# TELECOM SECTOR IN INDIA: ISSUES AND CHALLENGES

**Dr. Pavnesh Kumar ***

## *Abstract*

*The telecom sector is one of the prime contributors to India's GDP. The telecom services have been recognized the world-over as an important tool for socio-economic development for a nation... The literature available shows a positive correlation between rapid growth and modernization of various sectors of the economy with the growth of telecom infrastructure. From the time of the British Rule, the Telecom Industry in India was under the strict supervision of the government. The trend continued even after independence until the late 1990s, when the positive initiatives were taken up by the government. The telecom sector was opened up for private investment as a part of liberalization-privatization-globalization policies and since then it has seen radical and structural changes. In the last few decades the common man has seen lot of anomalies and scams in this sector. At present the government due to the transparency revolution is making it as a tool to fight corruption. This sector has also seen exponential growth due to increasing middle class population, competitive environment and the incentives from the government side. The paper is based on the latest statistics available in the government of India and International Telecom Union reports. It intends to discuss the global telecom scenario, the achievement of India in this sector, the growth-pattern of FDI, Mergers and Acquisitions, the changing landscape of telecom sector in terms of issues challenges and opportunities.*

## INTRODUCTION

The word "telecommunication" is a compound of the Greek prefix *"tele"* meaning 'far off', and the Latin *"communicare"*, meaning 'to share'. In its current usage, it refers to transmission of signals over a distance for the purpose of communication. In early days, communication between persons took place by means of drums, smoke signals, flags, etc. Emerging from such humble beginnings, the means now involve sophisticated high-speed, submarine optical cables laid on ocean floors and artificial satellites circling the Earth in space. As the demand for signal

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transmission has increased, the speed of transmission has also increased. The telecommunications industry has impact on every aspect of our lives, from the simple reality of enabling telephonic communication between people in different locations to enabling supply-chains to work seamlessly across continents to create products and fulfill demands.

The telecom services have been recognized world-over as an important tool for socio-economic development for a nation. It is one of the prime support services needed for rapid growth and modernization of various sectors of the economy. Indian telecommunication sector has undergone a major process of transformation through significant policy reforms, particularly beginning with the announcement of NTP 1994 and was subsequently re-emphasized and carried forward under NTP 1999. Driven by various policy initiatives, the Indian telecom sector witnessed a complete transformation in the last decade. It has achieved a phenomenal growth during the last few years and is poised to take a big leap in the future also. Telecom industry in India has undergone a revolution during the past few years with tremendous growth in the telecom subscriber base. Additionally, the country's telecom industry is one of the fastest growing and one of the largest telecommunication networks in the world. With the ongoing investments into infrastructure deployment, the country is projected to witness high penetration of Internet, broadband, and mobile subscribers in near future.

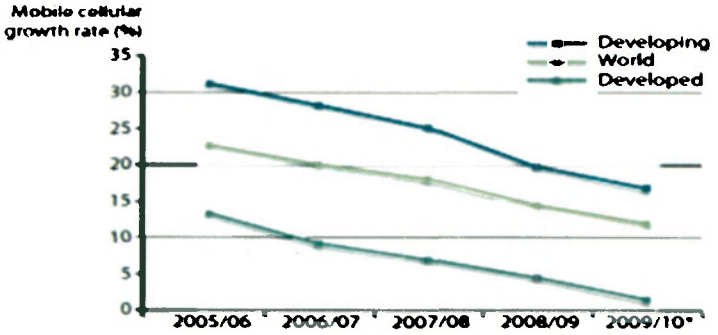
## GLOBAL OVERVIEW

***Table1.1: Countries with more than 100% Teledensity***

| Area | Countries |
|---|---|
| Africa | Seychelles |
| Americas | Argentina, Aruba, Bahamas, Barbados, Canada, Jamaica, Puerto Rico, United States of America |
| Asia | Japan, Korea (Rep.), Qatar, Singapore, Taiwan,UAE |
| Europe | Andorra, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Greenland, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom |
| Oceania | Australia, New Zealand |

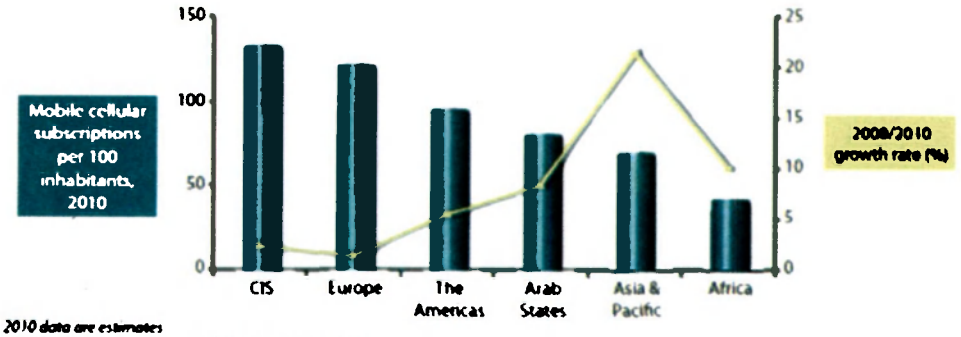
***Some facts and Figures:-Global Telecom Scenario***

