

THE GROWTH OF TELECOM SECTOR IN INDIA & THE PARADIGM SHIFT FROM E-GOVERNMENT TO M-GOVERNMENT

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ABSTRACT

India has been among the fastest growing telecom markets worldwide, with about 13 million subscriber additions per month. In terms of the number of subscribers, India is the second largest telecom market in the world, with about 530 million subscribers as of October 2009. The sector continued its growth even in the difficult times of the global economic crisis in 2008 and witnessed a subscriber growth of 44.2 percent over that in the last year. As of October 2009, India had a teledensity of 45 percent, hinting at the significant market potential yet to be tapped. The next phase of growth in subscriber base is expected to come from rural areas, as the urban teledensity has reached about 97 percent (more than 100 percent in Delhi, Mumbai, Chennai and Kolkata), as against the rural teledensity of 18 percent.

The paper discusses the current scenario in the Telecom Sector, the government incentives and the investments at present and projected future investments in the public and private sectors. The paper also highlights the paradigm shift from e-government initiatives to m-government initiatives being witnessed due to high penetration levels of mobile over broadband.

RELEVANCE

The expansion of India's telecom industry has led to an "all-inclusive growth" of the Indian economy in terms of GDP (gross domestic product) growth, employment and government revenues, among others. Telecommunications, together with the IT sector, have created jobs for India's knowledge professionals and skilled workforce. High growth in the IT and ITES (IT-enabled services) sectors is dependent on the sound connectivity infrastructure in India's metro areas.

The advent of the digital age, coupled with India's large number of young and educated people who are fluent in English, are transforming India into an important global outsourcing destination for customer services

and technical support. This would not have been possible without the growth of the telecom sector.

RESEARCH OBJECTIVE

The paper aims to study the growth of the telecom sector and the impact of the policy initiatives of the government on the sector. It also focuses on the role the telecom sector shall play in implementing the M-Government Initiatives in the country. The other objectives are:

- (a) To analyse the current scenario of the Telecom industry.
- (b) To analyse the growth rate in the Indian Mobile Subscribers Base and the Percentage Growth Rate of India's Mobile Market.

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- (c) To analyse the Total Tele- density (Rural & Urban).
- (d) To analyse the major policy initiatives in the Telecom Sector.
- (e) To evaluate the Major Investment Scenario in the Telecom Sector in India.
- (f) To analyse the impact of Growth in Telecommunications on the M-Government Initiatives in India.

have been incorporated suitably. Attempts have been made to make the tables self explanatory.

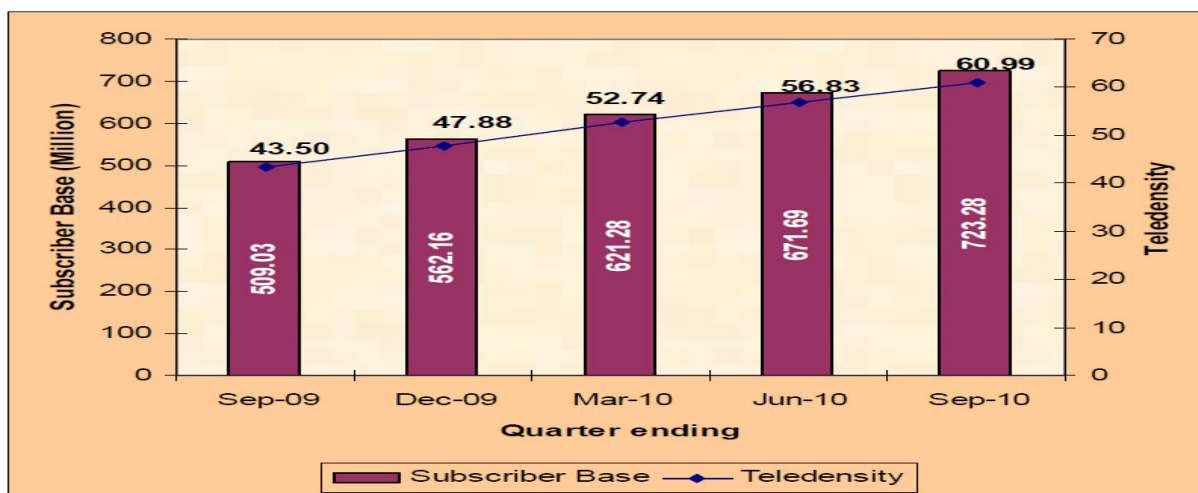
Scenario of Growth of Urban & Rural Telephone Subscribers & Teledensity (Till September 2010)

