Chapter 3
Profile of the Cell phone Service Providers

3.1. Introduction

The ubiquitous sight of a shop offering to re-charge your mobile phone is symbolic of the telecom revolution that has changed the face of India in the first decade of the twenty-first century with significant social and economic impact. The total number of telephone subscribers in India stood at 943.49 million in February 2012 as against 28.53 million in April 2000. The subscriber base for telecom services in India is large but skewed in favour of urban areas. Urban teledensity is 4.4 times that of rural density. Further, wireless phones dominate the market in India and wireline phone segment constitutes merely 3.4 per cent of the total subscriber base. The numbers of Internet and broadband subscribers are a very small fraction of the population. However, the number of people capable of accessing the net through mobile phones is substantially higher, if wireless data subscription through mobile is an indication.

The pace of growth of the telecom sector, particularly the telecom services has increased its significance to the overall economy in the past two decades. The share of telecommunication services (excluding postal and miscellaneous
services) as per cent of the total GDP, has increased from 0.96 in 2000–01 to 3.78 in 2009–10\textsuperscript{74}.

In India, there is interplay of three factors—regulation, liberalisation, and technology. There are continuous technological changes and evolving regulatory climate. While Indian telecommunication companies, increasingly buoyant and confident, have started venturing outside the country and investing abroad, the telecom manufacturing in India is still to attract investment on a sustained basis. Mobile phones are popular due to their personal, portable, and digital nature, enabling people to be always connected. There are increasing innovations, especially development of mobile applications. The low cost of handsets in India and the innovative budget telecom network have lowered the barrier to entry of consumers to the market.

On the supply side, mobile connections are relatively cheaper than fixed line telephony. The telecommunications sector plays an increasingly important role in the Indian economy. It contributes to economic growth and the GDP and generates revenue for the government and generates jobs. In short, telecom sector has a multiplier impact on the economy. We have come a long way. However, certain challenges such as encouraging telecom manufacturing

\textsuperscript{74} Telecom Regulatory Authority of India.
in India, spreading teledensity, and Internet services across India to bridge the digital divide are still to be fully met.

Tele-density\(^{75}\), which denotes the number of telephones per 100 population, is an indicator of telecom penetration in the country. Tele-density in the country, which was 75.23\% as on 1st April, 2014, increased to 77.59 per cent at the end of December 2014. The rural tele-density increased from 44.01 per cent to 46.14 per cent during this period. Urban tele-density, however, registered an up and down trend and later maintained the pace from 145.46 per cent to 147.75 per cent during this period. Among the Service areas, Tamil Nadu (116.96 per cent) had the highest teledensity followed by Himachal Pradesh (111.78 per cent), Punjab (105.13 per cent), Karnataka (96.35 per cent) and Kerala (95.21 per cent). On the other hand, the service areas such as Bihar (48.28 per cent), Assam (51.90 per cent), Uttar Pradesh (58.65 per cent), Madhya Pradesh (58.77 per cent), West Bengal (58.84 per cent), Odisha (65.24 per cent) and Jammu and Kashmir (73.67 per cent) have comparatively low teledensity\(^{76}\). Among the three metros, Delhi Service Area tops in tele-density with 235.62 per cent tele-density, followed by Kolkata (146.86 per cent) and Mumbai (145.86 per cent). The Telecom Regulatory Authority of India (TRAI) has always endeavored to encourage greater competition in the telecom sector together with better quality and affordable prices in order to

\(^{75}\) Telecom Regulatory Authority of India.

\(^{76}\) Department of telecommunications and Ministry of communications & Information technology Government of India New Delhi.
meet the objectives of National Telecom Policy (NTP)-2012. A number of recommendations on various telecom issues were made by TRAI during 2014-15. TRAI has also taken steps to ensure the quality of service provided by the service providers by way of monitoring the performance of Basic and Cellular Mobile Telephone Service on quarterly basis and Point of Interconnection (POI) congestion on monthly basis. The regulatory measures taken by TRAI facilitate orderly growth of telecom sector by promoting healthy competition and enhancing investment efficiency besides protecting interests of consumers.

