
UNIT 24 TELECOM POLICY: A CASE STUDY OF INDIA

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24.0 LEARNING OUTCOME

After studying this Unit, you should be able to:

- Understand the reasons for great strides in growth and expansion of telecom sector in India;
- Describe the telecom policies in India;
- Analyse the telecom policies and their impact on the telecom sector; and
- Recommend suitable measures to boost the growth and development of the telecom sector.

24.1 INTRODUCTION

Telecommunication is vital for providing connectivity between producers and markets, clients and service providers, exporters and importers, government functionaries and citizens, public and private organisations. The telecom services have also been recognised as an important tool for socio-economic development. With economic liberalisation and the likelihood of large investments flowing into India, new demands of business have spurred many telecom-based technological innovations for competing in global markets.

Telecommunications is one of the fastest growing sectors in India. With 125 million telephone networks, including mobile phones; it is one of the largest networks in the world. However, telephone penetration rate continues to be low at 11.32 phones per hundred population. Major initiatives

undertaken to improve the system and telecom policy include the opening up of international long distance tariff, permitting internet telephony, setting up a mechanism for Universal Social Obligations, permitting a fourth operator in the cellular mobile segment, commissioning of National Internet Backbone, and providing Village Public Telephone Service in rural areas. Under the New Telecom Policy (NTP) private and public sector companies, operating in a competitive market, provide the telecom services.

In this Unit we will give an overview of the various organisations involved in the Indian telecom sector, and assess the policy initiatives of the government. Attempt will be made to discuss telecom policies and consequences of policy changes on policy implementation, response of organisations, and the level of success achieved. In view of the new telecom policy, we will discuss the key policy issues that still need to be resolved to fully achieve the objectives set out.

24.2 TELECOM SECTOR: BROAD POLICY FRAMEWORK AND STATUS

The Indian Telegraph Act 1885, and the Wireless Telegraph Act 1933 predominantly governed the telecom sector. These Acts had been modified several times. Earlier the telecom sector was a state monopoly. The Department of Telecommunications (DoT), under the Ministry of Communications, administered the telecom services. In this regard, planning, engineering, installation, maintenance, management, and operations of telecom services were managed by the DoT. This Department also lay down and monitored adherence to technical standards, and managed frequency usage.

At present, DoT is responsible for policy formulation, performance review, monitoring, international cooperation, research and development, and grant of licenses to operators for providing basic and value-added services as per approved policy of the government. The Department also allocates frequency and manages radio communications in close coordination with the international bodies. Apart from this, it is also responsible for enforcing wireless regulatory measures and monitoring the wireless transmission of all users in India. The following units cooperate, co-ordinate, and contribute in providing affordable and effective services to the customers.

DoT-Units

- Public Sector Units
 - Bharat Sanchar Nigam Limited (BSNL)
 - Indian Telephone Industries Limited (ITI)
 - Mahanagar Telephone Nigam Limited (MTNL)
 - Telecommunications Consultants India Limited (TCIL)
- Other Units
 - Wireless Planning & Coordination Wing (WPC)
 - Telecom Engineering Center (TEC)
 - Controller of Communication Accounts (CCA)
- R&D Unit
 - Center for Development of Telematics (C-Dot)

Earlier, telecom sector was characterised by outdated equipment, under-investment, and unfocused growth. Therefore, the government made efforts to revise the policy, regulation, and structure of the telecom sector. The main imperatives for reforms were the overall trend of economic liberalisation and the technological advances. In this regard, the DoT has been formulating developmental policies for the accelerated growth of telecommunication services in India.

Under the DoT, Telecom Consultants India Ltd. (TCIL) was incorporated on March 10, 1978. The TCIL has since then been engaged in adopting world-class communication and IT technologies for catering to the local needs of countries, mainly in the developing world. It is undertaking projects in all the fields of telecommunications and IT in India and abroad. The TCIL has also revitalised and restructured the IT Division from software development to take part in IT & Networking Projects and made this a thrust area of development. Its successful high-tech initiatives include E-Governance Network Local Area/Wide Area Network Projects, Telecom Support Systems, Value Added Services, Setting up of Cyber City, Call Centre, and Fibre To The Home (FTTH) and Broadband Networks.

The telecom sector has undergone a major process of transformation through significant policy reforms, especially beginning with the announcement of NTP 1994. Initially the process of expansion of the network was rather slow, being owned and managed by the Government.

By the early 1990s, the assumption that telecommunications is best run as a state-owned monopoly was challenged and telecom reforms began.

i) **First Phase – 1980-1990**

In India, telecom reforms began in the 1980s with the launch of a "Mission-Better Communication" programme. In 1984, private manufacturing of customer premise equipment was allowed and the C-DOT was established to initiate and manage research in the switching and transmission segments for the development of indigenous technologies. Subsequently, in 1985, the government bifurcated the Department of Post and Telegraph by setting up the Department of Posts and the Department of Telecommunications, which was an important step towards reforms.