The number of telephone subscribers in India increased from 671.69 million in Jun-10 to 723.28 million at the end of Sep-10, registering a sequential growth of 7.68% over the previous quarter as against 8.11% during the QE Jun-10. This reflects year-on-year (Y-O-Y) growth of 42.09% over the same quarter of last year. The overall Teledensity in India has reached 60.99 as on 30th September 2010 (refer Chart I)

RESEARCH METHODOLOGY

The paper is based on the secondary data and the research type is the descriptive research. The data has been properly classified, tabulated, and analysed and the key results

Chart I
Trends in Telephone Subscribers & Teledensity in India(Till September 2010)

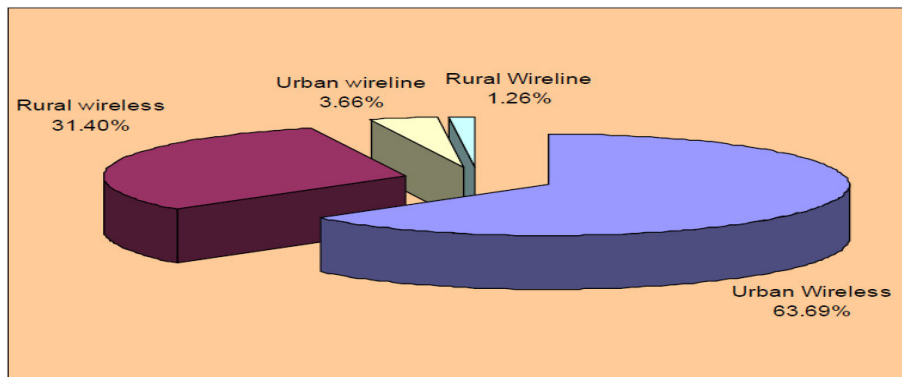


Source: TRAI Indian Telecom Services Performance Indicator Report

Subscription in Urban Areas grew from 452.59 million in Jun-10 to 487.07 million at the end of Sep-10, taking the Urban Teledensity from 128.20 to 137.25. Rural subscription increased from 219.09 million to 236.21 million, and the Rural Teledensity increased from 26.43 to 28.42. The share of rural subscribers has increased slightly to 32.66% in total subscription from 32.62% in Jun-10. About

66.83% of the total net additions have been in urban areas as compared to 63.47% in the previous quarter. Rural subscription recorded a decline in rate of growth during the quarter, from 9.18% in Jun-10 to 7.81% in Sep-10. Rate of growth for urban subscription increased marginally from 7.61% in QE Jun-10 to 7.62% in QE Sep-10 (refer Chart II)

Chart II
Composition of Telephone Subscribers



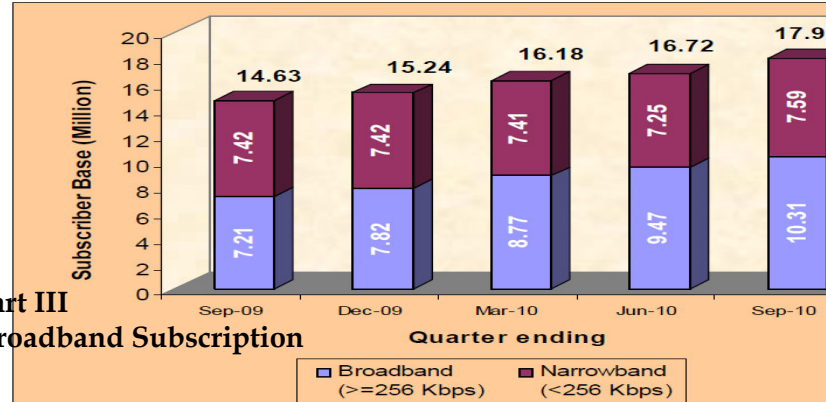
Source: TRAI Indian Telecom Services Performance Indicator Report

