GOVERNMENT OF INDIA

OUTCOME BUDGET

2008-2009

MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY
(Department of Telecommunications)

INDEX

Executive Summary

A system of performance budgeting by Ministries handling development programmes was introduced to assess the performance against the set out goals/objectives. However, it was felt that the document is not able to establish a clear one –to –one relationship between the Financial Budget and the Performance Budget and inadequate target setting in physical terms of the ensuing year. Therefore, in addition to the performance budgeting, the outcome budgeting was introduced. It was thought that there is a need to track not just the intermediate physical 'outputs' that are more readily measurable but the "outcomes" which are the end objectives. Thus, the Outcome budgets have become an integral part of the budgeting process since 2005-06.

As per the latest guidelines issued by Ministry of Finance vide letter no.F.No.2 (1)/Pers/E-Coord/OB/2005 dated 12th December, 2007, for the year 2008-09 there will be one single document titled **Outcome Budget 2008-09.** This will broadly indicate the physical dimensions of the financial budget showing actual physical performance in 2006-07, performance in the first 9 months of the year 2007-08 and the targeted performance during 2008-09. In pursuance to the instructions issued by Ministry of Finance, Outcome Budget 2008-09 has been prepared for the Department of Telecommunication.

Today, India's 273 million strong telephone network is the third largest network in the world. The Indian telecom market has grown rapidly in the last few years with an average annual subscriber growth of about 45%. With 7-8 million connections being added every month in the network, the mass market growth in India is led by the mobile segment. This rapid growth in the telecom network has resulted in an overall teledensity of 23.89% at the end of December 2007. This has surpassed the targeted teledensity of 15 % by 2010 as per New Telecom Policy (NTP) 99. The same is attributable not only to proactive and positive policy measures of the Government but also to the entrepreneurial spirit of the various telecom service providers both in public and private sector.

The plan of telecom expansion by the Government is mainly carried out through its PSU's[1]. The internal and extra budgetary resources (IEBR) of the PSU's fund the development and expansion activities. The gross budgetary support in the Budget Estimate 2008-09 is towards the outlays of WPC[2], WMO[3], TEC[4], TRAI[5], TDSAT[6], C-DOT[7] and four departmental projects.

The Universal Service Support Policy of the Government is executed through the Universal Service Obligation Fund (USOF). The resources for meeting the same are generated through a Universal Service Levy which is 5% of the Adjusted Gross Revenue (AGR) earned by all the operators except pure value added service providers like internet service provider, voice mail etc.

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[1] Public Sector Undertakings
[2] Wireless Planning and coordination
[3] Wireless Monitoring Organisation
[4] Telecommunication Engineering Centre
[5] Telecom Regulatory Authority of India
[6] Telecom Dispute Settlement &Appellate Tribunal
[7] Centre for Development of Telematics

The plan as well as Non-Plan expenditure is monitored on a monthly basis vis-à-vis the allocation as well as the targeted milestones of the project. Corrective actions are taken wherever required depending upon the utilization of the funds as well as the achievement of the targeted milestones. The monthly accounts of the Department are also available on the Department's website, *www.dot.gov.in*.

The Rural Telephony objectives which are achieved through USOF are available for public scrutiny as the monthly progress under USOF is made available on the Department's website, *www.dot.gov.in*. Similarly, the information regarding the progress of covering the uncovered 66,822 villages under the flagship "Bharat Nirman" programme is available on the website.

This document intends to highlight the specific objectives of projects/schemes, their outcomes and the development activities of the Department of Telecom and its PSUs. The document is broadly divided into six chapters. Chapter I gives a brief introduction on the role and functions of the Department, the vision statement of the Department and its organizational set up including the PSUs under its administrative control. Chapter II is primarily in a tabular format and its main objective is to illustrate one-to-one correspondence between Financial budget 2008-09 and the physical targets for 2008-09. Chapter III gives a snapshot view of the reform measures undertaken by the Department and various policy initiatives that have helped in fuelling the phenomenal growth in the sector with particular focus on the initiatives undertaken during past 2-3 years. Chapter IV is the review of the past performance during the year 2006-07, 2007-08 (up to December 2007) and includes a bird's eye view of the status of telecom sector as a whole. Chapter V broadly examines the overall trend in expenditure vis-à-vis Budget Estimates/Revised Estimates. The position regarding utilization certificates and unspent balances has also been indicated. Chapter VI presents a review of the statutory & autonomous bodies under the Department.

I.   Introduction

1.0   In pursuance of objectives of the New Telecom Policy announced in April, 1999, the Government of India by Notification No.1/22/1/99 Ca (i) dated 15.10.1999, had bifurcated the Department of Telecommunications into two Departments viz. the Department of Telecommunications for policy and licensing functions and Department of Telecom Services for all service providing functions. The Department of Telecom Services was further bifurcated vide Government of India Extra-ordinary Gazette Notification dated 19.7.2000 into two Departments, viz. the Department of Telecom Services and the Department of Telecom Operations for all matters relating to operations of telephones, wireless, data, facsimile and other forms of telecommunication. Subsequently, the Government of India has transferred the business of providing telecom services in the country from the Department of Telecom Services (DTS) and the Department of Telecom Operations (DTO) to a newly formed Company viz. Bharat Sanchar Nigam Limited, with effect from 1st October, 2000.

1.1   The Department of Telecommunication which forms part of the Ministry of Communications and Information Technology now remains responsible for policy formulation, licensing, wireless spectrum management, universal service obligation and the administration of various Acts pertaining to telecommunication.

1.2   An independent Regulator was set up by the Telecom Regulatory Authority of India Act 1997. The said Act was amended by TRAI (Amendment) Act 2000 to set up a Telecom Dispute Settlement & Appellate Tribunal (TDSAT).

Statutory Regulatory Body

i)   Telecom Regulatory Authority of India [TRAI]

Statutory Tribunal

i)   Telecom Disputes Settlement and Appellate Tribunal [TDSAT]

Autonomous body

i)   Centre for Development of Telematics [C-DOT]

Attached/Subordinate Offices
i)   Wireless Monitoring Organization (WMO)
ii)   Telecom Engineering Centre (TEC)
iii)   Administrator, Universal Service Fund (USF)
iv)   Controller of Communication Account Offices (CCA's)
v)   Vigilance and Technical Monitoring (VTM's) cells

Public Sector Undertakings

i)   Bharat Sanchar Nigam Limited, New Delhi – Govt. holding 100%
ii)   Mahanagar Telephone Nigam Limited, Delhi – Govt. holding 56.25%.
iii)   ITI Limited, Bangalore – Govt. holding 92.87%
iv)   Telecommunications Consultants India Limited, New Delhi – Govt. holding 100%

II.   Role and functions

2.0 Following are some of the functions assigned to the DoT under Government of India (Allocation of Business), Rules, 1961:

i)   Policy, Licensing and Coordination matters relating to telegraphs, telephones, wireless, data, facsimile and Telematics services and other like forms of communications.

ii)   International cooperation in matters connected with telecommunications, including matter relating to all international bodies dealing with telecommunications such as International Telecommunication Union (ITU), its Radio Regulation Board (RRB), Radio Communication Sector (ITU-R), Telecommunication Standardization Sector (ITU-T), Development Sector (ITU-D), International Telecommunication Satellite Organization (INTELSAT), International Mobile Satellite organization (INMARSAT), Asia Pacific Telecommunication (APT).

iii)   Promotion of standardization, research and development in telecommunications.

iv)   Promotion of private investment in Telecommunications.

v)   Procurement of stores, and equipment required by the Department of Telecommunications.

vi)   Telecom Commission

vii)   Telecom Regulatory Authority of India

viii)   Telecom Disputes Settlement and Appellate Tribunal.

ix)   Administration of laws with respect to any of the matters specified in this list, namely:

   (a)   The Indian Telegraph Act 1885 (13 of 1885)
   (b)   The Indian Wireless Telegraphy Act, 1933 (17 of 1933); and
   (c)   The Telecom Regulatory Authority of India Act, 1997 (24 of 1997).

x)   Indian Telephone Industries Limited.

xi)   Post disinvestment matters relating to M/s Hindustan Teleprinters Limited

xii)   Bharat Sanchar Nigam Limited.

xiii)   Mahanagar Telephone Nigam Limited.

xiv)   All matters relating to Centre for Development of Telematics (C-DOT)

xv)   Residual work relating to the erstwhile Department of Telecom Services and Department of Telecom Operations, including matters relating to -

a) Cadre control functions of Group 'A' services and other categories of personnel till their absorption in Bharat Sanchar Nigam Limited;

b) Administration and payment of terminal benefits.

xvi)   Execution of works, purchase and acquisition of land debitable to the capital Budget pertaining to telecommunications.

III.   Vision Statement of the Department

3.0   To develop a strong and vibrant technology neutral telecom sector with enhanced participation of private sector that can:

- Propel India into the forefront among the global economic superpowers with high quality and cost-effective telecom infrastructure and services support.
- Ensure that the India's rural masses have easy access to the info-highways leading to education, knowledge, commerce and health, thereby bridging the digital divide.
- Provide opportunities for private investment both in services sector and manufacturing sectors leading to creation of employment, particularly in rural areas.
- Keep India technically advanced; initiate R&D in cutting-edge telecommunication technologies.

IV.   Organizational set up

4.1   Department of Telecommunication

With a view to promoting quick decision making and development in all aspects of telecommunications including technology, production services and financing etc., the Government of India established a Telecom Commission with necessary executive, administrative and financial powers to deal with various aspects of telecommunications, modeled on the lines of Atomic Energy Commission/Space Commission. Telecom Commission, which consists of a Chairman and four full time and four part-time Members, functions under the Ministry of Communications and Information Technology. Till 30.9.2000, the Commission directly oversaw the operations and the developmental activities of the Department of Telecom Services. However, after the formation of BSNL, it remains responsible for policy matters, licensing, spectrum management and co-ordination.

4.2 Wireless Planning and Co-ordination (WPC) Wing

4.2.1 Objectives
i) Frequency Spectrum Management, issue of licenses to establish and operate wireless stations and conduct examinations for award of Radio Operators' Certificate of Proficiency and Licence to operate wireless equipment.
ii) Coordination at national level as nodal agency of the Government for interaction with the International Telecommunication Union (ITU), Geneva etc.

4.2.2 Functions
The Wireless Planning and Co-ordination (WPC) Wing of the Ministry of Communications & IT is responsible for:

i) Radio Frequency (RF) Spectrum Management for terrestrial and satellite operations and Orbit-Frequency coordination in respect of Satellite Systems keeping in view ITU's Radio Regulations.

ii) Assignment of radio frequencies for various radio services in India and all the related actions for national and international coordination.

iii) Licensing of all wireless stations of various categories.

iv) Coordination in all matters as national nodal agency, relating to International Telecommunication Union (ITU) including preparations for participation in their meetings and conferences after coordinating and harmonizing the views at national level with various wireless users from Govt. Departments/Organisation and others.

v) Conduct of examinations for award of Certificate of Proficiency (COP) for Radio Officers/Pilots/Wireless Operators on board ships and aircrafts and for award of Amateur Stations Operators Certificates (ASOC).

vi) Site clearance of wireless installations and effecting inter-departmental coordination through the apex body namely the Standing Advisory Committee on Radio Frequency Allocations. (SACFA).

vii) Direction and Control of Wireless Monitoring Organisation, the field organization.

Attached/Field Offices of DoT

4.3 Controller of Communication Accounts

The Offices of Controller of Communication Accounts (CCAs) came into existence on 1.10.2000, following the Corporatisation of the erstwhile operational arms of the DoT. These were created with a view to ensure smooth and efficient performance of major functions of the Department of Telecom at the field level. They have played a crucial role in ensuring smooth management of retirement and other terminal benefits of lakh of employees of DoT, BSNL and MTNL.

4.3.1 Functions being performed by CCA Offices

The 26 CCA offices spread across the length and breadth of the country are performing following important functions:

1. Disbursement of Pension: CCA offices are responsible for the settlement of pensionary and terminal benefits i.e. issue of pension payment orders, authorization of payment of commuted value of pension, gratuities, recovery of pension contribution, etc.

2. GPF, loans and advances: The CCAs are responsible for maintenance of GPF accounts and recovery/ accounting of long term advances taken by employees.

3. License Fee collection: Majority of the licensees are under revenue share regime of license fee. License Fee is based on fixed percentage of Gross Revenue/Adjusted Gross Revenue. The CCAs collect and account license fee from the telecom service providers in the circle. The preliminary scrutiny of license fee related documents as per license agreement is also performed by them. CCA offices deal with license fee related work of approximately 200 licensees under UASL/Basic/CMTS/NLD and other services.

4. Maintenance of Financial Bank Guarantees: The CCAs have been entrusted with the work of maintenance, renewal, revision and invocation of Financial Bank Guarantees submitted by the licensees.

5. Verification of Deductions: As per the license agreement, licensees claim deductions to calculate license fee payment. The CCAs are verifying the deductions on an quarterly basis (on account of pass thru charges, roaming service charges, sales tax , service tax)claimed by the licensees . The deductions claimed vary from 23% to 91% of the Gross Revenue under different categories of licenses.

5. Spectrum Charges: The CCAs are responsible for collection and monitoring of Spectrum Revenue from Telecom service providers in respect of 113 licensees relating to GSM/CDMA/UASL etc.

6. Universal Service Obligation: The CCA is responsible for the verification of the claims of the eligible service providers and release of payment. The CCA is responsible for physical inspection of facilities and monitoring the progress of Rural Telephony which has a direct bearing on subsidy disbursed.

6. The CCA also handle court cases at field level where the Government of India is a party in matters of licence fees, spectrum fees, pension, absorption issues etc.

7. The CCAs also hold pension Adalats and liaison with State Departments and other ministries on various issues.

4.4   Vigilance Telecom Monitoring Cells:

4.4.1   With the increasing number of telephone operators in the country the Government felt the need of presence of Telegraph Authority in the circles. The VTM cells are functioning as the field offices of the DoT. These cells perform the vigilance and monitoring functions. Vigilance functions include:-

Vigilance Functions:
- a) To Carry out inspection of premises of service providers(illegal) in order to curb illegal / clandestine activities
- b) Inspection of premises of the licensed service provider
- c) Control over clandestine / illegal operation of telecom networks by vested interest having no license
- d) To file FIR against the culprits, pursue the cases; issue notices indicating violation of conditions of various Acts in force from time to time.
- e) Analysis of call/subscription/traffic data of various licensees.
- f) Technical arrangement for the lawful interception / monitoring of all communications passing through the licensee's network.
- g) To ascertain that the licensee is providing the services within permitted area.

Monitoring Functions:
1. Coordination and monitoring of various network operators.
2. To check the compliance to the roll-out obligation as per license condition
3. Checking of the compliance by the licensee in respect of the license conditions and any directions issued by the licensor in public interest.
4. To ensure optimum call completion ratio of inter operator calls.
5. Matters related to national security.
6. Disaster Management: Taking over of network in the events of natural calamities or the other emergency situations.
7. Grievance re-dressal of subscribers in respect of deficiency by various operators.
8. Perform such other functions as may be entrusted to it from time to time by the DOT in overall interest of the country and consumers

4.5   Telecommunication Engineering Centre (TEC)

4.5.1.   Telecommunications Engineering Centre (TEC), is a Technical wing of the Department of Telecommunications (DoT), Ministry of Communications and Information Technology, Government of India. Its responsibilities include among other things:

- Preparing Standards and Specifications for harmonious growth of the Indian Telecom Network and Services for the public as well as private sector operators

- Carrying out evaluation of equipment and services

- According approvals for equipment, technology and services

- Studying new technology & services and give technical advice to DoT for their introduction in the Indian Telecom Network

- Technical & Advisory support for DoT

- Technical advice to TRAI and TDSAT on request of DoT

- Drawing up Fundamental Technical Plans of DoT

- Interaction with multilateral agencies like APT, ETSI and ITU etc., through DoT

- Creating facilities to further the objectives of MRA

- Develop necessary expertise to imbibe the latest technologies and results of R &D

- Coordinate with C-DoT to provide details on the technological developments in the Telecom Sector for policy planning at DoT level.

TEC has following specialized division:
- External Plant
- Information Technology
- Networks
- Transmission
- Radio Transmission
- Satellite Division
- Value Aided Services
- Switching
- Mobile Communication

In addition, Regional Coordination division coordinates all Regional Centres. The Regional Centres facilitate testing of equipment and licensed service networks. These are located with regional headquarters in Bangalore, Kolkatta, Delhi and Mumbai to cover the entire country. The Approval certificate is issued from centralized unit called Type Approval Unit under RC division.

4.6   Wireless Monitoring Organization (WMO)

The Wireless Monitoring Organization (WMO) is field organization of the WPC Wing of the DoT, Ministry of Communications & IT.

The WMO has a network of 22 Monitoring Stations spread all over the country to monitor (technical and operational parameters of) all wireless transmissions, both Government and Non-government agencies. These stations resolve cases of harmful interference as well as collect data on vacancy/occupancy of Radio Frequency Spectrum, identify and to locate unauthorized

wireless transmissions. To ensure mutual compatibility and efficient working of various services like microwave, LOS links, Radar, Cellular Radio Telephones etc., Mobile monitoring is also carried out.

An International Satellite Monitoring Earth Station is functioning at Jalana (Maharashtra) with its primary objective to protect Indian Satellite Systems from the interference caused by the transmissions of the foreign satellite systems by monitoring/checking of various technical parameters.

4.7   Administrator, Universal Service Fund (USF)

The Universal Service Support Policy (USSP) announced by the Government on the basis of the recommendations of the TRAI came into effect from 1.4.2002. The scope of the Universal Service Obligation (USO) includes public access through VPTs[8], RCPs[9], as well as provision of rural household telephones (RDELs) in the identified net high cost rural/remote areas. For implementation of the Universal Service Support Policy, the Government has appointed an Administrator, Universal Service Fund w.e.f. 1.6.2002. The office of the Administrator, USF is an attached office of the DOT.

The main functions of the Administrator, USF are as follows:

a)   Implementation of the guidelines laid down by Government for providing Universal Service Support;

b)   Suggesting such changes in policy as may be deemed necessary for implementation of Universal Service Support;

c)   Forecasting the requirement of Universal Service Funds for each financial year and obtaining approval of Government through Department of Telecom; and

d)   Ensuring that the prescribed Universal Service Levy is credited to the appropriate Universal Service Fund on a regular basis.

As envisaged in NTP-99, the resources for the implementation of the USSP are being raised through a Universal Service Levy (USL) which has been fixed at 5% of the Adjusted Gross Revenue (AGR) earned by all the operators as part of the licence fee, except for pure Value Added Service Providers, Voice Mail, e-mail and Internet Service Providers, etc.

Regulatory Authority/Appellate Tribunal

4.8   Telecom Regulatory Authority of India (TRAI)

The Telecom Regulatory Authority of India (TRAI) was established under the Telecom Regulatory Authority of India Act, 1997 enacted on 28th March 1997. The TRAI (Amendment) Act, 2000 led to reconstitution of the Authority. It consists of one Chairperson, two full- time members and two part-time members. TRAI has endeavoured to encourage greater competition in telecom sector together with better quality and affordable prices, in order to meet the objectives of NTP'99. Vide Notification of the Government dated 9th January

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[8] Village Public Telephones
[9] Rural Community Phones

2004, broadcasting and cable services have also been included in the definition of 'telecommunication service' under the TRAI Act, and thus, broadcasting and cable services have also come under the purview of TRAI.