***Table 1.2: Table showing the growth of Mobile cellular***




*Note: *Estimate*
*Source: ITU World Telecommunication/ICT indicators database*

***Table 1.3: Table showing the mobile cellular subscription***

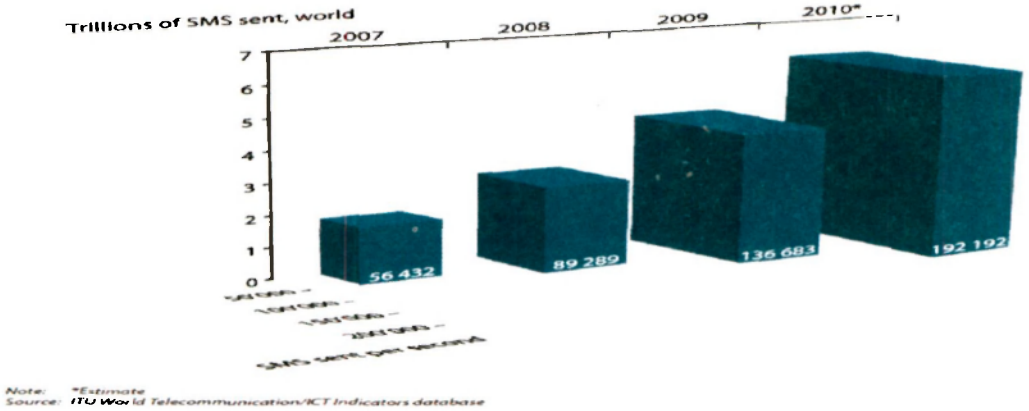



*Note: 2010 data are estimates*
*Source: ITU World Telecommunication/ICT indicators database*

By the end of 2010, according to an estimate: "There will be 5.3 billion mobile cellular subscriptions worldwide, including 940 million subscriptions to 3G services.- Access to mobile networks is now available to 90% of the world population and 80% of the population living in rural areas.- People are moving rapidly from 2G to 3G platforms, in both developed and developing countries."

In 2010, 143 countries were offering 3G services commercially, compared to 95 in 2007.Towards 4G: a number of countries have started to offer services at even higher broadband speeds, moving to next generation wireless platforms – they include Sweden, Norway, Ukraine and the United States.

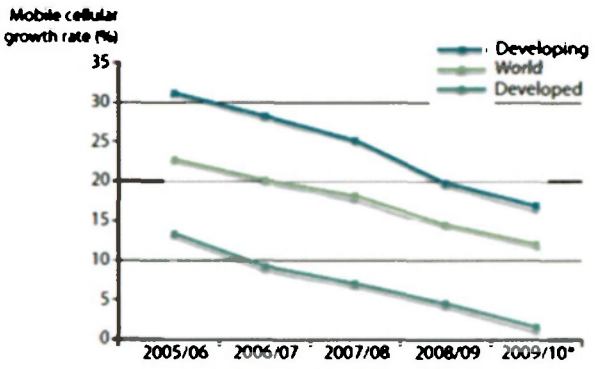
***Table1.4: Table showing SMS growth rate***




Note: *Estimate
Source: ITU World Telecommunication/ICT Indicators database

The total number of SMS sent globally tripled between 2007 and 2010, from an estimated 1.8 trillion to a staggering 6.1 trillion. In other words, close to 200 000 text messages are sent every Second. Assuming an average cost of USD 0.07 per SMS, in 2010 SMS traffic is generated an estimated USD 812 000 every minute (or around USD 14 000 every second). In 2009, SMS revenue accounted for 12% of China's largest mobile operator's total revenue.-The Philippines and the United States combined accounted for 35% of all SMS sent in 2009.

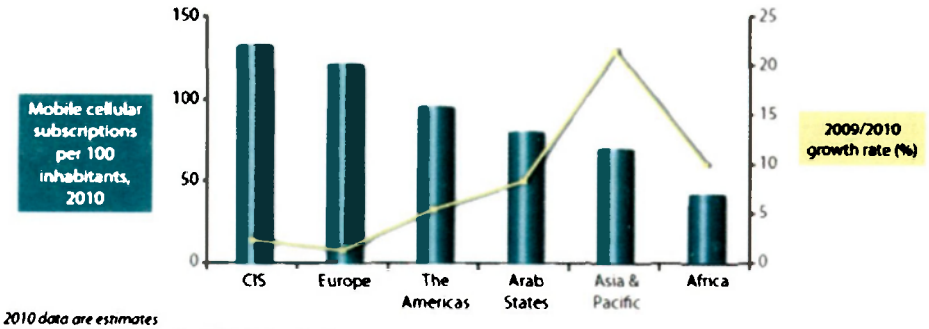
***Table 1.5***




Note: *Estimate
Source: ITU World Telecommunication/ICT Indicators database

Mobile cellular growth is slowing worldwide. In developed countries, the mobile market has reached saturation levels with on average 116 subscriptions per 100 inhabitants at the end of 2010 and a marginal growth of 1.6% from 2009-2010. At the same time, the developing world is increasing its share of mobile subscriptions from 53% of total mobile subscriptions at the end of 2005 to 73% at the end of 2010.

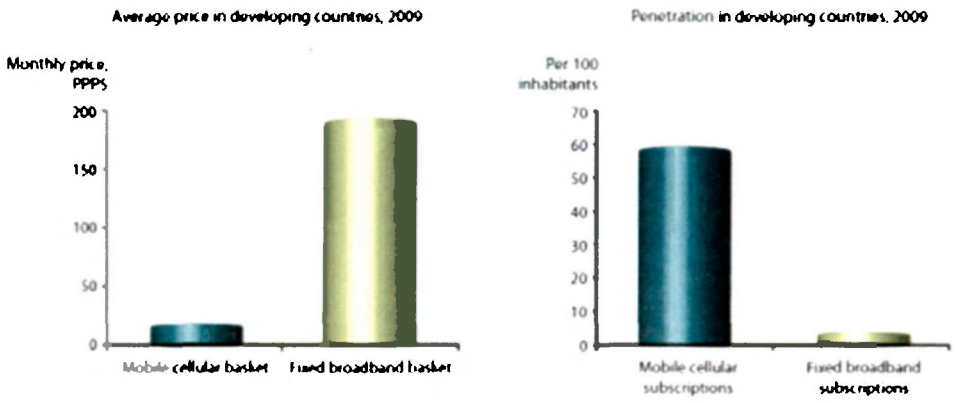
***Table 1.6***




*Note: 2010 data are estimates*
*Source: ITU World Telecommunication/ICT Indicators database*

According to an estimate: "The developing world's share of fixed (wired) broadband subscriptions is growing steadily. By the end of 2010, the developing world will account for an estimated 45% of global subscriptions (up from 42% five years earlier). Africa still lags behind when it comes to fixed (wired) broadband. Although subscriptions are increasing, a penetration rate of less than 1% illustrates the challenges that persist in increasing access to high-speed, high-capacity Internet access in the region."