With 52.21 million net additions during the quarter, total wireless (GSM + CDMA) subscriber base registered a growth of 8.21% over the previous quarter and increased from 635.51 million at the end of Jun- 10 to 687.71 million at the end of Sep-10. The year-on-year (Y-O-Y) growth over the same quarter of last year is 45.79%. Wireless Teledensity reached 57.99. Wireline subscriber base further declined from 36.18 million at the end of Jun-10 to 35.57 million at the end of Sep-10, bringing down the wireline Teledensity from 3.06 in Jun-10 to 3.00 end of Sep-10. Internet subscribers increased from 16.72 million at the end of Jun-10 to 17.90 million at the end of Sep-10, registering a quarterly growth rate of 7.02%. Top 10 ISPs

together hold 95% of the total Internet subscriber base.

Number of Broadband subscribers increased from 9.47 million at the end of Jun-10 to 10.30 million at the end of Sep-10, registering a quarterly growth of 8.79% and Y-O-Y growth of 42.93%. The growth in the number of Broadband subscribers during the quarter and also on Y-O-Y basis is more or less similar to the

Chart III
Trends in Internet/ Broadband Subscription



Source: TRAI Indian Telecom Services Performance Indicator Report

Scenario of Growth of Urban & Rural Telephone Subscribers & Teledensity in 2011

India has the fastest growing telecom network in the world with its high population and development potential. Airtel, Idea, Reliance, BSNL, Aircel, Tata Indicom, Vodafone, MTNL, and Loop Mobile are other major operators in India. However, rural India still lacks strong infrastructure. India’s public sector telecom company BSNL is the 7th largest telecom company in world. The total number of telephone subscribers in the country stands at 861.48 million, while the total numbers of mobile phone subscribers has reached 826.93 million as of April 2011. In the wireless segment; 15.34 million subscribers were added in Apr 2011. The total wireless (GSM, CDMA & WLL (F) subscribers’ base is 826.93 million as of April 2011. The wire line segment subscriber base stood at 34.55 million

Indian telecom operators added a staggering 227.27 million wireless subscribers in the 12 months between Mar 2010 and Mar 2011 averaging at 18.94 million subscribers every month. To put this into perspective, China which currently possesses the world’s

largest telecommunications network added 119.2 million wireless subscribers during the same period (March 2010 - March 2011) - averaging 9.93 million subscribers every month (a little over half the number India was adding every month). So, while India might currently be second to China in the total number of mobile subscribers, India is adding nearly twice as many subscribers every month.

Mobile teledensity increased by almost 18.4 percentage points from Mar 2010 and Mar 2011 (49.60% to 67.98%) while wireline subscriber numbers fell by a modest 2.2 million. This frenetic pace of monthly subscriber additions means that the Indian mobile subscriber base has shown a year on year growth of 43.23%. According to recent reports, India was purported to overtake China to become the world’s largest mobile telecommunications market by the year 2013. (However recent trends indicate that the event may occur earlier - as early as October 2011) It was also predicted that by 2013, the teledensity will shoot up to 75% and the total mobile subscriber base would be a colossal 1.159 billion.

**Chart IV
Telecom Subscription Data Highlights as on 31st January 2011**

Particulars	Wireless	Wireline	Total Wireless + Wireline
Total Subscribers	771.18	34.94	806.13
Total Net Addition	18.99	-0.15	18.85
% of Monthly Growth	2.52%	-0.41%	2.39%
Urban Subscribers	512.26	26.13	538.38
Urban Subscribers Net Addition	10.96	-0.08	10.88
% of Monthly Growth	2.19%	-0.30%	2.06%
Rural Subscribers	258.93	8.82	267.74
Rural Subscribers Net Addition	8.03	-0.07	7.97
% of Monthly Growth	3.20%	-0.75%	3.07%
Teledensity	64.74	2.93	67.67
Urban Teledensity	143.36	7.31	150.67
Rural Teledensity	31.05	1.06	32.11
Share of Urban Subscriber	66.42%	74.77%	66.79%
Share of Rural Subscriber	33.58%	25.23%	33.21%

