Chapter 1

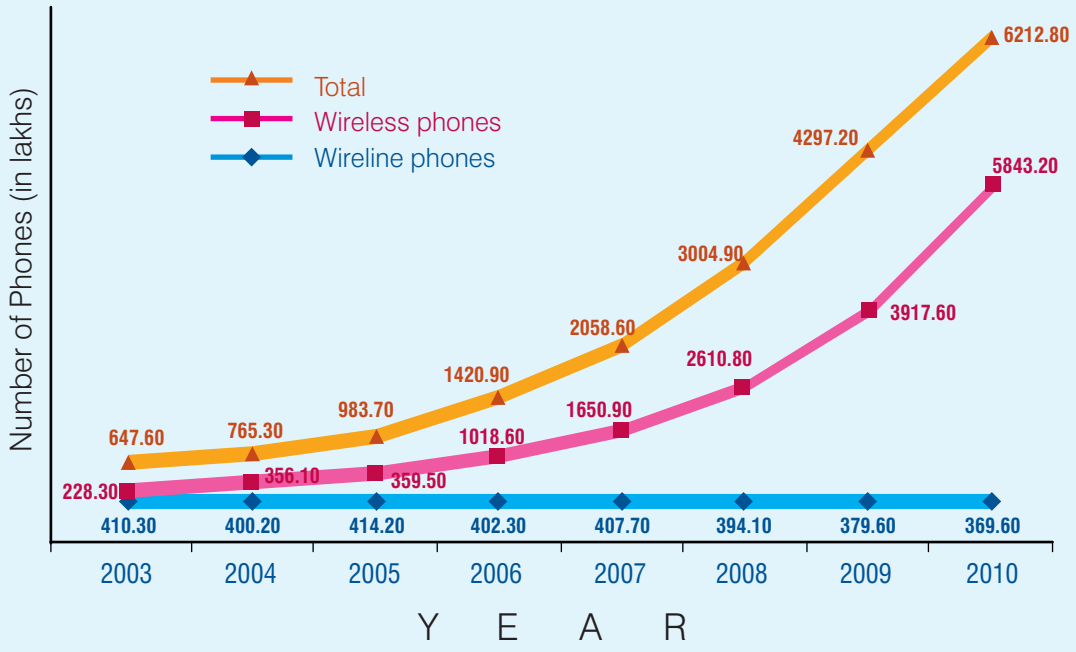
Introduction

1

1.1 Growth in Telecom Sector

In the recent times, India has emerged as one of the fastest growing telecom markets in the world. The Department of Telecommunication (DoT) under the Ministry of Communications and Information Technology (MoC&IT) was the monopoly agency providing communication facilities in India till 1994 when for the first time private players were invited to contribute to the telecom sector by way of investment for providing telecom services in the country. Since then it has been one of the few sectors in India, which has witnessed widespread structural and institutional reforms. With 62.13 crore telephone connections (Fixed lines- 3.70 crore and wireless 58.43 crore) as on March 31, 2010, it is the second largest network in the world after China. The eleventh plan target of 50 crore connections by 2010 stood achieved in September 2009 shown in the chart 1.1 below.

Chart - 1.1 Growth of Telecom Network (Wireline and Wireless)