***Table 1.7***

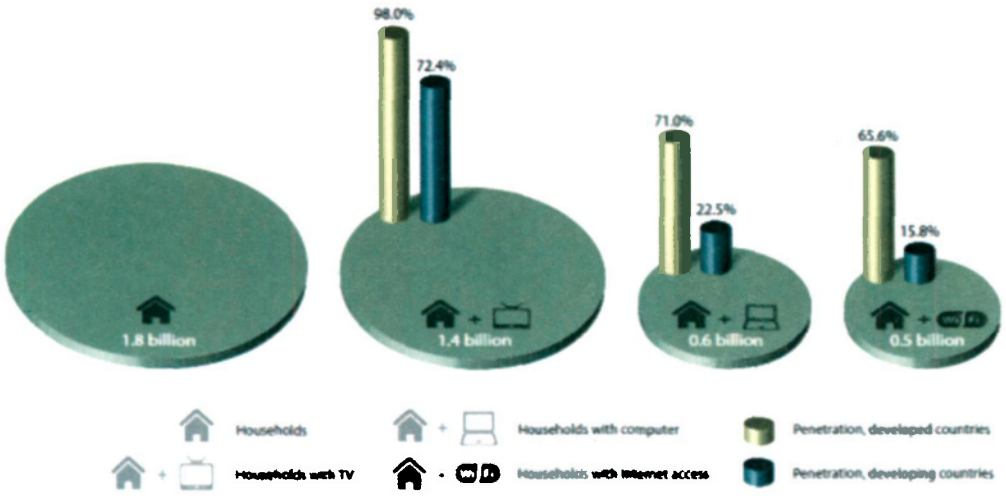



*Source: Measuring the Information Society Report 2010 ITU*

Fixed (wired) broadband prices dropped by 42% between 2008 and 2009 but there are huge differences among countries when it comes to the affordability of broadband: in 2009,an entry-level fixed (wired) broadband connection cost on average 190 PPP$ per month in developing countries, compared to only 28 PPP$ per month in developed countries. This has significant implications for the uptake of ICT services, which is much higher for lower-cost mobile cellular compared to higher-priced fixed broadband.

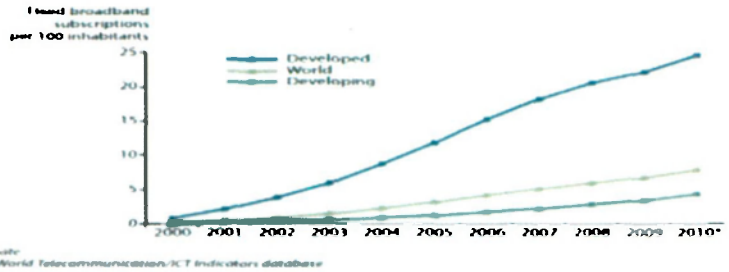
While in developing countries,72.4% of households have a TV, only 22.5% have a computer and only 15.8% have Internet access (compared to 98%, 71% and 65.6% respectively in developed countries). At the end of 2010, half a billion households worldwide (or 29.5%) will have access to the Internet. In some countries, including the Republic of Korea, Netherlands and Sweden, more than 80% of households have Internet access, almost all of them through a broadband connection.- The number of people having access to the Internet at home has increased from 1.4 billion in 2009 to almost 1.6 billion in 2010 (According to an estimate in 2010).

***Table 1.8***



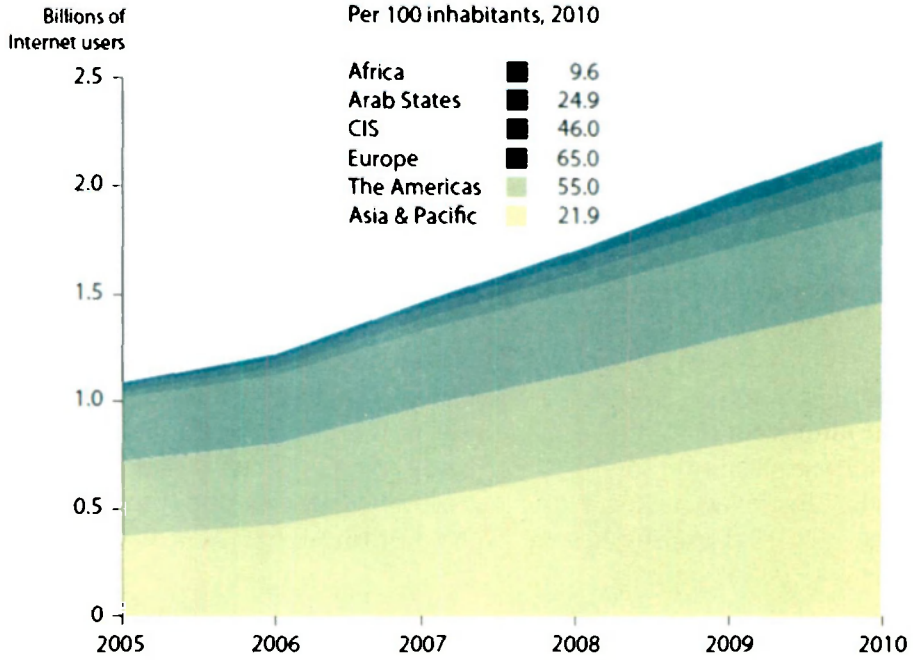

Note: Data refer to 2010 and are estimates.
Source: ITU World Telecommunication/ICT Indicators database