4.8.1 Functions of TRAI

4.8.1.1 Under section 11(1) (a) of the TRAI Act, the TRAI is to make recommendations either suo- moto or on a request from the licensor on the following matters:
(i)   Need and timing for introduction of new service providers,
(ii)   Terms and conditions of licence to service providers,
(iii)   Revocation of licence for non-compliance of the terms and conditions of licence
(iv)   Measures to facilitate competition and promote efficiency in the operation of telecommunication services,
(v)   Technological improvements in the services provided by the service providers,
(vi)   Type of equipment to be used by the service providers after inspection of the equipment used in the network,
(vii)   Measures for the developments of telecommunication technology,
(viii) Efficient management of the available spectrum.

4.8.1.2   Under section 11(1) (b) of the TRAI Act, TRAI's regulatory functions are:

(i)   Ensure compliance of the terms and conditions of licence,

(ii)   Fix the terms and conditions of inter-connectivity between the service providers,

(iii)   Ensure technical compatibility and effective interconnection between different service providers,

(iv)   Regulate arrangement amongst service providers of sharing their revenue derived from providing telecommunications services,

(v)   Lay down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct periodical survey of such service provided by the service providers so as to protect the interest of the consumers,

(vi)   Lay down and ensure the time period for providing local and long distance circuits of telecommunication between different service providers.

(vii)   Maintain register of interconnection agreements and all such other matters as may be provided in the regulations,

(viii) Ensure effective compliance of universal service obligations.

4.8.1.3   Under section 11(1) (c) & (d) of the TRAI Act, TRAI's other functions are:

(i)   Levy fee and other charges at such rates and in respect of such services as may be determined by regulations,

(ii)   Perform such other functions including administrative and financial functions as may be entrusted to it by the Central Government or as may be necessary to carry out the provisions of the TRAI Act,

As per section 11(2) of the TRAI Act, the function of the Authority is to notify from time to time in the Official Gazette the rates at which the telecommunication services within India and outside India shall be provided under the TRAI Act including the rates at which messages shall be transmitted to any country outside India.

In addition to the above, in exercise of the powers conferred by clause (d) of sub-section (1) of section 11 of the TRAI Act, the Central Government has entrusted additional functions to TRAI in respect of broadcasting and cable services which mandates TRAI to make recommendations regarding the terms and conditions on which the "Addressable systems" shall be provided to the customers.

4.9   Telecom Disputes Settlement & Appellate Tribunal (TDSAT)

Telecom Disputes Settlement & Appellate Tribunal (TDSAT) was established in the year 2000 by Government of India after amending the Telecom Regulatory Authority of India Act, 1997. The Tribunal consists of a Chairperson, and two members. The TDSAT adjudicates disputes between licensor and licensee, between two or more service providers, between a service provider and a group of consumers and hear and dispose of appeals against any decision or order of the Telecom Regulatory Authority of India. The Tribunal has original as well as appellate jurisdiction. As per Section 16 (1) of the Act, the Appellate Tribunal is not bound by the procedure laid down by the Code of Civil Procedure but is guided by the Principals of Natural Justice and subject to the other provisions of the Act, the Appellate Tribunal has powers to regulate its own procedure.

In exercise of the powers conferred by the proviso to clause (k) of sub-section (1) of Section 2 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Central Government by Notification No. 44(E) dated 9.1.2004 notified the "broadcasting services" and "cable services" to be "telecommunication service".

TDSAT has also developed its own Website and all the important judgments and other activities of this Tribunal are available on the Website www.tdsat.nic.in.

Autonomous Body

4.10   Centre for Development of Telematics (C-DOT)

The Centre for Development of Telematics (C-DOT) was set up by the Government of India on August 25, 1984 as an autonomous scientific society under the Societies Registration Act, 1860, with its registered office in New Delhi. Its activities focus on research and development in the areas of Telematics technology, products and services. The organization is funded mainly by way of grants-in-aid from the Government.

4.10.1 Key Objectives

(i)   Development of total telecom solutions, technologies and application for the fixed line, mobile and packet based converged network & services with particular emphasis on rural and remote areas.

(ii) Development of local manufacturing capabilities for C-DOT products by using indigenous ancillary industries for components.

(iii) Research in the frontiers of information technology and telematics, taking into account futuristic trends.

(iv) Research and development in the telecom security arena of telecom equipment as well as services.

Public Sector Undertakings

4.11   Bharat Sanchar Nigam Limited (BSNL)

4.11.1 In pursuance of New Telecom Policy 1999, the Govt. of India corporatised the service providing functions of Department of Telecommunications (DOT) and transferred and business of providing telecom services in the country to the newly formed company viz Bharat Sanchar Nigam Ltd w.e.f. 1st October 2000. The Company has been incorporated as a company with limited liability by shares under the Companies Act 1956, with its registered and corporate office in New Delhi.

4.11.2 BSNL is a Public Sector Undertaking with an authorized share capital of Rs.10,000 crore and paid up capital of Rs.5,000 crore. It is one of the largest technology-oriented Public Sector Undertaking (PSU) in the country with a mandate of providing all types of telecom services.

4.11.3 It operates the telecom services in all the telecom circles of the country except Delhi and Mumbai where another PSU viz MTNL is operating.

a)   The vision of BSNL is to provide world-class telecom services ranging from plain telephone service to all types of value added services at affordable prices.

b)   BSNL is working towards the following objectives:

i)   To provide the state of art technology telecom services to esteemed customers on demand at affordable price in the country.

ii) To provide world-class telecom infrastructure in its area of operation and develop the country's economy.

iii) To further improve its operations in Domestic markets by proper marketing strategies and entering into joint ventures.

iv) To provide Point of Interconnection to other service provider as per their requirement promptly.

v)   To meet the telecommunications requirements of business enterprise in the country.

vi) To retrain its employees with customer orientation in its operations.

4.12 Mahanagar Telephone Nigam Limited (MTNL)

4.12.1 Mahanagar Telephone Nigam Limited (MTNL) was incorporated on Feb.28, 1986 under the Companies Act as a wholly owned Govt. Company and on April, 01 1986, assumed responsibility for the control, management, operation of the telecommunications Networks in Delhi & Mumbai. MTNL is the principal provider of fixed-line telecommunication service in these two Metropolitan Cities of Delhi and Mumbai and the jurisdiction of Company comprises the city of Delhi and the areas falling under the Mumbai Municipal Corporation, New Mumbai Corporation and Thane Municipal Corporation.

4.12.2. MTNL under a license issued on Feb' 2001 is also providing GSM based cellular services in both the metropolitan cities of Delhi (including the cities of Gurgaon, Faridabad, Ghaziabad and Noida) and Mumbai (including Kalyan as well).

4.12.3 A Joint Venture Company named United Telecom Ltd. (UTL) has been set up by MTNL, VSNL and TCIL along with Nepal Venture Pvt. Ltd. (NVPL) to provide CDMA based basic services in Nepal. UTL also has licence to operate NLD & ILD services.

4.12.5 In the international arena, a wholly owned subsidiary under the name of Mahanagar Telephone Mauritius Ltd. (MTML) has been providing services in Mauritius.

 4.12.6 MTNL has also formed a Joint Venture with Software Technology Parks of India (STPI) under Department of Information Technology, Ministry of Communication and Information Technology, New Delhi, with authorized capital of Rs. 50 crores.

4.12.7 Millennium Telecom Limited (MTL) a joint venture company of MTNL & BSNL with 51% & 49% equity participation is planning to lay its own submarine cable system from both east & west of the country to for east & middle east with an aim for onward connectivity to Europe and North America through existing & newly planned submarine cable via both East & west routes.

4.12.8 MTNL launched Broadband service based on the state of the art ADSL2+ technology.

4.13   ITI Limited

14.13.1   ITI Limited was established in July 1948 as a Departmental Undertaking of the Government of India and was converted into a Company in January 1950. It is the first Public Sector Undertaking to be set up by the Government of India.   The Authorized and Paid up Share Capital of the Company is Rs.700 Crores and Rs.588 Crore respectively as on 31-03-2005. The Registered and Corporate Office of the Company is situated at Bangalore.   The Company has grown into country's largest telecom company with state-of-the-art manufacturing facilities spread across six manufacturing units located at Bangalore, Naini, Rae Bareli, Srinagar, Palakkad & Mankapur. In addition Network systems unit with head quarters at Bangalore provides value-added services like Radio Paging, VSAT, etc. and there are 10 Regional Offices. It offers a complete range of telecom products covering the whole spectrum of Switching, Transmission,

and Access and Subscriber Premises equipment. In tune with the technology trend, it has embarked on the manufacture of GSM and CDMA infrastructure equipment.

4.13.2.   ITI strength lies in the strategic area of communications for Defense and the same has been epitomized by the prestigious ASCON project. By deploying its vast telecom expertise and infrastructure, the Company is consolidating its diversification into IT and IT – enabled services, acquiring keen competitive edge in the convergence market.

4.13.3   Major Customers of ITI products are BSNL and MTNL. ITI is also supplying Telecom Products to Railways, Defence and Corporate Sectors. ITI is also making all out efforts to become a key player in the global market and continue its exports efforts in Afghanistan, Africa and SAARC countries.

4.14   Telecommunications Consultants India Limited (TCIL)

4.14.1 On 10th March 1978, Telecommunications Consultants India Ltd. (TCIL) was incorporated as a wholly owned Government of India Company. The Company was set up with the objective of extending the wide ranging telecom expertise available with DoT to friendly developing countries.   On August 1st, 1978, the Company commenced its business.   The Company 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.

4.14.2. Core Competence

4.14.2.1 Company is undertaking projects in all the fields of telecommunications and IT in India and abroad. The core competence of the Company is in Network projects, Software Support, Switching and Transmission Systems, Cellular Services, Rural Telecommunications, Optical Fibre based backbone network, and CDMA based basic service networks, Billing, Mediation and customer care systems for different telecom services. The company is also diversifying into other business areas such as Optical Fibre on ground wire for power utilities, e-governance for State Governments in India and abroad, communication system for Airport Terminals & Light Houses, construction of roads etc.

4.14.2.2. Company has also entered into Basic and other licensed Services in India/ abroad through the JV route. TCIL already has operations of cellular services through a JV in Rajasthan.

4.14.2.3. Company secures business by participating in international and national competitive bidding. The company is also contributing to provide strategic communication in the neighboring countries like Nepal, Afghanistan, and Bhutan etc.

CHAPTER – II

Outcome Budget 2008-09

The Outcome Budget 2008-09 has been prepared for the schemes/programmes under Plan as well as Non-Plan. The major component of the Non-Plan funds is on account of the funds provided for the Universal Service Obligation Fund. The Outcome Budget 2008-09 prepared for the Department of Telecommunication includes the following:

2.1 Rural Telephony
(Universal Service Obligation Fund)

Telecom development in rural areas assumes special significance as more than 70% of India's population lives in villages. There is a strong two-way co-relation between telecom development and overall economic development of a region. Telecom services are important drivers for development, delivery of public services such as education, health etc. and integration of rural areas with the rest of the country. Recognizing this, Government had announced the Universal Service Support Policy on 27th March 2002 under which a separate fund for providing access to telegraph services to people in the rural and remote areas was set up. The resources for implementation of USO are raised through a Universal Service Levy (USL) which is part of the License Fee being paid by service providers. The USL has presently been fixed at 5% of the Adjusted Gross Revenue (AGR) of all telecom service providers except the pure value added service provider like Internet, Voice Mail, email service providers etc. The activities being undertaken by Department of Telecom under USO are geared towards augmenting the infrastructure and increasing telecom coverage in the rural and remote areas.

"Bharat Nirman Programme"

Initially the emphasis was on provision of access to public telephones through installation of Village Public Telephones, Rural Community Phones and replacement of MARR telephones. The VPT component is covered under the flagship **Bharat Nirman Programme** of Government of India 66822 uncovered villages had been identified for provision of VPTs. At the end of 31st January, 2008, VPTs have been provided in 52,464 uncovered villages.

Other USoF activities

Mobile telephony has brought about a revolution in the urban areas. This has resulted in a rapid growth in the teledensity in the urban areas. The difficult topography and the high expenses involved in laying landlines encouraged USOF to consider the mobile option for the rural areas. The Indian Telegraph Act, 1885 has been amended in December,2006 to enable USOF to support mobile telephony in the rural and remote areas. Agreements for setting up and managing infrastructure sites and provision of mobile services in rural and remote areas have already been entered into and the scheme has been launched on 01/06/2007. The scheme covers setting up of 7871 towers in rural and remote areas in 81 clusters spread over 500 districts all over the country. Each tower will be shared by a maximum of 3 telecom service providers. Most of the 7871 sites are likely to be commissioned during 2008-09.

New Projects:

a) **Mobile Infrastructure Phase-II:** The second phase of the scheme for setting up and managing infrastructure sites and provision of mobile services in rural and remote areas is also in the pipeline in which about 11,049 towers shall be installed. During the year 2008-09, about 6,000 towers are likely to be commissioned.

b) **Special scheme for Andaman & Nicobar islands and Lakshadweep & Minicoy islands and Ladakh (J & K)**: A special scheme for Andaman & Nicobar islands and Lakshadweep & Minicoy islands and Ladakh (J & K) is in pipeline in which about 300 towers shall be installed and mobile services provided.

c) **Pilot Projects:** The scheme envisages establishment of five pilot projects for technology development in the telecom sector which can be deployed in the rural and remote areas and will be supported with the approval of the Central Government.

d) **Rural Broadband**: A scheme for broadband connectivity to 8000 blocks with their district headquarters in two phases has been drawn up. The scheme shall serve the Customer Service Centres being set up by the Deptt of Information Technology and also schools, Primary health centres, Police stations and Panchayats etc.

e) **General Infrastructure**: The scheme will cover 3000 blocks and envisages Optical Fibre equipment augmentation between blocks and districts. It will also cover provision of new Optical Fibre cable connectivity between blocks and districts covering 2000 unconnected blocks.

f) **New VPTs in identified uncovered villages**: About 40,000 Census 2001 villages not having any public telephone facility have been identified for providing public telephone facility during the year 2008-09.

In view of the above ongoing and new activities, the Department of Telecom has made a provision of Rs. 2900/- crore in the budget estimates for the year 2008-09 against which a sum of Rs. 2000/- crore has been allocated. The Outcome Budget[10] has been prepared accordingly. It is expected that financial year 2008-09 will mark a watershed in the growth and development of USOF activities and their resultant positive impact on rural connectivity, socio-economic progress and political inclusion.

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[10] Refer Annexure-A

2.2   Telecom Engineering Centre (TEC)

Telecom Engineering Centre, as a part of DoT, Government of India, has its headquarters at New Delhi. The TEC is responsible for the standardization and development of generic requirement, interface requirements for Telecom Equipment services and products. It is also responsible for new telecom technology study, trials, evolution and induction in the network. A sum of Rs.10.00 crore has been provided under the plan 2008-09 for the setting up of NGN test lab and other activities and Outcome Budget[11] prepared for the same.

2.3   Wireless Planning & Coordination (WPC)

The approved plan outlay of Wireless Planning and Coordination Wing for the year 2008-09 is Rs. 4.00 crore. WPC/WMO, as part of the Telecom Sector Reform Technical Assistance Project, has implemented National Radio Spectrum Management and Monitoring System (NRSMMS). This project strives to improve the utilization of Radio Frequency Spectrum, which is a scarce national resource and essential for modern telecommunication services. The Outcome Budget[12] of WPC relates to the residual payment being undertaken under this project.

2.4   Wireless Monitoring Organization (WMO)

The approved Plan Outlay for Wireless Monitoring Organization is Rs.15 crore for the year 2008-09 and the Outcome Budget[13] relates to the outlay. The funds would be utilized mainly for the up gradation of infrastructure and strengthening of VHF/UHF Spectrum Analysis Capability, strengthening of HF monitoring, civil works and implementation of Management Information System among other activities.

2.5   Centre for Development of Telematics (C-DOT)

Centre for Development of Telematics (C-DOT) is the Telecom Research and Development Centre of the Government of India. It is an autonomous scientific society which develops total telecom solution technologies and applications for the fixed line, mobile and packet based converged network and services. C-DOT's current focus is on the development and deployment of next generation networks and cost effective rural wireless solutions. A plan outlay of Rs.195.63 crore has been approved for C-DOT during 2008-09. Rs.158.00 crore has been provided as budgetary support which includes funds for the Centre for Communication Security Research and Monitoring, TETC project and Rs 37.63 crore is from the internal resources of C-DOT. The projects to be undertaken by C-DOT during 2008-09 and which is part of the Outcome Budget[14] are related to security related projects, development of technology for rural areas etc.

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[11] Refer Annexure-B
[12] Refer Annexure-C
[13] Refer Annexure-D
[14] Refer Annexure-E

2.6   Telecom Regulatory Authority of India (TRAI)

A sum of Rs. 10.00 crore has been provided under Plan for telecom regulatory authority. The quantifiable deliverables/physical outputs related to TRAI are related to the various proposed studies/consultancies to be undertaken by TRAI and on the training to TRAI officials on technical and regulatory issues. The funds have also been provided for the land & building component of TRAI. Hence, the Outcome Budget[15] for TRAI is pertaining to the above parameters.

2.7   Telecom Disputes Settlement and Appellate Tribunal (TDSAT)

A sum of Rs.1 crore has been provided under Plan to TDSAT. The funds would be utilized for up-gradation of reference library, holding of seminars, appointment of legal consultants and study tour of Hon'ble Chair person/members and the training of staff. The Outcome Budget[16] of TDSAT, therefore, relates to the above facilities.

2.8   Bharat Sanchar Nigam Limited (BSNL)

Bharat Sanchar Nigam Ltd. (BSNL) has a approved Plan Outlay of Rs. 18,591 crore without GBS for the year 2008-09. The funds would be utilized for the provision of telecom services internet, broadband facilities amongst other programmes given in the Outcome Budget[17].

2.9   Mahanagar Telephone Nigam Limited (MTNL)

The approved plan outlay of MTNL for the year 2008-09 is Rs. 2430.97 crore with no budgetary support. The resources are being generated by the company through its internal and extra budgetary resources. The outcome targets as given in the Outcome Budget[18] of MTNL mainly relate to increase in the net switching capacity, convergent billing and to support expansion in new service areas abroad.

2.10   DoT Projects

The Budgetary support of Rs.375 crore includes provision for the following projects and the Outcome Budget[19] has been prepared accordingly.

(a)   **Setting up of Telecom Testing and Security Certification Centre (TETC):** Advances in computer and communication technology formed a basis of global economic growth and increase of standard of living. With this increased reliance comes the need to make information system more secure, test worthy, sustainable and available in the face of both intentional attacks and accidental faults. There is a need to form comprehensive tests in order to assure oneself of secured network. It is important to create a test bed in which the Government has adequate control in devising protocols and procedures for testing of carrying out test of every telecom

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[15] Refer Annexure-F
[16] Refer Annexure-G
[17] Refer Annexure-H
[18] Refer Annexure-I
[19] Refer Annexure-J

products and carrying out research. **However, this project has been made part of C-DOT and funds provided under C-DOT head.**

(b)   Technology Development & Investment Promotion: For providing technical assistance for promoting investment in the manufacturing sector, export of telecom equipments to the developing/underdeveloped nations and setting up of telecom centres of excellence (TCoE) an amount of Rs.2 crore has been provided.

(c)   Undersea Cabling between Mainland and Andaman & Nicobar (UM&AN): In order to provide an alternate redundant path to avoid communication black out in a disaster it is felt eminently desirable to have a submarine cable link from mainland to Andaman & Nicobar Island.   This is also in line with the Government's approach and management in the developmental activities project. A token sum of Rs.5 crore has been provided for this project in BE 2008-09 as a token provision.

