Telecom Sector Profile

1. Background

Indian telecom is more than 160 years old, beginning with the commissioning of the first telegraph line between Kolkata and Diamond Harbour in 1839. In 1948, India had only 0.1 million telephone connections with a telephone density of about 0.02 telephone per hundred population. By 30 September 2005, there were 113.39 million telephone connections in the country with a telephone density of 10.24 telephones per hundred population.

Various administrative and functional aspects of the telecom sector in India are discussed below:

2. Administration and Control

The Telecom Commission, set up in April 1989, has the administrative and financial powers of the Government of India to deal with the various aspects of telecommunications. The Commission and the Department of Telecommunications (DoT) are responsible, *inter alia*, for policy formulation, licensing, wireless spectrum management, administrative monitoring of the Public Sector Undertakings (PSUs) engaged in telecommunication services, research and development, and standardization/validation of equipment.

3. Telecom Reforms

Telecom services and most of the manufacturing activities related to the sector were totally under the Government domain till telecom reforms began in the 1980s with the launch of the "Mission Better Communication" Programme. Private manufacturing of equipment for customers' use was allowed in 1984 and the Centre for Development of Telematics (C-DOT) was established for the development of indigenous technologies. Two large corporate entities were spun off from DoT, viz, the Mahanagar Telephone Nigam Limited (MTNL) in February 1986 for Delhi and Mumbai and the Videsh Sanchar Nigam Limited (VSNL) in March 1986 for all international services.

As a part of the continuing process of telecom reforms and in pursuance of the New Telecom Policy 1999 (NTP-99), the Department of Telecom Services (DTS) and the Department of Telecom Operations (DTO) were carved out from DoT in October 1999 for providing telecommunication services in the country. DTS and DTO were finally corporatised into a wholly owned Government Company namely, the Bharat Sanchar Nigam Limited (BSNL) (incorporated on 15 September 2000) and their business was transferred to this Company with effect from 1 October 2000. The creation of BSNL was expected to provide a level playing field in all areas of telecom services, between Government operators and private operators.

4. Entry of Private Operators

A paradigm shift in Government policy came in the early nineties when the telecommunications sector was opened up to private operators. The process of entry of these operators in providing telecommunication services in India commenced in 1992. Apart from privatizing basic telephone services, the Government also decided to introduce a number of value added services through private operators, such as cellular mobile telephones, radio paging, e-mail, internet and closed user groups (CUG), which added to the value of the existing basic telephone services.

5. Regulatory control

The entry of private service providers brought with it the inevitable need for independent regulation. The Telecom Regulatory Authority of India (TRAI) was thus established with effect from 20 February 1997 by an Act of Parliament, called the Telecom Regulatory Authority of India Act, 1997, to regulate telecom services, including fixation/revision of tariffs for telecom services, which were earlier vested in the Central Government. The TRAI Act was amended by an ordinance, effective from 24 January 2000, establishing a Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT) to take over the adjudicatory and disputes functions from TRAI. TDSAT was set up to adjudicate any dispute between a licensor and a licensee, between two or more service providers, between a service provider and a group of consumers, and to hear and dispose of appeals against any direction, decision or order of TRAI.

6. Telecom Policies

The first National Telecom Policy was announced in 1994 with a major thrust on universal service and qualitative improvement in telecom services besides the starting of private sector participation in basic telephone services. In the initial enthusiasm of opening up of the telecommunications sector, the private operators, in their bids, offered much higher amounts of licence fees than they could eventually muster. As a result, by May 1999, they had accumulated arrears totalling Rs 3,779.45 crore payable to the Government. The New Telecom Policy 1999 (NTP-99) allowed the private operators to migrate from the fixed licence fee regime to a revenue-sharing regime. Other provisions of NTP-99 included the permitting of interconnectivity and sharing of infrastructure among various service providers within the same areas of operations; separation of the policy and licensing functions of DoT from the service provision function; opening of National Long Distance (NLD) and International Long Distance (ILD) services to competition and carrying of both voice and data traffic by service providers. As of 31 March 2002, unrestricted entry was allowed in basic services on a revenue-sharing basis. All telecom services were also opened up for private sector participation; national and international data connectivity were opened to all and internet services were also opened up without any restriction on the number of entrants

and without any entry fee. A National Frequency Allocation Plan (NFAP-2002) was evolved in line with the Radio Regulations of the International Telecom Union (ITU) for catering to the conflicting demands on the spectrum.