***Table1.9***




There has been strong growth in fixed (wired) broadband subscriptions, in both developed and developing countries. According to an estimate in 2010, "At the end of 2010, fixed (wired) broadband subscriptions will reach an estimated 555 million globally (or 8% penetration), up from 471 million (or 6.9% penetration) a year earlier." Despite these promising trends, penetration levels in developing countries remain low: 4.4 subscriptions per 100 people compared to 24.6 in developed countries.

***Table 2.0***




*Note: *Estimate*
*Source: ITU World Telecommunication/ICT Indicators database*

The number of Internet users has doubled between 2005 and 2010.

According to an estimate, in 2010, the number of Internet users will surpass the two billion mark, of which 1.2 billion will be in developing countries. A number of countries, including Estonia, Finland and Spain have declared access to the Internet as a legal right for citizens. With more than 420 million Internet users, China is the largest Internet market in the world. While 71% of the population in developed countries is online, only 21% of the population in developing countries is online. By the end of 2010, Internet user penetration in Africa will reach 9.6%, far behind both the world average (30%) and the developing country average (21%).

## AN OVERVIEW: INDIAN TELECOM SECTOR

India has emerged as one of the youngest and fastest growing economies in the world today. One of the sectors that has shown the signs of profitability and contributed significantly to the country's economy is the telecom industry. In fact, the Indian telecom market has gained recognition as one of the most lucrative markets globally. The vast rural market holds a huge potential to drive the future growth of the telecom companies. Further, the government's initiatives for increasing the telecom connectivity in rural areas are also likely to aid the telecom service providers to extend their services in the unconnected rural areas.

The Indian Telecommunications network with 621 million connections (as on March 2010) is the third largest in the world. The sector is growing at a speed of 45% during the recent years. This rapid growth is possible due to various proactive and positive decisions of the Government and contribution of both by the public and the private sectors. The rapid strides in the telecom sector have been facilitated by liberal policies of the Government that provides easy market access for telecom equipment and a fair regulatory framework for offering telecom services to the Indian consumers at affordable prices. Presently, all the telecom services have been opened for private participation. The Government has taken following main initiatives for the growth of the Telecom Sector:

The process of liberalization in the country began in the right earnest with the announcement of the New Economic Policy in July 1991. Telecom equipment manufacturing was delicensed in 1991 and value added services were declared open to the private sector in 1992, following which radio paging, cellular mobile and other value added services were opened gradually to the private sector. This has resulted in large number of manufacturing units been set up in the country. As a result most of the equipment used in telecom area is being manufactured within the country. A major breakthrough was the clear enunciation of the government's intention of liberalizing the telecom sector in the National Telecom Policy resolution of May 13,1994.

## TELECOM SECTOR REFORMS: AN OVERVIEW

- Telecom equipment manufacturing deregulated in 1991
- Cellular phone services thrown open to private sector in 1992 and basic services in 1994
- The National Telecom Policy (NTP) formulated in 1994 and later replaced by NTP '99.
- NTP '99 also provided for registration of Other Service Provider category to promote BPO activities
- The Telecom Regulatory Authority of India (TRAI) set up in 1997 as an independent regulator
- Private sector allowed in Internet Service Provider (ISP) sector in 1998
- Migration from fixed license fee to revenue sharing regime in August 1999
- Establishment of a dispute settlement mechanism called Telecom Disputes Settlement and Appellate Tribunal through TRAI (Amendment) Act, 2000
- National long distance service opened to competition in August 2000
- The Communication Convergence Bill introduced in Lok Sabha in August 2001
- International Long Distance (ILD) services and Internet telephony opened for competition in 2002
- Introduction of the Calling Party Pays (CPP) in May 2003

## MERGERS AND ACQUISITIONS IN INDIAN TELECOM SECTOR

With the liberalization of the Indian economy, the telecom sector has become very attractive for mergers and acquisitions. Some of the big deals that have taken place in the Indian telecom include the following:

- SingTel increasing its stake in Bharti telecom from 26.96 % to 32.81)/0 in 2011
- Providence's investment into Aditya Birla Telecom in 2009
- Vodafone taking over Hutchison-Essar in 2007
- Malaysia Telekom's 49% stake in Spice Telecom
- Temasek Holdings' 9.9% stake in Tata Teleservices through its wholly-owned subsidiary Aranda Investments Mauritius

M&A in India is subject to various laws the principle of them being The Companies Act 1956, Income Tax Act 1961 and the Takeover Code (for public listed companies). Regulatory considerations are also equally important to take note of, in telecom M&A.