The DoT was managing the telecom operations of the entire country, and private franchises were freely given for Public Call Offices (PCOs) that offered local, domestic, and international call services. Even then their approach towards acceptance and induction of new technologies with very little customer orientation was a major obstacle to the growth of telecom sector. As a result, to improve the system, MTNL and VSNL spun off in 1986 from the DoT. The MTNL took over the operation, maintenance, and development of telecom services for Delhi and Mumbai. The VSNL was set up with the objective to plan, operate, develop, and accelerate international telecom services in the country. These corporate organisations were created to allow decision-making, autonomy, and flexibility; and facilitate public borrowings, which began the process of corporatisation of services. However, policy formulation, regulation, and key decision areas remained with the DoT.

In 1989, a high-powered Telecom Commission was created with administrative and financial power of the government to formulate and regulate policy, and prepare the budget for the DoT. The Telecom Commission was setup by the Government of India (vide Regulation dated April 11, 1989). This Commission consists of a Chairman, four full-time members (ex-officio Secretaries to the Government of India in the DoT) with each one managing technology, production, services and finance; and four part-time members (Secretaries to the Govt. of India), that is, Secretary (Information Technology), Secretary (Finance), Secretary (Planning Commission), and Secretary (Industrial Policy and Promotion). The Telecom Commission is involved in policy formulation, review of performance, licensing, wireless spectrum management, administrative monitoring of PSUs, research, and development and standardisation/validation of equipment and international relations.

ii) **Second Phase – 1990-1997**

The early nineties phase of reforms commenced with the general liberalisation of the economy and announcement of a New Economic Policy (NEP) 1991.

In 1991, the telecom equipment manufacturing was delicensed, and in 1992 value-added services were declared open to the private sector. It followed radio paging, cellular mobile, and other value-added services, which were opened gradually to the private sector. In 1994, the National Telecom Policy (NTP) was announced. The major thrust was on universal service and qualitative improvement in telecom services and also, opening of private sector participation in basic telephone services.

Since 1995, there had been pressure from international organisations, such as, the WTO, to review the status of VSNL and the DoT's monopoly in long distance communication. VSNL continued to have monopoly over international telecom and broadcast transmission.

In the Eighth Five-Year Plan (1992-97), the government substantially increased the outlay for telecom sector. It included an investment of about telecom US \$6,000 million, increase of telephone lines from 5.2 million to 10.7 million, and extending the area of operations in terms of route-kilometres from 59,000 to 1,05,000. The government included Telecom as a part of technology mission, a set of dedicated, welfare-oriented, and well-focused programmes being implemented at the national level. Even then the government could not provide commensurate level of benefits due to the diversity in types of switching technology and transmission media. Moreover, meagre government investments on basic infrastructure for rural areas and on provision of integrated digital services network did not result in noteworthy improvements in the telecom sector.

In 1995, 65 per cent of the switching, and 45 per cent of the transmission media had been digitised. Future investments focused on further digitisation of the telecom network, satellite communication, fibre optics, and wireless in the local loop. The satellite programme had been fairly successful, with the development and launch of indigenous multi-purpose satellite systems. The Ministry of Communications, and the Information and Broadcasting used the satellites.

In 1997, legislation was enacted to set up a regulatory body, the Telecom Regulatory Authority of India (TRAI).

iii) **Third Phase — 1999 till date**

The most significant landmark in telecom reforms came with the New Telecom Policy, 1999 (NTP-99). The government recognised and accepted the importance of telecommunications as an important service for common man and an important variable in economic growth. Keeping these considerations in view, the following objectives were included in the Tenth Five-Year Plan:

- Provide affordable and effective communication facilities to all citizens.
- Make provision of universal service to all uncovered areas, including villages.
- Build a modern and efficient telecommunication infrastructure to meet the convergence of telecom, IT and the media.
- Transform the telecommunications sector to a greater competitive environment providing equal opportunities and level playing field for all the players.
- Strengthen R & D efforts.
- Achieve efficiency and transparency in spectrum management.
- Protect the defence and security interests of the country.
- Enable Indian companies to become truly global players.

The specific targets of the NTP-99 are as follows:

- Availability of telephone on demand by the year 2002 and sustain it thereafter so as to achieve a tele-density of 7 by the year 2005 and 15 by 2010.
- Encourage the development of telecom in villages, making it more affordable by suitable tariff structure and making rural communications mandatory for all free service providers.

Increase rural tele-density from the current level of 0.4 per cent to 4 per cent by 2010 and provide reliable transmission media in all rural areas.

Achieve telecom coverage of all villages and provide reliable media to all exchanges by 2002.

- Provide Internet access to all District Headquarters in the country,
- e Provide by 2002 high-speed data and multimedia capability using technologies including ISDN, to all towns with a population greater than two lakh.

Recognising the potential of ubiquitous broadband service in growth of GDP, and enhancement of quality of life (the government have finalised a policy) to accelerate the growth of broadband service. It enhances quality of life through societal applications including tele-education, tele-medicine, e-governance, entertainment as well as employment generation by way of high-speed access to information and web-based communication. The government's Broadband policy is based on recognition of the need to provide effective and affordable broadband facility to the customers.