3.2. Bharti Airtel Limited is an Indian global telecommunications services company headquartered in New Delhi, India. It operates in 20 countries across South Asia, Africa, and the Channel Islands. Airtel provides GSM, 3G and 4G LTE mobile services, fixed line broadband and voice services depending upon the country of operation. It is the largest mobile network operator in India and the third largest in the world with 325 million subscribers. Airtel was named India's second most valuable brand in the first ever Brandz ranking by Millward Brown and WPP plc.

Airtel is credited with pioneering the business strategy of outsourcing all of its business operations except marketing, sales and finance and building the 'minutes factory' model of low cost and high volumes. The strategy has since

77 https://en.wikipedia.org/wiki/Telecommunications_in_India
been adopted by several operators. Airtel’s equipment is provided and maintained by Ericsson and Nokia Solutions and Networks whereas IT support is provided by IBM. The transmission towers are maintained by subsidiaries and joint venture companies of Bharti including Bharti Infratel and Indus Towers in India. Ericsson agreed for the first time to be paid by the minute for installation and maintenance of their equipment rather than being paid up front, which allowed Airtel to provide low call rates of 1/minute (US$0.02/minute).

In 1984, Sunil Mittal started assembling push-button phones in India, which he earlier used to import from a Taiwan company, Kingtel, replacing the old fashioned, bulky rotary phones that were in use in the country then. Bharti Telecom Limited (BTL) was incorporated and entered into a technical tie up with Siemens AG of Germany for manufacture of electronic push button phones. By the early 1990s, Bharti was making fax machines, cordless phones and other telecom gear. He named his first push-button phones as 'Mitbrau'.

In 1992, he successfully bid for one of the four mobile phone network licences auctioned in India. One of the conditions for the Delhi cellular license was that the bidder has some experience as a telecom operator. So, Mittal clinched a deal with the French telecom group Vivendi. He was one of the first Indian entrepreneurs to identify the mobile telecom business as a
major growth area. His plans were finally approved by the Government in 1994 and he launched services in Delhi in 1995, when Bharti Cellular Limited (BCL) was formed to offer cellular services under the brand name AirTel. Within a few years Bharti became the first telecom company to cross the 2-million mobile subscriber mark. Bharti also brought down the STD/ISD cellular rates in India under brand name 'Indiaone'.

In 1999, Bharti Enterprises acquired control of JT Holdings, and extended cellular operations to Karnataka and Andhra Pradesh. In 2000, Bharti acquired control of Skycell Communications, in Chennai. In 2001, the company acquired control of Spice Cell in Calcutta. Bharti Enterprises went public in 2002, and the company was listed on Bombay Stock Exchange and National Stock Exchange of India. In 2003, the cellular phone operations were re-branded under the single Airtel brand. In 2004, Bharti acquired control of Hexacom and entered Rajasthan. In 2005, Bharti extended its network to Andaman and Nicobar. This expansion allowed it to offer voice services all across India.
In May 2008, it emerged that Airtel was exploring the possibility of buying the MTN Group, a South Africa-based telecommunications company with coverage in 21 countries in Africa and the Middle East. *The Financial Times* reported that Bharti was considering offering US$45 billion for a 100% stake in MTN, which would be the largest overseas acquisition ever by an Indian firm. However, both sides emphasize the tentative nature of the talks, while *The Economist* magazine noted, "If anything, Bharti would be marrying up," as MTN has more subscribers, higher revenues and broader geographic coverage. However, the talks fell apart as MTN group tried to reverse the negotiations by making Bharti almost a subsidiary of the new company. In May 2009, Bharti Airtel again confirmed that it was in talks with MTN and the companies agreed to discuss the potential transaction exclusively by 31 July 2009. Talks eventually ended without agreement, some sources stating that this was due to opposition from the South African government.