*Table 2.1: Growth Story Some Facts*

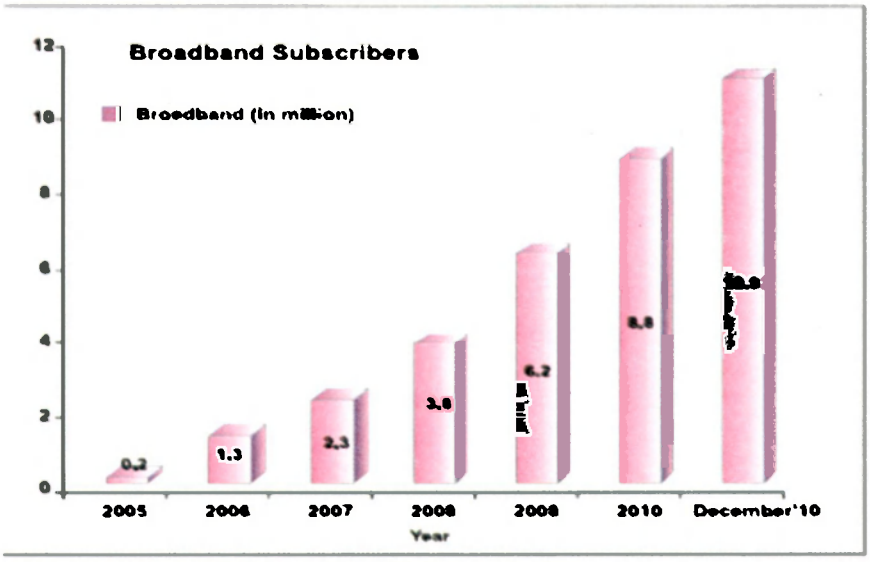



*Table 2.2*

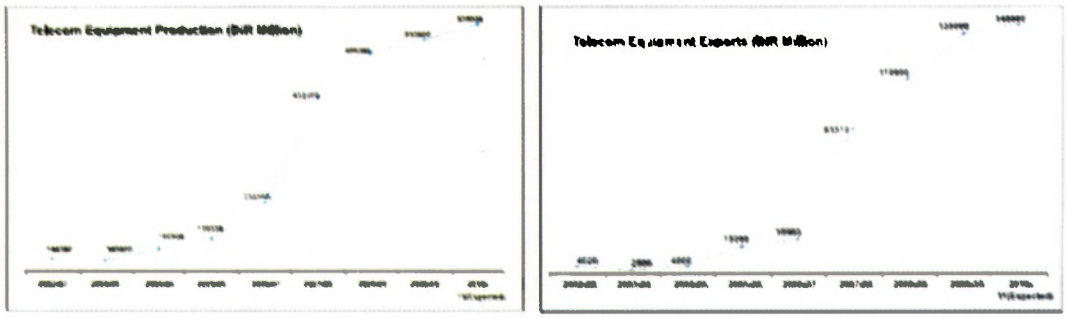
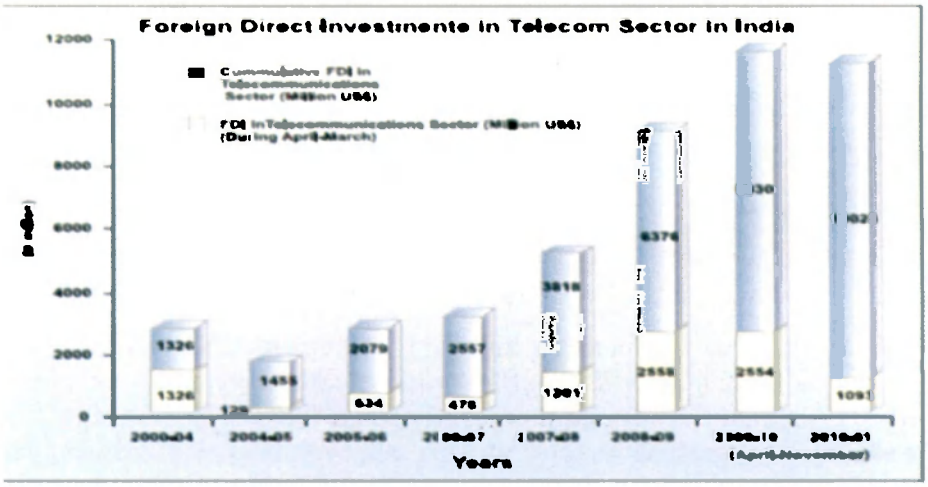



