over the forecast period.

**Chart - 1.2: US Wireline and Wireless Revenues, 2013-2018 ($Billions)**

![Bar Chart: US Wireline and Wireless Revenues, 2013-2018 ($Billions)](chart.png)


From 2013 to 2018 total US revenue will grow from $500 billion to $581 billion at a CAGR of 3.1 percent. Worldwide, broadband service providers of all stripes continue to try to create viable business models in order to deliver high-speed broadband—leveraging Internet protocol (IP) packet delivery and management to create and deliver new services. Overseas carriers are rolling out broadband on a mass scale, targeting consumers and small businesses, and bundling new premium services like Voice over IP (VoIP), virtual private network (VPN), video, games, and entertainment. The network architecture and market for next-generation enhanced services is also beginning to take shape.
1.3 INDIAN SCENARIO

1.3.1 Introduction

The main focus, of this, chapter is to present an overview of evolution of India's Telecommunication services. This description is essential to understand the choices made by the policy maker, on reforming the existing institutions that are involved in the growth and transformation of Information technology that gives a cutting edge in the world scenario to decide on where India stands in its technological front. In addition, this, description provide, necessary background information for analysing the economic and strategic implications of the policy changes.

The Indian telecommunication industry is the world's fastest growing industry with 811.59 million mobile phone subscribers as of March 2011. It is also the second largest telecommunication network in the world in terms of number of wireless connections after China. As the fastest growing telecommunications industry in the world, it is projected that India will have 1.159 billion mobile subscribers by 2013. Furthermore, projections by several leading global consultancies indicate that the total number of subscribers in India will exceed the total subscriber count in the China by 2013. The industry is expected to reach a size of ₹344,921 crore (US$76.57 billion) by 2012 at a growth rate of over 26 per cent, and generate employment opportunities for about 10 million people during the same period. According to analysts, the sector would create direct employment for 2.8 million people and for 7 million indirectly.

In 2008-09 the overall telecom equipments revenue in India stood at ₹136,833 crore (US$30.38 billion) during the fiscal, as against ₹115,382 crore (US$25.61 billion) a year before. A large population, low telephony penetration levels, and a rise in consumer spending power have helped make India the fastest-growing telecom market in the world. The market's first operator was the state-owned Bharat Sanchar Nigam Limited (BSNL), created by corporatization of the Indian Telecommunication Service, a government unit formerly responsible for provision of telephony services.
Subsequently, after the telecommunication policies were revised to allow private operators, companies such as Bharti Airtel, Reliance Communications, Tata Indicom, Idea Cellular, Aircel and Loop Mobile have entered the market (source: http://www.studymode.com/essays/Research-422984.html).

In the fiscal year 2008-09, rural India outpaced urban India in mobile growth rate. While all the major cities and towns in the country were linked with telephones during the British period, the total number of telephones in 1948 numbered only around 80,000. Post independence, growth remained slow because the telephone was seen more as a status symbol rather than being an instrument of utility. The number of telephones grew leisurely to 980,000 in 1971, 2.15 million in 1981 and 5.07 million in 1991, the year economic reforms were initiated in the country.

While certain measures were taken to boost the telecom industry from time to time, (for example introduction of the telex service in Mumbai in 1953 and commissioning of the first Subscriber trunk dialing route between Delhi and Kanpur and between Lucknow and Kanpur in 1960), the first waves of change were set going by Sam Pitroda in the eighties. The real transformation in scenario came with the announcement of the National Telecom Policy in 1994.

### 1.3.2 Telecom sector in the pre-reform Period

The development and major landmark in the telecom sector in India during the pre reform period is discussed under two broad heads. They are:

i) Telecom sector in the pre-Independence Period (1850-1946) and;

ii) Telecom sector in the post-Independence and pre-reform Period (1947-1990)

### 1.3.3 Telecom sector in the pre-Independence period (1850-1946)

A. The telecommunication sector in India has grown since the construction of first Experimental Electronic Telegraph Line between Kolkata (earlier called Calcutta) and Diamond Harbor for East India Company in November 1850. It is one among the oldest network in the world.
B. In the year 1881, license was granted to private company to open telephone exchanges at: Mumbai, Kolkata, Chennai (earlier called Madras), Karachi and Rangoon. Telephone exchanges at Mumbai (90 subscribers), Kolkata (102 subscribers), Chennai (24 subscribers), Karachi (11 subscribers) and Rangoon (17 subscribers,) were opened in the year 1882.