Broadband Policy 2004: Policy Framework

The Broadband policy framework visualises creation of infrastructure through various access technologies that can contribute to growth and can mutually co-exist. Spread of infrastructure is also necessary for healthy competition. Various access technologies include Optical Fibre Technologies, Digital Subscriber Lines (DSL) on Copper loop, Cable TV Network, Satellite Media, Terrestrial Wireless, and Future Technologies, new options may be used for provisioning of broadband services in the changing scenario. Most important is the acceleration of Internet use due to broadband.

Quality of Service (QoS)

- As per TRAI Act, 1997, the TRAI has to prescribe QoS parameters. Therefore, keeping in view the impact of QoS on investment and rollout decisions of operators, TRAI will prescribe the QoS parameters.

Simplification of SACFA/WPC clearance

A transparent scheme is outlined separately for time-bound frequency allocation, siting clearance and wireless licensing by removing the cumbersome procedures, computerisation and by setting predetermined standards.

Role of other Agencies

The policy highlights that the broadband services will accelerate decentralised governance at panchayat level. In this regard, to carry the advantage of these services to users, role of other facilitators like electricity authority, Department of IT of various state governments, Departments of Local Self-Government, Panchayats, Department of Health and Family Welfare and Department of Education is very important.

Fiscal Issues

The DoT assigns a very high priority to indigenous manufacture of broadband related equipments. To provide equipments at an affordable price, the DoT works closely with the concerned Ministries and Manufacturers' Associations.

The major policy initiatives in the important areas, such as, reduction of call charges, waiver of mandatory rollout obligations, accession of subscribers, and FDI, as on Jan 1st, 2006, are described in the following table.

Table 24.1 : Telecom Policy: Major Initiatives

	Area	Policy Initiatives
1.	Reduction in calls charges.	● BSNL announced 33% reduction in international call charges across the board.
2.	Reduction in Annual license fee w.e.f. January 1, 2006.	● Annual license fee for NLD as well as ILD licenses reduced to 6% of Adjusted Gross Revenue.
3.	Reduction in entry fee for NLD licenses.	● Entry fee reduced to Rs. 2.5 crore from Rs. 100 crore prospectively.
4.	Reduction in entry fee for ILD.	● Entry fee reduced to Rs. 2.5 crore from Rs. 25 crore.
5.	Permission to carry intra-circle traffic.	● NLD service provider shall be permitted to carry intra circle traffic with mutual agreement of originating service provider. Here, agreement with terminating service provider is not required.
6.	Waiving of mandatory rollout Obligations for NLD licenses liberalised.	● Mandatory roll out obligations for future NLD licenses as well as existing NLD licenses waived off,
7.	Mandatory rollout obligations for ILD service licenses.	○ No more mandatory roll out obligation except for having at least one switch in India. For existing ILD service license, roll out obligations stand waived from the date of issue of orders.
8.	Networth and paid-up capital of the applicant company.	○ For NLD as well as ILD service license charge is reduced Rs. 2.5 crore only and while counting the networth, the networth of promoters shall not be counted.
9.	Accession of subscribers	● NLD service providers can access the subscribers directly for provision of leased circuits / closed user groups, and can provide last mile connectivity. ○ ILD service providers can access the subscribers directly only for provision of leased circuits/ closed user groups.
10.	Non-issuance of IP-II and IP VPN licenses.	● No more IP II and IPVPN licenses to be issued with immediate effect as these licenses are allowed to migrate to NLD/ILD service license.
11.	License fee for Internet Service Provider (ISP).	● ISP with internet telephony (restricted) to be charged licence fee at 6% of AGR w.e.f. January 1, 2006.
12.	Annual license fee-VSAT	● Annual license fee in respect of VSAT commercial to be charged at 6% of AGR w.e.f. January 1, 2006.
13.	Foreign Direct Investment (FDI) in Telecom Sector liberalised.	● FDI ceilings raised from 49% to 74%. ● 100% FDI is permitted in the area of telecom equipment manufacturing and provision of IT enabled services.

Source: Ministry of Finance, Economic Division, Government of India.

24.3 TELECOM POLICY: CHANGES AND THEIR IMPACT

In this section, we will concentrate on growth of telecom sector and the important issues in telecom policy, such as, role of the private sector, share of mobile phones, rural telephony, broadband connectivity, spectrum management, foreign direct investment, research & development, validation and standardisation, tariff rebalancing measures, and international cooperation.

The drivers of telecom growth, as presented in the following table (24.2), have undergone a significant change in terms of mobile versus fixed phones, as well as public versus private service providers. It is evident from the data that the shares of mobile phones and the private sector increased from about 6.28 million (2001-02) to about 61.60 million (December 2005), that is, about ten-fold increase. In recent years, with lower capital expenses of mobile technology, it has become the technology of low priced telephony.