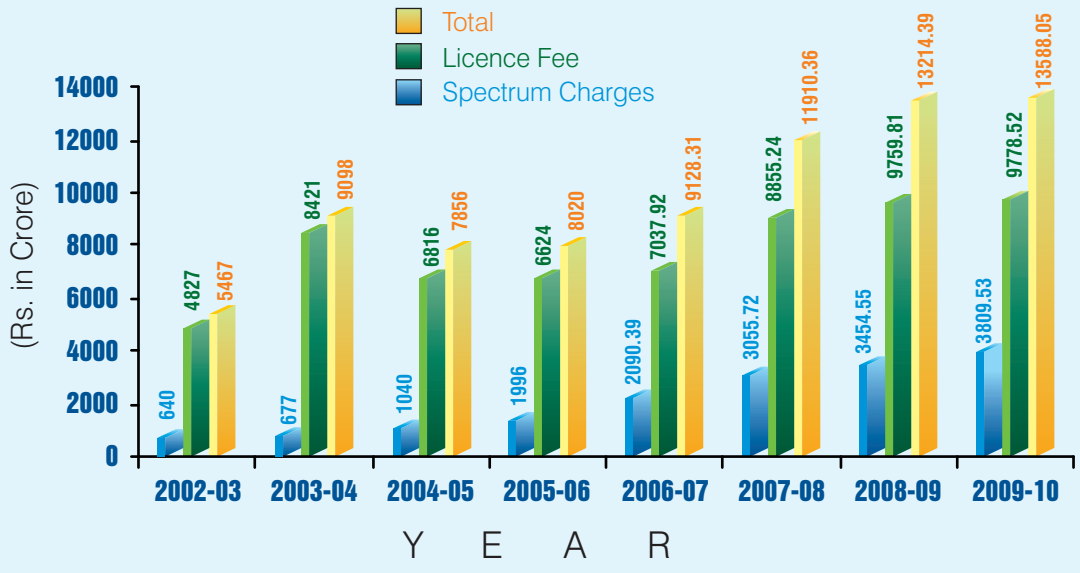


1.2 Overview of Policies

1.2.1 The first National Telecom Policy was announced by the Government in 1994 (NTP-94) with the objectives of providing telephone on demand, provision of world-class services at reasonable prices and universal availability of basic telecom services to all villages. NTP-1994 recognized that the required resources for achieving these targets could not be made available only out of Government sources and private investment and involvement of the private sector was required to bridge the large resource gap.

1.2.2 While there were several achievements under the NTP 1994, some of the objectives could not be met. Acknowledging several changes both at the national and global scenario in the telecom sector; a New Telecom Policy- NTP-99 was announced by Government w.e.f. 1st April 1999. Licensing of all telecom services thereafter was to be under the policy framework of NTP-99, which sought to significantly redefine the competitive nature of the industry. The new policy lifted the restrictions on the number of service providers for the Basic Service Providers (BSPs) as well as the Cellular Mobile Service Providers (CMSPs) making it open for participation by all bidders who satisfied the conditions of the DoT. The new policy also required all operators who were under the fixed licence fee regime to migrate to a revenue sharing regime. In the revenue sharing model, the operators were required to pay a percentage of their Adjusted Gross Revenue (AGR) as annual license fee and spectrum usage charge to the Government. The percentage of revenue share depended on the service area* where they offered their services.

Chart - 1.2 Revenue on account of Spectrum charges and Licence Fee



* The country is divided into 22 Service Areas. Earlier it consisted of 19 Telecom Circles and 4 Metros for providing Unified Access Services (UAS). Subsequently Chennai was merged with Tamil Nadu service area.

1.2.3 The Union Cabinet based on the recommendations of Group of Ministers (GoM) on Telecom matters constituted in September 2003 approved the policy for licensing of Unified Access Services. The GoM had considered the recommendations submitted by Telecom Regulatory Authority of India (TRAI) on 27 October 2003. The policy drew upon NTP-99. Through this approval, Cabinet besides, a number of other related decisions, charted the course to a Universal Licensing Regime. Guidelines for issue of licenses under UAS were issued on 11 November 2003 where after licences were issued only under UAS.

1.2.4 In April 2007, the DoT sought the opinion of the TRAI on some specific points including that of putting a cap on the number of access service providers in a service area, as radio frequency spectrum required for wireless services was not sufficient to meet the increasing demand from UAS Licensees. TRAI recommended (August 2007) that no cap be placed on the number of access service providers in any service area. the DoT issued 122[1] new licences to 17 companies in 2008 and spectrum was allotted to all operators except for four in Delhi service area (December 2009).

There were 241 Unified Access Service (UAS), 2 Basic Service (BS) and 38 Cellular Mobile Telephone Service (CMTS) Licences as on 31 March 2010.