*Table 2.3*



## *Table 2.4*

## Number Of Villages with Direct Access to Telecom Facilty

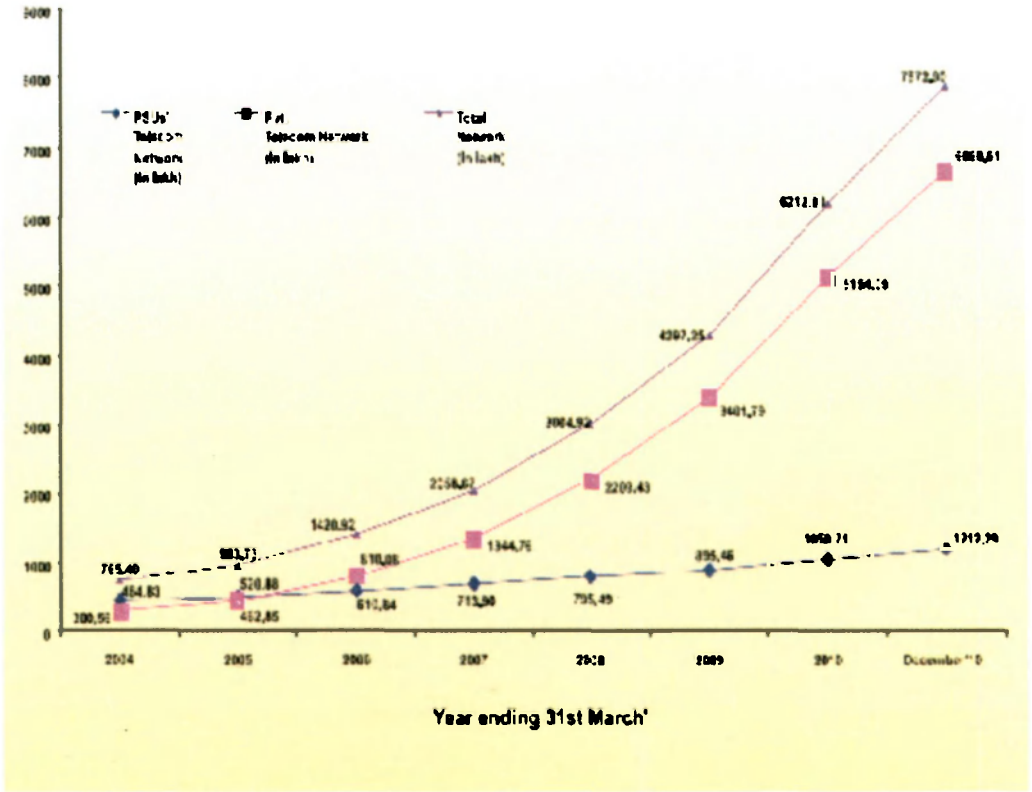
| S. No. | Circle/states | No. of Villages (Rev.w. e.f. Oct. 2007) | Village covered with VPTs as on | | | | | PCOs as on | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Public | | Private | Total Vpts | | (Local + STD + Highway) | |
| | | | 31.03.2010 | 31.12.2010 | 31.03.2010 | 31.03.2010 | 31.12.2010 | 31.03.2010 | 31.12.2010 |
| 1. | Andaman & Nicobar | 501 | 337 | 341 | 0 | 337 | 341 | 702 | 729 |
| 2. | Andra Pradesh | 26613 | 23333 | 23692 | 1408 | 24741 | 25100 | 200291 | 133531 |
| 3. | Assam | 25124 | 23992 | 24032 | 0 | 23992 | 24032 | 33862 | 30561 |
| 4. | Bihar | 39032 | 38891 | 38898 | 0 | 38891 | 38898 | 67160 | 64583 |
| 5. | Chhattisgarh | 19744 | 18101 | 18134 | 0 | 18101 | 18134 | 8630 | 5831 |
| 6. | Gujrat | 18159 | 16905 | 16926 | 4114 | 21091 | 21040 | 89587 | 61552 |
| 7. | Haryana | 6764 | 6683 | 6678 | 0 | 6683 | 6678 | 26273 | 16393 |
| 8. | Himanchal Pradesh | 17495 | 17300 | 17365 | 0 | 17300 | 17365 | 11416 | 8950 |
| 9. | Jammu & Kashmir | 6417 | 5994 | 6284 | 0 | 5994 | 6284 | 12693 | 10726 |
| 10. | Jharkhand | 29354 | 27733 | 28759 | 0 | 27733 | 28759 | 18954 | 17510 |
| 11. | Karnatka | 27481 | 27419 | 27441 | 0 | 27419 | 27441 | 242020 | 195587 |
| 12. | Kerala | 1372 | 1372 | 1372 | 0 | 1372 | 1372 | 123469 | 89584 |
| 13. | Madhya Pradesh | 52117 | 51986 | 51986 | 611 | 52597 | 52597 | 56992 | 51249 |
| 14. | Maharastra | 41442 | 39319 | 39607 | 2643 | 41962 | 42250 | 262797 | 181878 |
| 15. | North East - I | 7347 | 4990 | 5262 | 0 | 4990 | 5262 | 9531 | 7856 |
| 16. | North East - II | 7456 | 5016 | 5095 | 0 | 5016 | 5095 | 8628 | 8658 |
| 17. | Orissa | 47529 | 43222 | 43805 | 0 | 43222 | 43805 | 24796 | 17703 |
| 18. | Punjab | 12301 | 12061 | 12063 | 879 | 12940 | 12942 | 23897 | 16895 |
| 19. | Rajsathan | 39753 | 38803 | 38838 | 3010 | 41813 | 41848 | 55445 | 42893 |
| 20. | Tamil Nadu | 13837 | 13826 | 13827 | 0 | 13826 | 13827 | 216555 | 170784 |
| 21. | Uttaranchal | 15761 | 14814 | 15106 | 0 | 14814 | 15186 | 11065 | 11065 |
| 22. | Uttar Pradesh (E) | 76993 | 74123 | 74121 | 0 | 74123 | 74121 | 124809 | 116370 |

| S. No. | Circle/states | No. of Villages (Rev.w. e.f. Oct. 2007) | Village covered with VPTs as on | | | | | PCOs as on | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Public | | Private | Total Vpts | | (Local + STD + Highway) | |
| | | | 31.03.2010 | 31.12.2010 | 31.03.2010 | 31.03.2010 | 31.12.2010 | 31.03.2010 | 31.12.2010 |
| 23. | Uttar Pradesh (W) | 20949 | 23636 | 23629 | 0 | 23636 | 23629 | 44103 | 23940 |
| 24. | West Bengal | 37365 | 33882 | 34564 | 0 | 33882 | 34564 | 60181 | 51441 |
| 25. | Kolkata | 1040 | 567 | 567 | 0 | 567 | 567 | 64083 | 55679 |
| 26. | Chennai | 1655 | 1655 | 1655 | 0 | 1655 | 1655 | 79513 | 75714 |
| 27. | Delhi | NA | 0 | 0 | 0 | 0 | 0 | 73819 | 65975 |
| 28. | Mumbai | NA | 0 | 0 | 0 | 0 | 0 | 137409 | 117781 |
| | **All India** | 593601 | 565960 | 570047 | 12665 | 578697 | 582792 | 2088680 | 1649826 |