In 2009, Bharti negotiated for its strategic partner Alcatel-Lucent to manage the network infrastructure for the fixed line business. Later, Bharti Airtel awarded the three-year contract to Alcatel-Lucent for setting up an Internet Protocol access network across the country. This would help consumers

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78 https://en.wikipedia.org/wiki/Telecommunications_in_India
access internet at faster speed and high quality internet browsing on mobile handsets.

In 2009, Airtel launched its first international mobile network in Sri Lanka. In June 2010, Bhartil acquired the African business of Zain Telecom for $10.7 billion making it the largest ever acquisition by an Indian telecom firm. In 2012, Bharti tied up with Wal-Mart, the US retail giant, to start a number of retail stores across India. In 2014, Bharti planned to acquire Loop Mobile for INR 7 billion, but the deal was called off later.

Bharti Airtel Limited (Airtel), the world’s third largest mobile operator with operations in 20 countries across Asia and Africa, today said that its Treasury division has been adjudged as a highly commended winner of the Top Treasury Team (Asia) Awards at the Adam Smith Asia Awards 2015.

3.3. Reliance Communications Ltd. (RCOM)\(^79\) is an Indian Internet access and telecommunications company headquartered in Navi Mumbai, India. It provides CDMA (CDMA2000, 1xRTT, EV-DO), GSM (Voice, 2G, 3G) mobile services, fixed line broadband and voice services, DTH depending upon the areas of operation. Reliance Communications is the fourth largest telecom operator in India with 109.90 million subscribers as of June 2015. Established in 2002, it is a subsidiary of Reliance Anil Dhirubhai Ambani Group. Reliance Communication IT Support is provided by Reliance

\(^79\) https://en.wikipedia.org/wiki/Telecommunications_in_India
Tech Services and Telecom network is maintained and operated by Ericsson, transmission towers are maintained by its subsidiary Reliance Infratel. Launched the most popular monsoon hangama and changed the mobile market earlier dominated by Max Touch, Airtel, aircel and BPL etc. Reliance Infocomm laid the largest Optic Fibre Cable network in the country in 2003 to 2005, approximately 135,000 km, and touched almost all top broadband cities with the help of their Franchisee's - Local Cable Operators (LCO's). On an average 1900 large LCO's were connected to the Reliance Infocomm network to provide Voice, Data and Video services known as Triple Play on IPTV platform. After the split of the Telecom business venture between Mukesh Ambani and Anil Ambani the telecom business was handed over to Anil Ambani, who later christened the company as "Reliance Communications Limited".

In November 2015, Reliance Communications entered into an agreement to acquire MTS India.

In 2002, it launched CDMA Operations in 22 circles and became a pan India operator. In 2008, Reliance Communications launched GSM. In the 2010 spectrum auction, Reliance Communications paid ₹ 58,642.9 million for
3G spectrum in 13 circles Delhi, Mumbai, Kolkata, Punjab, Rajasthan, Madhya Pradesh, West Bengal, Himachal Pradesh, Bihar, Odisha, Assam, North East and Jammu & Kashmir.

On 25 May 2012, RCom announced a price reduction of 51% on its 3G services. In 2011, Reliance provided up to 28 Mbit/s data rate in India with its MIMO technology. On 31 January 2013, Reliance announced its partnership with Lenovo to market co-branded smartphones in India. The smartphones were said to use the Android operating system and have dual-core processors. In 2015, it launched CDMA in REV. B technology in non 3G circles.