C. In 1885, Indian Telegraph Act was enacted entitling the Government of India to be the sole operator or license others to operate telecommunication services (Dossani, 2003). The Plain Old Telephones' (POT) services originally operated by private companies were taken over by the National Government in 1943, and became a public monopoly.

1.3.4 Telecom sector in post-independence & pre-reform period (1947-1991)

- Independent India inherited a telecommunication infrastructure with 321 telephone exchanges, 82,985 direct exchange lines and 537 Public Call Offices (PCOs) from its colonial legacy.

- Establishment of Indian Telephone Industry (ITI) in 1948 as a Public Sector Unit (PSU) and setting up of Telecom Research Center in 1956 at Delhi were important landmarks in the early stage of development of telecommunication sectors.

- In November 1960, Subscriber Trunk Dialing (STD) was commenced between Kanpur and Lucknow.

- First International Subscriber Dialing (ISD) was introduced between Bombay and London in 1976.

- In the switching field, first Cross-Bar Trunk Automatic Exchange was commenced in Chennai in February 1967.
Indian telecommunications sector in eighties witnessed a major revolution in the field of switching and transmissions due to the introduction of electronics (both analog and digital).

Introduction of first digital telex exchange was followed by the first Analogue Electronic exchange at Bombay in March 1982 and April 1983, respectively. Within the union Ministry of Communication, telecom was earlier under the purview of the Post and Telegraph Department.

The telecommunication equipment industry was a monopoly functioning as a department of the Government till 1984. In 1984 the private manufacturing of customer premises equipments were allowed.

Mahanagar Telephone Nigam Limited (MTNL) – the telecom operating company for Delhi and Mumbai, and Videsh Sanchar Nigam Limited (YSNL) - the operating company for the international telecommunication services were created in 1986.

The other positive developments during 1980s were the success of the Center for the Development of Telematics in developing cheap rural branch exchanges and the installation of a wide network of PCOs all over the country, including rural areas with long distance direct dialing facility (Dossani et al, 2003).

The slow growth in the telecom sector during the prereform years could be attributed to limited resource deployment in the sector and the policy of assigning less priority to the development of telecom infrastructure.

The VII plan (1985-1990) had a plan outlay of 3.6 per cent for communication sector, which was the highest among all plan allocations in the pre-reform years. However, during this period the Government realised that inadequate telecommunication services and non-availability of 'new services like FAX, mobile telephony, radio paging etc. come in the way of Indian business, trade and commerce.
In short, the pre-reform status of provisioning and pricing of telecom services are best summarized by Dossani et al (2003): "Annual reports of DOT and its predecessors justified the monopoly on the grounds of universal Service Obligations (USO).

But DOTs record hardly scintillates: its own reports indicate that teledensity was abysmal 0.8 in 1990; only 140,000 out of 570,000 villages had a phone connection of low quality.

Wait time for new connection extended to seven to eight years and quality of service was low. Access charges and long distance tariffs were among the highest in the world".

The main obstacle in the development of telecommunications service provisioning in the pre reform years was the inadequacy of resources and rigidity in regulatory and policy frameworks.

Thus, an important objective of reforming India's telecom sector is to remove these obstacles for growth of the sector. These reforms are described below.

1.3.5 Telecom sector in the post-reform years (Since 1991)

Since July 1991 Indian economic policy shifted from a protectionist approach to an approach where market dynamics and competition have a role in determining the economic decisions. A larger plan allocation ranging from five to six per cent was provided for the communication sector after introduction of reforms in 1991.

In addition in order to deal with the scarcity of telecom services and paucity of funds faced by the incumbent monopolists and to facilitate economic growth, private sector entry in the provisioning of telecom services was allowed in the entire country. To begin with, the value added services were opened to the private sector in 1992.