Table 24.2 : Growth of Telephones

Sl. No.	Year	Fixed (in Million)			Per cent of PSUs	Mobile (including WLL), in million			Per cent of PSUs
		PSUs	Pvt.	Total		PSUs	Pvt.	Total	
1	2001-02	37.90	0.52	38.42	98.65	0.26	6.28	6.54	3.98
2	2002-03	40.53	1.10	41.63	97.36	2.64	10.35	12.99	20.32
3	2003-04	40.49	2.36	42.85	94.49	5.99	27.70	33.69	17.78
4	2004-05	41.11	5.69	46.20	88.98	10.97	41.20	52.17	21.03
5	2005-06*	40.70	7.01	47.71	85.31	16.48	61.60	78.08	21.11

* first nine months of 2005-2006.

Source: Ministry of finance, Economic Division, Government of India

Table 24.2 presents data about the significant growth in the number of telephones from April 2001 to December 2005. It is evident that the PSUs, that is, BSNL and MTNL, have been losing their market share in fixed telephony. The PSUs have shown a decreasing trend, in this sphere as is clear from the data. The share of PSUs in 2001-02 was 98.65 per cent, which decreased to 85.31 per cent by December 2005. However, the number of fixed phones in the private sector increased from .052 (2001-02) to 7.01 (December 2005), which is almost a fourteen times increase. Data presented above also shows that the public sector operators have improved their share in mobile telephony from 3.98 per cent to 21.11 per cent of the market. While the public sector was slow to take off in mobile telephony, the private operators had an aggressive start and kept up their vibrant marketing strategies, capturing nearly four-fifth of this market by the end of 2005.

The Economic Survey of India has applauded telecom companies (public and private) for increasing the teledensity from 2.32 per cent in 1999 to 11.32 per cent by 2005. In addition, significant growth has been identified in broadband service, that is, from about 49,000 subscribers in 2004 to about 7.5 lakh subscribers by the end of 2005 (HT Business, February 28, 2006).

First Nine Months of 2005-06

Under the NTP with the provision of affordable and effective communication as its vision and goal, the telecom sector has grown a lot in recent years. As mentioned above, with rapid growth, teledensity level has surpassed the targets set. The data reflects that the total number of telephones

(basic and mobile) rose from 44.96 million during 2001-02 to more than 125.79 million by December 2005. However, 21.83 million telephones were added during 2004-05, and another 27.47 million during the first nine months of 2005-06. With the introduction of mobile connection with free incoming lifetime packages during December 2005-February 2006 there has been an unprecedented acceleration of this trend.

The government had initiated several policy changes to provide accelerated growth in infrastructure and services; improve service conditions; and provide autonomy, flexibility, and competitiveness within the telecom sector. The policy changes were initiated mainly in restructuring the telecom sector, increasing investments, service provision, and technology development and transfer. In the following sub-section, we will review the policy changes and assess their impact on the telecom sector.

24.3.1 Telecom Sector: Restructuring

The focus of policy makers on restructuring had been on the organisational form and not so much on identifying the mechanisms for acquisition of new core capabilities, appropriate incentives, and appropriate working conditions in which change could take place. However, major issues such as, management of unions and retraining of the staff to orient itself to a more competitive environment were neglected.

The setting up of the TRAI in 1997 separated the regulatory function from DoT. However, policy-making and operations continued to be with the latter. The government's approach to organisational reform had been ad-hoc, which was driven primarily by increasing pressures from the private operators, but not as a pro-active agenda in an overall plan of reform. The government had not addressed adequately the basic requirements necessary for reform, as there was no pre-planned sequence of structural changes, which are the basic determinants of effective reform. Therefore, the various stakeholders, such as, the government, investors and subscribers could expect only marginal benefits, and that too at a slow pace from the reform process.

24.3.2 Telecom Policy: Increasing Role of Private Sector

The private sector has continued to play a significant role in the growth of the telecom sector. Key driver for change in this sector was the NTP (1994), which paved the way for private sector participation in telecom services. In the process of liberalisation, inter-circle communication remained under the DoT. VSNL maintained an exclusive license for international services until 2004. Advanced communication services, such as, cellular, paging, e-mail, fax, data transmission over telephone, and leased circuits were increasingly being made available by private operators. However, adoption of Electronic Data Interchange standards had not made the desired progress due to the problems in long distance communication; and lack of coordination and clarity in policies in the departments, which were involved in implementation. After the NTP 1999, situation of the private sector has changed a lot. The share of private sector in the total telephone connections has increased. It is to be noted that out of the 163.52 lakh additional phone connections provided during 2004-05, 125.87 lakh connections (about 77 per cent) were provided by the private sector. (Vide table 24.2).

24.3.3 Telecom Policy: Investment in Telecom Sector

1) Increasing Investment

The entire budgetary provision of Rs. 1814.58 crore allocated for the year 2002-03 (Rs. 300 crore), 2003-04 (Rs. 200 crore), 2004-05 (Rs. 1314.58 crore), and 2005-06 (Rs. 1766.85

crore) was fully utilised (Hindustan Times, May 2, 2006). Though the government investment in this sector had steadily increased, telecom's share of investment in the economy remained more or less steady at an average of 2.81 per cent until 1985. Although the budgeted share of investment for 1992-97 showed a sharp increase to 5.8 per cent, it was far less than what other developing countries were investing in the infrastructure at that time. However, in the Tenth Five-Year Plan the share of telecom sector was increased to 6.5 per cent. Data on outlays for the telecom sector from the first to the tenth plan is presented in the following table.