3.4.Bharat Sanchar Nigam Limited (abbreviated BSNL)\(^8\) is an Indian state-owned telecommunications company headquartered in New Delhi. It was incorporated on 15 September 2000 and took over the business of providing of telecom services and network management from the erstwhile Central Government Departments of Telecom Services (DTS) and Telecom Operations (DTO), with effect from 1 October 2000 on a going concern basis. It is the largest provider of fixed telephony and broadband services with more than 60% market share and sixth largest mobile telephony provider in India. However, in recent years the company's revenues and market share have

\(^8\) [https://en.wikipedia.org/wiki/Telecommunications_in_India](https://en.wikipedia.org/wiki/Telecommunications_in_India)
plummeted into heavy losses due to intense competition in the Indian telecommunications sector. BSNL is India's oldest communication service provider and had a customer base of 93.29 million as of June 2015. It has footprints throughout India except for Mumbai and New Delhi, which are managed by Mahanagar Telephone Nigam (MTNL)

BSNL is a major provider of GSM cellular mobile services under the brand name Cell one. BSNL provides complete telecom services solution to enterprise customers including MPLS, P2P and Internet leased lines. It provides fixed line services and landline using CDMA technology and its extensive optical fiber network. BSNL provides Internet access services through dial-up connection as prepaid, Net One as Postpaid and Data One as BSNL Broadband.

BSNL offers value-added services, such as Free Phone Service (FPH), India Telephone Card (Prepaid card), Account Card Calling (ACC), Virtual Private Network (VPN), Tele-voting, Premium Rate Service (PRM), Universal Access Number (UAN). BSNL also offers the IPTV which enables customers to watch television through internet and Voice and Video Over Internet Protocol (VVoIP). In 2007, BSNL announced plans for providing 5 million broadband connectivity and secured 80% of the INR 25 billion rural telephony project of Government of India. On 20 March 2009, BSNL launched black cherry services across India. BSNL paid Rs. 101.87 billion
for 3G spectrum in 2010. As of 2011, BSNL offers coverage in over 800 cities across India.\textsuperscript{[11]} BSNL launched in 2012 a 3G wireless pocket router named Wink net Mf50. BSNL 3G provides HSPA+ service with highest speed of 21.1 Mbit/s downlink and 5.76 Mbit/s uplink.

BSNL announced the discontinuation of its telegram services from 15 July 2013, after 160 years in service. It was opened to the public in February 1855; it was upgraded to a web-based messaging system in 2010, through 182 telegraph offices across India.

3.5.\textbf{Vodafone Group}\textsuperscript{81} /ˈvɒdfəʊn/ is a British multinational telecommunications company headquartered in London and with its registered office in Newbury, Berkshire. It is the world's second largest mobile telecommunications company measured by both subscribers and 2013 revenues (behind China Mobile), and had 434 million subscribers as of 31 March 2014.

Vodafone owns and operates networks in 26 countries and has partner networks in over 50 additional countries. Its Vodafone Global Enterprise division provides telecommunications and IT services to corporate clients in 150 countries.

\textsuperscript{81} \url{https://en.wikipedia.org/wiki/Telecommunications_in_India}
Vodafone has a primary listing on the London Stock Exchange and is a constituent of the FTSE 100 Index. It had a market capitalisation of approximately £89.1 billion as of 6 July 2012, the third-largest of any company listed on the London Stock Exchange. It has a secondary listing on NASDAQ.

In 1980, Sir Ernest Harrison OBE, the then chairman of Racal Electronics, agreed to a deal with Lord Weinstock of the General Electric Company to allow Racal to access some of GEC's tactical battle field radio technology. The head of Racal's military radio division, Gerry Whent, was briefed by Ernest Harrison to drive the company into commercial mobile radio. Whent visited a mobile radio factory run by General Electric (unrelated to GEC) in Virginia, USA the same year to understand the commercial use of military radio technology.

Jan Stenbeck, head of a growing Swedish conglomerate, set up an American company, Millicom, Inc. and approached Racal’s Whent in July 1982 about bidding jointly for the UK’s second cellular radio licence. The two struck a deal giving Racal 60% of the new company, Racal-Millicom, Ltd, and Millicom 40%. Due to UK concerns about foreign ownership, the terms were revised, and in December 1982, the Racal-Millicom partnership was awarded the second UK mobile phone network license. Final ownership of Racal-Millicom, Ltd was 80% Racal, with Millicom holding 15% plus royalties and
venture firm Hambros Technology Trust holding 5%. According to the UK Secretary of State for Industry, "the bid submitted by Racal-Millicom Ltd… provided the best prospect for early national coverage by cellular radio."