Till 1995, the fixed line network of DOT and MTNL represented the entire telecom network in the country. In the post reform years, the Government of India emerged as a
policy making body for the telecommunication sector. Private sector participation along with
the resultant emergence of competition has been seen as the most expedient and reliable way
of making high quality service available through modern technology at an affordable price.

1.4 MILESTONES AND DEVELOPMENTS IN A NUTSHELL

- 1902 - First wireless telegraph station established between Sagar Islands and Sandheads.
- 1907 - First Central Battery of telephones introduced in Kanpur.
- 1913-1914 - First Automatic Exchange installed in Shimla.
- 1927 - Radio-telegraph system between the UK and India, with Imperial Wireless Chain beam stations at Khadki and Daund. Inaugurated by Lord Irwin on 23 July by exchanging greetings with King George V. (source: http://en.m.wikipedia.org/wiki/List_of_firsts_in_India)
- 1933 - Radiotelephone system inaugurated between the UK and India.
- 1953 - 12 channel carrier system introduced.
- 1960 - First subscriber trunk dialing route commissioned between Lucknow and Kanpur.
- 1975 - First PCM system commissioned between Mumbai City and Andheri telephone exchanges.
- 1976 - First digital microwave junction introduced.
- 1979 - First optical fibre system for local junction commissioned at Pune.
- 1980 - First satellite earth station for domestic communications established at Secunderabad, A.P..
• 1983 - First analog Stored Program Control exchange for trunk lines commissioned at Mumbai.

• 1984 - C-DOT established for indigenous development and production of digital exchanges.

• 1992  Telecommunication sector in India liberalized to bridge the gap through government spending and to provide additional resources for the nation’s telecom target. Private sector allowed participating.

• 1993  The Telecom industry gets an annual foreign investment Rs 20.6 million

• 1994  National Telecom Policy 1994 announced. License for providing cellular mobile services granted by the government of India for Metropolitan cities of Delhi, Mumbai, Kolkata and Chennai. Cellular mobile service to be duopoly (i.e. not more than two cellular mobile operators could be licensed in each telecom circle), under a fixed license free regime for 10 years.

• 1995  19 more telecom circles get mobile licenses.

• 1995  (August) Kolkata became the first metro to have a cellular network

• 1997  Telecom Regulatory Authority of India and AUSPI is setup.

• 1998  Annual foreign investment in telecom stands at Rs 17,756.4 million

• 1999  FDI inflow into telecom sector falls by almost 90% to Rs 2126.7 million

• 1999  TRAI issues Telecommunication Interconnection (Charges & Revenue Sharing) Regulations,

• 1999  (March) National Telecom Policy is announced

• 2000  (June) FDI inflow drops further coming down to Rs 918 million

• 2000  (Jul) Amendment of TRAI act.
1. Limited Mobility Service Introduced
2. Tata Teleservices Ltd acquires Hughes Telecom(I) Ltd providing basic services in Maharashtra circle.
3. Reliance Infocom Ltd launches services across 17 circles on a country wide basis in a phased manner
4. Broadband policy announced.
5. ‘One Nation-One Rupee’ tariff plan introduced by Reliance Infocom
6. USOF subsidy support to BSNL to provide 8,61,459 wire-line Broadband connections to individual users and Government Institutions from 27,789 DSLAMs for a period of 5-years.
7. 3G spectrum auctions were finally carried out and operators have started launching services.
8. telecom Industries envisaged a setback, due to 3G spectrum scam and the subsequent cancellation of the allotment by the Supreme Court of India. (Courtesy “http://www.studymode.com/essays/Research-447826.html”).