Table 24.3 : Share of Telecom Sector

Five-Year Plan	Period	Total Outlays Actual (Rs. in crore)	Communication Outlay	Percent of Total Plan Outlay
First Plan	1951-56	1,960	47	2.4
Second Plan	1956-61	4,672	66	1.4
Third Plan	1961-66	8,577	164	1.9
Annual Plan	1966-69	6,624	159	2.4
Fourth Plan	1969-74	15,779	415	2.6
Fifth Plan	1974-78	28,653	781	2.7
Annual Plan	1978-80	22,950	519	2.3
Sixth Plan	1980-85	1,09,646	2,722	2.5
Seventh Plan	1985-90	2,25,010	8,123	3.6
Annual Plan	1990-91	61,518	3,040	4.9
Annual Plan	1991-92	65,856	3,632	5.5
Eighth Plan	1992-97	4,34,100	25,110	5.8
Ninth Plan*	1997-2002	8,59,200	47,280	5.5
Tenth Plan	2002-2007	15,25,639	98,968	6.5

* Outlay of Communications for the Ninth Plan also includes Rs. 300 crore for Information Technology.

Source: DoT, Ministry of Communication & IT, Government of India.

There were a number of restrictions for raising finances for the telecom sector until 1984. Subsequently, the government removed some of these constraints and allowed MTNL, and VSNL to raise funds by issuing low interest tax-free bonds. VSNL became the first public sector undertaking to offload its equity, in 1997, in the international market. The government had also recognised the role of increased investments, which had been reflected in its bidding guidelines both for basic and VAS, where it mandated foreign financial support.

ii) Foreign Direct Investment (FDI)

One of the significant sources of the substantial financial investment required for the growth of teledensity has been FDI. In the case of FDI, during 1991 (August) to 2004 (September) 930 proposals of FDI of Rs. 41,369.11 crore were approved, which is second only to Power & Oil Refinery sector. However, after 2001 FDI inflow into the telecom sector improved substantially. The Government is reformulating telecom guidelines.

In view of the Government's commitment to liberalise, the FDI ceiling in the telecom sector was enhanced, in November 2005, from 49 per cent to 74 per cent in certain areas like basic, cellular,

unified access services, national/international long distance, Very Small Aperture Terminal (VSAT) Public Mobile Radio Trunk Services (PMRTS), Global Mobile Personal Communication Services (GMPCS) and other value-added services. Here, 74 per cent FDI ceiling includes direct and indirect foreign holding in the company concerned.

24.3.4 Telecom Policy: Technology Transfer and Development

India had attempted to follow a policy of self-reliance in the manufacture of telecom products through indigenisation. However, in the wake of liberalisation, the DoT attempted to introduce some advanced technology both by indigenisation and by seeking foreign collaborators. Import of technology was also linked to the requirement of phased indigenisation. India's indigenisation programme in the switching segment carried out by C-DOT was successful in the introduction of rural exchanges.

i) Telecom Equipment and Systems: Research and Development, Validation and Standardisations

The Centre for Development of Telematics (C-DOT) has been engaged in indigenous research and development of telecom equipment systems. The Centre has developed a wide range of switching and transmission products for rural and urban applications. The C-DOT has also developed main, medium and small automatic exchanges, an integrated Time Division Multiple Access-Point to Multi-Point (TDMA-PMP) for serving 256 subscribers sparsely distributed within a radius of 20 Km.

Recourse to upgraded technology enabled the manufacturers to increase production capacity to seven million lines per annum. The C-DOT extends pro-active support for the operation and maintenance of its products. Its small capacity RAX & C-DOT SBM RAX has also been exported to a number of countries in Europe, Asia and Africa. It is also committed to safeguard the investments made by telecom service providers in technology by upgrading the existing systems with the latest features.

In September 2005, C-DOT formed a joint venture with Alcatel to form C-DOT Alcatel Research Center, which is working on broadband wireless solutions. It is developing WIMAX technology suitable for rural areas in India (Gairola, April 2006).

The National Internet Exchange (NIXI) has been set up by the DoT to ensure that Internet traffic originating and destined for India, is routed within India only. The Telecom Engineering Centre (TEC) is devoted to the product validations and standardisation for the user agencies, and provides technical support to Telecom Commission and the field units. The Indian Telephone Industries Limited (ITIL) manufactures telecom equipment, and offers customised telecom solutions and support to customers.

ii) Spectrum Management

Radio frequency spectrum has become an essential ingredient in modern telecommunication with its emphasis on mobility; and the Government of India has adopted a technology-neutral policy in the telecom sector. Serious efforts are being made to introduce newly emerging radiocommunication technologies, without unduly constraining the other existing operations. The policies on allocation of spectrum are critical to the future of the telecom industry. Although the allotment of spectrum is being managed in an objective and transparent manner, the service providers and other wireless users along with the manufacturers need to play a more constructive and disciplined role in mutual understanding and cooperation. There has been an on-going process of addressing bottlenecks in spectrum availability. Automated spectrum management system in India commenced from January

2005. Efforts are being made to get the spectrum required for public telecom services by its release from other existing users. For spectrum management, and augmenting the wireless monitoring systems a World Bank Project is being implemented with an outlay of Rs. 200 crore.'