(d)   OFC based network for Defence Services (DS): In the context of coordination/vacation of spectrum by Defence Services, based on a meeting between Secretary (Telecom) and Defence Secretary, it was agreed in principle that DoT would help in replacement of some of the Defence wireless networks between fixed locations, with Optical Fibre Cable based network through BSNL, etc. The urgency for coordination/vacation of spectrum by Defence for growth of mobile services as well as introduction of 3G services, has been recognized at the level of PMO also. The Ministry of Defence has requested for this project to be undertaken by DoT, with DoT funds, for faster execution etc. Hence, an amount of Rs.170 crore has been provided in BE 2008-09.

RURAL TELEPHONY
(UNIVERSAL SERVICE OBLIGATION FUND)
OUTCOME BUGDET 2008-09

S.No.	Name of Scheme/Programme	Objective/Outcome	Outlay 2008-09 (fig. in crores)			Quantifiable Deliverables/ Physical Outputs	Projected Outcome	Processes/ Timelines	Remarks/Risk factors
1	2	3	4			5	6	7	8
			4(i)	4(ii)	4(iii)				
			Non-Plan Budget	Plan Budget	Complementary/Extra Budgetary Resources				
1	Operation & Mtce of VPTs	Operation and Maintenance of existing VPTs.	110						
2	Replacement of MARR VPTs	Replacement of MARR VPTs to technology other than MARR and mtce.of those already replaced.	230			1651	1651	Jun-08	
3	Provision of RCPs	Installation of second VPT in villages with population exceeding 2000 and mtce of existing RCPs.	10			4797	4797	Jun-08	Numbers may reduce if PCOs are already available
4	VPTs in Uncovered Villages	Installation of VPTs in villages without any public telephones and mtce. Of existing VPTs.	157			10480	10480	Jun-08	DSPT installation slow
5	New VPTs in identified Uncovered Villages as per Census 2001		73			10000	10000	Mar-09	Agreement yet to be signed

S.No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2008-09 (fig. in crores)			Quantifiable Deliverables/ Physical Outputs	Projected Outcome	Processes/ Timelines	Remarks/Risk factors
6	Rural Household DELs installed between 1/04/02 and 31/03/2005	Mtce of RDELs installed b/w 01/04/02 and 31/03/05.	200						
7	Rural Household DELs installed between 1/04/05 and 31/03/2007	Mtce of RDELs installed b/w 01/04/05 and 31/03/07 and also those to be installed b/w 1/04/07 and 31/03/08.	300						
8	Mobile Infrastructure-Phase-I (number of towers)	Setting up of 7871 infrastructure sites and provision of mobile services in rural and remote areas of the country.	120			7671	7671	Dec-08	Time overrun by six months; Expected Col.No-7 date will be met
9	Mobile Infrastructure-Phase-II(Number of towers)	Setting up of 11,049 infrastructure sites and provision of mobile services in rural and remote areas of the country.	94			6000	6000	Mar-09	Scheme under finalisation
10	Special scheme for Andaman & Nicobar islands, Lakshadweep and Minicoy islands and Ladakh (J & K)	Setting up of about 300 towers and provision of mobile services for Andaman & Nicobar islands, Lakshadweep and Minicoy islands and Ladakh (J & K)	3.5			300	300		Scheme under finalisation
11	Pilot Projects	Launching of five pilot projects with a ceiling of Rs.50,00,000/- per project	2.5			5	5	Dec-08	Proposals received under scrutiny

S. No.	Name of Scheme/ Programme	Objective/Outcome	Outlay 2008-09 (fig. in crores)			Quantifiable Deliverables/ Physical Outputs	Projected Outcome	Processes /Timelines	Remarks/Risk factors
12	Broadband Connectivity Phase-I	Provision of Broadband connectivity to 5000 Block Headquarters.	500			5000	5000		
13	Broadband Connectivity Phase-II	Provision of Broadband connectivity to 3000 Block Headquarters.	300			2000	2000		
14	General Infrastructure: Equipment augmentation b/w blocks and districts.	Optical Fibre equipment capacity augmentation b/w 3000 blocks and their districts.	300			3000	3000		
15	General Infrastructure: Cable connectivity b/w blocks and districts.	New Optical Fibre cable connectivity between 2000 blocks and their districts.	500			2000	2000		
			2900						

Note:

1. **MARR VPTs**: Originally 1,86,872 MARR VPTs were to be replaced and the same has been reconciled by BSNL in August'2007. The revised figure is now 1,82,766

2. **RCP:** Originally 46,253 RCPs were to be provided by BSNL and Reliance. The same has now been reconciled to 43,409 after revision by BSNL. Further Reconciliation is also under process for the number of RCPs to be provided by Reliance.

3. **VPTs in UNCOVERED VILLAGES**: Reconciliation is being carried out by BSNL and the number of VPTs to be provided may reduce by about 4000.

4. **RDEL from 1/04/05 to 31/03/07**: The cut off date for installation under the scheme has been extended for one year period from 1/04/07 to 31/03/08. About 5,00,000 new RDELs are likely to be provided during the extended period.

5. **Mobile Infrastructure-Phase-I**: Scheme has been launched in June 2007 and majority of the towers are likely to be installed after December 2007.

6. The above target figures are estimated and subject to actual disbursement based on timely submission of claims by the USPs and number of facilities actually provided and/or working.

7. Subsidy claims are received and disbursed in arrears after completion of the quarter in which the facilities are provided and/or remained operational.

8. The physical numbers during the quarter represent the number of facilities for which subsidy is to be paid during the following quarters including those existing at the beginning of the quarter and eligible for subsidy.

9. Under O & M of VPTs and RDEL installed between 1/04/02 to 31/03/05, the facilities are already existing for which subsidy is to be paid.

Abbreviations used:
VPT: Village Public Telephone
MARR VPT: Multi Access Radio Relay VPTs
RCP: Rural Community
Phones
USP: Universal Service
Provider
DELs: Direct Exchange Lines

TELECOM ENGINEERING CENTRE

(Rs. in crore)

S. No.		Objective/ Outcome	Outlay 2008-09			Quantifiable/ Deliverable/ Physical Outputs	Project Outcome	Process Time	Remarks/ Risk factors
			4 (i) Non-Plan Budget	4(ii) Plan Budget	4 (iii) Complementary Extra-Budgetary Resources				
1	2	3	4			5	6	7	8
B. Project Activities									
PETTY WORKS									
1	Up gradation of TEC Intranet	The speed of existing intranet shall increase and also the access. Mail Server shall be provided to improve mail access.		0.25	0.00	Procurement and installation			
NGN Lab Work									
2	Procurement of PCs, Laptop for Office automation	Office Automation		0.30	0.00	Procurement and installation			
3	CPE Lab	To carry out testing and certification of NGN complaint CPEs[20] and terminals		1.94	0.00	Establishment of Lab			

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[20] Customer Premises Equipment

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4	EMF and Health	To carry out testing and development of test process related to EMF & Health		0.38	0.00	Establishment of Lab			
5	Transport Lab	To carry out testing and certification of NGN complaint transport equipment		0.94	0.00	Establishment of Lab			
6	Access Lab	To carry out testing and certification of NGN complaint Access Network equipment		1.17	0.00	Establishment of Lab			
7	Control Lab	To carry out testing and certification of NGN complaint Control equipment		0.88	0.00	Establishment of Lab			
8	Application/Services Lab including VoIP[21] and IPV6 Lab	To carry out testing and certification of NGN complaint Applications/Services equipment		0.96	0.00	Establishment of Lab			
9	Infrastructure	Upgrade of infrastructure for accommoding labs and staff		1.11	0.00				
10	Foreign Training of TEC Personnel	To keep the officers of TEC abreast with new developments in new technologies in the telecom Sector		1.07	0.00	Training to the officers			
11	NE Region	Satellite Based Broadband Network in NE Region		1.00	0.00	Proposal sent to DoT for Approval			
	Total			**10.00**	**0.00**				

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[21] Voice over Internet Protocol

WIRELESS PLANNING COORDINATION

(Rs. in crore)

S. No.	Name of Scheme	Objective /Outcome	Outlay 2008-09			Quantifiable Deliveries/ Physical Outputs	Projected Outcome	Processes/ Timelines	Remarks /Risk Factors
1	2	3	4			5	6	7	8
			4(i)	4(ii)	4(iii)				
			Non-Plan Budget	Plan Budget	Complementary Extra-Budgetary Resources				
1	National Spectrum Management and Monitoring System (NRSMMS)	Wrap up of the project and monitoring of setup during Defect Liability period.	Nil	4.00	Nil	Completion of spill over of work Completion of formalities for wrap up of the project Making payment of outstanding dues of 2007-08 Completion of formality towards finalization of AMC (Annual Maintenance Contract) for first year Creation of separate cell for monitoring of complete setup during defect liability period and thereafter	The automation of RF spectrum management has resulted in effective and efficient frequency management and radio monitoring processes.	July, '08 Dec., '08 March, '09 Oct., '08 April, '08	--

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WIRELESS MONITORING ORGANISATION

(Rs. in crore)

Sl. No.	Name of Schemes/ Programmes	Objective/ Outcome	Outlay 2008-09			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcome	Process/ Timelines	Remarks / Risk Factors
			Non-Plan Budget	Plan Budget	Complement-ary Extra-Budgetary Resources				
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8
1.	**Tech. Schemes** Creation of Project Implementation Unit (PIU)	To implement the schemes at S.No.3 & 4 given below	N/A	0.15	Nil	Salary & office expenses only	Timely Implementation of schemes at S.No.3 & 4 given below	The approval of the competent authority is expected during the FY 2008-09	Case under the process of administrative approval & financial concurrence
2.	Augmentation of Training Facilities	To procure technical literature/ development kits	N/A	0.50	Nil	Procurement of tech.l literature, software and hardware development kits	Capacity Building spectrum management including Radio Monitoring	Procurement of tech. literature, hardware, software will be completed in the FY 2008-09.	-Do-
3.	**Expansion of Monitoring Facilities**								
3.1.	Establishment of 6 additional Monitoring Stations	To cover the uncovered states/ cities	N/A	0.50	Nil	Additional 6 Wireless Monitoring Stations will be established	Uncovered states/ areas are expected to be brought under monitoring coverage.	Work will be taken up to establish all the 6 WMS	----

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3.2	Regional Maintenance Centre (RMC)	To procure hardware & software for use in Integration & Testing of Monitoring Facilities	N/A	0.50	Nil	Procurement of Hardware and Software	Maintenance of the equipment which is the State of the Art	Work on most basic facilities for testing and integration will be completed within the FY 2008-09	
3.3	Augmentation/ Up-gradation of Microwave Terminals (MWT) (1 GHz – 40 GHz)	Procurement of 20 MWT's to augment / add monitoring facilities up to 40 GHz across the country	N/A	2.85	Nil	To develop one Pilot MWT.	Initially to integrate and test one Pilot MWT for the fine tuning of specs for proposed 20 MWTs.	To develop pilot terminal within F.Y. 2008-09	Subject to offer by vendors.
3.4	**Tech. Schemes** Satellite Monitoring Earth Station.	To renovate & replace existing antenna sub-assemblies including motors at ISMES Jalna	N/A	1.50	Nil	Procurement of required equipment & accessories	Antenna assembly of existing Satellite Monitoring facility will be up-graded	The item of work will be completed	----
4.	Augmentation/ Up-gradation of Wireless Monitoring Facilities	To up-grade monitoring facilities for 2G/3G monitoring set up, HF/VHF DSC equipment.	N/A	3.00	Nil	Procurement of specialized monitoring equipment for 2G&3G, HF&VHF, DSC , packet radio communication decoders, antenna systems etc.	Monitoring Stations have to be better equipped to monitor emissions of 2G,3G,DSC etc.	Process of up-gradation to be spread over current 5 year plan 2007-12	----
	Total (A)			**9.00**					
5.	**Civil works**	Miscellaneous Civil works such as proc. of land, const. of office bldg, staff qtrs. & ancillaries..	N/A	6.00	Nil	Procurement of land & civil construction works	Housing of Monitoring establishments in their own buildings and staff quarters.	Procurement of land & civil construction works	Subject to execution by CPWD
	Total (B)			**6.00**					
	G. Total (A) + (B)			**15.00**					

CENTRE FOR DEVELOPMENT OF TELEMATICS [C-DOT]

Sl. No.	Name of Scheme/Programme	Objective/ Outcome	Annual Plan 2008-09 (Proposed)	Quantifiable Deliverables	Process/ Timelines	Remarks / Risk Facors
1	2	3	4	5	6	7

1	High bit rate network backbone on fiber & satellite	Development of high capacity systems for information transport over Optical Fiber & Satellite	7.50	• Development of different types of ONT[22]s which will cater to SOHO[23]/Residential customers for delivery of triple play services provided by G-PON[24]
				• Development of optical line terminal equipment (OLT) & its integration with OLT to provide complete solution
					Q2 : First type of
					Q4: ONT
					            OLT lab
					            model	

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[22] Optical Network Terminals
[23] Small office/Home Office
[24] Gigabit Passive Optical Network

			• Ethernet Passive Optical Network (EPON) based broadband for Metro Ethernet delivery	Q2: Study of standards & Q4: finalization of specs & architecture based on EPON Finalization of subsystems design documents	EPON, based on IEEE standard, is emerging as technology to deliver broadband services with simplicity of its architecture for transport of native Gigabit Ethernet packets. Transport through EPON up to the Junction box (Node) and building premise delivery would offer an economical solution of broadband for metro networks. Market scenario will also be studied
2	Communication & Security Research & Monitoring				
2(a)	Security Management for Law Enforcement Agencies	With the massive subscriber base which is growing further there is a need for development computational approaches using artificial intelligence techniques, biometric devices, crypto analysis, voice		• Demonstration of feasibility pilot for various technologies on a centralized platform• Scaling up of platform for lawful interception & monitoring for higher no. of operators; multiple technologies; additional LEAs[25] & covering more service	Q2:Q4 Updated pilot : demo of multi technology centralized platform. Scaling up of the platform for multiple technologies	Digitally secured workflow automation that can authenticate Law Enforcement Agency personal and desired. Information would be sent via encrypted channels to ensure that the integrity of information is

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[25] Law Enforcement Agencies

		recognition technologies, encryption/decryption, mining data bases etc. to provide useful inputs to the national security agencies about suspected target subscribers and potential antisocial groups.		areas		preserved and only authorized personnel access and get the same
				Study and design for creating Identity Matrix and Social Networking Analysis	Q 4: Finalisation of design & architecture	Creating a national identity database for telecom subscribers and analysis of call data records using advanced machine learning and AI techniques, to build a system that analyzes the CDRs[26] and finds specific calling patterns and identifies criminal groups and their unusual social networking that could possibly be involved in unlawful activities.
(i)	R&D for Security management for law & enforcement agencies		13.80	**Please see 2 (a)**		

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[26] Call Detail Records

(ii)	Scaled up infrastructure creation for centralised monitoring & analysis		70.20	**Please see 2 (a)**		
* 2(b)	*Secured Network for Defence & Govt. communication*			• Expansion of secure network facilities to various state capitals		Scaling up to reach for different areas in the country

All schemes are not likely to be taken concurrently. The outcome budget contains various R & D activities. Some of the priorities within scheme / deliverables would be re-considered after feasibility of research & timelines for the same may accordingly be refixed before the onset of the year. Also, the schemes will be taken based on the GBS provided.

* *Additionally, Rs.50.00 crores (currently excluded in the outcome budget for 2008-09) may be required for expansion of secured network facilities to various states / capitals under the program on secured network for Defence & Govt. Communications during the year, if approved.*

3	Technologies for North Eastern Region	To provide packet oriented telecom technologies also including possibility for use of satellite connectivity suitable for demography, terrain and environment of NE region and similar areas	16.00	VoIP technology, migration of MAX technology to next generation, implementation of network mgmt system & satellite-based system	Q1 to Q4 : Progressive implementation	NE component would also span across various appropriate deliverables of C-DOT technologies
4	Rural Technologies	Provisioning of broadband and end-to-end VoIP services in rural areas	16.65	VoIP based rural broadband access node & end-to-end voice services in rural areas over wireless interface	The dates for various milestones will be fixed by the end of Q1	The scheme may have different technology deliverables (including cognitive radio) progressively.

5	Broadband Technologies	Development of Multichannel metro aggregation platform for transport of multiple types of client interfaces.	7.00	Development of Basic platform of Multichannel metro aggregation platform for one type of client interfaces.		The projects will be studied initially for feasibility & targets will be decided accordingly.
		Broadband delivery on VDSL2		Development of VDSL2 interface for EPON, with integrated NMS		
6	Strategic & Enterprise Solutions	Development of state of art Transmission Network Management system for centralized supervision and analysis of a diverse set of transmission technologies for enhancing operational efficiency, fast service delivery with Business layer integration for various types of Transmission technologies	9.94	• Development of NMS for multi-technology and multi application Transmission Networks • Implementation of clearing house application to provide services on commercial basis • Other components including Network Operation Centre type of platform	Q1 to Q2 :	:• Detail requirements study & architecture finalization for NMS activities for transmission networks • Clearing-house application implementation on commercial basis	The Transmission NMS and its operations are specialized requirements of Network operators as the transmission network is a very wide & heterogeneous , consisting of various transmission technologies, supplied from various vendors also employing non-standard EML-NML layer interfaces .

| | | Project wise customization and deployment of CDOT ATM based systems for multiple defense applications and multiple projects. | | Mandatory testing for inducting CDOT systems in defense applications across multiple projects will be conducted jointly by CDOT and the Defence agency and developments relating to customization, prototyping and testing systems for new defense projects will be undertaken. | Q2 to Q4 : | Progressive targets for different sub deliverables are being worked out. | Such customization associated developments need to be undertaken for other Naval programs, wherein, CDOT ATM based technology will be project-wise customized. Development work related to each project will be taken up as a different deliverable under this scheme. |
| | | Provisioning of innovative computer based voice applications and solutions | | Development and testing of computer based voice services | Q1: | Feasibility study will be carried-out decide the timeline | CDOT had developed a platform for provisioning of computer based voice applications. New interactive applications like Group Message System, Fault Repair Service etc.will be implemented on this platform and put on field trials |

All schemes are not likely to be taken concurrently. The outcome budget contains various R & D activities. Some of the priorities within scheme / deliverables would be re-considered after feasibility of research & timelines for the same may accordingly be refixed before the onset of the year. Also, the schemes will be taken based on the GBS provided.

7	Enhancements / New Features / up gradation / adaptation / technical support for developed technologies	The scheme focuses on developmental enhancements, migration to next generation technologies leveraging the legacy, feature addition, scalability, value additions, customization for changing requirements, etc for the developed / deployed technologies as up gradation are the major components envisaged under the scheme	28.22	IN Enhancements for WIN services & continuation of its trial; enhancements for IN converged network; Indigenous development /& trial for NGN Trial for CIIS at Enforcement Directorate; OSS trial /AT to provide services on commercial basis • Enhancement of other developed & deployed technologies • Other progressive requirements	Q1 to Q4 :	It is a progressive work to be done continuously throughout the year	This scheme focuses on development for enhancements like evolution / migration, feature addition, scalability etc. and support activities like trials, software /& hardware patches / solutions for technologies developed / deployed
8	Basic Research on Telecom Network & Enabling Technologies/ Study/ Pilot Projects	This scheme focuses on conducting basic research on areas like Spectrum management, Quality of service, Network and service optimization,	1.75	Study Project : Digital Up/Down Converters for Software Defined Radios [SDR]	Q3 :	Study report	In SDRs[27], Digital Up/Down Converters are intermediate subsystems between digitally implemented Modems and analogue RF front ends ; they generically comprise of NCOs, high speed ADCs & DACs, so that they can be driven by the system software.