1.5 OBJECTIVES OF BSNL

a) To provide state of the art technology for all types of telecom services in the country.
b) To face the competition and excel its operations in Indian/overseas markets by developing proper marketing strategies and entering into joint ventures.
c) To emphasis customer orientation in all its operations.
d) To provide all types of telecom services at affordable rates in every nook and corner of the country including the rural areas.
e) To fulfill the telecommunication requirements for the growth and development of business enterprise in the country.
1.6 STATISTICS ON TELECOM NETWORK IN INDIA

In fact there are reasons to believe that these market-oriented reforms might not be able to provide a sufficient level of connectivity to the poorest and most isolated rural areas. The gaps left by the private sector can only be remedied by public intervention. To a large extent while this responsibility lies with BSNL the required policy and regulatory support is also essential to ensure this. The structure of telecom service provisioning in India is divided into four circle categories. Under each category there are varying numbers of circles. Each of these circles is divided into various telecom districts. Under each telecom district there are rural and urban exchanges (private or public) providing landline and/or mobile telecom services. The importance of these structures for the provisioning of telecommunication services will be elaborated. There are 26 Telecom Circles and 2 Metro Districts for the basic telephony services. BSNL the public sector operator operate, in all the circle, except in two metro districts, namely, Mumbai and Delhi BSNL.

Table - 1.2: A Comparative statistics on Telecom between Sept’ & Dec’ 2012

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Subscribers</td>
<td>937.70 Million</td>
<td>895.51 Million</td>
</tr>
<tr>
<td>% change over the previous quarter</td>
<td>-2.88%</td>
<td>-4.50%</td>
</tr>
<tr>
<td>Urban Subscribers</td>
<td>595.69 Million (63.53%)</td>
<td>556.96 Million (62.20%)</td>
</tr>
<tr>
<td>Rural Subscribers</td>
<td>342.01 Million (36.47%)</td>
<td>338.54 Million (37.80%)</td>
</tr>
<tr>
<td>Market share of Private Operators</td>
<td>86.16%</td>
<td>85.51%</td>
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<tr>
<td>Market share of PSU Operators</td>
<td>13.84%</td>
<td>14.49%</td>
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<tr>
<td>Teledensity</td>
<td>77.04</td>
<td>73.34</td>
</tr>
<tr>
<td>Urban Teledensity</td>
<td>161.13</td>
<td>149.9</td>
</tr>
<tr>
<td>Rural Teledensity</td>
<td>40.36</td>
<td>39.85</td>
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</table>

Source: TRAI PERFORMANCE INDICATOR REPORT January 2013

1) The number of telephone subscribers in India declined from 937.70 million at the end of Sep-12 to 895.51 million at the end of Dec-12, registering a negative growth of 4.50% over the previous quarter sep-12. This reflects year-on-year (Y-O-Y) negative growth of 3.35% over the same quarter of last year. The overall Teledensity in India has declined from 77.04 as on 30th September, 2012 to 73.34 as on 31st December, 2012.
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Total Wireless Subscribers</td>
<td>906.62 Million</td>
<td>864.72 Million</td>
</tr>
<tr>
<td>% change over the previous quarter</td>
<td>-2.94%</td>
<td>-4.62%</td>
</tr>
<tr>
<td>Urban Subscribers</td>
<td>571.70 Million (63.06%)</td>
<td>533.12 Million (61.65%)</td>
</tr>
<tr>
<td>Rural Subscribers</td>
<td>334.92 Million (36.94%)</td>
<td>331.60 Million (38.35%)</td>
</tr>
<tr>
<td>GSM Subscribers</td>
<td>808.80 Million (89.21%)</td>
<td>786.98 Million (91.01%)</td>
</tr>
<tr>
<td>CDMA Subscribers</td>
<td>97.82 Million (10.79%)</td>
<td>77.74 Million (8.99%)</td>
</tr>
<tr>
<td>Market share of Private Operators</td>
<td>88.43%</td>
<td>87.83%</td>
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<tr>
<td>Market share of PSU Operators</td>
<td>11.57%</td>
<td>12.17%</td>
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<tr>
<td>Teledensity</td>
<td>74.49</td>
<td>70.82</td>
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<tr>
<td>Urban Teledensity</td>
<td>154.64</td>
<td>143.48</td>
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<tr>
<td>Rural Teledensity</td>
<td>39.52</td>
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<th>Wireline Subscribers</th>
<th>30th September, 2012</th>
<th>31st December, 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Wireline Subscribers</td>
<td>31.08 Million</td>
<td>30.79 Million</td>
</tr>
<tr>
<td>% change over the previous quarter</td>
<td>-1.10%</td>
<td>-0.95%</td>
</tr>
<tr>
<td>Urban Subscribers</td>
<td>23.99 Million (77.17%)</td>
<td>23.84 Million (77.43%)</td>
</tr>
<tr>
<td>Rural Subscribers</td>
<td>7.10 Million (22.83%)</td>
<td>6.95 Million (22.57%)</td>
</tr>
<tr>
<td>Market share of Private Operators</td>
<td>20.16%</td>
<td>20.43%</td>
</tr>
<tr>
<td>Market share of PSU Operators</td>
<td>79.84%</td>
<td>79.57%</td>
</tr>
<tr>
<td>Teledensity</td>
<td>2.55</td>
<td>2.52</td>
</tr>
<tr>
<td>Urban Teledensity</td>
<td>6.49</td>
<td>6.42</td>
</tr>
<tr>
<td>Rural Teledensity</td>
<td>0.84</td>
<td>0.82</td>
</tr>
<tr>
<td>Village Public Telephones (VPT)</td>
<td>0.585 Million</td>
<td>0.588 Million</td>
</tr>
<tr>
<td>Public Call Office (PCO)</td>
<td>1.551 Million</td>
<td>1.411 Million</td>
</tr>
</tbody>
</table>