24.3.5 Telecom Policy: Service Provision

In the earlier phase, basic service provision in most areas was poor. Until 1998, private basic service was available in Madhya Pradesh only. Service provision has been receiving considerable attention in the PSUs as well. A network of 76,000 Public Tele-Info Centres (PTICs) and 5,000 High Speed PTICs is being taken up as part of service provision, especially in the rural areas. Further, 1.84 Lakh Multi Access Radio Relay (MARR)-based VPIs will be replaced. In this context, 50 per cent of such VPIs have already been replaced and the remainder will be replaced during 2006.

i) Data Communication Services

First public data communication network, INDONET was started in 1985 in India by CMC Ltd., which is a public sector computer organisation. However, it could not achieve the desired objectives due to poor service quality and lack of revenues for expansion. Since 1992, the DoT owned and operated data communication network I-NET, which initially linked up eight metropolitan cities in India through 9.6 kbps and 64 kbps data links. However, there were delays in service provision and often the quality of service was poor, resulting in poor growth of network.

National Informatics Centre (NIC), a government agency, had set up a nation-wide network, NICNET, using VSATs for various government and semi-government organisations. NIC has also provided system design and implementation support. In most cases, the system was basically used for generating fixed format reports. There was little flexibility in querying or report generation. Since mid nineties. An educational network, ERNET, set up in the mid-nineties by Department of Electronics with funding from the UNDP, linked up several universities, research and educational institutes and had been successful in providing e-mail, internet connectivity and other network services. However, its services are not generally available to commercial organisations. Although the DoT allowed private VSAT provision, and tariffs were regulated by it, The DoT did not allow leased private networks or VSAT-based networks to be connected to the public switched network.

ii) Increasing role of Mobile Service

In May 1991, the government announced its intention to award licenses to private operators for providing cellular phones in the four metro cities of New Delhi, Calcutta, Bombay, and Chennai, and paging services in 27 cities across India. Cellular services were viewed as a lucrative segment by private entrepreneurs, and as such there was an enthusiastic response for bids. Despite the initial legal hurdles, by 1997, cellular services were well established in metropolitan cities and several other cities.

iii) Rural Telephony

The government encouraged new emerging technologies including local loop wireless, cellular telephony and satellite based communication systems that could help to develop rural telecom in a cost effective manner. As many as 5,39,572 villages were connected by December 2005, using a Village Public Telephone (VPT). The government plans to provide connectivity to 14,183 remote and far-flung villages using digital satellite phone terminals. Despite the increase of villages connected by phone, rural connectivity is also an important concern. It is expected that the pace of work in this sphere would considerably accelerate with provision of adequate funds and broadband networking in the rural and remote areas.

Under the Bharat Nirman Programme, 66,822 revenue villages in thirteen states, that is, Andhra Pradesh, Assam, Jharkhand, Gujarat, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Chhattisgarh, Maharashtra, North East, Orissa, Rajasthan, and Uttaranchal (Hindustan Times, May 2, 2006) are expected to be covered by VPT by 2007. As against this target 17,182 villages have been covered. In villages, more than 2 lakh Public Call Offices (PCOs) and 14.18 million phones have been provided.

Telecom technology has also pioneered programmes of tele-medicine in India. A new Wi-Fi wireless technology allows eye specialists in Arvind Eye Hospital at Theni, Tamil Nadu, to examine patients in five selected villages through video-conferencing. This project has been so successful that now there is a plan to take it to five more hospitals that will connect 36 clinics, to cater to half-a-million patients each year (Rajendran, June 2006).

iv) **Broadband Connectivity**

In October 2004, the Government announced the Broadband policy. The main emphasis in this policy is on the creation of infrastructure through various technologies that can contribute to the growth of broadband services. New technologies have been utilised for this purpose. Response to provision of broadband services has exceeded all expectations.

The cost of broadband services has already decreased due to increase in volume and competition. Internet bandwidth will become cheaper to the extent that domestic traffic is switched within India and servers accessed by Indian users are located within the country. With a view to encourage connectivity, both outdoor & indoor usage of low power Wi-Fi and Wi-Max systems in 2.4 GHz – 2.4835 GHz band, and low power indoor systems in 5.15– 5.35 GHz and 5.725–5.875 GHz bands have been delicensed.

v) **Telecom Tariff: Tariff Rebalancing Measures**

The policy initiatives by government resulted in substantial decline in tariffs. A dramatic fall in telecom tariffs has been seen due to increased competition. The public sector operators have launched the 'One-India Plan' with effect from March 1, 2006. The new tariff structure eliminates the difference between intranet work calls and inter-network calls for the purpose of call charges. The TRAI planned to facilitate service provision by ensuring that equitable and fair interconnect agreements were worked out and implemented, and also planned to define and monitor the quality of service parameters.