7. Other Government organisations in the Telecom Sector

Besides MTNL and BSNL, other public sector undertakings under the telecom sector are ITI Limited (ITI), Telecommunications Consultants India Limited (TCIL), Intelligent Communication Systems India Limited (ICSIL) and Millennium Telecom Limited (MTL). ITI Limited was formed in 1948 for manufacturing a wide range of equipment, which included electronic switching equipment, transmission equipment and telephone instruments of various types. TCIL was established in 1978 for providing know-how in all fields of telecommunications at the global level. The core competence of TCIL is in communications network projects, software support, switching and transmission systems, cellular services, rural telecommunications and optical fibre based backbone network. ICSIL was established in April 1987 for manufacturing computer based communication systems and equipment. It also provides engineering, technical and management consultancy services for computers and communication systems in India and abroad. MTL was established in February 2000 as a wholly owned subsidiary of MTNL for providing internet services in the country. It is pursuing the establishment of broadband internet access for the corporate segment and Voice Over Internet Protocol (VOIP) telephony services throughout India with the use of relevant technologies like Very Small Aperture Terminals (VSATs).

In addition to C-DOT and the Telecom Commission, other Government organisations engaged in the telecom sector (as a part of DoT) are the Telecom Engineering Centre (TEC) and the Wireless Planning and Coordination (WPC) wing. C-DOT was established in 1984 with the objective of developing a new generation of digital switching items. It has developed a wide range of switching and transmission products both for rural and urban applications. TEC is devoted to product validation and standardization for user agencies. It also provides technical and engineering support to the Telecom Commission and the field units.

The Wireless Planning and Coordination wing deals with the policies of spectrum management, licensing, frequency assignments, international coordination for spectrum management and administration of the Indian Wireless Telegraphy Act, 1933. In order to administer the use of radio frequencies, the licences/renewals for use of wireless equipment and the frequencies are authorised by WPC. The licences are granted for specific periods on payment of prescribed licence fees and royalty in advance and are renewed after expiry of the validity periods.

8. Financial performance of PSUs in the Telecom Sector

As on 31 March 2005, six PSUs namely BSNL, MTNL, ITI, TCIL, ICSIL and MTL were in the telecom sector. Some of the important financial performance indicators of these telecom PSUs for the year ended 31 March 2005 were as follows:

(Rs in crore)

PSU	Investment in shares by Government			Govt. Loans	Total income earned	Dividend paid on Govt. equity investment	Capital employed	Profit before tax (PBT)	Percentage of PBT to capital employed
	Equity shares	Preference shares	Total						
	(Rupees in crore)								%
BSNL	5000	7500	12500	7500	36090.09	117.50	75282.72	7920.08	10.52
MTNL	354.37	---	354.37	---	6084.10	283.50	10173.78	1206.22	11.86
ITI	267.47	---	267.47	---	1374.17	---	1107.76	(309.82)	(27.97)
TCIL	28.80	---	28.80	---	449.14	21.60	354.78	13.68	3.86
ICSIL	---	---	---	---	24.34	---	0.80	0.11	13.75
MTL	---	---	---	---	1.32	---	5.08	0.71	13.98
Total	**5650.64**	**7500**	**13150.64**	**7500**	**44023.16**	**422.60**	**86924.92**	**8830.98**	**10.15**

* Rs 2.88 crore of equity share capital of MTL was fully subscribed by MTNL.

As may be seen from the above table, on equity capital investment of Rs 5,650.64 crore in these six telecom PSUs, the Government received dividend of Rs 422.60 crore, which worked out to only 7.48 *per cent*. On preference capital investment of Rs 7,500 crore in BSNL, the Government did not receive any dividend as BSNL was exempted from the payment of dividend up to 31 March 2005 on preference capital. On the total capital employed of Rs 86,924.92 crore in the above PSUs, the overall percentage of profit before tax worked out to 10.15 *per cent*.

The individual financial performance of each of these PSUs is also discussed in the succeeding chapters.

9. Foreign Direct Investment

Foreign Direct Investment (FDI) up to 100 *per cent* has been allowed in the telecom manufacturing sector and services like e-mail, voice-mail, internet (without gateways) and infrastructure providers. Seventy four *per cent* FDI is allowed in case of radio paging service, internet (with gateway) and end-to-end bandwidth providers. In the case of basic, cellular, NLD, ILD and value added services, FDI was limited to 49 *per cent*. This was increased to 74 *per cent* in October 2005.

As a result of the positive response to the investment policy being pursued for the telecom sector, 930 proposals of FDI of Rs 41,369.11 crore were approved for this sector during August 1991 to September 2004, which was second only

to the power and the oil refinery sector. From these proposals, the actual inflow of FDI during August 1993 to August 2004 was Rs 10,273.05 crore, of which Rs 99.17 crore had been received during January to August 2004.