Vodafone was launched on 1 January 1985 under the new name, Racal-Vodafone (Holdings) Ltd, with its first office based in the Courtyard in Newbury, Berkshire, and shortly thereafter Racal Strategic Radio was renamed Racal Telecommunications Group Limited. On 29 December 1986, Racal Electronics issued shares to the minority shareholders of Vodafone worth GB£110 million, and Vodafone became a fully owned brand of Racal.

On 26 October 1988, Racal Telecom, majority held by Racal Electronics, went public on the London Stock Exchange with 20% of its stock floated. The successful flotation led to a situation where Racal's stake in Racal Telecom was valued more than the whole of Racal Electronics. Under stock market pressure to realise full value for shareholders, Racal demerged Racal Telecom in 1991. On 28 July 2000, the Company reverted to its former name, Vodafone Group plc.

In 2001, the Company acquired Eircell, the largest wireless communications company in Ireland, from eircom. Eircell was subsequently rebranded as Vodafone Ireland. Vodafone then went on to acquire Japan's third-largest mobile operator J-Phone, which had introduced camera phones first in Japan.

On 17 December 2001, Vodafone introduced the concept of "Partner Networks", by signing TDC Mobil of Denmark. The new concept involved
the introduction of Vodafone international services to the local market, without the need of investment by Vodafone. The concept would be used to extend the Vodafone brand and services into markets where it does not have stakes in local operators. Vodafone services would be marketed under the dual-brand scheme, where the Vodafone brand is added at the end of the local brand. (i.e., TDC Mobil-Vodafone etc.)

In 2007, Vodafone entered into a title sponsorship deal with the McLaren Formula One team, which traded as "Vodafone McLaren Mercedes" until the sponsorship ended at the end of the 2013 season.

In May 2011, Vodafone Group Plc bought the remaining shares of Vodafone Essar from Essar Group Ltd for $5 billion.

On 1 December 2011, it acquired the Reading based Bluefish Communications Ltd – an ICT consultancy company. The acquired operations formed the nucleus of a new Unified Communications and Collaboration practice within its subsidiary – Vodafone Global Enterprise, which will focus on implementing strategies and solutions in cloud computing, and strengthen its professional services offering.

In April 2012, Vodafone announced an agreement to acquire Cable & Wireless Worldwide (CWW) for £1.04 billion. Vodafone was advised by UBS AG, while Barclays and Rothschild advised Cable & Wireless. The acquisition will give Vodafone access to CWW's fibre network for businesses, enabling it to take unified communications solutions to large enterprises in
UK and globally; and expand its enterprise service offerings in emerging markets. On 18 June 2012, Cable & Wireless’ shareholders voted in favour of the Vodafone offer, exceeding the 75% of shares necessary for the deal to go ahead.

On 24 June 2013, Vodafone announced it would be buying German cable company Kabel Deutschland. The takeover is valued at €7.7 billion, and was recommended over the bid of rival Liberty Global.

On 2 September 2013, Vodafone announced it would be selling its 45% stake in Verizon Wireless to Verizon Communications for $130 billion, in one of the biggest deals in corporate history.

In October 2013, Vodafone began its rollout of 4G to provincial New Zealand, with the launch of the system in holiday hotspots around Coromandel.

In February 2014, Vodafone made an offer to acquire Spain’s largest cable operator, ONO, in a deal rumoured to be around €7 billion.

3.6.Idea Cellular Limited

Idea Cellular is an Aditya Birla Group Company, India's first truly multinational corporation. Idea is a pan-India integrated GSM operator offering 2G and 3G services, and has its own NLD and ILD operations, and

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82 https://en.wikipedia.org/wiki/Telecommunications_in_India
ISP license. With revenue of Rs. 31,571 crore; revenue market share of nearly 17.5 per cent; and subscriber base of over 161 million in FY 2013, Idea is India’s third largest mobile operator. Idea ranks among the top 10 country operators in the world with a traffic of over 1.5 billion minutes a day.