Source: TRAI Report

Indian Telecom subscriber count has reached 806.13 Million by end of January 2011. India added 18.99 Million new Mobile subscribers in January to take the total mobile subscriber count to 771.18 Million. According to the latest report released by Telecom Regulatory Authority of India (TRAI), India has 538.38 million Urban Subscribers while 267.74 million rural subscribers. The mobile growth in rural areas is higher at 3.07% as compared to urban which was about 2.06% in January. The share of Urban Subscriber has declined to 66.79% from 67% where as share of

Rural Subscribers has increased from 33% to 33.21%. With this, the overall Tele-density in India reaches 67.67 percent (refer Chart IV)

Present & Future Projected Investment in Telecom Sector (Xth- XIth Plan);

The Working Group on Telecommunications for the Eleventh Plan has projected public sector investment (through BSNL and MTNL) at Rs. 1,21,630 crore for the Eleventh Plan. The historical evolution of such expenditures in the Tenth Plan is given in **Table I**

Table I
Anticipated Public & Private Investment in Telecommunications in Xth Plan

(Rs. crore)						
Year	2002-03 (Actual)	2003-04 (Actual)	2004-05 (Actual) *	2005-06 (Actual) *	2006-07 (Actual)	Total X Plan (Anticipated)
Centre	15,690	8,649	9,508	7,957	7,208	49,013
Private	5,954	4,274	8,600	16,642	18,882	54,352
Total	21,644	12,924				

Source: The Secretariat for the Committee on

In light of the low public investment in the Tenth Plan and the declining capital costs of telecom equipment, the estimated public investment by the Working Group has been scaled down to Rs. 80,753 crore. It is also assumed that private investment will grow at

Year	2007-08	2008-09	2009-10
Public	13,525	14,037	16,061
Private	17,850	10,965	14,142
Total	31,375	25,002	30,203
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Private	17,850	10,965	14,142
Total	31,375	25,002	30,203

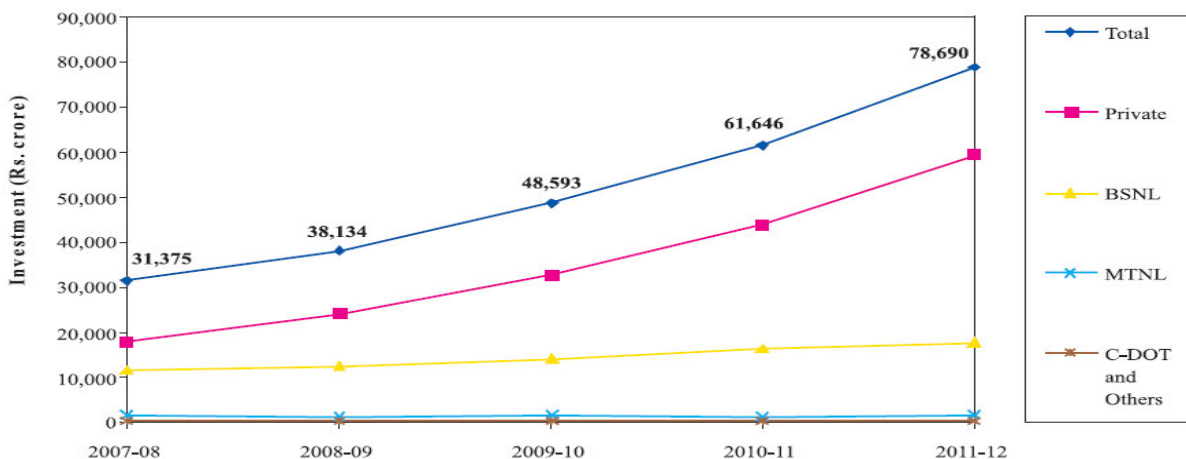
Table II
Projected Public & Private Investment in Telecommunications in XI th Plan