Source: TRAI PERFORMANCE INDICATOR REPORT January 2013

2) Subscription in Urban Areas decreased from 595.69 million at the end of Sep-12 to 556.96 million at the end of Dec-12, and Urban Teledensity declined from 161.13 to 149.90. Rural subscription decreased from 342.01 million to 338.54 million, and Rural Teledensity also declined from 40.36 to 39.85. Share of subscription in Rural areas out of total subscription increased from 36.47% at the end of Sep-12 to 37.80% at the end of Dec-12.

3) With a decline of 41.90 million subscribers during the quarter, total wireless(GSM+CDMA) subscriber base registered a negative growth of 4.62% over the previous quarter and subscriber base declined from 906.62 million at the end of Sep-12 to 864.72 million at the end of Dec-12. The year-on-year (Y-O-Y) negative growth rate of Wireless subscribers for Dec-12 is 3.26%. Wireless Teledensity decreased from 74.49 at the end of Sep-12 to 70.82 at the end of Dec-12.
Chart - 1.3: Trends in Telephone subscribers and Teledensity in India

Source: TRAI PERFORMANCE INDICATOR REPORT January 2013

Chart - 1.4: Composition of Telephone Subscribers

Source: TRAI PERFORMANCE INDICATOR REPORT January 2013
<table>
<thead>
<tr>
<th>Table - 1.3: Telecom Performance Indicator Report January 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wireline Subscribers</strong></td>
</tr>
<tr>
<td>Total Wireline Subscribers</td>
</tr>
<tr>
<td>% change over the previous quarter</td>
</tr>
<tr>
<td>Urban Subscribers</td>
</tr>
<tr>
<td>Rural Subscribers</td>
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<tr>
<td>Market share of Private Operators</td>
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</tr>
<tr>
<td><strong>Internet / Broadband Subscribers</strong></td>
</tr>
<tr>
<td>Total Internet Subscribers (excluding Internet Access by Wireless Phone Subscribers)</td>
</tr>
<tr>
<td>% change over the previous quarter</td>
</tr>
<tr>
<td>Broadband Subscribers</td>
</tr>
<tr>
<td><strong>Broadcasting &amp; Cable Services</strong></td>
</tr>
<tr>
<td>Number of private satellite TV channels registered with Ministry of I&amp;B</td>
</tr>
<tr>
<td>Number of Pay Channels</td>
</tr>
<tr>
<td>Number of private FM Radio Stations</td>
</tr>
<tr>
<td>DTH Subscribers registered with Pvt. SPs</td>
</tr>
<tr>
<td><strong>Telecom Financial Data (for the QE Sep-12)</strong></td>
</tr>
<tr>
<td>Gross Revenue during the quarter</td>
</tr>
<tr>
<td>% change in GR over the previous quarter</td>
</tr>
<tr>
<td>Share of Public sector undertaking's in GR</td>
</tr>
<tr>
<td>Adjusted Gross Revenue (AGR)</td>
</tr>
<tr>
<td>% change in AGR over the previous quarter</td>
</tr>
<tr>
<td>Monthly Average Revenue Per User (ARPU) for Access Services</td>
</tr>
<tr>
<td><strong>Revenue &amp; Usage Parameters (for the QE Sep-12)</strong></td>
</tr>
<tr>
<td>Monthly ARPU GSM Service</td>
</tr>
<tr>
<td>Monthly ARPU CDMA Full Mobility Service</td>
</tr>
<tr>
<td>Minutes of Usage (MOU) per subscriber per month GSM Service</td>
</tr>
<tr>
<td>Minutes of Usage (MOU) per subscriber per month CDMA Full Mobility Service</td>
</tr>
<tr>
<td>Minutes of Usage for Internet Telephony</td>
</tr>
</tbody>
</table>