1.2.5 TRAI in August 2007 also recommended that "a licensee using one technology may be permitted on request, usage of alternative technology and thus allocation of dual spectrum. However, such a licensee must pay the same amount of fee which has been paid by the existing licences using the alternative technology or which would be paid by the new licensee going to use that technology". 35 licencees were permitted to use dual spectrum and allocated spectrum in 2007-08.

[1] In January 2008 DoT issued 121 Letters of Intent (LOIs) against which only 120 licenses were issued. Two more licenses were issued in July 2008.

1.3 Methodology for Entry and Fee Structure in Various Policy Regimes

BOX-1

Policy Stage	Methodology for Entry of Operators	Fixed Fee Regime
NTP 1994	▪ In first phase (Nov-94), two CMTS licences were awarded in four Metro cities on beauty parade* basis. ▪ In second phase (Dec-95), two CMTS licences were awarded in 18 telecom circles through a process of competitive bidding. ▪ Six companies were awarded Basic service licences through bidding process.	*License Fee was pre-determined and bids were called on selected parameters.*
NTP 1999	▪ All existing BSOs and CMSPs were required to migrate to the new regime. ▪ Number and timing of new licenses was to be based on TRAI's recommendations. ▪ BSNL and MTNL became the third CMTS operator in 2000. ▪ Seventeen new CMTS licences as fourth cellular mobile operators in 2001 through a multi-stage bidding process. ▪ Twenty Five new Basic service licences in 2001 based on eligibility as per the guidelines issued on January 2001.	- *One-time entry fee before signing the license agreement.* - *A fixed percentage of Adjusted Gross Revenue (AGR) as annual license fee.* - *A fixed percentage of Adjusted Gross Revenue (AGR) of mobile services as annual spectrum charge.*
UAS 2003	▪ All the existing BSOs and CMPSs were given option to migrate to UASL regime; by BSOs paying the difference of entry fee paid by them that as paid by the fourth CMTS operator in 2001and CMTS operator at nil entry fee. ▪ 51 new UAS licences were awarded between 2004 to March 2006 at the entry fee determined in 2001. ▪ 122 new UAS licences awarded in 2008, also at the same entry fee of 2001.	- *One-time entry fee before signing the licence agreement.* - *A fixed percentage of Adjusted Gross Revenue (AGR) as annual licence fee.* - *A fixed percentage of Adjusted Gross Revenue (AGR) of mobile services as annual spectrum charge.*
Introduction of dual technology	▪ Approvals were issued in 2007-08 for dual technology (for using both CDMA and GSM) in 35 service areas at the entry fee equivalent to the migration fee fixed in 2001.	- *One-time entry fee equivalent to migration fee for UAS based on 2001 entry fee of CMSPs was charged for allowing DT in 2007.* - *Revenue sharing as for UAS 2003.*

* Beauty parade fixes the price of spectrum to ensure optimum utilization by awarding it to the user(s) who score the highest against a group of pre set criteria (such as rural coverage or the fulfillment of roll out obligations).

1.4 Role of Telecom Regulatory Authority of India (TRAI)

The TRAI was set up in March 1997 and its mandate included making recommendations on the following matters:

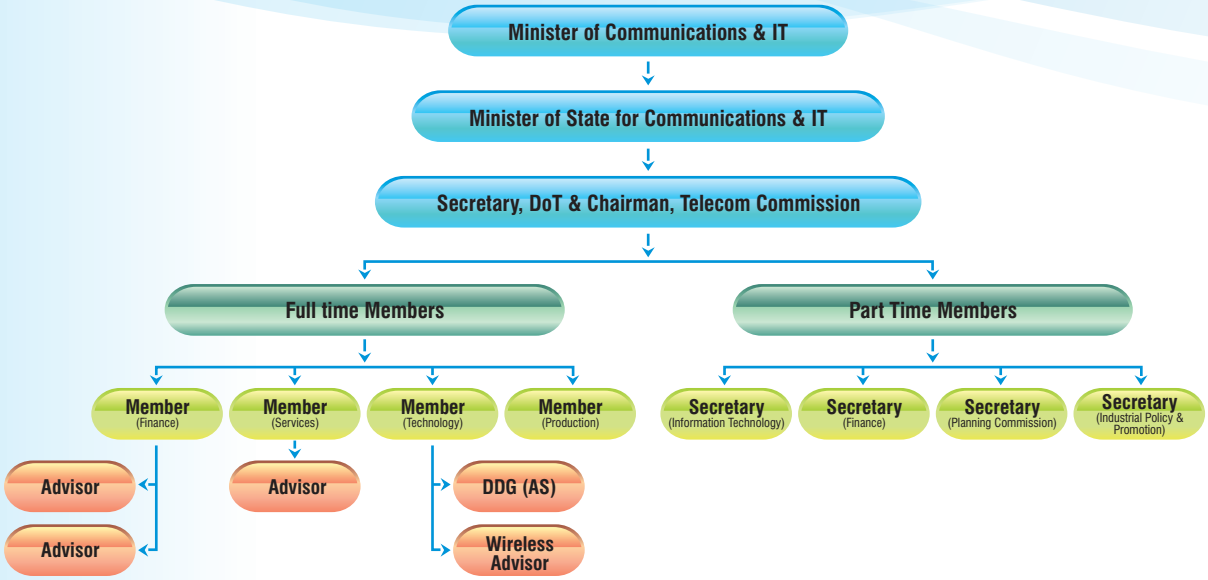
- need and timing for introduction of new service providers.
- terms and conditions of the licences to be given to service providers and
- efficient management of the available spectrum.

TRAI also had to notify the rates at which telecommunication services within India and outside were to be provided under the TRAI Act, through Gazette notifications, from time to time. NTP-99 stipulated that the Government will invariably seek TRAI's recommendations on the number and timing of new licences before taking decision on issue of new licenses. The original Act of 1997 under which it was set up was amended by the TRAI (Amendment) Act 2000. The new Act provided for the establishment of two separate bodies i.e. the Telecom Dispute Settlement and Appellate Tribunal (TDSAT) for dispute settlements between the licensor and licensees, between two or more service providers and between service providers and consumers and TRAI for regulatory functions. Thus, TRAI as a regulator has only an advisory role in the policy matters.

1.5 Organisational Arrangement

The work relating to formulation of policy, issue of licences for various telecom services and spectrum allocation are under the overall control of Ministry of Communications & IT. Secretary, DoT, reports to the Minister (Communications and IT) and is assisted by the Member (Finance), the Member (Technology), Member (Services), Member (Production) and Wireless Advisor.

The Secretary, DoT, is also the Chairman of the Telecom Commission which is a high powered commission, established in 1989, consisting of four full time members (Production, Services, Technology and Finance) and four part-time members (Secretaries of the Ministries of Finance, Industrial Policy and Promotion, Information Technology and Planning Commission). The major functions of the Telecom Commission include policy formulation, review of performance, licensing, wireless spectrum management, administrative monitoring of PSUs, research and development, standardization/ validation of equipment and International Relations.



1.6 Issue of Licences

Operators intending to provide telecommunication services have to obtain a licence from the DoT. The guidelines for issuing new licences for various Telecom Services as approved (December 2005) by the DoT stipulated that an applicant would have to apply for a licence along with the requisite processing fees. Applicants meeting the eligibility criteria prescribed by the DoT would be issued a Letter of Intent (LoI). Thereafter the applicant was required to deposit the prescribed entry fees, submit the requisite Bank guarantees and other necessary documents before the grant of licence.

1.7 Spectrum Allocation

Radio Frequency Spectrum is the entire range of wavelengths of electromagnetic radiation which is used as carrier of wireless transmission and thus a basic requirement for providing wireless services. It is a finite but non-consumable global natural resource and commands high economic value in the telecommunication sector.