Source: The Secretariat for the Committee on Infrastructure, Planning Commission, GOI

the CSO in 2005-06 and 2006-07? Total private investment over the Eleventh Plan is projected at Rs. 1,77,686 crore. Thus, of the total investment of Rs. 2,58,439 crore or US\$ 64.61

billion in the sector during the Eleventh Plan, 68.75 per cent would come from the private sector and 31.25 per cent from the public sector (refer Chart V)

Chart V
Projected Investment in Telecommunications during the XIth Plan



Source: The Secretariat for the Committee on Infrastructure, Planning Commission, GOI

Government Incentives

The government has taken a number of policy initiatives to increase private participation and to bridge the gap between rural and urban teledensity in the country. Some of these initiatives are

Financial Incentives

- The Department of Telecommunication (DoT) announced to offer subsidy to select bidders for the installation of telecom towers in rural areas.
- The government has set up a Universal Service Obligation (USO) fund that provides subsidy for the installation of telecom towers in rural areas. The fund recently concluded the first phase of Mobile Infrastructure Project. Under this, about 7,500 towers were installed in 500 villages in 27 states. In the first phase, villages with population of over 2,000 were covered.
- In the second phase, the fund will provide mobile coverage to villages with



population of more than 500. Under this project, 10,000 towers would be installed within two years.

Incentives at Operational Level

The government has allowed infrastructure sharing (both active and passive) with a view that this will enable faster penetration of wireless telecom network in rural areas. Infrastructure sharing resulted in the reduction of cost, expansion of coverage and efficient utilisation of telecom infrastructure. According to industry sources, infrastructure sharing helps reduce the cost of telecom infrastructure by 25-30 percent, speed-up network roll outs and reduce carbon footprint.

Some Incentives offered to Telecom Equipment Companies

- 100-percent Foreign Direct Investment (FDI) permitted through automatic route
- Income and capital invested could be fully repatriated

- Telecom product-specific Special Economic Zones
- Export income of exporters exempt from income tax
- A five-year, 100-percent tax holiday and 30-percent tax in a block of 15 years
- Infrastructure telecom equipment exempted from customs duty

Investment Focus

In the short term, investments focus in telecom infrastructure can broadly be divided into two: investments in the expansion of telecom network in rural areas and investments in new technologies (3G, Wi-Max).

Investments in expansion of Telecom Network

Currently, increasing rural teledensity (about 18 percent teledensity covering about 70 percent of the country's population in rural areas) is high on the government's agenda. Various initiatives have been taken in this direction. However, efforts have fallen short due to various issues prevalent in such areas. One of such issues is the lack of proper power supply in rural areas.

- Power management solution providers see an opportunity here to provide solutions for power problems for base transceiver stations in rural areas.
- Various alternative energy solution providers are exploring ways to offer power solutions customised for applications in such areas.
- Active and passive infrastructure sharing is clearly the business model that industry players are opting for to expand their reach in rural areas for the next wave of growth.

Investments in new technologies

The auction of spectrum for new technologies (such as 3G and Wi-Max) is on the cards for the Indian telecom industry since

quite a long time now. As of December 2009, licences for these technologies were expected to be awarded in February 2010. With the advent of the 3G technology, there will be a need for high-quality value-added services. The government plans to allot the licence to four players initially.

Major Investments

The booming domestic telecom market has been attracting huge amounts of investment which is likely to accelerate with the entry of new players and launch of new services.

- Norway-based telecom operator Telenor has bought a 60 per cent stake in Unitech Wireless for US\$ 1.23 billion.
- BSNL, India's leading telecom company in revenue terms, will put in about US\$ 1.16 billion in its WiMax project.
- Vodafone Essar will invest US\$ 6 billion over the next three years in a bid to increase its mobile subscriber base from 40 million at present to over 100 million.
- Telecom operator Aircel, which launched GSM mobile services in Bangalore in February 2009, plans to invest US\$ 220.58 million over the next year to set up base stations across the state.
- The American Tower Corporation (ATC) has made an offer to acquire Aircel's tower business, which has about 12,000 towers.
- Reliance Communications has signed a telecom infrastructure sharing agreement with S Tel, a new telecom operator. The deal, which covers telecom towers, transmission and fibre backbone, will be executed by RCom through its tower subsidiary, Reliance Infratel.
- Bharti Airtel will invest US\$ 126.5 million to ramp up its networks in the Assam and Northeast circles in 2009-10.
- Etisalat DB Telecom India (erstwhile Swan Telecom) and Reliance Communications

have entered into a long-term passive infrastructure sharing agreement worth over US\$ 2.1 billion, spread over a period of ten years.