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[27] Software Defined Radios

				Study Project : High Speed Packet Technology	Q4 :	Study report	Scalable, high capacity Media Gateways & IP routers would be required in large, unified Networks spanning various wireless, Cellular & legacy wireline networks.
		enabling technologies and techniques, feasibility studies on emerging/green field technologies and on piloting trials also (through partnerships) to gain operational insights and an appreciation of technical/logistic issues.		Pilot Project: CDOT Next Generation Technology (NGN) Trials	Q4 :	Commencement for technology trials	Trials of VoIP enhancements made to CDOT MAX technology will be field tried in the operators' networks before clearing the enhancements for mass deployment.
				Pilot Project: High throughput, enhanced Wi-Fi Mesh Network: A campus Network for Surveillance	Q1:	Feasibility study will be carried-out	Next generation, enhanced Wi-Fi technology is evolving, for providing near wireline speed. A campus network will be set up to study its performance related issues, for future integration/development for North Eastern regions.
9	C-DOT Alcatel Research Centre (CARC)	CARC is a joint venture program between C-DOT & Alcatel approved by the Cabinet during the 10th plan period to establish Broadband & Wireless Access Research Centre in India.	13.00	Mobile WiMAX technology	Q3 :	Commencement for technology trials	C-DOT's contribution in joint venture is Rs.104.00 crore which comprises of equity & loan equally. The equity component is Rs.52.00 crores spread over 3yr period from 2005-06 to 2007-08 & loan component of 52.00 crore is spread over 4yrs from 2006-07 to 2009-10. Under the 11th Plan, this joint venture program will

							continue the research and development of Wireless broadband and supporting technologies First amongst the deliverables is mobile WiMAX technology.
10	Campus Infrastructure	Construction of residential facilities for C-DOT staff at Delhi R&D campus area, to further enhance environment for R&D.	6.57	Construction of dwelling & Hostel facilities for C-DOT staff & Project Board (Priority for the hostels)	Q4 :	Construction activity will be in progress	The R&D building and associated services had already been completed including state of art labs & offices operational from the premises of Delhi Campus. Construction of residential accommodation could not commence, awaiting statutory bodies' approval.
11	Telecom Testing & Security Certification Centre (TETC)	Setting up of testing & security certification centre	5.00				
			195.63	The GBS component is taken as Rs.158.00 crores which caters to 'Communication & Security Research & Monitoring' program , Rs.5.00 crore is also considered under the outlay to be given to TETC activities. The balance amount of GBS support of Rs.64.00 crores for other R&D technology programs, including Rs.16.00 crore for NE activities.			

All schemes are not likely to be taken concurrently. The outcome budget contains various R & D activities. Some of the priorities within scheme / deliverables would be re-considered after feasibility of research & timelines for the same may accordingly be refixed before the onset of the year. Also, the schemes will be taken based on the GBS provided.

TELECOM REGULATORY AUTHORITY OF INDIA

(Rs. in crore)

Sl. No.	Name of the Scheme / Programme	Objective / Outcome	Outlay 2008-09			Quantifiable deliverables / Physical Output	Projected outcome	Process / Timelines	Remarks
			Non-Plan Budget	Plan Budget	Complime ntary Extra-Budgetary resources				
1.	Institutional Capacity Building Project of TRAI	To strengthen the institutional capabilities of TRAI to perform its functions under the TRAI Act, 1999 including carrying out of consultative studies on regulatory issues and provision of training	-	3.00	-	(a) Consultative studies / workshops on regulatory issues	The proposed studies will help TRAI in formulating its recommendations and in other regulatory functions	To be completed during 2008-09	
						(b) Provision of training for TRAI officials on technical and regulatory issues	To meet the training needs of TRAI officials		
2.	Purchase of Land & Building (Capital)	To obtain own office premises	-	7.00	-	The proposed land has been identified and necessary formalities are being taken with DDA for transfer of land	At present TRAI is paying exorbitant rents for its office. By having its own office premises, there would be savings on this count in the long run	Construction would be completed in 18 months from the date of transfer of land by DDA	
		Total		**10.00**					

TELECOM DISPUTES SETTLEMENT AND APPELLATE TRIBUNAL

(Rs. in crore)

Sl. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2008-09			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcomes	Processes/ Timelines	Remarks/ Risk Factors
			Non-Plan Budget	Plan Budget	Comple-mentary Extra-Budgetary Resources				
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8
1	Up gradation and maintenance of Reference Library	Purchase of Books and networking of reference Library for improvement of delivery system						1st Quarter	
		Purchase of Books and case monitoring system/SMS alerts		0.10				2nd Quarter	
		Purchase of Books and networking of reference library						3rd Quarter	
		Purchase of Books						4th Quarter	
2	Study tours of Hon'ble Chairperson/ Members and training of staff	Identification of countries where study tours of Hon'ble Chairpersons/Members are to be undertaken, training institutes where staff can be trained and where possible study tours/training arranged.		0.60				1st Quarter	Since the itinerary depends on the action taken in the first quarter, targets have to be fixed accordingly for the next three quarters

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(Rs. in crore)

Sl. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2008-09			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcomes	Processes/ Timelines	Remarks/ Risk Factors
			Non-Plan Budget	Plan Budget	Comple-mentary Extra-Budgetary Resources				
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8
3	Holding of Seminars	Identification of places for organizing seminars and making arrangements for the same		0.30				Each Quarter	Action taken would depend upon the identification of places in the first quarter, targets have to be fixed accordingly for the next three quarters.
	Total			**1.00**					

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BHARAT SANCHAR NIGAM LIMITED

(Rs. in Crore)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2008-09	Quantifiable Deliverables	Actual Achievement	Processes/ Timelines	Remarks / Risks / Constraints
1(a)	DELs on Mobile	To provide DELs on demand	Annual Outlay for 6236 cr.	Total 105 lakh			
			1st Qtr. 624 cr.	1st Quarter 10.5 lakh			
			2nd Qtr. 1247 cr.	2nd Quarter 21.0 lakh			
			3rd Qtr. 1871 cr.	3rd Quarter 31.5 lakh			
			4th Qtr. 2494 cr.	4th Quarter 42.0 lakh			
1(b)	DELs on landline & WLL	To provide DELs on demand	Annual Outlay for 3906 cr.	Total -8.93 lakh			
			1st Qtr. 391 cr.	1st Quarter -0.89 lakh			
			2nd Qtr. 781 cr.	2nd Quarter -1.79 lakh			
			3rd Qtr. 1172 cr.	3rd Quarter -2.68 lakh			
			4th Qtr. 1562 cr.	4th Quarter -3.57 lakh			
1(c)	Internet connections		Annual Outlay for 355 cr.	Total 5.25 lakh			
			1st Qtr. 36 cr.	1st Quarter 0.52 lakh			
			2nd Qtr. 71 cr.	2nd Quarter 1.05 lakh			
			3rd Qtr. 106 cr.	3rd Quarter 1.58 lakh			
			4th Qtr. 142 cr.	4th Quarter 2.10 lakh			
2	Broadband connections	To provide Multiplay i.e voice,video & data on demand and allied services	Annual Outlay for 2813 cr.	Total 14.7 lakh			
			1st Qtr. 281 cr.	1st Quarter 1.5 lakh			
			2nd Qtr. 563 cr.	2nd Quarter 2.9 lakh			
			3rd Qtr. 844 cr.	3rd Quarter 4.4 lakh			
			4th Qtr. 1125 cr.	4th Quarter 5.9 lakh			

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3	TAX (Killo Circuts)	To provide connectivity for additional exchange equipment & provide POIs on demand	Annual Outlay for 1176 cr.	Total 1260 KCTs			
			1st Qtr. 118 cr.	1st Quarter 126 KCTs			
			2nd Qtr. 235 cr.	2nd Quarter 252KCTs			
			3rd Qtr. 353 cr.	3rd Quarter 378 KCTs			
			4th Qtr. 470 cr.	4th Quarter 504 KCTs			
4	OFC (RKMs)	To provide Transmission network for new exchange equipment & provide Bandwidth on demand	Annual Outlay for 4105 cr.	Total 29925 RKMs			
			1st Qtr. 411 cr.	1st Quarter 2992 RKMs			
			2nd Qtr. 821 cr.	2nd Quarter 5985 RKMs			
			3rd Qtr. 1231 cr.	3rd Quarter 8978 RKMs			
			4th Qtr. 1642 cr.	4th Quarter 11970 RKMs			
	Grand Total		**18591**				

MAHANAGAR TELEPHONE NIGAM LIMITED

(Rs. in crore)

S. No.	Name of scheme/programme	Objective /Outcome	Outlay 2008-09			Quantifiable Deliverables/physical outputs	Projected Outcome	Processes/ Timelines	Remarks/Risk Factors
1	2	3	4			5	6	7	8
			Non-plan Budget	Plan Budget (Rs in Crores)	Complementary Extra-Budgetary Resources				
1.	Switching (including TAX/TANDEM) and access lines(including CDMA/ WLL, Handsets, GSM)in existing and new areas	Increase in net switching capacity	-	1601.58	-	Additions of 1000K lines in net switching capacity for WLL & GSM	Deployment of 3G GSM	November 2008	Delay in supplies by supplier, A/T, problem in site acquisition & finalization of tender/orders. Delay in permission for digging/laying of ducts for cables.
						Addition of 96K lines of TAX/Tandem/NGN capacity	Introduction of class iv NGN	November 2008	
2.	Deployment of DLC/DSLAM/FTTH & Metro Ethernet		-	163.60	-	Addition of 500K ports of lines TAX/Tandem/NGN capacity	Deployment of FTTH	Feb 2009	
3.	IT related Services	Convergent billing		165.79		Introduction of Convergent billing for services	Convergent billing	January 2009	
4.	Expansion in new service Areas Abroad and National Acquisition	Service in Overseas Operations		500.00		To expand in other areas.	-	-	-
	Total		**-**	**2430.97**	**-**				

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DoT PROJECTS

(Rs. in Crore)

Sl. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2008-09			Quantifiable/ Deliverables/ Physical Outputs	Projected Outcomes	Processes/ Timelines	Remarks/ Risk Factors
			Non-Plan Budget	Plan Budget	Comple-mentary Extra-Budgetary Resources				
1	2	3	4(i)	4(ii)	4(iii)	5	6	7	8
1	Undersea Cabling between Mainland & A&N Islands (UMA&N)	To connect the Mainland with the Islands of A&N.		5.00		Laying of the undersea cable	Better connectivity	Details of the Project are being worked out	Token provision has been made
2	Technology Development and Investment Promotion	Providing technical assistance for promoting investment in the manufacturing export of telecom equipments, and setting up of telecom centres of excellence (TCoEs)		2.00		Hosting of India Telecom 2007 and more such event Providing funds for setting up of TCoEs	To project India as the next hub for telecom equipment manufacturing and showcase the telecom growth in the country	Ongoing activity	
3	OFC based network for Defence Services (DS)	To provide alternate network for Defence Services for releasing spectrum		170.00		OFC network will be laid for Defence Services	Alternate network on release of spectrum by Defence Services		

Note: The DoT project of Setting up of Telecom Testing and Security Certification Centre (TETC) has been made part C-DOT with effect from 2008-09. Funds to the extent of Rs.5.00 crore have been allocated during 2008-09.

CHAPTER – III

Reform measures and Policy initiatives

3.1   Introduction

Indian Telecommunication sector has undergone a major process of transformation through significant policy reforms, particularly beginning with the announcement of NTP 1994. The major thrust of NTP 1994 was on universal service and qualitative improvement in telecom services and also, opening of private sector participation in basic telephone services. An independent statutory regulator was established in 1997. The most important landmark in telecom reforms, however, came with the New Telecom Policy 1999 (NTP-99). Rather than insisting on the prior fulfillment of its revenue obligations, NTP-99 allowed service providers to "migrate" from fixed license fee regime to a revenue sharing regime. Recognizing that broadband services can contribute significantly in the growth of national economy, Department of Telecom, announced Broad policy 2004 in October, 2004.

3.2   National Telecom Policy 1994

NTP 1994's thrust was on universal service and qualitative improvement in telecom services and also, opening of private sector participation in basic telephone services. NTP 1994 defined certain important objectives including availability of telephone on demand, provision of world class services at reasonable prices improving India's competitiveness in global market and promoting exports. Recognizing the fact that resources for achieving these targets would not be available only out of Government sources and it was, therefore, acknowledged that private investment and involvement of the private sector was required to bridge the resource gap.

The private sector participation in the telecommunication services sector was introduced in a phased manner from the early 90's initially for Value Added Services such as Paging Services and Cellular Mobile Telephone Service (CMTS) and thereafter for Basic Telephone Services (BTS). After a competitive bidding process in 1995, licenses were awarded to 8 CMTS operators in 4 metros, 14 CMTS operators in 18 State circles, 6 BTS operators in 6 State circles and 2 paging operators in 27 cities and 18 State circles. VSAT Services were also liberalized for providing data services and 14 operators were issued licenses. The Government also announced the policy for Internet Service Provision (ISP) by private operators and commenced licensing of the same.

3.3   New Telecom Policy, 1999

A world-class telecommunication infrastructure is a key to rapid economic and social development of the sector. It is critical not only for the development of the communications and information technology industry but also has wide spread ramification in various other sectors of the economy. Keeping these objectives in mind, the Government laid down the New Telecom Policy, 1999 (NTP, 1999). The guiding principles of the NTP are as follows:

- To make available affordable and effective communications for all citizens.

- To strive to provide a balance between the provision of universal service to all uncovered areas, including the rural areas, and the provision of high-level services capable of meeting the needs of the country's economy;
- To encourage development of telecommunication facilities in remote, hilly and tribal areas of the country;
- To create a modern and efficient telecommunications infrastructure taking into account the convergence of IT, media, telecom and consumer electronics and thereby propel India into becoming an IT superpower;
- To convert PCOs[28], wherever justified, into Public Teleinfocentres having multimedia capability like ISDN services, remote databases access, Government and community information systems etc.
- To transform in a time bound manner, the telecommunications sector into a greater competitive environment in both urban and rural areas providing equal opportunities and a level playing field for all players;
- To strengthen research and development efforts in the country and provide an impetus to build world-class manufacturing capabilities;
- To achieve efficiency and transparency in spectrum management.
- To protect the defense and security interests of the country.
- To enable Indian telecom companies to become truly global players.

The key policy provisions of NTP-99 are:

1. As mentioned earlier, a significant shift from the fixed license fee regime to a license fee regime based on revenue sharing mechanism.
2. Interconnectivity and sharing of infrastructure among various service providers within the same area of operations is permitted.
3. Separation of policy and licensing function of the DoT from service provision function.
4. National long distance services sector to be opened to competition from January 1, 2000.
5. Service providers would carry both voice and data-traffic.

3.4   Opening up of the sector

The broad policy provisions as laid down in NTP 99 have been implemented by Government in letter and spirit. Full competition has been ushered in through unrestricted entry in almost all the service sectors. The migration package from fixed licence fee regime to revenue sharing basis was implemented. The policy and licensing functions of DoT have clearly been delineated from the service provisioning. National as well as international long distance services sector has been opened to full competition.

3.5   Unified Access (Basic and Cellular) Services Licence Regime

Keeping in view the rapid expansion of telecom services and the fact advances in technologies erase distinctions imposed by earlier licensing systems, Government introduced in November, 2003 the following categories of licences for telecommunication services :

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[28] Public Call Offices

(i)   Unified Licence for Telecommunications services permitting Licensee to provide all telecommunication/telegraph services covering various geographical areas using any technology;

(ii)   Licence for Unified Access (Basic and Cellular) services permitted Licensee to provide Basic and/or Cellular Services using any technology in a defined service area.

3.6   Telecom Equipment Manufacturing

The Government has taken a number of fiscal measures to lower custom/excise duties on the telecom and telecom related equipments. Specified equipment have been fully exempted from customs duty. Other telecom equipment, which is in the nature of capital goods, attract concessional rate of 7.5%. The peak rate of customs duty has also been reduced to 10% during the 2007-08. Cell phones have been exempted from customs duty and excise duty/CV duty. In fact, reduction of customs duty on Cell phones has seen the number of cellular users increasing exponentially.

3.7   Broadband Policy 2004

Broadband services contribute significantly in the growth of GDP and enhancement in quality of life through societal applications including tele-education, tele-medicine, e-governance, entertainment as well as employment generation. Broadband connectivity is defined as "*an always on data connection i.e. able to support interactive services including internet access and has the capability of the minimum download speed of 256 kbps to an individual subscriber from the point of presence (POP) of the service provider intending to provide broadband service*." The estimated growth for broadband and internet subscribers in the country envisaged through various technologies is as follows:

Table 1:   Broadband Targets

Year Ending	Internet Subscribers	Broadband Subscribers
2005	6 million	3 million
2007	18 million	9 million
2010	40 million	20 million

The Broadband Policy 2004 visualizes creation of the infrastructure through various access technologies such as Optical Fibre, Digital Subscriber Line (DSL), Cable TV Network, and Satellite Media etc. The Government has decided to mark 2007 as the year of the Broadband with a target for Broadband connectivity set at 9 million with a maximum speed up to 2 Mbps.

3.8   Foreign Direct Investment

FDI in telecom has increased manifold in recent years. FDI inflow is mainly in telecom services as compared to manufacture sector. The Government vide Press Note 5 (2005 series) dated 3.11.2005, had notified the enhancement of Foreign Direct Investment (FDI limit) from 49% to 74% in certain telecom services subject to specified conditions. The FDI policy was reviewed and vide Press Note No.3 (2007 series), Government enhanced the FDI limit from 49% to 74% in telecom services subject to certain conditions. The enhancement of the FDI ceiling is applicable in case of Basic, Cellular, Unified Access Services, National/International Long Distance, VSAT,

Public Mobile Radio Trunk Services (PMRTS), Global Mobile Personal Communication Services and other value added services. Both Direct and Indirect Foreign Investment in the licensing company shall be counted for the purpose of FDI ceiling. FDI up to 49% will continue to be on the automatic route. Telecommunication is one of the sectors attracting highest FDI equity inflow in the country as is evident from the table given below:

Table 2: SECTORS ATTRACTING HIGHEST FDI EQUITY INFLOWS

Amount Rupees in crore (US$ in million)

Ranks	Sector	2004-05 (April-March)	2005-06 (April-March)	2006-07 (April-March)	2007-08 (April-Nov. 2007)	Cumulative Inflows (April 2000 to Nov. 2007)	% age with total Inflows (In terms of rupees)
1.	**Services Sector** (financial & non-financial)	1,986 **(444)**	2,399 **(543)**	21,047 **(4,664)**	9,121 **(2,230)**	38,228 **(8,672)**	**19.86 %**
2.	**Computer Software & Hardware**	2,441 **(539)**	6,172 **(1,375)**	11,786 **(2,614)**	4,217 **(1,054)**	30,760 **(6,922)**	**15.98 %**
3.	**Telecommunications** (radio paging, cellular mobile, basic telephone services)	570 **(125)**	2,776 **(624)**	2,155 **(478)**	3,963 **(975)**	15,607 **(3,555)**	**8.11 %**
4.	**Construction activities** (including roads & highways)	696 **(152)**	667 **(151)**	4,424 **(985)**	3,593 **(887)**	9,989 **(2,308)**	**5.19 %**
5.	**Automobile Industry**	559 **(122)**	630 **(143)**	1,254 **(276)**	1,191 **(296)**	8,350 **(1,858)**	**4.34 %**
6.	**Housing $ Real Estate**	0 **(0)**	171 **(38)**	2,121 **(467)**	5,161 **(1,279)**	7,573 **(1,811)**	**3.93 %**
7.	**Power**	241 **(53)**	386 **(87)**	713 **(157)**	206 **(50)**	5,958 **(1,287)**	**3.09 %**
8.	**Chemicals** (other than fertilizers)	909 **(198)**	1,731 **(390)**	930 **(205)**	733 **(182)**	5,956 **(1,338)**	**3.09 %**
9.	**Drugs & Pharmaceuticals**	1,343 **(292)**	760 **(172)**	970 **(215)**	353 **(88)**	4,633 **(1,030)**	**2.41 %**
10.	**Metallurgical Industries**	836 **(182)**	6,540 **(147)**	7,866 **(173)**	1,909 **(481)**	4,572 **(1,066)**	**2.37 %**

Note: *Cumulative Sector- wise FDI inflows (from April 2000 to November 2007)*
 Source: DIPP website (Fact sheet on Foreign Direct Investment (FDI) from August 2001 to November 2007)

3.4 **Thrust areas of the Department**

The focus of Department of Telecommunication, with respect to telecom is on evolving a strategy for the development of world class infrastructure for accelerated growth of all sectors, bridging the digital divide, an optimum utilization of spectrum; focus on policy recommendations for promotion of private sector including FDI and to review the performance of telecom equipment manufacturing sector. The thrust areas identified by the Department are as follows:

1.   **Network Expansion**

- Achieve a telecom subscriber base of 600 million and a rural teledensity of 25% by 2012.
- To provide telephone connection on demand across the country at an affordable price.