vi) **International Cooperation**

For promoting international co-operation in the field of telecom and IT serious efforts are being made. With assistance of Canadian International Development Agency (CIDA) the Telecom Operation Project covering 33 villages in Madhya Pradesh was completed during 2004-05. The major investors in the services sector are Hutchison, Singtel, AT&T and Distcom. In this regard, Telecom major Vodaphone has announced its entry into the sector with acquisition of 10 per cent shares in Bharti Televentures for a consideration of Rs. 6,700 crore. The agenda for having world renowned Telecom and IT companies set up their R&D / manufacturing base in India has been to ensure timely delivery, high quality, cost effective supplies and reliable after-sale services. One major advantage of FDI is that it also brings in new technologies into the field,

vii) **Software Exports**

To facilitate software exports, which has been a thrust area identified by the government, the exporters were allowed to set up satellite communication at 64 kbps from Software Technology

Parks set up in selected locations in the four metros and in Bangalore, Pune, Hyderabad, and several other cities. In these parks, other infrastructure facilities, such as, buildings, and electricity were made available easily. Previously, such high-speed data links were not available. Procedures for establishing high-speed data links for software export have been simplified by dovetailing and coordinating the activities of various telecom organisations.

24.4 TELECOM POLICY: FINDINGS AND SUGGESTIONS

The following aspects of telecom policy need serious and joint efforts to improve the effective functioning of the telecom sector.

24.4.1 Telecom Sector: Need Assessment and Model Building

There is an urgent need to assess the demand for telecom services under a variety of assumptions, governing delivery of such services. In this context, appropriate models need to be developed, which could be drawn from the successful experiences of other countries.

It is evident that India's 125 million-strong telephone network, including mobile phones, is one of the largest in the world. Even then the telephone penetration rate continues to be low at about 11.32 phones per hundred populations (Economic Survey, 2005-06). However, there are vast avenues for growth, and the end of 2007 targets the total numbers of phones to reach 250 million. In this regard, major policy initiatives in the telecom sector are highlighted in table 24.1. The telecom sector in India needs whole-hearted attempts to fulfil the demand for a variety of telecom services under a variety of scenarios of competition, pricing, and network expansion. In this context, government support and political will are required for implementing reforms; attaining the desired objectives; and developing robust models for forecasting the demand in telecom sector for subsequent planning of how these services can be delivered effectively. An in-depth analysis of need and clarity on required type of telecommunications infrastructure will contribute in estimating delivery mechanisms and the required resources. In addition, public debate on sensitive issues will also contribute to transparency in policy-making and effective implementation of policies.

24.4.2 Issues in Financing: Increasing Investments

Government policies on pricing, revenue sharing, competition, financial arrangements, and tax regimen influence the rate of return of a private investor. In this regard successful experiences of other countries, which had raised finances, need to be explored by policy-makers to raise capital, and provide management incentives to improve the overall functioning of the organisation. Urban tele-densities may reach international averages, in case the constraints on availability are overcome and prices are kept low through investment and competition.

New products and ways of providing telecom services are emerging with rapid research and development in telecom technology. Therefore, there is a need to develop an accurate mode to evaluate the proper utilisation of investments, operating costs, quality, and accessibility. As India expects to spend a large amount on telecommunications infrastructure, therefore, efforts should be made to develop appropriate skills as well as to provide adequate resources for technology development,

In telecom sector, the investors can hope to get returns only in the long run. There is a need to build models, which will factor-in all the market uncertainties and policy implications to calculate returns on investments. In addition, new personnel should be trained and proper training of existing personnel is necessary to manage the finances and expansion of the telecom network.

24.4.3 Technology Transfer and Development: Policy Issues

Serious efforts and capabilities are required to introduce innovative approaches in the field of technology and development. Smart phones should be made available at affordable prices, which can handle e-mail, instant messages, web pages and data.

There is an urgent need to harness technical expertise within an institutional framework, which is dominated by generalist bureaucrats, and establish sustainable and responsive high tech organisations; review the policies on pricing of leased lines, availability of leased lines, and limitations on interconnection amongst different networks of service providers; and strengthen data communication infrastructure, and make it user-friendly.

C-DOT can do wonders in R & D activities. In the area of communication technologies, C-DOT and Bell Labs (the research and development arm of Lucent Technologies) should be encouraged to work together in the field of new generation communication technologies.

24.4.4 Service Provision: Delivery Mechanism and Regulation

The next important dimension of telecom policy would relate to the nature of institutional infrastructure to augment telecom services, and subsequently deliver these services. In case of private operators, the government must ensure that their conditions for service provision are based on sound commercial principles while at the same time ensuring optimal service to customers.

The government needs to ensure that all the Indian users have easy access to the latest technology, as often such technology is cheaper and better than the existing one. To improve and provide desired services, training programmes should be organised for DoT officials to enable them to understand the fact that demand can be created through better service, which adds value. In this way DoT officials should be prepared to view their business from the consumer perspective,

PCs, content and applications are important constituents for overall growth of Internet and broadband services in India. It is to be noted that the broadband services will have the potential to transform the rural areas if various governmental agencies, local authorities, NGOs and the private sector pull together in working out appropriate strategies.