**NA-Not Applicable* ue to application of UASL Private VPT,s are constant since Oct 2003**

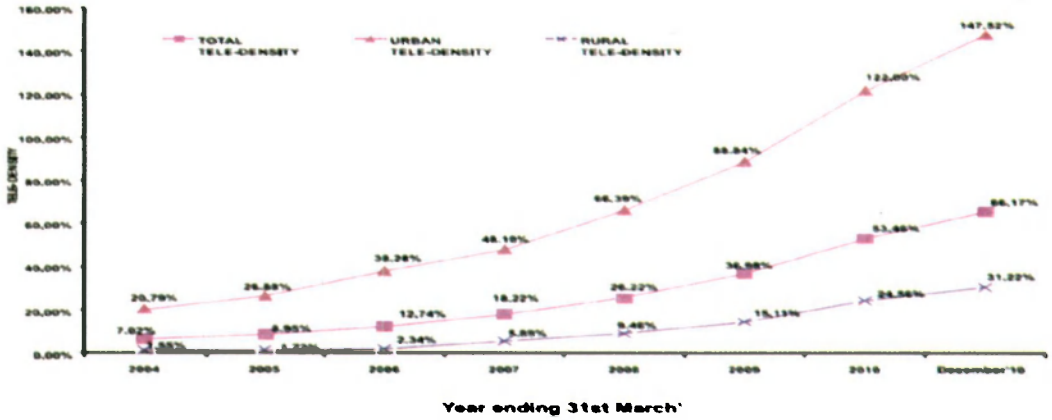
*Table 2.5*

**GROWTH OF TELECOM NETWORK (PSUs & PRIVATE)**



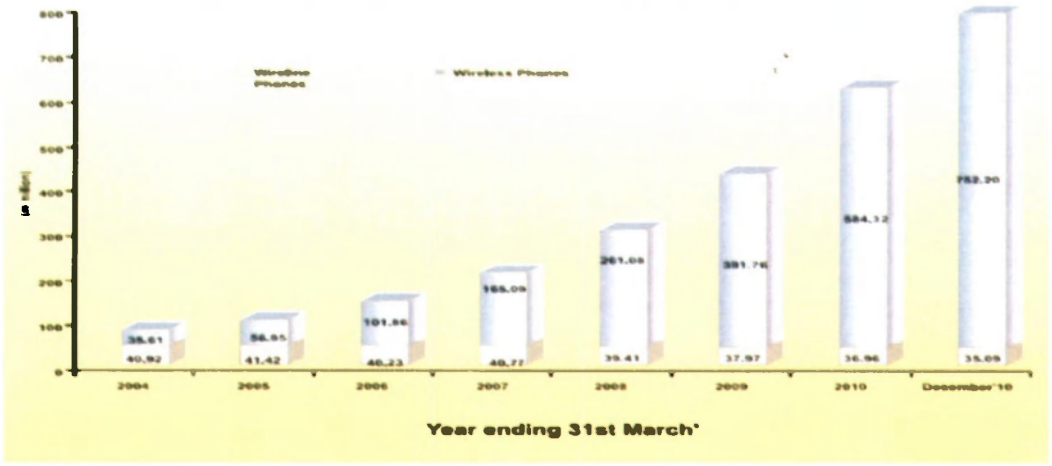
## *Table 2.6*

**TELE-DENSITY (Number of Telephones per 100 Population)**



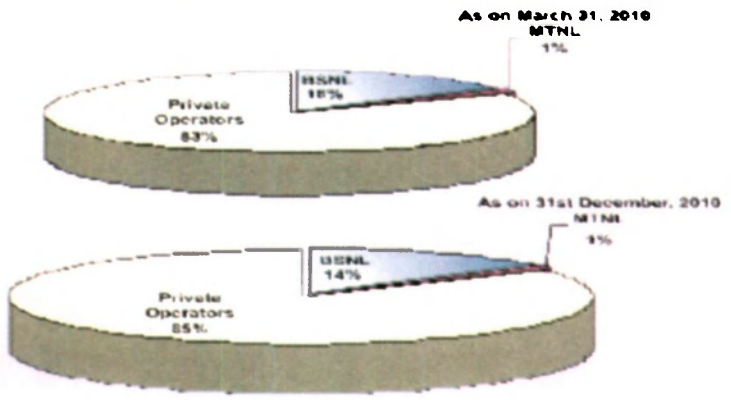

## *Table 2.7*

**WIRELINE TELEPHONES AND WIRELESS TELEPHONES**




## *Table 2.8*

**DISTRIBUTION OF Total Phones (Wireline+Wireless)(PSUs+Pvt.)**



## Issues and Challenges in the Telecom sector

| Issues | Opportunities |
|---|---|
| Lack of Infrasturcture | Rural Telephony |
| Falling APRU | 3G Services |
| Rural Areas –Underpenetrated | WiMax |
| Excessive Competetion | Value Added Service |
| Price war | Infrastructure Sharing |
| Spectrum Allocation | Managed Service |

1. FDI in Telecom sector in India was ~ USD 1.7 billion in FY2011, down by almost 35% compared with ~ USD2.6 billion in FY2010. Investments in sector by leading operators are down 50%.

2. Mobile operators in the country are experiencing declining financial performance. Increasing competition (significantly high number of operators compared to global benchmarks) has resulted in reduction in average revenues per minute to INR 0.5 per call in FY2010 from a high of INR 7.3 per call in FY2000.

3. The minutes of usage per subscriber has also decreased from a peak of 465 minutes in FY2007 to 369 minutes in FY2010. This has resulted in average revenue per user (ARPU) per month declining from INR 362 in FY 2005 to INR 105 in FY 2010 for GSM operators and from INR 256 to INR 68 for the same period for CDMA operators

4. The operators reported an overall growth in subscriber base by 43% between FY 2009 to FY 2010; the industry grew revenues only by 5% for the same period much less than inflation rate of 8.72% for the same period

5. The significant increase in network operating expenses besides governmental fees, levies, charges and penalties adding to margin pressures for the operators. India has a significantly high regulatory levy varying between 19% to 28% of the operator revenues

6. Rising interest rates have resulted in increase in debt servicing costs for operators. Consequently operators are under immense margin pressures (several reporting negative PATs). Similarly, most operators report a negative or low return on capital employed.