2.   **Rural Telephony**

- One phone per two rural household by 2010 (about 100 million rural connections).
- For Rural Telephony the mobile infrastructure created under USO will be shared amongst at least three service providers
- To support the development of general telecom infrastructure in rural areas, pilot projects would be undertaken under USOF.

3.   **Broadband**

- Broadband coverage for all secondary and higher secondary schools, Public Health Centres, Gram Panchayats during 11th Plan (2007-2012).
- Achieve a Broadband coverage of 20 million and Internet Connections of 40 million during the 11th Plan.

4.   **Manufacturing & R&D**

- Making India a hub for telecom manufacturing by facilitating more and more telecom specifics SEZs[29].
- Providing platform for export promotion of telephone equipment and services by setting up Export Promotion Council.

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[29] Special Economic Zones

Chapter – IV
Review of Performance

A.   Department of Telecommunication

4.1   Overview of the Telecom Sector

Globally, in recent years, the telecommunication industry has experienced high growth, as a result of rapid and innovative technology developments, culminating into an increasingly competitive and networked world.   The same is true of growth in the telecommunication sector in India also and telecommunication is now accepted as a basic infrastructure contributing to the growth of national economy.

Telecommunication is the key infrastructural input required for the rapid growth and modernization of various sectors of the economy. It has contributed significantly to the enormous growth of Information Technology (IT) and Information Technology enabled services (ITes) and its significant impact on the rest of the economy. Acknowledging the same, policy initiatives of the Government have been focused on bringing complete transformation in the sector.

4.1.1   Network Expansion

During December 2007 itself, a total of 80.97 lakh telephones were added, thus taking the number of telephones in the country to **2728.71 lakh** as on **December 31, 2007.** The boom in the telecom sector in India is led by the mobile segment. Consequently, the gap between mobile and wireline (basic phones) has been widening sharply. The wireline phones are showing a negative growth trend. A point-to-point comparison (December 2006-December 2007) in the number of telephones shows an increase of   56.17% in the wireless segment whereas the overall growth is 43.68%, as shown below:

Table 3: Growth during Dec. 2006 to Dec. 2007

Parameter	Number of additions (in lakh) during				Number as on 31st Dec.'07	Growth during Jan. 01, 07 to Dec. 31, 07
	Dec.'06	Dec.'07	Apr.06-Dec.06	Apr.07-Dec.07		
Basic Phones	(-) 0.21	(-)0.59	0.97	(-) 15.24	392.50	(-) 2.66%
Wireless Phones	64.86	81.56	477.32	685.27	2336.21	56.17%
Total Phones	64.65	80.97	478.29	670.03	2728.71	43.68%

A month to month comparison between April-December during the year 2006 and 2007 reveals (**Grap**h **1)**, consistently the number of connections added during the year 2007 have been more than, in the year 2006.This is an indicator of the growth potential of the Indian telecommunication sector. The teledensity of about 24% coupled with its billion population offers immense growth prospects for the telecom services sector in the coming years.

Graph 1: Month-wise Comparison of increase in connections during Apr-Dec 2006 and 2007

Increase in No. of connections
Comparision between Apr-Dec 2006 and Apr-Dec 2007
(Month-wise)

Month	Year 2006	Year 2007
Apr	41.05	49.15
May	22.61	63.19
Jun	47.19	71.58
Jul	48.71	75.54
Aug	60.45	82.45
Sep	59.11	76.51
Oct	66.83	78.81
Nov	67.70	82.24
Dec	64.65	80.97

No. of connections (in lakhs) — Corresponding Month
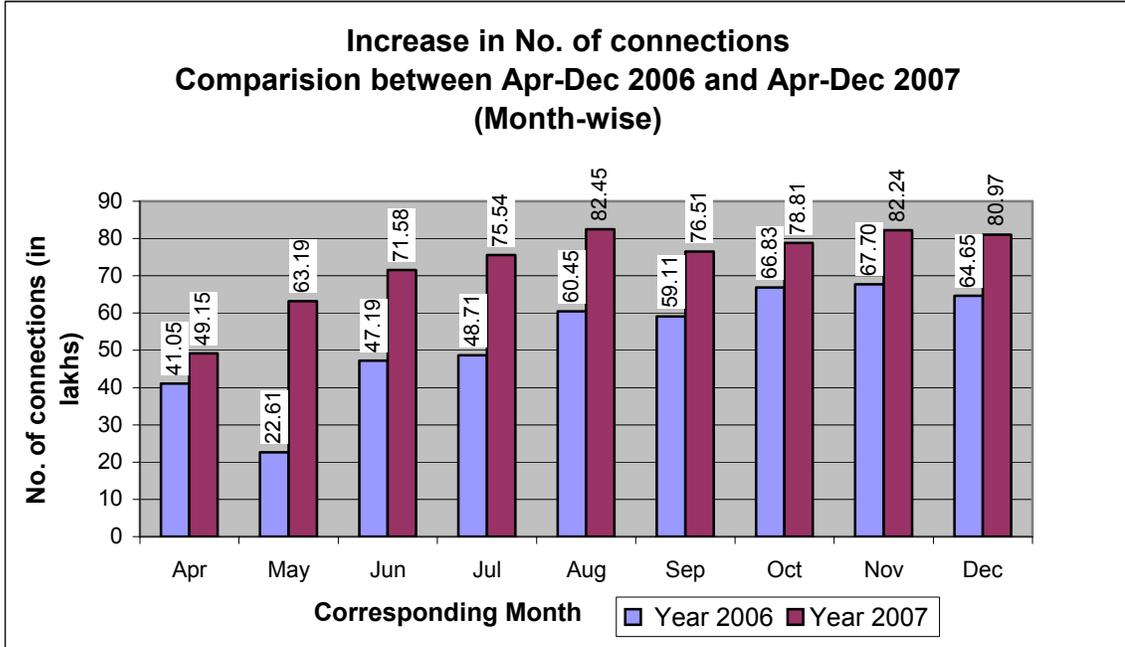
4.1.2 Teledensity

The tele-density, which was 16.83% as the end of December 31, 2006, now stands at 23.89% (**Graph 2**) as on December 31, 2007. There has been considerable improvement in the rural teledensity during 2007-08 and the rural teledensity which was 1.86% at the end of December 2006 now stands at 8.35% at the end of December 2007 The following table exhibits the growth of teledensity from Dec-06 to Dec-07.

Table 4: Month-wise Teledensity (December 2006-07)

Year	Rural	Urban	Total
Dec-06	1.86	53.34	16.83
Jan-07	1.86	55.43	17.45
Feb-07	1.87	57.21	17.99
Mar-07	2.91	55.74	18.31
Apr-07	2.84	57.31	18.72
May-07	2.84	59.11	19.25
Jun-07	6.44	52.40	19.86
Jul-07	6.75	53.70	20.50
Aug-07	7.00	55.47	21.20
Sep-07	7.30	56.93	21.85
Oct-07	7.61	58.41	22.52
Nov-07	7.90	60.04	23.21
Dec-07	8.35	61.26	23.89

Graph 2: Growth of Rural and Urban Teledensity from Mar-Dec 2007.

Increase in Teledensity

Legend: ◆ Rural ■ Urban ▲ Total

Urban: 55.74, 57.31, 59.11, 52.40, 53.70, 55.47, 56.93, 58.41, 60.04, 61.26

Total: 18.31, 18.72, 19.25, 19.86, 20.50, 21.20, 21.85, 22.52, 23.21, 23.89

Rural: 2.91, 2.84, 2.84, 6.44, 6.75, 7.00, 7.30, 7.61, 7.90, 8.35

Y-axis: Teledensity (Percentage)

X-axis: Month & Year — Mar-07, Apr-07, May-07, Jun-07, Jul-07, Aug-07, Sep-07, Oct-07, Nov-07, Dec-07
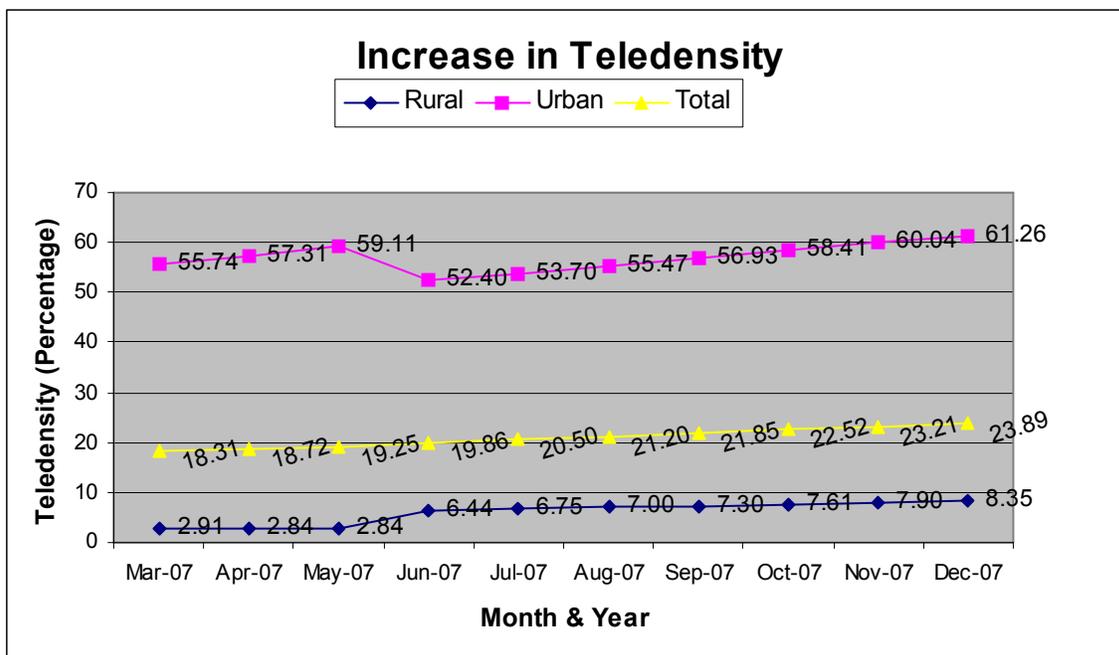
4.1.3 Trends in the composition of telephones (public vs. private):

During the period April to December 2007, 670.03 lakh telephone connections were added in the telecom network and the average addition per month during the current financial year up to December 2007 has been 74.45 lakh connections. The relative performance in the Telecom sector when compared with 2006 is detailed at Table 6. Similarly a comparison of the performance in telecom sector for the period 1st April to December 2006 vis-à-vis April 2007 to December 2007 is shown in Table 7.

The public sector has added 7.94 lakh phones during December 2007 as against 73.03 lakh phones added by the private sector. The Operator-wise position is given below:

Table 5: Service Providers Distribution (Public vs. Private)

Operators	Up to Dec.'2007	Addition during Apr-Dec.'07	%-age in Total upto Dec.'07
BSNL	68,510,318	3,786,032	25.11%
MTNL	6,806,916	139,944	2.49%
Total PSUs	**75,317,234**	**3,925,976**	**27.60%**
Private Operators	197,554,172	63,077,459	72.40%
Total (Fixed+CDMA+GSM)	**272,871,406**	**67,003,435**	**100.00%**

The comparative performance of BSNL/MTNL for the period April-December 2006 and April-December 2007 is shown in **Graph-3**.

The share of private sector in the number of telephones has increased from 65.00% (1234.46 lakh) in December 2006, to 72.40% (1975.54 lakh) in December 2007 while the share of public sector

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has declined to 27.60%. The share of wireless in the total number of phones is 85.62% (2336.21 lakh) as on December 31, 2007 as against 78.77% (1495.98 lakh)as on December 31, 2006 (**Refer Chart No 1&2**).

The preference for use of wireless telephony continues. This is confirmed from the rising share of wireless phones (GSM+CDMA), which increased from 78.77% (1495.98 lakh) as on December 31, 2006 to 85.62% (2336.21 lakh) as on December 31, 2007.

Chart 1: Composition of Telephones in December 2006

Composition of Telephones in December 2006

Private Fixed 1.61%
Public Wireless 15.38%
Public Fixed 19.62%
Private Wireless 63.39%
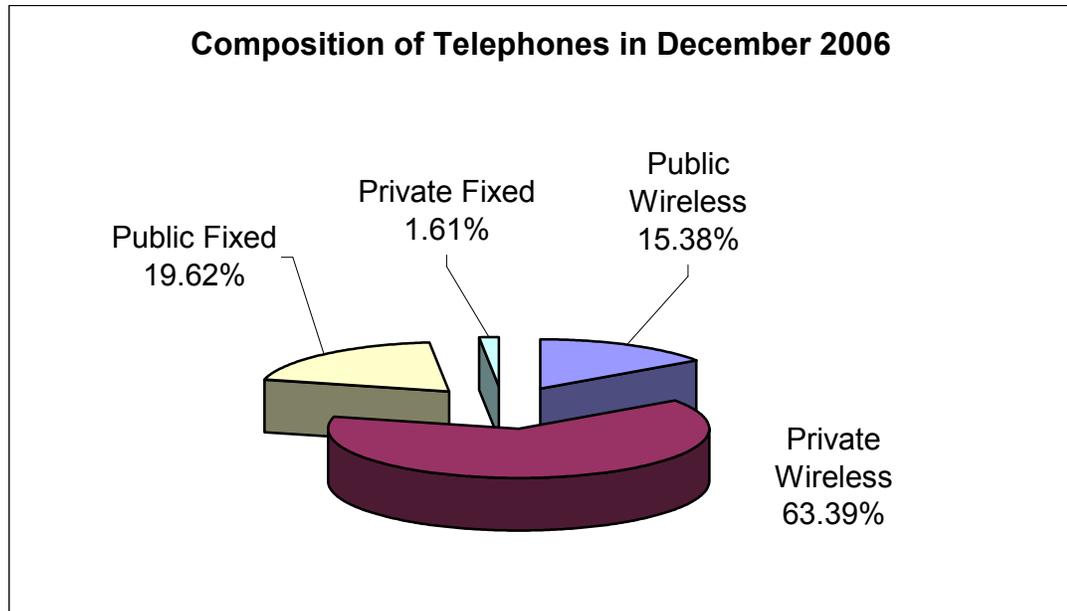
Chart 2: Composition of Telephones in December 2007

Composition of Telephones in December 2007

Private Fixed 1.45%
Public Wireless 14.66%
Public Fixed 12.94%
Private Wireless 70.95%
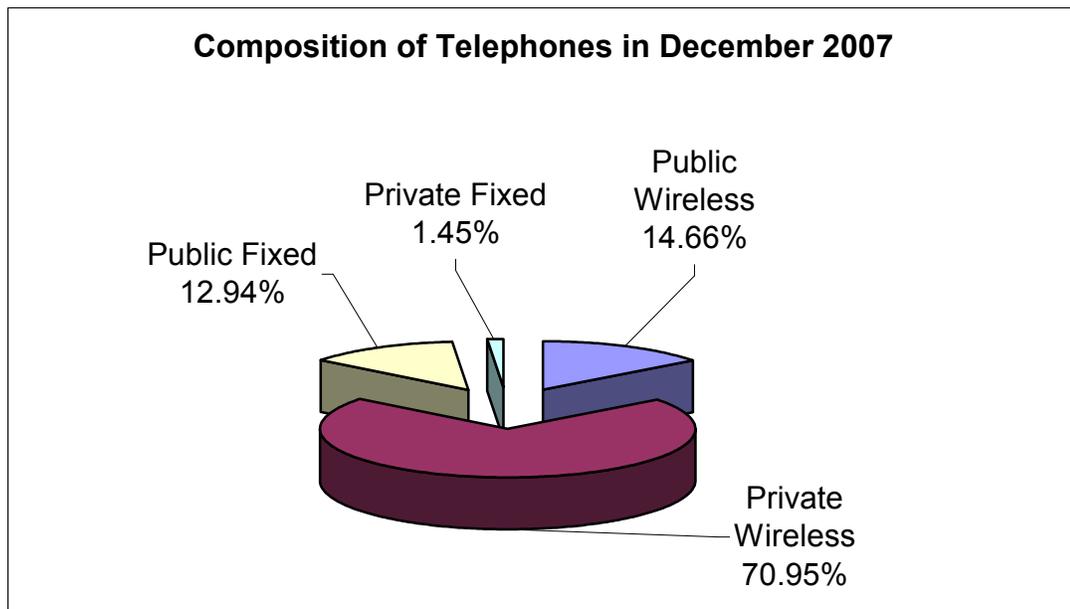
Table 6: Relative Performance in December 2007

Sl. No.	Description		Position at the end of Nov.'06	Position at the end of Dec.'06	Absolute Change (4-3)	Position at the end of Nov.'07	Position at the end of Dec.'07	Absolute Change (7-6)
1	2		3	4	5	6	7	8
1	Fixed Phone (in Lakh)	Public	373.77	372.69	-1.08	354.64	353.06	-1.58
		Private	29.67	30.54	0.87	38.45	39.44	0.99
		Total	**403.44**	**403.23**	**-0.21**	**393.09**	**392.50**	**-0.59**
2	Wireless Phones (GSM+CDMA) (in lakh)	Public	284.01	292.06	8.05	390.59	400.11	9.52
		Private	1147.11	1203.92	56.81	1864.06	1936.10	72.04
		Total	**1431.12**	**1495.98**	**64.86**	**2254.65**	**2336.21**	**81.56**
3	Total Telephones		**1834.56**	**1899.21**	**64.65**	**2647.74**	**2728.71**	**80.97**
4	Teledensity		**16.28%**	**16.83%**	**-**	**23.21%**	**23.89%**	**-**
5	Switching Capacity (in lakh)	Public	857.47	864.43	6.96	923.79	931.84	8.05
6	Village Public Telephones (VPTs)		555868	557043	1175	530301	530724	423
7	PCOs (in lakh)	Public	23.57	23.54	-0.03	22.59	22.63	0.04
8	OFC Route kms	Public	507526	509175	1649	541437	544227	2790
9	TAX Lines (in lakh)	Public	72.86	73.37	0.51	85.31	85.44	0.13
10	Rural Phones (Fixed+CDMA)	Public	14793059	14848352	55293	63561584	67331303	3769719

Table7: Relative Performance during Mar. '06 - Dec. '07

Sl. No.	Description		Position at the end of Mar.'06	Position at the end of Dec.'06	Absolute Change (4-3)	Position at the end of Mar.'07	Position at the end of Dec.'07	Absolute Change (7-6)
1	2		3	4	5	6	7	8
1	Fixed Phone (in Lakh)	Public	392.44	372.69	-19.75	374.61	353.06	-21.55
		Private	9.82	30.54	20.72	33.13	39.44	6.32
		Total	**402.26**	**403.23**	**0.97**	**407.74**	**392.50**	**-15.24**
2	Wireless Phones (GSM+CDMA) (in lakh)	Public	218.39	292.06	73.67	339.30	400.11	60.81
		Private	800.27	1203.92	403.65	1311.64	1936.10	624.46
		Total	**1018.66**	**1495.98**	**477.32**	**1650.94**	**2336.21**	**685.27**
3	Total Telephones		**1420.92**	**1899.21**	**478.29**	**2058.68**	**2728.71**	**670.03**
4	Teledensity @		**12.74%**	**16.83%**	**-**	**18.22%**	**23.89%**	**-**
5	Switching Capacity (in lakh)	Public	792.14	864.43	72.29	888.17	931.84	43.67
6	Village Public Telephones (VPTs)		547111	557043	9932	564610	530724	-33886
7	PCOs (in lakh)	Public	23.86	23.54	-0.32	23.65	22.63	-1.02
8	OFC Route kms	Public	490437	509175	18738	519155	544227	25072
9	TAX Lines (in lakh)	Public	69.53	73.37	3.84	82.20	85.44	3.24
10	Rural Phones (Fixed+CDMA)	Public	14768247	14848352	80105	47099514	67331303	20231789

@ Based on revised population Projections .w.e.f. Jan.2007.