Idea’s robust pan-India coverage is built on a network of over 100,000 2G and 3G cell sites, spread across over 55,000 towns in India.

Using the latest in technology, Idea provides world-class service delivery through the most extensive network of customer touch points, comprising nearly 4,500 exclusive Idea outlets, and over 7,000 call centre seats. Idea’s customer service delivery platform is ISO 9001:2008 certified, making it the only operator in the country to have this standard certification for all 22 service areas and the corporate office.

Idea has consistently stayed ahead of the industry in VLR reporting. Idea’s thought leadership on Mobile Number Portability (MNP) has enabled it to stay as the top gainer with the highest net gain. Every 4th mobile user who exercises choice through MNP, prefers Idea.

Idea offers a range of high-speed mobile broadband devices including Android based 3G smartphones, dongles etc. Idea’s wide portfolio of 3G smartphones offer the latest products with 3G applications and high-end data services such as Idea TV, games, social networking etc., at affordable prices.
Idea has been a pioneer in introducing more product offerings for segmented customers. It is the first mobile operator to introduce innovative value added services in the Indian telephony market, and has remained ahead of the industry in data product offerings.

Idea has received several national and international recognitions for its path-breaking innovations in mobile telephony products and services. Idea won the prestigious ‘NDTV Business Leadership Award’ in the telecom category for its solid, consistent performance in 2012. It was the winner of ET Telecom Awards 2012, in the categories — ‘Customer Experience Enhancement’, ‘Excellence in Marketing’, and ‘Innovative Products’. Idea also won the ‘Best Ad Campaign of the Year’ award for the popular Honey Bunny campaign at the Tele.Net Telecom Awards 2012.

Idea won the ‘Best Brand Campaign’ at the esteemed World Communication Awards in 2012 and 2011. It also won the GSM Association Award for ‘Best Billing and Customer Care Solution’ for two consecutive years, and was awarded ‘Mobile Operator of the Year Award – India’ for 2007 and 2008 at the Annual Asian Mobile News Awards.

Idea is listed on the National Stock Exchange (NSE)\textsuperscript{83} and the Bombay Stock Exchange (BSE) in India.

\textsuperscript{83} https://en.wikipedia.org/wiki/Telecommunications_in_India
3.7. **Aircel** is an Indian mobile network operator headquartered in Chennai, which offers voice and 2G, 3G and 4G data services. Maxis Communications holds a 74% stake and Sindya Securities and Investments holds the remaining 26%. Aircel was founded by C Sivasankaran and commenced operations in Tamil Nadu in 1999. It is the fifth largest mobile service provider in India with a subscriber base of 83.05 million subscribers as of June 2015. Aircel is a market leader in Tamil Nadu and has considerable presence in Odisha, Assam and North-East circles.

Aircel was founded by Indian entrepreneur C Sivasankaran and started its operations in Tamil Nadu in 1999. It became the leading operator in Tamil Nadu and one of the fastest growing mobile operators in India. Malaysian telecom company Maxis Communications bought a 74 percent stake in the company in 2005 from its Indian owner Chinna kannan Sivasankaran. The remaining 26% stake is held by Sindya Securities and Investments promoted by Suneeta Reddy, Managing Director of Apollo Hospitals group.
In June 2010, Aircel paid ₹34380 million for acquiring wireless broadband spectrum in eight circles: Andhra Pradesh, Assam, Bihar and Jharkhand, Jammu & Kashmir, North East, Orissa, Tamil Nadu and West Bengal. Aircel launched 4G services in Tamil Nadu and Jammu & Kashmir in August 2014, becoming the only private telecom operator to offer all the three existing technologies of 2G, 3G and 4G in these markets. Chinese equipment maker ZTE announced on 30 December 2013, that it had won a contract to deploy a 4G broadband network based on LTE technology for Aircel. The LTE network will be launched in Tamil Nadu and will be expanded later to other circles. On 16 July 2014, it launched 4G services in four circles Andhra Pradesh, Assam, Bihar and Odisha.