7. Telecom companies are bundling broadband, voice, wireless, video and other emerging technologies together, as well as a variety of value added content, in an effort to remain competitive, offer seamless services and attract more customers.

8. Ongoing mergers and acquisitions have resulted in duplicate systems and applications across the organization, which have made it difficult to integrate data, realize cost benefits and capitalize on new revenue opportunities.

9. With new players entering the market, telecommunications companies are competing strongly and selling products and services beyond their core offerings and at much cheaper prices. This is resulting in less revenue from traditional sources, more pressure on profit margins, and an urgency to find new revenue streams by investing in new technologies such as VoIP or fixed/mobile convergence.

## OPPORTUNITIES IN THE TELECOM SECTOR

1. With the arrival of 3G, various operators in India are particular about providing faster and more robust Internet, better access of data services including e-commerce, social networking, audio-video conferencing, and many other broadband applications with very high speed. The deployment of 3G services is also likely to help the emergence of new VAS. The demand for value added services is likely to surge, given that, 'Gen Y' are more inclined to use the smart phones and adopt the VAS services.

2. With the implementation of mobile number portability, the service providers need to focus more on developing VAS as a service differentiator to retain their existing customers besides attracting the new ones.

3. The outstanding growth in the mobile sector explains the advent of digital cellular technology and reduced tariffs as a consequence of competitive pressures. The growth in the cellular subscribers has surpassed the benchmark of subscriber base. The telecom market has increased dramatically with the advent of Wireless in Local Loop Technology.

4. Around 300 million population of highly consumable middle-class status that is advantageous for the industry surrounds the telecom sector in India. This is because, in some of the Indian that possess land line telephones can be substituted by mobile phones that is very unlike the developed countries. Therefore, it adds up to the growth in mobile sector in Indian telecom industry.

5. Introduction of a number of international long distance services sector. The opportunities in the Indian telecom sector is increasing at a massive pace with the introduction of newer and innovative schemes in various sectors and at present the telecom sector in India is claimed to be one of the major contributors in India's flourishing economy.

## MAJOR OPPORTUNITIES

- Rural Telephony – Connecting the Real India
- 3G Services – Potential Growth Driver
- Worldwide Interoperability for Microwave Access (WiMAX) -Reaching the Last Mile
- Mobile Value Added Service (MVAS) – An Opportunity to Increase the ARPU
- Infrastructure Sharing – A Profitable Proposition
- Managed Service – Outsourcing in Telecom

## FUTURE OUTLOOK

The Indian mobile subscriber base is likely to sustain the rapid growth recorded in the past few years. Presence of skilled labour pool, improving telecom infrastructure, favorable demographics, rising disposable incomes of consumers, declining tariffs, increasing demand, growing attraction for mobiles with new features and greater availability of handsets at lower prices, are expected to continue driving the growth of the telecom sector, going forward. However, the companies are likely to encounter a more challenging business environment in the near future, given the sustained fall in ARPUs, rapidly increasing competition and consequent pressure on margins and regulatory risks. Companies with good rural coverage, better operational efficiency, and superior quality of service are likely to stay ahead of competitors. The government has proposed to achieve a rural tele-density of 25% by deploying 200 mn-connections at the end of the Eleventh Five Year Plan, given that more than 70% of the population lives in villages. The optimum utilization of USO fund and increase in mobile services might help the government attain this goal. The government's thrust on welfare programmes such as community development, education and health and rural connectivity can also be facilitated through satellite communications, internet connections et al. Besides, broadband connections for all gram panchayats and public healthcare centres, secondary and higher secondary schools and provision of 3G services to all cities/towns with more than 0.1 mn population is also likely to be achieved during the Eleventh Five Year Plan. It is also visualized to link block headquarters and the nearest exchange through the State-Wide Area Networks (SWAN) connectivity. Major initiatives such as e-Agriculture, e-Health, e-Education, rural BPOs are slated to increase internet penetration as they set the base for increasing acceptance of the same. During the Eleventh Five Year Plan period, Rs 2,670 bn worth of investments are projected to be made in the telecom industry and the public sector is expected to have a 33.50% share in the same, while the private sector is expected to contribute 66.50%. Further, a total of 650 mn connections (including 66 mn wired and 584 mn wireless connections) are expected to be achieved by the end of 2012. The growth process in this ever-evolving sector needs to be backed by a strong R&D support. The active participation of the private sector in R&D would ensure greater benefits for the sector. Further, the government also envisions making India a hub for telephone equipment

manufacturing that is expected to be achieved through telecom specific special economic zones (SEZs) and by setting up Export Promotion Council to promote export of telephone equipment and services.

## CONCLUSION

The growth of India as a knowledge based economy will not be possible without the growth and expansion of the Indian telecommunications and IT sectors. This symbiotic relationship is not lost on the government which has attempted to back the telecommunications sector by fostering an encouraging regulatory scenario. This has not only helped the telecommunications sector to evolve in a dynamic manner but has also enabled it to attract foreign investments.

Telecom spectrum is a scarce resource and with so many scams happening right under the government's nose, it is no surprise that the situation looks quite grim. But despite all the hiccups, the future is fresh with promise as each day; the mobile is finding more acceptances and becoming an inevitable part of our lives. Perhaps, that is a single shimmer of hope that is keeping the sector going. The area which needs immediate attention is the need for flexibility in the regulatory mechanism. The telecom legislation at present seems to be archaic laws and the need of the industry right now is a mechanism that can continuously adapt itself to the changing needs of the industry. There is no doubt at all that the coming years are going to be exciting years for the Indian telecom sector.

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