Graph 3: Comparative Performance

COMPARATIVE PERFORMANCE OF TELECOM SECTOR

Legend:
- 1st April'06 - 31st Dec. '06
- 1st April'07 - 31st Dec. '07

Y-axis: No. of connections (in lakhs)

Data labels:
- Fixed Phones (Public+Private): 0.97, -15.24
- Wireless Phones (Public+Private): 477.32, 685.27
- Switching Capacity (Public): 72.29, 43.67
- Tax Lines (Public): 3.84, 3.24
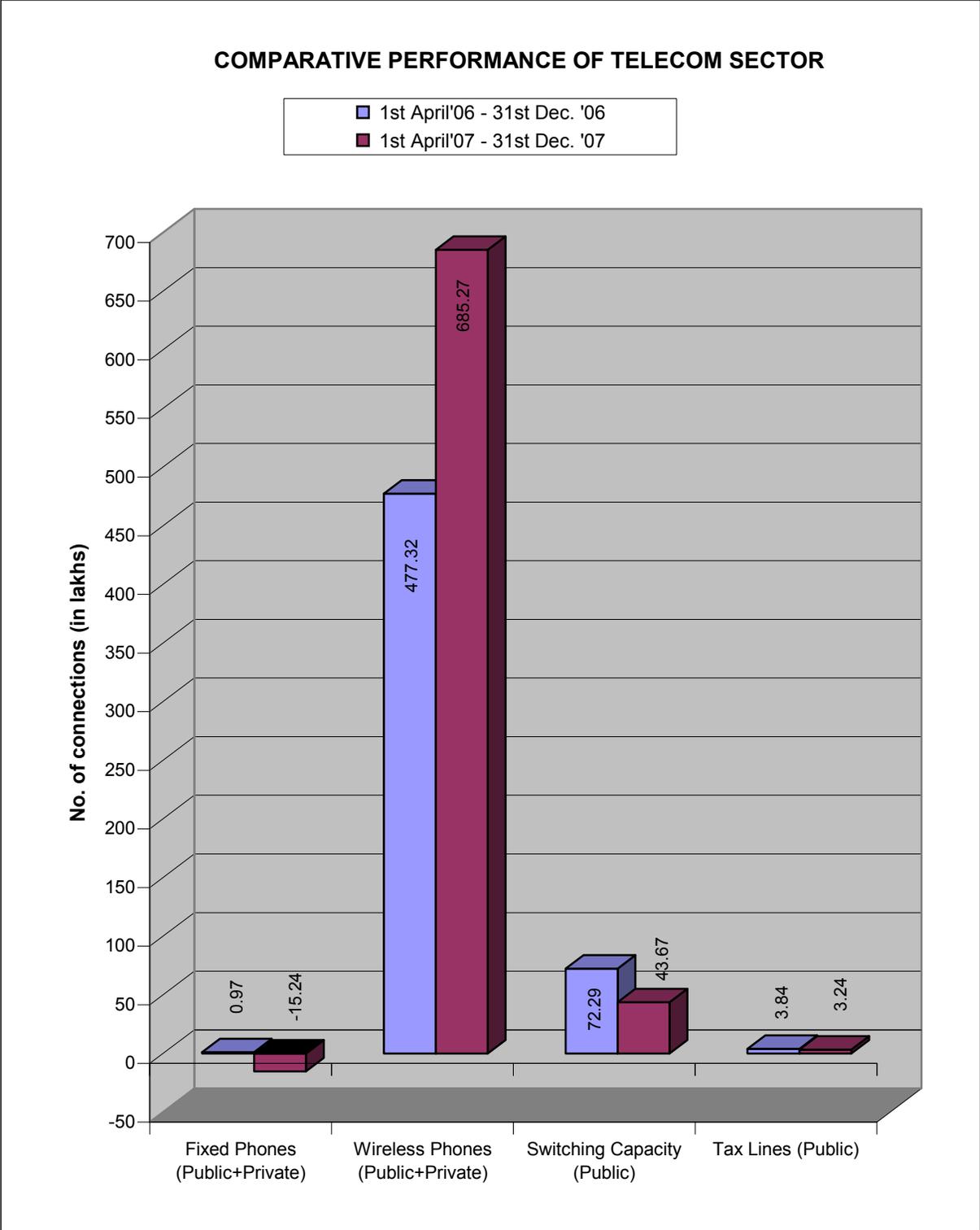
4.1.3 Rural Telephony

Improving rural connectivity has been high on priority of DOT. Several measures have been taken in this direction.

➢ Providing telephones in remaining unconnected villages is a component of Bharat Nirman. Bharat Sanchar Nigam Limited (BSNL) has been awarded the work for providing Village Public Telephones (VPTs) in all the remaining 66,822 uncovered villages by November 2007 with support from Universal Service Obligation Fund (USOF). As on 31st January 2008, 52464 VPTs have been provided.

➢ To promote reliable connectivity, about 1.80 lakh MARR VPTs have been replaced with landline/FWT VPTs. The remaining MARR VPTs shall be replaced during the year 2007-08.

4.1.4   Broadband

➢ Broadband Policy announced in October 2004 with a vision of covering 20 million broadband subscribers by the end of 2010.

➢ There are 26 lakh Broadband subscribers in the country as on 30.09.2007.

➢ Nation-wide Broadband Services launched by BSNL & MTNL w.e.f. 14.1.2005 to cover 200 towns in one year. The spread now covers 600 towns with about two million connections given out of which share of BSNL/MTNL is 75%.

➢ To encourage expansion of broadband connectivity at a faster pace, both outdoor and indoor usage of low power Wi-fi and Wi-Max systems in 2.4 GHz– 2.4835 GHz band has been delicensed. The use of low power indoor systems in 5.15 - 5.35 GHz & 5.725 - 5.875 GHz has also been delicensed.

4.1.5 Licensing liberalization

Several important initiatives have been taken to further liberalize the licensing norms with the objective of making telecom services available at affordable prices.

➢ FDI Ceiling increased from 49 per cent to 74 per cent in the telecom services.

➢ Annual licence fee for National Long Distance (NLD), International Long Distance (ILD), Infrastructure Provider-II, VSAT commercial and Internet Service Provider (ISP) with internet telephony (restricted) licences was reduced to 6% of Adjusted Gross Revenue (AGR) w.e.f. 1-1-2006.

➢ Entry fee for NLD licences was reduced to Rs. 2.5 Crore from Rs. 100 Crore prospectively i.e. date of issue of amendment to the existing guidelines to that effect. Entry fee for ILD be reduced to Rs. 2.5 Crore from Rs. 25 Crore.

➢ Lease line charges have been reduced to make the bandwidth available at competitive prices to facilitate growth in IT enabled services.

In order to further enhance the penetration of access services for rapid expansion of tele-density, it has also been decided that the existing private UAS Licensees may be permitted to expand their existing networks by using alternate wireless technology i.e. the present UAS Licensee who is using GSM technology for wireless access may be permitted to use CDMA technology and vice-versa. The spectrum for the alternate technology, CDMA or GSM (as the case may be) shall be allocated in the applicable frequency band subject to availability after payment of prescribed fee.

4.1.6 Manufacturing

The Government has stepped up initiatives to promote manufacturing in the country.

➢ As a result of constant follow up, various global Telecom & IT companies announced their investment plans in Telecom and IT sectors.

➢ The growth potential and pro-active role of the Government has brought the major telecom companies like Nokia, Motorola, Ericsson, Flextronics, and Elcoteq etc. into the manufacturing space of the country.

4.1.7   Internet Service

➢ ISP policy is one of the most liberal Telecom Policy. Licenses for Internet Service Providers are issued after announcement of ISP Policy on 6th Nov., 1998. From 1st April, 2002, ISPs were also allowed to offer Internet Telephony Service after obtaining permission of the Telecom Authority.

➢ As on 31.12.2007 there are 378 ISP licensees out of which 121 licensees have been permitted to offer Internet Telephony on their request. There are about 96.97 lakh internet subscribers as on 30.09.2007.

➢ ISPs are permitted to set up their own gateways using satellite or Submarine cable medium after getting security clearance.

➢ A new guideline for grant of Internet Service license was issued on 24th August 2007 wherein no separate permission to offer internet telephony is required. 23 new licenses has been issued after issuances of new guidelines.

4.1.8   VSAT Services

➢ As envisaged in the NTP 99, licenses are granted on non exclusive basis for **Very Small Aperture Terminal (VSAT)** services using INSAT satellite system within the territorial boundaries of India. Under the VSAT license, the licensees provide data connectivity within CUG between various sites scattered throughout India using VSATs and central hub. There are two categories of VSAT licenses :

(i)   Captive CUG VSAT license wherein the licensee company can set up VSAT network for its internal use only.

(ii)   Commercial Common User Group (CUG) VSAT license wherein the licensee company can provide CUG VSAT service to a number of CUGs on commercial basis.

- As on 31.12.2007 there are 12 licenses for commercial CUG VSAT services and the number of VSATs under this service is around 67,000 as on 31.10.2007.
- As on 31.12.2007 there are 32 captive CUG VSAT networks and the number of VSATs under this service is around 9,400 as on 31.10.2007.

4.2 Exhibitions, Seminars and Bilateral and International Cooperation/Meetings.

The Department of Telecommunications participated in the various national & international exhibitions, conferences, seminars & trade fairs during the period from 2007-08 as detailed below:

4.2.1 Bilateral Co-operations / Joint Commission Meetings during the year 2007-08 till December 2007 were 31 and details of some of them are as follows:

1. A six member Singapore delegation led by CEO Info Comm Development Authority of Singapore (IDA), Called on Chairman, TC on 10.4.2007 in Sanchar Bhawan. The meeting was also attended by DDG(IT) & Director (IR-I) from DOT side. Both sides shared views on developments in the field of Telecom in the two countries.

2. A seven member Chinese delegation led by H.E. Mr. Wang Luolin, Dy Chief of Economic Committee of Chinese People's Political Consultative called on Chairman, Telecom Commission in his Chamber in Sanchar Bhawan on 17.4.2007. DDG (IR) also attended the meeting from DOT side.

3. Chairman, Telecom Commission led the Indian delegation for participation in the "IT Ministerial Conference 2007" at Seoul, South Korea from April, (19-22), 2007 on the invitation from H.E. Rho, Jun-Hyong, Minister of Information and Communication, Republic of Korea addressed to Hon'ble MOC&IT. One officer of JS level from Deptt. of IT accompanied the Chairman, Telecom Commission .

4. The 9th Session of India-UAE Joint commission meeting was held in MEA, south block on 05-06-2007, under the Chairmanship of JS (Gulf/Haj), MEA, Director (IR-I) attended the meeting from DoT side.

5. On the invitation of Secretary, DOT, a 12 member Chinese delegation led by H.E. Mr. Jiang Yaoping, Vice Minister, Ministry of Information Industry of People's Republic of China (PRC) visited India in late August' 2007. Secretary (T) led the 14 members Indian delegation, and met the Chinese Vice Minister and the Chinese Delegation on 28-08-2007 in Hotel Le-Meridien, New Delhi.

6. A six members Bostwana delegation led by H.E. Ms. Pelonomi Venson-Moitoi, Minister of Communications, Science and Technology, met Hon'ble MoS (C&IT) on 17.10.2007, Wednesday at 10.00 hrs in Dak Bhawan, New Delhi. DDG(IR) from DoT also participated in meeting to assist Hon'ble MoS (C&IT) during the discussions in the meeting. Both the dignitaries exchanged views and discussed matters concerning each countries in the field of ICT.

7. A six member Finnish delegation led by H.E. Mr. Paavo Vayrynen, Minister for foreign Trade and Development met Dr. Shakeel Ahmad, Hon'ble Minister of State for Communication and IT MOS (C&IT) on 22nd October, 2007. Both the dignitaries exchanged views on the developments taking place in India in the IT and Telecommunications Sector. During discussions Hon'ble MOS(C&IT) also replied some of the queries raised by EVP, Nokia.

4.2.2 Membership Contribution to ITU:- It has been decided to enhance the   annual membership contribution to ITU from 5 units to 10 units w.e.f Jan 2008. This has been announced by Chairman (T C) during ITU Council Session of 2007 in Geneva.

4.2.3 Visit of Ministers and other Dignitaries/Delegations to Foreign Countries:

1. Deputation of Indian delegation led by Additional Secretary (T) , DoT along with Legal Advisor, DoT and DDG (AS),DoT from   31st March to 5th April, 2007 to undertake meeting with FCC, FBI, TIA and other Industry Association of USA.

2. Deputation of following Indian delegation led by Shri D.S.Mathur Secretary (Telecom), DoT for participation in IT Ministerial Conference 2007 from 19-22th Aprill, 2007 at Seoul, South Korea.

3. Deputation of Indian delegation led by Shri K. Sridhara, Member (Technology), DoT for participation in Asia Pacific Wi-MAX Conference and Exhibition held at Taipeie, Taiwan during 13-15 May, 2007.

4. Deputation of Shri P.K. Garg, Wireless Advisor (WPC), DoT for participation in the meeting of Radio Regulations Board of International Telecommunication Union held from 4th to 8th June, 2007 at Geneva, Switzerland.

5. Deputation of Indian delegation led by Dr. Shakeel Ahmad Hon'ble MOS C&IT, DoT along with the Shri Hukum Singh Meena PS to MOS C&IT, DoT and Shri R.N. Jha, DDG (IR) for participation in the 3rd Inforcomm Media Business Exchange Ministerial Forum, Communic Asia 2007 at Singapore from 18th to 20nd June, 2007.

6. Deputation of Indian Delegation led by Shri D.S. Mathur, Chairman Telecom Commission, Department of Telecom along with Shri. R.N. Padukone Sr. DDG (TEC), Department of Telecom from 19th-22nd June, 2007 for participation in the Wi-MAX Forum Member conference held in Madrid, Spain.

7. Deputation of Shri D.S. Mathur, Chairman (TC) & Secretary (T), along with Shri R.N. Jha DDG (IR), DOT to Shanghai, China from 24-26th July, 2007 for ITU Seminar on Telecom Transformation and bilateral meeting with Chinese counterparts.

8. Deputation of Indian delegation led by Shri R.Bandyopadhyay Additional Secretary (T), and A.K.Srivastava, DDG (AS),DOT as member of Department of Telecommunication to Siem Reap, Cambodia from 22-25 August, 2007 for participation in the 7th ASEAN Telecommunications and Information Technology Ministers Meeting.

9. Deputation of Shri M. Sahu Joint Secretary (T), Shri R.N. Jha, DDG (IR) and Shri R.J.S. Khushvaha Joint Wireless Advisor DOT for participation in the WiMAX Forum Member Conference from 27th January to 01st February, 2008 at Kona, Hawaii, USA.

4.2.4 Important Initiatives/ events:

4.2.4.1 Setting up of Telecom Centers of Excellence in Public Private Partnership mode:

To meet the future challenges of Indian Telecom Sector, the fastest growing telecom sector in the world with addition of nearly 8 million connections per month on sustainable basis, Department of Telecom has initiated an unique initiative of setting up of **Telecom Centers of Excellence** (TCOEs) at selected Indian Institute of Technology (IITs), IIM Ahmedabad and Indian Institute of Science (IISc) Bangalore and Industries in Public Private Partnership mode (PPP) mode. The objective of these TCOEs is to bridge the high rural-urban gap in tele-density (digital divide), development of India specific applications, and faster deployment of broadband infrastructure across the country and continuous adaptation of regulatory environment to facilitate induction/adoption of high potential new technologies and business models and capacity building of talent pool for industry.

All the seven TCOEs are now in place and the MOUs for all of them viz. Idea TCOE at IIM Ahmedabad, Vodafone Essar TCOE at IIT Kharagpur, BSNL TCOE at IIT Kanpur, Bharti TCOE at IIT Delhi, TATA Teleservices TCOE at IIT Bombay, Reliance TCOE at IIT Madras and Aircel TCOE at IISc Bangalore, have been signed between the Government, academic institute and the sponsoring service provider before the Hon'ble MOC&IT.

4.2.4.2 India Telecom Series of Exhibition cum Conference:

To showcase the progress, latest developments, achievements and potential of Indian telecom Sector, the Government decided to organize Indian telecom series of international conference cum exhibition in association with Chambers of Industry and various telecom associations.

The first edition of this event was held in December 2006. The second event in this series **"India Telecom 2007"** was held at New Delhi from 12th to 15th December 2007. The event was inaugurated by Hon'ble Prime Minister of India. It witnessed a phenomenal response from the Industry as 22 countries from across the globe including USA, UK, China, Singapore, New Zealand, Italy etc. participated in the event, 170 exhibitors showcased their technology/product and more than 14000 trade visitors participated in the event. It also showcased the huge potential that India holds in the Telecom sector for inviting investments in telecom equipment manufacturing.

The key attractions of the event were five interactive conference sessions with eminent international speakers, Seminar on Next Generation Multiple Play, Roundtable on Telecom Centers of Excellences, Open House sessions with Policy makers and Regulatory Authorities etc.

4.2.4.3 Department of Telecom celebrated the **17th May** as World Telecom and Information Society day in the conference hall of Sanchar Bhawan at 1230 hours The theme for this year is **"CONNECTING YOUNG : THE OPPORTUNITIES OF ICT".** The event was chaired by Shri K Sridhara, Member (Technology), DOT. A large gathering of dignitaries and staff participated in the celebrations and listened to a video message of Secretary General ITU .

4.3   Telecommunication Engineering Centre (TEC):

(i)   TEC is responsible for standardization activities in India for telecom sector writing of   specifications for all the telecom operators, accord Approval and Services test   certificates etc. During the period from April 2007 to December 2007; under review,   12   GRs/ IRs were issued, 33 GRs revised. GRs issued included: Element Management   System, Metal Free   Optical   Fibre   Cable (G.652 D Fibre), Services for NGN   Subscribers, Wi-Fi Hotspot, 1.2 & 1.8 m Earth station antenna operating in Ku-band, Ethernet Traffic Analyser etc.

(ii)   TEC is engaged in the Type Approval/ Validation of the cutting edge technology systems. 316 Interface Approvals issued for products for interfacing with the BSNL/ MTNL network and 91 Service Test Certificates were issued.