Radio frequency spectrum, i.e., the entire range of wavelengths of electromagnetic radiation, is a finite global natural resource with a high economic value, due to its heavy demand in the telecommunications sector. The word 'Spectrum' basically refers to the collection of various types of electromagnetic radiations of different wavelengths. Frequencies are allocated by the International Telecommunication Union (ITU) at "World Radio Communication Conferences". Allocations are made on a regional basis and are made for different services. Allocation of spectrum in ITU Radio Regulations exists from 9 KHz to 1000 GHz. In India, the radio frequencies are confined between 9 KHz and 400 GHz.

Some of the important and typical characteristics of the radio frequency spectrum are that:

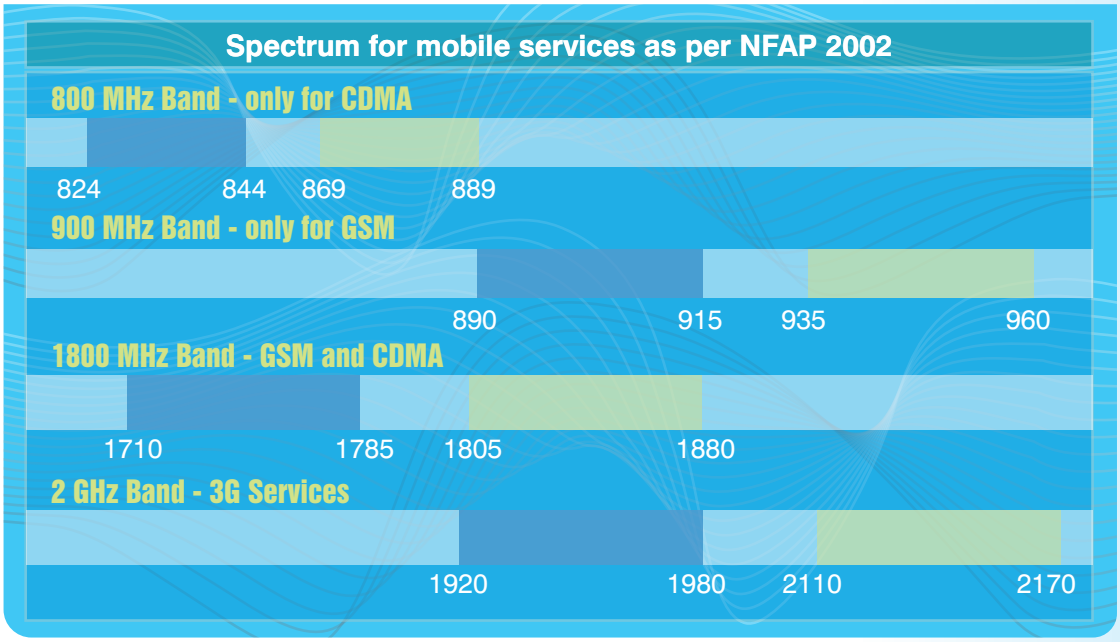
- radio frequency spectrum does not respect international geographical boundaries as it is spread over a large terrestrial area.

- use of radio frequency spectrum is susceptible to overlapping interference and requires the application of complex engineering tools to ensure interference free operation of various wireless networks.
- unlike other natural resources, radio frequency spectrum is not consumed upon its usage. It is also liable to be wasted if it is not used optimally and efficiently.

Assignment of radio frequencies is governed by international treaties formulated under the aegis of the ITU. India falls in the ITU Region III.

In India, Mobile services which use GSM technology work in the frequency bands of 900 & 1800 MHz and those in CDMA technology work in the 800 MHz band. 800, 900 and 1800 MHz bands were earlier allotted to the defence services for their mobile communication usage. Presently, 25 MHz spectrum in 900 MHz band (890 – 915 / 935 – 960 MHz) and 75 MHz in the 1800 MHz band (1710 – 1785 / 1805 – 1880 MHz) is earmarked for GSM services.

For CDMA services, 20 MHz spectrum in the 800 MHz band (824 – 844 / 869 – 889 MHz) is available. Spectrum for the roll out of 3G services (voice, data and video) were allotted through e-auction in the 2.1 GHz (1920 – 1980 / 2110 – 2170 MHz) band. All the above bands were historically allotted to the Defence sector for their mobile and point to point communication needs in India. Therefore, their cooperation was also required to make them available for commercial use. To facilitate the same, Government of India (GoI) has allocated funds from time to time to provide optical fibre cables for use by the Defence Sector.