Source: TRAI PERFORMANCE INDICATOR REPORT January 2013
4. Wireline subscriber base further declined from 31.08 million at the end of Sep-12 to 30.79 million at the end of Dec-12, bringing down the wireline Teledensity from 2.55 at the end of Sep-12 to 2.52 at the end of Dec-12.

5. Internet subscribers increased from 24.01 million at the end of Sep-12 to 25.33 million at the end of Dec-12, registering a quarterly growth rate of 5.49%. Top 10 ISPs together hold 95.42% of the total Internet subscriber base.

6. Number of Broadband subscribers increased from 14.68 million at the end of Sep-12 to 14.98 million at the end of Dec-12, registering a quarterly growth of 2.02% and Y-O-Y growth of 12.23%.

7. Share of Broadband subscription in total Internet subscription decreased from 61.16% at the end of Sep-12 to 59.15% at the end of Dec-12. 84.82% of the Broadband subscribers are using Digital Subscriber Line (DSL) technology.

![Chart - 1.5: Trends in Internet/Broadband subscription](chart.png)

Source: TRAI PERFORMANCE INDICATOR REPORT January 2013
8. Monthly Average Revenue per User (ARPU) for GSM service increased by 3.03%, from `95 in QE Sep-12 to `98 in QE Dec-12, with Y-O-Y increase of 2.25%.

9. On an all India average, the overall MOU per subscriber per month for GSM service increased by 4.99% from 342 in QE Sep-12 to 359 in QE Dec-12. Prepaid MOU per subscriber increased by 5.21% (from 321 to 338), while postpaid MOUs decreased by 0.68% (from 960 to 953)

10. Monthly ARPU for CDMA – full mobility service increased by 2.8%, from `78 in QE Sep-12 to `80 in QE Dec-12. ARPU for CDMA has increased by 8.84% on Y-O-Y basis.

11. The total MOU for CDMA per subscriber per month increased by 2.15%, from 225.22 in QE Sep-12 to 230.06 QE Dec-12. The Outgoing MOUs (117) increased by 2.8% and Incoming MOUs (113) increased by 1.5%.

12. Gross Revenue (GR) and Adjusted Gross Revenue (AGR) of Telecom Service Sector for the QE Dec-12 has been `52858.39 Crore and `34527.50 Crore respectively. There has been a decrease of 0.15% in GR and a decrease of 2.67% in AGR as compared to previous quarter. The year-on-year (Y-O-Y) growth in GR and AGR over the same quarter in last year has been 7.08% and 1.31% respectively. Pass-through charges accounted for 34.68% of the GR for the quarter ending Dec-12. The quarterly and the year-on-year (Y-O-Y) growth rates of pass-through charges for QE Dec-12 are 4.96% and 19.94% respectively.

13. Average license fee as percentage of AGR is 8.15% in QE Dec-12. The quarterly and the year-on-year (Y-O-Y) growth rates of the average license fee are -2.42% and -0.68% respectively for the QE Dec-12.

14. Access services contributed 75.19% of the total revenue of telecom services. In Access services, Gross Revenue and Pass Through Charges increased by 0.22% and 3.40% respectively, whereas AGR, License Fee & Spectrum Charges decreased by 1.15%, 1.22% & 0.51% respectively, in the quarter ending Dec-12.
15. Monthly Average Revenue per User (ARPU) for Access Services based on AGR increased from Rs.99 in QE Sep-12 to Rs.101 in QE Dec-12. (Courtesy TRAI PERFORMANCE INDICATOR REPORT January 2013).