(iii) Test fee collection from vendors: During the period from April 2007 to December 2007, the fee collection from vendors is Rs.5.43 Crore.The review of the performance for the year 2006-07 and for the year 2007-08 (up to 31st December 2007) is placed at **Annexure-K**.

4.4   Wireless Planning and Co-ordination

The Wireless Planning and Coordination Wing in the Department of Telecommunications, deals with the policy of spectrum management, wireless licensing, frequency assignments, international coordination for spectrum management and administration of Indian Telegraph Act 1885, (ITA, 1885), for radio communication systems and Indian Wireless Telegraphy Act 1933, (IWTA, 1933)

4.4.1 Achievement, activities and performance for the period 1.4.2007 to 31.12.2007

▪ Assignments of frequencies for terrestrial networks of government and private sector were made for variety of applications, namely, GSM band Cellular network, PMRTS, CDMA & Cor-DECT based networks, point-to-point and point-to-multipoint microwave networks, etc. after necessary technical examinations, analysis and coordination with other wireless networks, as appropriate for establishing electromagnetic compatibility so as to ensure interference-free operation of all such networks. The frequency in 869-889 MHz paired with 824-844 MHz is considered for assignment for CDMA based networks & 1880-1900 MHz is considered for assignment for Cor-DECT based networks.

▪ Efforts for coordination of additional spectrum for the GSM based cellular services have been continuing at the highest level.

▪ SACFA is a high level inter-departmental standing committee under the chairmanship of the Secretary (Telecom) and is responsible for formulating policies on radio frequency allocations, including formulation of National Frequency Allocation Plan (NFAP) and the siteing of new wireless installations in the country, etc. During the year under review, the Committee took a major, forward looking decision of exempting those sites from the

elaborate procedure of clearance, wherein the mast/antenna height, at a distance of more than seven kilometers from the nearest airport, does not exceed 40 meters from the level of airport reference point. Such sites would need only a "Registration" with the Secretariat.

- About forty five thousand sites awaiting consideration of clearance were processed & cleared in two special drives undertaken during the year with the cooperation of all SACFA members, heralding a major boost in the expansion of the telecom services in the country.

4.4.2 National Frequency Allocation Plan (NFAP-2005)

The current policy document on spectrum viz. the National Frequency Allocation Plan-2002 (NFAP-2002) has been placed on WPC website. Based on the comments received from various agencies on the above, revised Draft National Frequency Allocation Plan-2005 (NFAP-2005) has also been prepared & placed on WPC website. This revised National Frequency Allocation Plan would take care of the requirements of various telecom operators.

4.4.3 Satellite System Coordination:

- **Satellite System Coordination:** International coordination of satellite systems is required to be undertaken as per the provisions of the International Radio Regulations (RR) of the International Telecommunications Union (ITU). Coordination of frequency assignments for the individual satellite networks is necessary with satellite networks of other administrations for mutual coexistence and interference free operations of these networks.

- **Satellite coordination with other Administrations**

  i) The proposals for coordination meeting with Administrations of UAE, Thailand and Russian Federation are under examination in consultation with satellite operators.
  ii) Matter of coordination of Japanese ESV in Indian waters is under examination with stake   holders.

4.4.4 Coordination with ITU

Following information in respect of Indian satellite Networks were examined and submitted to ITU-R for publication in relevant section of International Frequency Information Circular (BRIFIC).

- Advanced Publication Information and Detailed Coordination Request iro, MSS-NG (48), INSAT-MSS-NG (55), INSAT-MSS-NG (74), INSAT-MSS (83), INSAT-MSS-NG (93.5), INSAT-MSS-NG (111.5) satellite networks.

- Detailed coordination request i.r.o INSAT-NAV-55 (55E), INSAT KU 78E and INSAT KU 88E / INSAT-2(74E) and INSAT-2(93.5E) satellite networks for BSS.

- Advanced Publication Information in respect of Agrani-3(98.5E), INSAT-NAV (131.5) satellite networks.

- Basic data for conversion of allotment into assignment for under article 6 of Appendix 30B in respect of 74E orbital location.

- Additional Information required by ITU-R for notification of INSAT-EXC 55E satellite under article 8 of Appendix 30B.

- Additional filing under Appendix 30 B of RR for location 40.5E, 49E, 59.1E, 114E, 83E and 93.5 E orbital locations.

4.4.5 Protection of Indian space, Terrestrial and Radio Astronomy Services from the Satellite Networks of other countries.

- With a view to protecting our frequency assignments and satellite orbital position for interference free operation of Indian satellite networks, detailed examination of Special Sections of weekly circulars published by the ITU have been undertaken on a continuous basis. Space Circulars received from Radio communication Bureau (BR) have been examined and objections have been sent to Republic of Seychelles, Japan, Germany, Malaysia, China, U.K., Turkey, France, Russian federation, Israel, Sweden, Kazakhstan, Saudi Arabia, Korea, France, China, Spain, Indonesia, Turkey, USA, UK, Australia and Thailand, requesting for detailed coordination with a view to protecting Indian Satellite and terrestrial networks.

- Following Indian satellite networks were published in the relevant special sections of International Frequency Information Circular (BRIFIC).

- Notification in respect of INSAT 2(48) and Modified Advance Publication Information iro INSAT-
  MET (94E) satellite network were published.

- Progress report of INSAT-NAV (82E) and INSAT-2(83E) satellite network were published.

- Advanced publication Information in respect of INSAT EK48, -EK55 -EK74,- EK83 and INSAT2E   82 were published.

- Coordination request in respect of INSAT 2E 82, INSAT EK48, -EK55 -EK74,- EK83 published under special section CR/C.

- The BRIFICs received during January-March 08 will be examined in detail to protect our frequency assignments and satellite orbital position for interference free operation of Indian satellite and terrestrial system.

4.4.6 Automation of Spectrum Management and Augmentation of Monitoring System

The project 'Design, Supply, Installation & Commissioning of "National Radio Spectrum Management & Monitoring System (NRSMMS)" is being implemented by the WPC Wing. Under the project, spectrum management and monitoring functions have been automated

with a view to making these activities effective and efficient. The review of the performance for the year 2006-07 and 2007-08 is placed at **Annexure – "L"**

4.5   Wireless Monitoring Organisation

Wireless Monitoring Stations in the Organisation continue to monitor the entire radio frequency spectrum for:-

- Many important Radio Surveys/Investigation assignments were carried out by way of Mobile Monitoring during the year.

- Microwave Mobile Monitoring Terminals continued to monitor radio transmissions in microwave frequency bands to verify emissions, characteristics and interference potential. The measurements on terrestrial microwave links viz LOS Systems, Radars etc. to ensure compatibility are also being carried out regularly. Assistance are also provided to the users by way of conducting noise surveys for wireless/earth stations and site selection.

- A Specialized Mobile Monitoring Terminal having monitoring capabilities up to 40 GHz is operational. The primary objective is to monitor unauthorized transmission in the satellite communication bands, as well as from terrestrial stations.

- At a few Monitoring Stations, fixed/mobile direction finding systems are being used for locating the direction/location of authorized/unauthorized transmissions.

- Satellite Monitoring Earth Station at Jalna (Maharashtra) is continuing the monitoring of signals from all satellites located in orbit arc of interest to India. Observations for related data are being made.

- W.M.O is undergoing major modernization of Radio Spectrum Monitoring capabilities through World Bank assisted Telecom Reform Project. Under this the following has been done:-

   i.   Antenna Towers have been erected measuring around thirty meters in height for better reception of Radio signal to be used for the sophisticated receiving systems coming under the   project at Ajmer, Delhi, Chennai, Nagpur, Mumbai, Shillong and Trivendrum. Installation procedure is processing at Ahmedabad, Jallandhar, Goa, Gorakhpur and Bhopal Wireless
   ii.   Monitoring Stations.

   iii. The installation of the LAN (Local Area Network) comprising of thirty workstations has been completed at Wireless Monitoring Organisation Head Quarters (MHQ). Pushpa Bhawan, New Delhi. The ISDN leased lines between Sanchar Bhawan and MHQ have been connected and communication through these lines is to be tested. LAN wiring etc. has been completed at   several Wireless Monitoring Stations spread all across India.

- Acceptance test   procedures   of   mobile & fixed monitoring systems are completed. After completion of the mobile monitoring V/UHF systems, these are already dispatched to

respective Monitoring Stations except at Jalpaiguri. Operations for the above systems are under progress.

- The review of the performance for the year 2006-2007 and for the year 2007-2008 (up to 31st December 2007) is placed at **Annexure - "M"**.

4.6 Universal Service Obligation Fund:

The New Telecom Policy 99 (NTP-99) envisages provision of access to basic telecom services to all at affordable and reasonable prices. The resources for meeting the Universal Service Obligation (USO) are to be generated through a Universal Service Levy (USL) which would be a percentage of the revenue earned by the operators under various licenses.

In keeping with NTP-99, the recommendations of TRAI on the issues relating to the USO were sought. Based on the decisions taken on the recommendations, the Universal Service Support Policy (USSP) was framed. The USSP came into effect from 01/04/2002. The USL presently is 5% of the Adjusted Gross Revenue (AGR) earned by all the operators except pure value added service providers like internet service providers, voice mail, email etc.

The Indian Telegraph (Amendment) Act 2003 giving statutory status to USOF was passed by both houses of the Parliament in December 2003. Deemed to have come into force from 1st April 2002, the fund is to be utilized exclusively for meeting the USO and the balance to the credit of the fund will not lapse at the end of the financial year. Credits to the fund shall be through the Parliament. The rules for administration of the fund have also been notified on 26/03/2004.

Scope of Support from USOF:

The scope of USOF covers rural and remote areas with public access telephone, individual household telephones in net high cost rural and remote areas, provision of shared mobile infrastructure and supporting creation of General Infrastructure. It also endeavors to implement Universal Public access, Broadband in more than 8000 blocks.

The policy provides for provision of Village Public Telephones (VPTs) in all 6.07 lakh Census Revenue villages and provision of additional Rural Community Phones (RCPs) in nearly 43,000 villages with population of more than 2000. Replacement of VPTs on Multi Access Radio Relay (MARR) technology installed prior to 01/04/2002 is also covered under the scope of USOF. The total number of such phones to be replaced is nearly 1.83 lakh.

Implementation Status:

A. Activities covered:

a) Public access:

- Nearly 5.2 lakh VPTs are already receiving support towards operation and maintenance covering more than 90% of the villages with VPTs.

- For the remaining 66,822 villages Agreements have been signed with M/s BSNL who emerged as the successful bidder in the tender for which BSNL and Bharti had participated. So far 52,464 villages have been covered under the scheme. Support is also being extended for 1.83 lakh MARR technology VPTs out of which 1.80 lakh VPTs have been replaced.

- Agreements have also been signed with BSNL and Reliance on 30/09/2004 for installation of RCPs in 46,253 villages (reconciled figure 43,409) with population more than 2000. These are the second public telephones to be provided in a phased manner. So far 38,112 RCPs have been provided.

b)   Individual Access:

- Support has been extended to nearly 91 lakh Rural Household Direct Exchange Lines (RDELs) installed prior to 01/04/2002 towards the differential between the TRAI prescribed rental and the rental charged by the service provider. The support has been provided for a limited period from 01/04/2002 to 31/01/2004.
- Agreements were signed in March 2005 for providing new RDELs in the identified 1685 net cost positive Short Distance Charging Areas (SDCAs) with BSNL, Reliance and TATA.
- Subsidy support is also being provided for the RDELs installed between 01/04/2002 to 31/03/2005 in 1685 SDCAs. Agreements for this purpose were signed with BSNL and Reliance.

c)   Mobile Infrastructure Phase-I:

Agreements for setting up and managing infrastructure sites and provision of mobile services in rural and remote areas have already been entered into and the scheme has been launched on 01/06/2007. The scheme covers setting up of 7871 towers in rural and remote areas in 81 clusters spread over 500 districts all over the country. Each tower will be shared by a maximum. of 3 telecom service providers. Most of the 7871 sites are likely to be commissioned during 2008-09.

B. **Activities on hand:**
- **Mobile Infrastructure Phase-II:** The second phase of the scheme for setting up and managing infrastructure sites and provision of mobile services in rural and remote areas is also in the pipeline in which about 11,049 towers shall be installed. During the year 2008-09, about 6,000 towers are likely to be commissioned.

- **Special scheme for Andaman & Nicobar islands and Lakshadweep & Minicoy islands and Ladakh (J & K)**: A special scheme for Andaman & Nicobar islands and Lakshadweep & Minicoy islands and Ladakh (J & K) is in pipeline in which about 300 towers shall be installed and mobile services provided.

- **Pilot Projects:** The scheme envisages establishment of five pilot projects for technology development in the telecom sector which can be deployed in the rural and remote areas and will be supported with the approval of the Central Government.

- **Rural Broadband**: A scheme for broadband connectivity to 8000 blocks with their district headquarters in two phases has been drawn up. The scheme shall serve the Customer Service Centres being set up by the Deptt of Information Technology and also schools, Primary health centres, Police stations and Panchayats etc.

- **General Infrastructure**: The scheme will cover 3000 blocks and envisages Optical Fibre equipment augmentation between blocks and districts . It will also cover provision of new Optical Fibre cable connectivity between blocks and districts covering 2000 unconnected blocks.

- **New VPTs in identified uncovered villages**: About 40,000 Census 2001 villages not having any public telephone facility have been identified for providing public telephone facility during the year 2008-09.

Disbursement status:

- A revised allotment of Rs.1, 450 crore has been received for the financial 2007-08. Till December 2007, disbursement of Rs.430.56 crore has been made out of the funds so allotted.

- Sufficient funds are available to meet the requirements of USO activities during the current financial year. The review of the performance for the year 2006-07 and 2007-08 (up to 31st December 2007) is placed at **Annexure – "N".**

4.7   PUBLIC SECTOR UNDERTAKINGS

4.7.1   BHARAT SANCHAR NIGAM LIMITED

This paragraph gives a review of overall performance of the Bharat Sanchar Nigam Limited detailing the targets and achievements during 2007-08 in terms of broad physical dimensions and financial outlays.

A) **Targets**: - The physical targets for the year 2007-08 (RE) are as follows:

Table 8: Physical Targets

S.No.	Parameter	Target
1	Direct Exchange Lines (Lakh lines)	100
2	Village Panchayat Telephones	10,000
3	Trunk Automatic Exchange (K lines)	1,500
4	Optical Fibre Cables (RKMs)	25,000

- The review of the performance for the year 2006-2007 and for the year 2007-2008 (up to 31st December 2007) is placed at **Annexure - 'O'**.
- BSNL has introduced Broadband equipment in its network & has provided 8 lakh broadband connections.

- The review of the performance for the year 2006-2007 and for the year 2007-2008 (up to 31st December 2007) is placed at **Annexure - 'O'**.
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B)   **SPECIAL COMPONENT PLANS**

Annual Plan of 2008-09 (BE) and Revised Plan 2007-08 (RE) inter-alia also focus on accelerated growth and early implementation of telecom facilities in the following areas.

   a)   North East Region
   b)   Tribal Areas
   c)   National Capital Region

The Special Plans with the parameters are as follows –

- **NE Region Component Plan and Tribal Sub-Plan**

NE Region comprises of 8 states which has international border with Bangladesh, Myanmar & China. Development of NE region is a priority for Government of India. So, BSNL provides special attention to this area and intends to provide special attention during 11th Plan period.

So, it has targeted to provide 11.35 lakh lines of switching capacity in NE region during 2007-08. It is also proposed to lay 1250 RKMs of OFC cable and commission 28 nos. of satellite systems.

During 2008-09, it is planned to provide net switching capacity of 12 lakh in NE region. Transmission network is also planned to be expanded by providing 1000 RKMs of OFC cable and commissioning 30 nos. of satellite systems.

Tribal Sub Plan

Tribal areas in the country are declared by Government of India in the Census. Development of Tribal area is also a priority of Government of India. So, BSNL provides special attention in development of telecom in tribal area and intends to continue it during 11th Five Year Plan.

The main objectives of the Tribal Sub-Plan are

   a)   To provide public telephone in all tribal villages.
   b)   To provide telephone facility on demand in tribal areas

The Tribal Sub-Plan 2007-08 envisages provision of 17.83 lakh lines of switching capacity and 2,600 RKMs of OFC cable.

During 2008-09, it is planned to provide 5.0 lakh of switching capacity and 1,200 RKMs of OFC and 1 lakh of broadband connections.

National Capital Region (Excluding Delhi)

➢ The area of NCR excluding Delhi lies within License jurisdiction of BSNL. BSNL is making all efforts to improve the telecom facilities in NCR which includes introduction of various Value Added Services to make it at par in telecom facilities with National Capital of Delhi. BSNL aims to make the Telephone on Demand in its jurisdiction of NCR.

D. The financial outlay in respect of BSNL is given below in Table 9.

Table 9: Financial Outlay

(Rs in Crore)

	Year	Outlay
BE	2007-08	22,881
RE	2007-08	14,065
BE	2008-09	18,591

4.7.2 MAHANAGAR TELEPHONE NIGAM LIMITED

4.7.1 MTNL is the principal provider of fixed-line telecommunication service in these two Metropolitan Cities of Delhi and Mumbai and the jurisdiction of Company comprises the city of Delhi and the areas falling under the Mumbai Municipal Corporation, New Mumbai Corporation and Thane Municipal Corporation. MTNL's digital network provides host of supplementary services like Call Waiting, Call forwarding etc. to the customers.

As a company, MTNL grew rapidly modernizing its network. A variety of phone plus services have been made available by MTNL to the customers connected to modern state of art technology digital exchanges e.g. computerized morning alarm, voice mail, automatic changed number announcement, computerized fault booking/ payment system etc. Sustained efforts are being made to maintain a high level of various operational parameters such as STD and Local call completion rate. MTNL has taken several steps to improve its interface with the customers. Telephone Adalats and Open House Sessions are being held for both way effective communications with the customers. Quick customer service centers are running at all divisional offices for catering to the day-to-day needs of customers for accessories, phone plus services, STD barring/restoration, local shift of telephone, ISDN, Internet connections and IN services.

Table 10: Actual Physical Performance in 2006-07.

Item	Annual Target for 2006-07	Achievement as on March 07	Status as on March 07
Switching Capacity*	2000000	665040	9101872
DELs*	1000000	1000055	6666972
TAX/Tandem	64000	0	0

Deployment of DLC/DSLAM (Broadband)	500K Ports	257511	469446
Optical Fibre Cable (in Fiber kms)	18000 Fibre Kms	56588.073	297285.500

*Including GSM and WLL (CDMA)

4.7.2   The major schemes/projects during the current financial year were:

1. Convergent Billing & CRM Project

  The project once implemented will serve as a single converged platform for all billing and CRM application across all the lines of business of MTNL i.e. GSM, CDMA, landline, Broadband, Leased Circuit as well as upcoming services. The customer will get a single consolidated bill for all services which he has subscribed from MTNL. Testing of various applications/service modules is in progress and the project is likely to be completed by next year.

2. Broadband
Broadband services based on ADSL2+ are being provided by MTNL. Triple play services i.e. voice (including VOIP), high speed Internet and IPTV are being offered on this broadband network. The service is very popular with the subscribers. MTNL presently has a broadband capacity of 5, 66,888 and its customer base has reached to 505349 as on November 2007.

3. NGN Tandem

MTNL intends to continue to invest in expanding and upgrading its network to improve the quality of service. Recently, MTNL has placed a PO to add 24K tandem capacity based on NGN (Next Generation Network), in Delhi & Mumbai each.