10. Employment generation

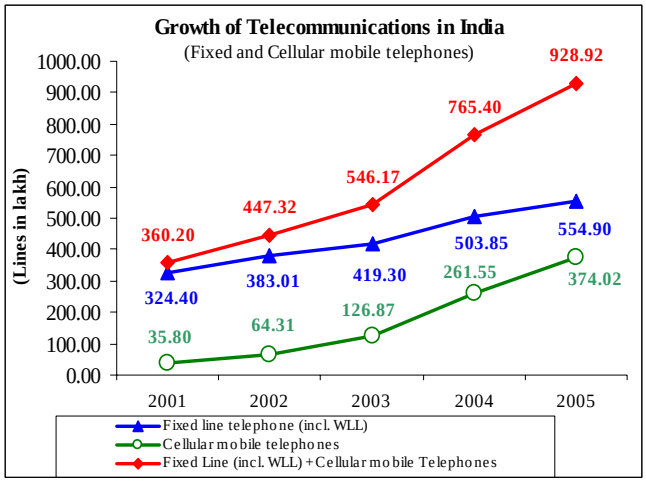
As on 31 March 1991, there were approximately 3.75 lakh government employees (excluding industrial workers) working in the telecom sector (DoT and MTNL). With the growth of the sector, this number went up and as on 31 March 2005, there were around 4.03 lakh government employees (excluding industrial workers) working in this sector (DoT, BSNL and MTNL). This represented growth in employment generation by around 7 *per cent* over the last 14 years.

11. Contribution of private and public sectors to the telecom network

The contributions of the private sector and the public sector (MTNL and BSNL) in some of the important fields of national telecom network as on 31 December 2004 were as under:

Sl. No.	Telecom Network	Public sector (MTNL & BSNL)	Private sector	Total
		(figures in lakh)		
1.	Direct exchange lines♣(DELs) including WLL	411.92	142.98	554.90
2.	Cellular mobile connections	90.56	283.46	374.02
3.	Village public telephones	5.12	0.13	5.25
4.	Public Call Offices	20.24	---	20.24
5.	Rural direct exchange lines including WLL	130.37	---	130.37
6.	Internet connections	28.51	27.03	55.54

The growth* in fixed lines and cellular mobile telephones in India during 31 March 2001 to 31 December 2004 was as given in the chart below.



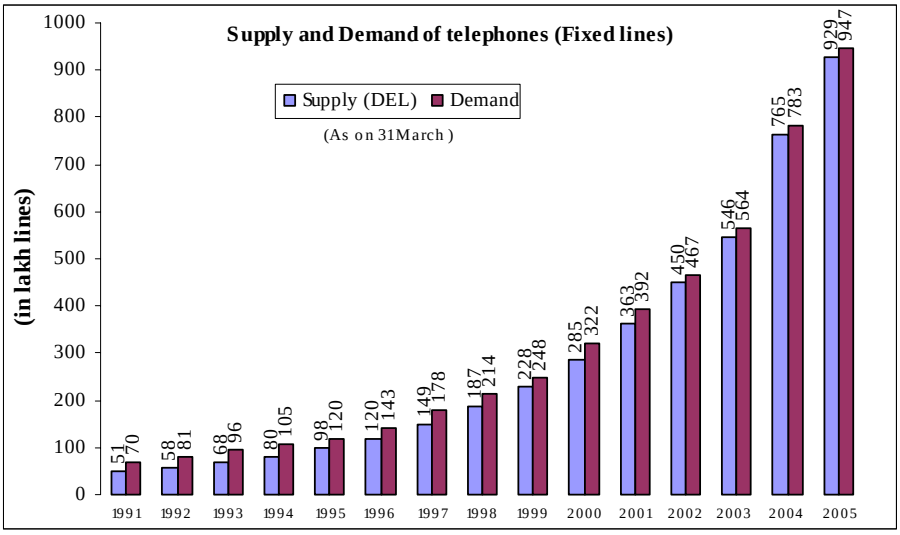
Fixed line telephones (i.e. DELs including WLL) increased from 324.40 lakh as on 31 March 2001 to 554.90 lakh as on 31 December 2004, representing a growth of more than 71 *per cent* during this period. In the case of cellular mobile telephones, however, the number of

♣ This includes rural direct exchange lines including WLL shown at serial no. 5.