1.7 IMPORTANCE OF CUSTOMER PREFERENCE IN TELECOM INDUSTRY

Customer preference is the primary function that induces the sale of any product or service in telecommunication industry and thereby the survival and further growth of the is decided in a big way. Categorically speaking, the powerful tools and differentiators are the various Determinants of customer preferences including Quality of product and the effectiveness of Product/service. Also the power of Innovation, Technology and Superior product line are very helpful in building loyal customer base. Thus in the current economic scenario telecom industries can achieve this purpose by just building a significant customer experience and satisfaction through a set of activities that would set their brand apart. Customer Relationship Management popularly known as CRM plays a pivotal role in bringing together the organization and the customers. CRM initiatives taken by telecom industries through its various innovative strategies and also its relevance, importance and benefits in today’s context that would drive Organisations to earn an edge over the cutthroat competition.

1.7.1 Importance Customer Relationship Management

CRM stands for Customer Relationship Management. It is the processes or methodologies used to understand customers’ needs and behaviors to build stronger relationships with them. CRM is a process that brings together information about customers, sales, effectiveness of marketing program & changes required. CRM uses technology and human resources to analyze the behavior of customers and the value of those customers.
1.7.2 Components of CRM

CRM consists of three components: Customer, Relationship and Management. There should be duplex communication and interaction between a company and its customers for a continued healthy relationship. The relationship can be anyone or a combination of the following types

a) Short-term or long-term,
b) Continuous or discrete and
c) Repeating or one-time.

Also relationship can be influenced by either attitude or behavior. Though the attitude towards the company and its products is positive by a customer, the situation influences the buying behavior largely. For example, the booking pattern for a suite in a Hotel depends on if a person books it for a private visit or a business visit. Managing this relationship in CRM brings in expected profit and also mutual benefit. CRM is more an activity towards continuous change in corporate culture and processes than an activity simply within a marketing department. To reap the advantage of the information and opportunities in the market, the customer information is collected and transformed into corporate knowledge. CRM necessitates a fine tuning of the organizational resources and its people. To prop up the management process, one may entail the following software:

- Field work,
- E-commerce,
- Self service applications,
- Record management,
- Bill preparation and presentation,
- Marketing activities and
- Analysis applications

To study the behaviour of customers and the value of those customers, CRM deploys technology and human resources.
1.7.3 How does CRM Work?

CRM was based on the principle that the cost of acquiring new customer is much costlier than retaining the existing customer. Its main objective was improving customer relationship by empowering businesses with ample strategies, technologies and processes with a focus on methodologies to capture customer information and enhancing their satisfaction level in terms of service. For that one should test the effectiveness of the determinants that would influence the customer preference towards any Service or Product.

1.8 DETERMINANTS OF CUSTOMER PREFERENCE

Also it was found through various studies and researches which are discussed in the forthcoming chapter on Literature survey that the following are the 13 numbers of different determinants that would influence the customer preference towards any service or product and the present study is all about testing their effectiveness in this context to improve BSNL’s efficacy in retaining the customers.

1  Quality of Product/Service
2  Assortment of Product/Service
3  Fashion of Product/Service
4  Price of Product/Service
5  Service Personnel
6  Location conveniences
7  Other Convenience Factors
8  Product/Services
9  Service Promotions
10 Advertising & Brand Image
11 Service outlet atmosphere
12 Reputations on Adjustments
13 References from friends about the Service Provider
1.9 CHAPTER ORGANISATION

The project report has been divided into five chapters.

- Chapter 1- Introduces the topic under study, the importance and scope of the study, the research methodology adopted and the limitations of the study.

- Chapter 2- Deals with the Review Of Literature

- Chapter 3- Discusses about the Research Methodology adopted

- Chapter 4-Deals with the Analysis and Interpretation of data collected from respondents of BSNL, Coimbatore towards determinants of preference of telecommunication services.

- Chapter 5-Presents a Summary of the Findings and Suggestions to retain the customer base of BSNL

- Conclusion