1.7.1 The Wireless Planning & Coordination (WPC) Wing in the Department of Telecommunications deals with the policy of spectrum management, wireless licensing and frequency assignments. The spectrum allocation policy is contained in the National frequency allocation plan (NFAP) which is based on the International Radio Regulations. The NFAP (1981) and its subsequent revisions in consultation with the national users through the forum of Standing Advisory Committee on Radio Frequency Allocation (SACFA) provides the basis for assignment of frequency.

Wireless licence is an independent licence and therefore any UAS licence holder intending to offer mobile services has to obtain a separate wireless licence from WPC wing.

BOX-2

Allocation of contractual and additional spectrum

Detail of licences	Allocation of contractual spectrum	Allocation of additional spectrum
CMTS licences for first and second Operators (1994-1995)	A cumulative maximum of up to 4.4 MHz +4.4 MHz in the 900 MHz band based on appropriate justification.	As per DoT's order dated 22nd September 2001 bandwidth up to 6.2 MHz+6.2 MHz instead of 4.4 MHz+4.4 MHz subject to availability and justification effective from 1.8.99.
CMTS licences for third Operators (1997-98)	A cumulative maximum of up to 4.4 MHz +4.4 MHz in the 900 MHz band based on appropriate justification.	
CMTS licences for fourth operators (2001)	A cumulative maximum of up to 4.4 MHz +4.4 MHz in the 1800 MHz band. Based usage, justification and availability, additional spectrum up to 1.8 MHz+1.8 MHz making a total of 6.2 MHz+6.2 MHz.	As per DoT's order dated 1.2.2002, 1.8 MHz+1.8 MHz spectrum beyond 6.2 MHz (total 8 MHz+8 MHz) would be assigned to an operator on reaching a subscriber base of 5 lakh or more in a service area. Further, allocation of spectrum up to 10 MHz+10 MHz on reaching prescribed subscriber base could also be considered subject to availability.
CMTS licences for fourth operators (2001)	Initially a cumulative maximum of up to 4.4 MHz + 4.4 MHz in TDMA/GSM based systems or a maximum of 2.5 MHz + 2.5 MHz in CDMA based systems, on case by case basis subject to availability. The Licensee operating wireless services will continue to provide such services in already allocated/contracted spectrum.	In 2006, criteria for allotment of additional spectrum in GSM beyond initial spectrum (4.4 MHz) was revised which was based on the minimum subscriber base ranging from 2 lakh subscribers for 6.2 MHz to 26 lakh subscribers for maximum of 15 MHz 2G spectrum depending upon the category (A/B/C) of the circle or service area. In January 2008, criteria for allotment of additional spectrum in GSM band beyond initial spectrum (4.4 MHz) was again revised needing a minimum subscriber base ranging from 15 lakh subscribers for 6.2 MHz to 116 lakh subscribers for maximum of 14.2 MHz 2G spectrum depending upon the category (A/B/C) of the circle or service area.
New UAS Licences granted during November 2003 to March 2007	Initially a cumulative maximum of up to 4.4 MHz + 4.4 MHz in TDMA/GSM based systems or a maximum of 2.5 MHz + 2.5 MHz in CDMA based systems, on case by case basis subject to availability. Additional spectrum allowed based on optimal utilisation but not more than 5+5 MHz in respect of CDMA or 6.2+6.2 MHz in respect of TDMA/GSM.	
UAS licences using dual technology (2008)	Initially a cumulative maximum of up to 4.4 MHz + 4.4 MHz in TDMA/GSM based systems and a maximum of 2.5 MHz + 2.5 MHz in CDMA based systems, on case by case basis subject to availability. Additional spectrum allowed based on optimal utilisation but not more than 5+5 MHz in respect of CDMA or 6.2+6.2 MHz in respect of TDMA/GSM.	