- Loop Mobile, formerly known as BPL

Mobile plans to invest around US\$ 75 million in its Mumbai operations.

Mergers & Acquisitions in the Indian Telecom Industry are shown in the **Table III** below.

Table III
Recent Mergers & Acquisitions in the Indian Telecom Industry:

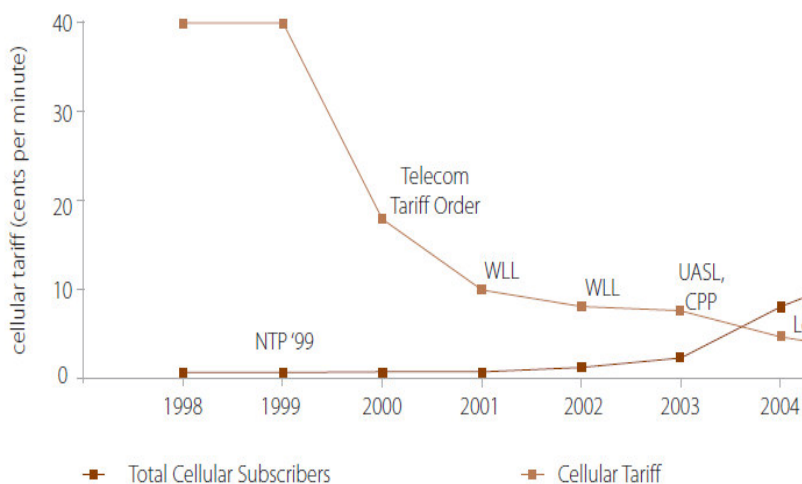
Recent Mergers & Acquisitions in the Indian Telecom Industry			
Maxis Communications – Aircel	Hutch – BPL Mobile	Vodafone – Hutchison Telecom International	Telekom Malaysia – Spice Communications
Maxis Communications acquired a 74-per cent stake in Aircel for US\$ 1.08 billion	Hutch acquired BPL Telecom for approximately US\$ 1 billion	Vodafone purchased a stake from Hong Kong's Hutchison Telecom International for US\$ 11.08 billion	Telekom Malaysia acquired a 49-per cent stake in Spice Communications for US\$ 179 million

Policy Initiatives by Government of India

At present, India is the third largest deregulated telecom market in the world. The Indian government has continuously laid

strong focus on the development of world-class telecom infrastructure and the industry has witnessed synchronous policy changes 1999 onwards as represented in the **Chart VI** below.

Chart VI
Impact of Policy Change on Indian Telecom Industry



Source: TRAI

Buoyed by this, the entry of numerous private players has triggered an improvement in the quality of services; a reduction in the tariff level across all segments and the development of infrastructure. Currently, private participation is permitted in all

segments of the telecom industry, including international long distance, domestic long distance, basic cellular, internet, radio paging, etc. The government has taken many proactive initiatives to facilitate the rapid growth of the Indian telecom industry.

- 100 per cent foreign direct investment (FDI) is permitted through the automatic route in telecom equipment manufacturing.
- FDI ceiling in telecom services has been raised to 74 per cent.
- Introduction of a unified access licensing regime for telecom services on a pan-India basis.
- Introduction of mobile number portability in a phased manner, starting in the fourth quarter of 2008.
- The government is implementing a program of connecting 66,822 uncovered villages under the Bharat Nirman program. The government will invest US\$ 2 billion to set up 112,000 community service centers in rural India to provide broadband connectivity in 2008-09.
- The Department of Telecommunications (DoT) has stated that foreign telecom companies can bid for 3G spectrum without partnering with Indian companies. Only after winning a bid, would they need to apply for unified access service licence (UASL) and partner with an Indian company in accordance with the FDI regulations.