Aircel has a subscriber base of over 80 million with a market share of 8% among wireless operators in the country and is India's fifth-largest GSM mobile service provider. Aircel is a market leader in Tamil Nadu and has considerable presence in Odisha, Assam and North-East circles. In 2012, as a part of a major re-organization in its operations, the company ceased its operations in five telecom circles, namely Madhya Pradesh, Gujarat, Haryana, Kerala and Punjab. In April 2015, Aircel relaunched its service in Kerala.
3.8. Tata Teleservices

Tata Teleservices (TTL) spearheads the Tata group’s presence in the telecom sector. Incorporated in 1996, TTL is the pioneer of the CDMA 1x technology platform in India. It has embarked on a growth path since the acquisition of Hughes Tele.com (India) [renamed Tata Teleservices (Maharashtra)] by the Tata group in 2002.
The company launched mobile operations in January 2005, under the brand name Tata Indicom and today, enjoys a pan-India presence through existing operations in all of India’s 22 telecom circles.

TTL is also the market leader in the fixed wireless telephony market. The company’s network has been rated as the ‘Least congested’ in India for six consecutive quarters by the Telecom Regulatory Authority of India through independent surveys.

**Areas of business**

TTL became the first Indian private telecom operator to launch 3G services in India under the brand name Tata DOCOMO, with its recent launch in all the nine telecom circles where it bagged the 3G license. Through its association with NTT DOCOMO — one of the world’s leading mobile operators — the company finds itself favorably positioned to leverage this first-mover advantage. TTL’s joint venture with NTT DOCOMO has also earned it a significant presence in the GSM space. Tata DOCOMO has received a pan-
India license to operate GSM telecom services, and has been allotted spectrum in 18 telecom circles, in which it has rolled out GSM services.

The TTL bouquet comprises four other brands as well — Virgin Mobile, Walky (for fixed wireless phones), the Photon family (that provides a variety of options for wireless mobile broadband access), and T24. Of these, T24 was formed of a strategic partnership with Future Group to offer mobile telephony services on the GSM platform.

In December 2008, TTL announced a unique reverse equity swap strategic agreement between its telecom tower subsidiary, Wireless TT Info-Services and Quippo Telecom Infrastructure. The combined entity, later named Viom Networks, kicked off operations with 18,000 towers, thereby becoming the largest independent entity in this space. Viom Networks now has a portfolio of close to 45,000 towers and has the highest tenancy ratios in the industry.

Today, TTL, along with TTL (Maharashtra), serves over 84 million customers in more than 450,000 towns and villages across the country, with a bouquet of telephony services encompassing mobile services, wireless desktop phones, public booth telephony, wireline services and enterprise solutions.

**Joint ventures, subsidiaries, associates:**

- Tata Teleservices (Maharashtra): formerly Hughes Tele.com (India)
- Virgin Mobile India: a brand franchise arrangement with the Virgin Mobile group
- Tata DOCOMO: joint venture with Tokyo-based NTT DOCOMO
- T24: strategic partnership with Future Group
- Viom: merger of telecom tower operations of TTL (Wireless TT Info-Services) and Quippo Telecom Infrastructure
3.9. **India's telecommunication network**[^1] is the second largest in the world based on the total number of telephone users (both fixed and mobile phone). It has one of the lowest call tariffs in the world enabled by the mega telephone networks and hyper-competition among them. It has the world's third-largest Internet user-base. According to the Department of Telecommunication of India (DoT), as on March 2015, India has 302.35 million internet connections. Major sectors of the Indian telecommunication industry are telephony, internet and television broadcast Industry in the country which is in an ongoing process of transforming into next generation network, employs an extensive system of modern network elements such as digital telephone exchanges, mobile switching centres, media gateways and signalling gateways at the core, interconnected by a wide variety of transmission systems using fibre-optics or Microwave radio relay networks. The access network, which connects the subscriber to the core, is highly diversified with different copper-pair, optic-fibre and wireless technologies. DTH, a relatively new broadcasting technology has attained significant popularity in the Television segment. The introduction of private FM has given a fillip to the radio broadcasting in India. Telecommunication in India has greatly been supported by the INSAT system of the country, one of the largest domestic satellite systems in the world. India possesses a diversified communications system, which links all parts of the country by telephone, Internet, radio, television and satellite.