Telecom Policy: Implications

As India is moving from a closed economy to a competitive economy, intensive monitoring, detailed implementation plans, and guidelines to ensure fair access to the network need to be designed systematically in the planning process. However, the rural densities need to be projected after careful analysis of existing demand patterns.

A well-defined strategy is crucial to implement telecom policies in an efficient and effective manner. A long-term policy for training and educating the workforce in technical and managerial aspects, software design and maintenance, and service development has to be addressed properly in the telecom policy. The approach to corporatisation needs to be carefully worked out to achieve the desired goals. However, policy-making committees must consist of professionals from a wide range of fields to strengthen the analytical component of telecom policy design, and implementation.

To achieve desired goals the telecom sector needs easy access to capital, skilled manpower and new technologies. In this regard, funds from various sources, either through partial or full privatisation, will have to be obtained for hefty investments on a continuing basis.

To meet the competition with private agencies, introduction of new products and service innovation should be enhanced in the basic and value added services and manufacturing by DoT. In addition, to maintain efficiency and profitability in the changing scenario, policy, especially in marketing,

usage and ownership of datacom channels and other telecom services needs to be improved continuously.

In the policy-making strategy, a coherent technology transfer policy can play a positive coordinating role between foreign collaborators and internal R&D units in technical development. It will ensure availability of latest technology at reasonable prices. In this regard, the Telecom Commission must work as an enabler and catalyst in the change process.

India witnessed a silent revolution in the telecom sector in less than a decade. The monopoly of the public sector was dismantled, and the outcome of the policy change led to highly beneficial results. This had very few parallels in other sectors in which liberalisation and privatisation have been ushered. The private players in the telecom sector displayed unusual dynamism and pumped in significant investments. The efforts of the government and that of the private sector found a great deal of congruence in advancing the interests of the customers. TRAI has also been playing its role as a regulator in a befitting manner by promoting competition among service providers in the interests of the consumers of service.

24.5 CONCLUSION

In this Unit, the first part emphasised the telecom policies in India. It dealt with reforms in telecom sector through telecom policies, especially NTP 1994, NTP 1999 and Broadband Policy 2004. NTP 1999 modified the provisions of NTP 1994 to take into account the far-reaching technological developments taking place in the telecom sector globally and to implement the government's resolution to make India a global IT superpower. The underlying theme of this policy was to usher in full competition through unrestricted entry of private players in all service sectors. As a result of implementation of telecom policies the telecom sector has been witnessing a mazing change, in terms of coverage and efficiency of services offered.

The second part of the Unit analysed the changes introduced since 1999, and their impact on the telecom sector. The impact of telecom policies and functioning of DoT was assessed in terms of telecom penetration. The data reveals that about 10 per cent of citizens own wireless phones in India. However; the mobile subscriber base crossed the landmark figure of 10 crore in May 2006. According to the TRAI report, which was released in January 2006, India added more than 4.5 million subscribers each month. In addition, there are about 5 crore landline connections in India, resulting in a total telecom penetration level of about 15 per cent. (Sharma, June 2006)

Last but not least, third part of the Unit attempted to assess the current and future scenarios and suggested policy changes and other measures to improve the telecom sector, especially to achieve the desired objectives through effective policy planning and implementation.

24.6 KEY CONCEPTS

Access Network : It is a wireless or wire line network that provides direct connectivity to a corporate building or for an enduser's house from the service provider's system. Thus, it provides direct link to any part of the country through the backbone network of the operator(s).

ADSL : An ADSL MODEM is a Broadband Internet access device, which utilises the high frequency segment of the phone line to transmit high-speed data without affecting the voice transmission. It is to be noted that the frequency of the ADSL signal is higher than that of voice, so voice and ADSL signal can co-exist in one line by using splitter to insulate each from the other.

- Broadband** : In telecommunications broadband refers to a signal or circuit, which includes or handles a relatively wide range of frequencies. It is a relative term, understood according to its context. In data communications, a modem will transmit a bandwidth of 64 Kilobits per second (Kbit/S) over a telephone line; over the same telephonenumber a bandwidth of several megabits per second can be handled by ADSL, which is described as broadband.
- Broadband Connectivity** : It has been defined as "Always on" with minimum speed of 256 Kbps.
- Spectrum** : It is a scarce natural resource, which needs to be allocated in ways that maximise its economic value. The recent trend in telecommunications is towards mobility, for which radio frequency spectrum is one of the essential ingredients.
- Teledensity** : It is the number of landline telephones in use for every 100 individuals living within an area. A teledensity greater than 100 means there are more telephones than people in the specified area.

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24.8 ACTIVITIES

- 1) "The two Public Sector Undertakings, that is, BSNL and MTNL, have been losing their market shares in fixed telephony." Explain the above statement on the basis of your study and observation.
- 2) Critically evaluate the impact of Bharat Nirman Yojana, especially in the context of rural telephony. Cite examples of social and economic impact of 11011-availability of telecom services in a particular rural area.
- 3) Explain the factors behind the significant growth in broadband connectivity within a short time.
- 4) Review the telecom policies, and highlight the effects of privatisation on increase in operational efficiency.