Future Prospects

- Telecom is one of the priority sectors for infrastructure development in the country. The future prospects of the sector are bright, with huge potential yet to be tapped in rural areas where teledensity remains at close to 18 percent.
- In the second phase of the application of Universal Service Obligation Fund (USO) used to subsidise telecom projects in rural India where worth of funds are close to USD 5 billion—about 10,000 towers are to be installed in rural areas.
- Service providers are expected to focus on service quality for urban consumers in 2009-10. As 3G and Wi-Max get introduced,

many data-centric mobile service users may move to these. Further, the advent of 3G and MNP services will give a necessary impetus to innovation in value-added services (VAS) and associated ARPU.

- Recently, DoT permitted Mobile Virtual Network Operations (MVNO) in India. A licence fee of USD 18.5 million for an all-India roll-out of MVNO is expected.

The Role of Telecommunication in the Effective Implementation of the M-Government Initiatives of Government of India:

M-Government is defined as the strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, services, applications and devices for improving benefits for citizens, business and all government units. The rapid diffusion of mobile ICT gadgets such as laptops, mobile phones, PDAs, along with emails, instant messaging and other networking services have rapidly fuelled the mobilization of interaction



The M-Government thus appears as a powerful component of E-Government to facilitate the delivery of more and better services to citizens, in a customized manner and through several devices. The concept of m-Government, “mobile Government,” stands for the use of mobile wireless communication technology within government administration and in its delivery of services and information to citizens and firms. Mobile Government is

- Future Government that provides for citizens, companies and government to deliver personalized government services through wireless network,
- Multi-channel Government that overcomes current limitation of E-Government and supports mobility and accessibility and,
- Wired-Wireless Convergence Network that can access government service anytime and anywhere.

In advocating the existence and importance of mobile Government, there are two basic facts to be considered

- There are more people who do not have access to PCs than there are people who do not have a cell phone or other wireless device, which will make government and services available more to mobile customers as a group than to PC users, even as M-Government is considered a subset of e-Government, and
- Computers generally do not travel with citizens, but information and public services can: M-Government provides for instant availability of services and information, helping frequent travellers and people on the move to access government. When travelling overseas, citizens will not have to rely on unsafe internet cafes, as mobile coverage exists in vast majority of countries globally. Mobile Government also means that a citizen does not have to go and search for kiosks, or even get a connection to the house. People now carry a mobile Government access terminal with them wherever they go.

CONCLUSION

Indian Telecom sector, like any other industrial sector in the country, has gone through many phases of growth and diversification. Starting from telegraphic and telephonic systems in the 19th century, the field of telephonic communication has now expanded to make use of advanced technologies like GSM, CDMA, and WLL to the great 3G Technology in mobile phones. Day by day, both the Public Players and the Private Players are putting in their resources and efforts to improve the telecommunication technology so as to give the maximum to their customers.

India's telecommunications landscape has witnessed rapid growth over the last few years, as the regulatory climate has improved and private carriers have invested aggressively in

nationwide network deployments. Encouraged by the rapid surge in subscribers, India's telecom players have been making huge investments, India's leading telecom company (in revenue terms), will place some US\$1.2 billion in its WiMax deployment. The project entails establishing WiMax wireless broadband connectivity, mostly in urban areas, by this year, and there are also plans to develop 50,000 IT-enabled kiosks – dubbed common service centers (CSC) – nationwide, which will run on WiMax.

Under its Bharat Nirman Program, the government has also set a target to connect all villages with a village public telephone (VPT) by 2008. Connectivity with remote and far-flung villages, which number over 14,000 in the country, will be provided through digital satellite phone terminals. The government will also invest US\$2 billion to set up some 100,000 community service centers in rural India to provide broadband connectivity. India's rural market is going to be the next big thing for wireless service providers. With the tele-density in rural areas at less than 10 percent against the national average of about 21 percent, there seems to be huge untapped potential for mobile phone penetration in rural India.

To conclude Telecom Industry in India is out of its nascent stage and the government together with the private sector initiatives is on the path of making India the electronics manufacturing hub of the world. The advent of the digital age, coupled with India's large number of young and educated people who are fluent in English, are transforming India into an important global outsourcing destination for customer services and technical support.

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