Indian telecom industry underwent a high pace of market liberalisation and growth since the 1990s and now has become the world's most competitive and one of the fastest growing telecom markets. The Industry has grown over twenty times in just ten years, from under 37 million subscribers in the year 2001 to over 846 million subscribers in the year 2011. India has the world's second-largest mobile phone user base with over 929.37 million users as of May 2012. It has the world's second-largest Internet user-base with over 300 million as of June 2015.

The total revenue of the Indian telecom sector grew by 7% to ₹2832 billion (US$42 billion) for 2010–11 financial year, while revenues from telecom equipment segment stood at 1170 billion (US$17 billion).\(^85\)

Telecommunication has supported the socioeconomic development of India and has played a significant role to narrow down the rural-urban digital divide to some extent. It also has helped to increase the transparency of governance with the introduction of e-governance in India. The government has pragmatically used modern telecommunication facilities to deliver mass education programmes for the rural folk of India.

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<tr>
<th>Telecom circle</th>
<th>Wireline subscriber base in million(May 2012)</th>
<th>Wireless subscriber base in million(May 2012)</th>
<th>Teledensity (September 2014)(^39)</th>
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<td>34.51</td>
<td>95.96</td>
</tr>
<tr>
<td>Kolkata (including West Bengal)</td>
<td>1.18</td>
<td>25.25</td>
<td>73.0</td>
</tr>
<tr>
<td>Madhya Pradesh &amp; Chhattisgarh</td>
<td>1.13</td>
<td>53.30</td>
<td>57.04</td>
</tr>
<tr>
<td>Maharashtra &amp; Goa (including Mumbai)</td>
<td>2.64</td>
<td>71.00</td>
<td>92.20 *</td>
</tr>
<tr>
<td>Mumbai</td>
<td>3.0</td>
<td>35.93</td>
<td>Not available *</td>
</tr>
<tr>
<td>North East</td>
<td>0.25</td>
<td>8.76</td>
<td>72.00</td>
</tr>
<tr>
<td>Orissa</td>
<td>0.40</td>
<td>26.27</td>
<td>63.41</td>
</tr>
<tr>
<td>Punjab</td>
<td>1.44</td>
<td>31.17</td>
<td>103.49</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>1.14</td>
<td>49.52</td>
<td>76.18</td>
</tr>
<tr>
<td>Tamil</td>
<td>3.16</td>
<td>78.96</td>
<td>114.71</td>
</tr>
<tr>
<td>Telecom circle</td>
<td>Wireline subscriber base in million (May 2012)</td>
<td>Wireless subscriber base in million (May 2012)</td>
<td>Teledensity (September 2014)</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Nadu (including Chennai since 2005)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uttar Pradesh (East)</td>
<td>1.20</td>
<td>77.74</td>
<td>58.09 (Combined)</td>
</tr>
<tr>
<td>Uttar Pradesh (West) &amp; Uttarakhand</td>
<td>0.79</td>
<td>55.12</td>
<td>58.09 (Combined)</td>
</tr>
<tr>
<td>West Bengal (including Kolkata)</td>
<td>0.62</td>
<td>46.79</td>
<td>73.40</td>
</tr>
</tbody>
</table>

To conclude, in this chapter an attempt has been made by the researcher to examine the profile of the Cell phone service providers. The profile of the Respondents and CRM Strategies of the Mobile Network Companies were discussed in the next chapter.