* The figures for the years 2002 and 2003 in the chart have been recast as of 31 March of these years compared to August and July, respectively, shown in the previous Audit Report.

connections increased remarkably from 35.80 lakh as on 31 March 2001 to 374.02 lakh as on 31 December 2004, representing of about ten-fold growth during this period.

Similarly, the position[π] of demand and supply of telephones (DELs, WLL and Cellular) in India during the years 1990-91 to December 2004 was as under:



As can be seen from the above, against a demand of 70 lakh telephones as on 31 March 1991, the demand as on 31 December 2004 was 947 lakh, representing more than thirteen-fold growth in demand. The supply of telephones against the above demand was 51 lakh telephones as on 31 March 1991 and 929 lakh telephones as on 31 December 2004, representing an eighteen-fold growth in supply. However, the supply of telephone connections in India has never been adequate to meet the demand fully in any of the last 15 years.

12. Unified Access (Basic and Cellular) Services Licence

Taking into account the technological developments in the telecom sector, the extended scope of services provided by the new technologies, the falling cost of wireless services, etc. TRAI felt that there was no justification in continuing a service-wise licensing regime and in October 2003 recommended moving towards a unified licensing regime. As a first step, basic and cellular services were to be unified within the service area. Based on the recommendations, guidelines for a Unified Access Service Licence regime were issued in November 2003. The guidelines, *inter alia*, stipulated the following:

a. The existing operators had an option to continue under the present licensing regime (with present terms and conditions) or migrate to

[π] The figures in the bar diagram for the years 2000 to 2003 have been recast as of 31 March of these years.

the new Unified Access Service Licence (UASL) in the existing service areas with the existing allocated/contracted spectrum.

b. The service providers migrating to UASL would continue to provide wireless services in the spectrum already allocated/contracted to them and no additional spectrum would be allotted under the migration process for UASL.

c. In addition to the services permissible under the current licences, Cellular Mobile Service Providers (CMSPs) could also offer limited mobility facilities existing within the Short Distance Charging Area (SDCA) as permitted to the Basic Service Providers at appropriate tariffs through concepts such as home-zone operations.

d. The unified access service providers were free to use any technology without any restriction.

e. No additional entry fee was to be charged from CMSPs for migration to UASL. For Basic Service Operators (BSOs), the entry fee for migration to UASL for a service area would be equal to the entry fee paid by the fourth cellular operator for that service area, or the entry fee paid by the BSO itself, whichever was higher. While applying for migration to UASL, the BSO would pay the difference between the said entry fee for UASL and the entry fee already paid by it.

f. Notwithstanding anything stated in para (e) above, no additional entry fee was to be paid by the existing BSO, where no fourth CMSP had bid.

g. BSOs who had provided the use of wireless access terminals and multiple registration facilities to their subscribers in more than one SDCA, could also migrate to UASL. In that case, in addition to the entry fee based on the principles stated in paras (e) and (f) above, they would have to pay till the date of payment from the date of their having signed the Basic Service Licence Agreement, penal interest at the rate of 5 *per cent* above the prime lending rate of the State Bank of India on the day the payment became due i.e. the date on which they signed the licence agreement.

h. The existing BSOs, after migration to UASL, could offer full mobility. However, they were required to offer limited mobility services also for customers who desired the same.

Consequently, 27 out of 31 basic service licences were converted to Unified Access Service licences. This regime offered greater participation of private and public sector operators and led to increased competition and the provision of improved facilities for customers.

13. Interconnection Usage Charges

In January 2003, TRAI notified the Interconnection Usage Charges (IUC) Regulation, 2003 and issued the same in October 2003, which covered arrangements amongst service providers for payment of IUC, covering Basic Services, including Wireless-in-Local Loop (Mobile), Cellular Mobile Services, NLD and ILD services. This regulation, which came into force from 1 February 2004, provided for charges payable by one operator to another for origination, transit and termination of calls in a multi-operator environment. The main features of the new IUC regime were lower Access Deficit Charges (ADC), uniform termination charges of Rs 0.30 per minute irrespective of the terminating network and reduction of ADC on NLD and ILD calls, all of which resulted in lower tariffs for voice telephony.

14. Broadband service

BSNL and MTNL introduced broadband services in January 2005. 'Broadband' is an 'always on' data connection that is able to support interactive services including internet access and has the capability of the minimum download speed of 256 kbps for an individual subscriber.

15. The picture ahead

With the rapid upgradation of technology and the entry of private players in the telecom sector, it is expected that the competitive environment will result in more value added services and facilities for the subscribers at lower cost. With the continuous expansion in the telecom sector, tele-density in the country is expected to rise to 15 by 2010.