4. IP MPLS

MTNL has commissioned a state of art IP-MPLS Core network in Delhi & Mumbai to provide MPLS enabled services to the customers. This MPLS core network will also aggregate all the next generation network voice, data broadband and video traffic so as to enable MTNL to have an efficient utilization of its bandwidth. MTNL is working on the expansion of IP-MPLS network to bring the network closer to its nodes (switching centers)

5.   GSM Cellular Mobile Services:

Presently the total capacity of GSM network is 1325K in Mumbai and 1025K in Delhi and is planned to be further expansion by 750K in each city. M/s ITI on whom PO was placed for 750K lines for Mumbai under reservation quota is yet to supply some of the equipment. MTNL plans to further increase its capacity by 250K each in Delhi & Mumbai for 3G services once the spectrum is made available for the same by the Government.

(i) Value added Services in GSM:

A Host of Value Added Services based on VOICE/SMS/GPRS is available & consistent efforts are being made to introduce other new value added services. In Delhi the Missed call Alert facility is also currently available to limited subscribers and for the remaining subscribers, MTNL Delhi has already installed Missed Call alert for extended capacity for which the Acceptance Testing is in progress and services are expected to be launched by end of December 2007. MTNL Delhi has also launched the instant messaging services in limited capacity for the GSM subscribers. In MTNL Mumbai, Missed Call alert services are expected to be launched by end of this year.

6.   Value Added Services in CDMA:

A trial has been successfully conducted by M/s eMbience (Mast Mobile) for commercial launch of BREW enabled value added services on revenue share basis in MTNL's CDMA 1X network in Delhi and Mumbai, with limited downloadable contents. Due to some commercial and legal issues between M/s Qualcomm and M/s eMbience , further work on finalization of the arrangement of this proposal has been put on hold.

7.   DWDM Project:

To strengthen its transmission network, MTNL has planned to induct DWDM technology in its network and placed a PO for the supply of 42 terminals (20 Delhi & 22 Mumbai) of 40 channel, 10 GB/channel DWDM equipment .Presently the equipment is being tested at ITI by QA wing of BSNL and shall be deployed in the network after the completion of testing.

8.   Utilization of MTNL's Assets:

MTNL has over the years acquired land and built buildings as per its requirements. MTNL is identifying various methods for best utilization of this property and is in the process of building world class infrastructure for appropriate utilization. This will also add to revenues. In line with the above, it was decided by MTNL to develop a Core Knowledge Park in its vacant plot at   Noida, UP on joint development partnership basis and an agreement has been signed. The project is scheduled to be completed in stages from Dec 2008 to August 2010.

9.   Submarine Cable Project:

Millennium Telecom Ltd. (MTL), a joint venture of MTNL and BSNL with 51% & 49% equity participation respectively, is planning to install a Millennium Submarine Cable System (MSCS) consisting of trunk-and-branch segments from East Coast of India to South East Asia and from West coast of India to middle East with an aim for onward connectivity to the Europe and North America through existing and newly planned Submarine cables via both East and West routes.

10.   Overseas Investments:

In its quest to expand business in the overseas market due to shrinking domestic opportunities, MTNL is participating in the bidding process for acquiring 100% stake of Suntel Ltd. in Srilanka. Suntel Ltd. is a profit making CDMA technology based fixed line telephony service provider in

Srilanka with highly skilled work force having subscriber base of around 3 lakh. Based on its final bid, MTNL has been selected as a preferred bidder by the sellers.

4.7.3 Joint Ventures Of MTNL

1.   United Telecom Limited (UTL):

A Joint Venture company namely United Telecom. Ltd. (UTL) has been set up by MTNL, VSNL and TCIL along with Nepal Venture (P) Limited (NVPL) to provide CDMA based basic services in Nepal. UTL also have license to operate NLD and ILD services. MTNL has so far invested Rs. 29.015 crore as equity in UTL. As of 20.09.2007, United Telecom Limited has a customer base of 1, 02,000 customers out of which about 45,000 customers are using CDMS mobile service.

2. MAURITIUS

MTNL has set up its 100% subsidiary in Mauritius with the name MTML. MTML has obtained license to operate as 2nd operator to provide fixed/mobile telephone services and ILD services in Mauritius. MTNL has so far invested INR 400 million in the company.

The ILD services were started by MTML on 24.06.2005. MTML has launched mobile services in Mauritius w.e.f. 15.12.2006 under brand name "MOKOZE".   With this, now MTML offers full fledged telecom services i.e. CDMA based fixed service, Mobile service and ILD service. MTML has achieved a customer base of 34,828 as on September 2007 in Mauritius.

3.   MTNL-STPI IT Services Limited:

MTNL-STPI IT Services Limited is a 50:50 joint venture between Software Technology Parks of India (STPI) and Mahanagar Telephone Limited, (MTNL). The JV formed in 2006 combines the STPI's rich experience as an ISP and MTNL's track record of being India's leading Telecom operating company to offer niche Web Portal Services to the Indian community. The JV aims to provide exclusive data centre services, messaging services, business application services to the identified sectors of economic activity and thereby also popularizing the .in domain in the networked community across the world.

The review of the performance is placed at **Annexure -P**.

4.7.3   ITI LIMITED

A. The paid-up Share Capital of the Company as on 31.03.2005 is Rs.588 Crores, consisting of Rs.288 crores Equity Shares and Rs.300 Crores Cumulative Redeemable Preference Shares. Out of the equity shares 92.87% is held by Government of India and 0.11% by Government of Karnataka and 7.02% by financial institutions and others. The Preference Shares are held by M/s Mahanagar Telephone Nigam Limited and M/S. Bharat Sanchar Nigam Limited. Till 31.03.2005, the Government of India has disinvested 2,02,19,310 shares of Rs.10/- each including 9,81,310 shares of Rs.10/- each (face value) at the price of Rs.59/- to employees during 1994-95.

B.   The provision for payment of compensation of losses for the Srinagar Unit of ITI is being made in the non-plan DoT Budget. A sum of Rs.6.08 crore was provided during the year 2007-08 and Rs.6.45 crore have been provided during 2008-09. No budgetary support has been provided under Plan for the year 2008-09.

4.7.4   TELECOMMUNICATION CONSULTANTS INDIA LIMITED

In spite of various constraints Company has made efforts to expand its base in new countries, IT related projects and other diversified areas of operation like Road construction, Power line projects. The company has been awarded FTTH project in Kuwait, National Internet Backbone (NIB) project from BSNL, Establishment of vessel traffic monitoring system in the Gulf of Kuch.   The company was awarded a contract for Pilot Project in Ethiopia for e-medicine and e-education worth US$ 2 million. Based on success of the Pilot project, the company will also be awarded work of US$ 117 million for 53 more African countries. The company is also in dialogue with MEA for e-education project in Asian countries.

Profitability of projects :

Keeping in view the prospects for the year 2007-08 and various points discussed in the following paras, the Profit for the year 2007-08 has been increased to Rs. 7.58 crs. Budgeted Profit for 2008-09 is estimated to Rs. 11.60 crs. Most of the projects in high tech areas have been obtained under stiff competition.

Order Booking 2007 –08

During   the   year   2007-08, till Sept 2007, Company has secured orders of over Rs. 359 crs. The major orders booked during the year are as under:

1. Setting up of High ICT Deptt. for SMT Engg. Co. in Sudan for   valuing Rs. 70 crores
2. Feasibility report of Sudan Technology city for Ministry of Sudan valuing Rs. 1 crores
3. Mobily contract in KSA valuing Rs. 46.38 crores
4. GSM contract in KSA valuing Rs. 17.39 crores
5. Maintenance contract in KSA valuing Rs. 11.60 crores
6. Relocation of Telephone plant in Kuwait from Copri valuing Rs. 4.51 crores
7. Rural road projects valuing Rs. 133.87 crores
8. NGN Migration project for Rs. 2.51 crs from Intercol Bahrain

IT related Projects

A major thrust was given in last three years on securing IT related projects keeping in view of the huge potential in this sector. The IT Division has submitted tenders/ proposals for a total value of over Rs. 2218 crs. in last three years. The Division has secured contracts for a value of Rs.373 crs. approx. which includes National Internet Backbone-II for BSNL,Lawful Interception Monitoring Project for BSNL and Delhi Police. FTTH Project in Kuwait, Kisan Call Center, computerisation of customer care centre and O&M sub division of Dakshin Haryana Bijli Vitran Nigam, Setting up of Village Resource centre for Capart in Bihar, Orissa , Chhattisgarh and Rajasthan and Kisan Knowledge Management System for Ministry of Agriculture, e-Governance in the State of   Karnataka etc,   The Division is likely to secure further projects in e-Governance,Campus Wide Networking etc.

Investment in joint ventures:

A provision of Rs. 20.42 crore was kept for investment in joint ventures for the budget estimates for the year 2007-08. The provision was mainly for investment in Kenya, Oman and Nepal. During the year company has so far subscribed further to equity of UTL Nepal of Rs. 5.50 crore. Telecom commission has approved formation of Joint venture in Oman where TCIL equity share is 70% amounts to Rs. 1.30 crore. Keeping in view the above, it is proposed to revise provision to Rs. 8.76 crore for the joint ventures for the year 2007-08. A provision of Rs. 6.92 crore. is proposed in the year 2008-09.

Present countries of operation

Company continues to operate in Kingdom of Saudi Arabia, Algeria, Afghanistan, Mauritius, Myanmar, Kuwait, Botswana, Ethiopia, Nepal, Oman, Bhutan, Ghana, Qatar, Sudan, Bahrain and Jordan.

Projects in progress

Following major projects are in progress: -

a) Setting up of ICT Deptt. for SMT Engineering co. Sudan valuing Rs. 70 crs
b) Stringing of OPGW, Lot – 4 cable for a country wide back bone telecommunications network over forty no. 220 KV power transmission lines valuing Rs. 9.03 crs in Algeria
c) MPT project for implementation of SDH/ STM 4 Optical Fiber link in Myanmar valuing Rs. 31.5 crs.
d) Construction of 60 KV and 220 KV power transmission lines in Algeria valuing Rs. 12.25 crs.
e) Network Maintenance contract in Kuwait valuing Rs. 54.95 crs.
f) Fiber to the Home project in Kuwait valuing Rs. 74.71 crs.
g) Satellite O & M Project in Saudi Arabia valuing Rs. 9.24 crs.
h) OSP Projects in Saudi Arabia valuing Rs. 8.05 crs.
i) GSM O&M project in KSA valuing Rs. 20.70 crs.
j) SDC Jeddah project in KSA valuing Rs. 11.50 crs
k) Minor Network Expansion 04 Project in Oman valuing Rs. 12.70 crs.

Investment in joint ventures

As on 31.3.2007 Company has a total investment in joint venture
Companies as under:

(Rs in crores)

Hexacom India Limited		
(a JV for operation of Cellular Services)	-	91.26
TCIL Bell South Limited	-	00.84
TSCL	-	00.67
ICSIL	-	00.36
Telecom Consultant Nigeria Ltd.	-	00.01
Tamil Nadu Telecom Ltd.	-	6.95
UTL Nepal	-	23.34
		123.42 cr.

TELECOM ENGINEERING CENTRE [TEC/
Performance for the year 2006-07

(Rs. in crores)

S.No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2006-07	Quantifiable / Deliverables	Process / Timelines	Achievements w.r.t. Col (5)	Remarks / Outlay
1	2	3	4	5	6	7	8
A. Core Activities							
1	New Generic Requirements, Interface requirements and Service Requirements.	Preparation of new GRs / IRs		Qtr.1 - 07 Qtr.2 - 12 Qtr.3 - 10 Qtr.4 - 11 --------------- Total - 40		Qtr.1 - 07 Qtr.2 - 01 Qtr.3 - 04 Qtr.4 - 10 -------------- Total - 22	
2	Review of GRs/ IRs	Revision of existing GRs / IRs		Qtr.1 - 25 Qtr.2 - 25 Qtr.3 - 30 Qtr.4 - 25 --------------- Total - 106		Qtr.1 - 08 Qtr.2 - 05 Qtr.3 - 26 Qtr.4 - 09 --------------- Total - 48	
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule		Qtr.1 - 30 Qtr.2 - 38 Qtr.3 - 41 Qtr.4 - 31 --------------- Total - 140		Qtr.1 - 19 Qtr.2 - 06 Qtr.3 - 18 Qtr.4 - 16 --------------- Total - 59	The additional work for preparation of NGN Compendium and setting up of NGN lab was under taken
4	White papers	For New Generation Network (NGN)		Additional work was given by DoT		40	

5	Validations	For testing conformance to laid down specification		13	In progress
6	Service test approved to licensed/ Service providers	Certification of service in accordance with the license conditions		No target defined	Qtr.1 - 95 Qtr.2 - 59 Qtr.3 - 120 Qtr.4 - 111 --------------- Total - 385
7	Interface approvals of customer equipment	Certification to authorize use of equipment in telecom network		No target defined	Qtr.1 - 33 Qtr.2 - 20 Qtr.3 - 16 Qtr.4 - 27 --------------- Total - 96
8	Participation in APT, ITU and other standards organizations in Foreign Country	To keep the officers of TEC abreast with new developments in new technologies in the telecom Sector		No target defined	7 TEC Officers attended the meetings/ seminar of APT/ ITU-T in different foreign countries

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S. No.	Name of Scheme/ Programme	Objective		Quantifiable / Deliverables		Achieved during 2006-07	
9	Training & Seminar in India	To keep the officers of TEC abreast with new developments in new technologies in the telecom Sector		No target defined		77 officers of TEC were deputed for different in-service courses/ training in various Telecom Training Centres in India and 27 officers attended workshop on motivation and vitalisation change in TEC.	
10	Test Fee collection from Vendors	Test Charges for testing and certification		No target defined		Qtr.1 - 1.5793 Qtr.2 - 1.8941 Qtr.3 - 1.6562 Qtr.4 - 4.3754 --------------- Total - 10.5050 (Rs. In Crore)	

B. Project Activities

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2006-07	Quantifiable / Deliverables	Process / Timelines	Achieved during 2006-07	Expenditure for 2006-07
1	Up gradation of TEC Intranet	The speed of existing intranet shall increase and also the access. Mail Server shall be provided to improve mail access.	0.07	i) Revision of Specification ii) Revision of Budget	i) Revision of Specification ii) Revision of Budget iii) Floating of	Completed Completed	0.0000

				iii) Floating of Tender for Part-I (S/W) & Part- II (Installation)	Tender iv) Date of Opening of tender v) Evaluation of tender vi) Installation of equipment	Completed	
				iv) Placement of Order for Part-III (H/W) on DGS&D		Equipment received, DGS&D Bill awaited	
				v) Opening of tender for Part-I		Completed	
				vi) Opening of tender for Part-II		Completed	
				vii) Evaluation of Tender for Part-I		Tender evaluation under process	
				viii) Evaluation of tender for Part-II		No bid received. Put up for review	
				ix) P.O. for Part-I			
				x) P.O. for Part-II			
				xi) Installation of Equipment			
2	VoIP Test Bed	The lab set up shall help in interoperability testing of NGN products.	0.05	i) Revision of Specification	i) Revision of Specification ii) Revision of Budget iii) Floating of Tender iv) Date of Opening of tender v) Evaluation of tender	Completed	Project Closed (Undertaken in setting up of NGN Lab)
				ii) Floating of tender		Completed	
				iii) Opening of tender		Completed	
				iv) Evaluation of Tender		Tender evaluation under process	

				v) Placement of P.O.	vi) Installation of Tender		
				vi) Installation of Equipment			
3	Procurement of testing tools and accessories for CDMA	Procurement of accessories for conducting tests and training of staff	0.72	i) Placement of Order for Part-I (CDMA Cards)	i) Placement of P.O. for Pt-I (CDMA Card)	Completed	0.0177
				ii) Placement of order for Part-II (Computers) on DGS&D	ii) Placement of order for part -II	Completed	
					iii)Floating of Tender fpr pt-III		
				iii) Floating of tender for Part-III (Tester)	ii) Date of Opening of tender	Completed	
				iv) Opening of tender for Part-III	iii) Evaluation of tender	Completed	
				v) Evaluation of tender for Part-III	iv) Placement of P.O. for Pt-III	Short closed	
				vi) Placement of order for Pt-III	v) Installation of equipment		
				vii) Placement of order for Part-IV (Vehicle) on DGS&D		Closed	
				viii) Installation of equipment		Completed	

4	WiFi Hotspot	To carry out studies on radio interface of WiFi		i) Procurement of equipment and Installation	i) Procurement of equipment and Installation	Installation completed.	0.0349
5	Procurement of PCs, Laptop for Office automation	Procurement of PCs, Laptop for Office use	0.17	Order on DGS&D for i) PCii) LaptopInstallation ofiii) PCsiv) Laptop Computers	Order on DGS&D for i) PCii) LaptopInstallation ofiii) PCsiv) Laptop Computers	i) Completedii) Completediii) Completlediv) Completed	0.0000
6	IPv6 Test Lab	To carry out testing and certification of IPv6 complaint equipment		i) Preparation of EOI	i) Preparation of EOI ii) Floating of invitation of EOI iii) Opening of EOI iv) Evaluation of Tender v) Placement of P.O. vi) Installation of equipment	Completed	
				ii) Floating of invitation of EOI		Completed	
				iii) Opening of EOI		Completed	
				iv) Evaluation of Tender		In Progress	
				v) Installation of equipment by bidders for short listing for Proof of Concept			
	Total		**1.00**				**0.0526**

TELECOM ENGINEERING CENTRE   [TEC]
Performance for the year 2007-08 (up to 31st December 2007)

(Rupees in crores)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2007-08	Quantifiable / Deliverables	Process/ Timelines	Achieved as on December, 2007	Remarks /
1	2	3	4	5		6	7
A. Core Activities							
1	New Generic Requirements, Interface requirements and Service Requirements.	Preparation of new GRs / IRs		Qtr.1 - 09 Qtr.2 - 13 Qtr.3 - 15 --------------- Total - 37		Qtr.1 - 03 Qtr.2 - 07 Qtr.3 - 02 -------------- Total - 12	
2	Review of GRs/ IRs	Revision of existing GRs / IRs		Qtr.1 - 15 Qtr.2 - 13 Qtr.3 - 13 --------------- Total - 41		Qtr.1 - 15 Qtr.2 - 09 Qtr.3 - 09 --------------- Total - 33	
3	Preparation of Test Schedule/ Test Procedure	Preparation of Test Schedule		Qtr.1 - 22 Qtr.2 - 26 Qtr.3 - 30 --------------- Total - 48		Qtr.1 - 10 Qtr.2 - 19 Qtr.3 - 15 --------------- Total - 44	
4	Service test approval to licensed/ Service providers	Certification of service in accordance with the license conditions		No target defined		Qtr.1 - 147 Qtr.2 -121 Qrt.3 - 43* ------------------ Total - 311	* work has been transferred to VTM cell in Oct, 07

5	Interface approvals of customer equipment	Certification to authorise use of equipment in telecom network		No target defined		Qtr.1 - 38 Qtr.2 - 30 Qtr.3 - 23 ------------------ Total - 91	
6	Participation in APT, ITU and other standards organisations in Foreign Country	To keep the officers of TEC abreast with new developments in new technologies in the telecom Sector				9 TEC Officers attended the meetings/ seminar of APT/ ITU-T in different foreign countries	
7	Training & Seminar in India	To keep the officers of TEC abreast with new developments in new technologies in the telecom Sector				13 officers of TEC were deputed for different in-service courses/ training/ Seminar in various Telecom Training Centres in India	
8	Test Fee* collection from Vendors	Test Charges for testing and certification				Qtr.1 - 2.9695 Crore Qtr.2 - 2.1488 Crore Qtr.3 - 0.3149 Crore ------------------------------- Total - 5.4332 Crore	

Other Activities

1	Field Trials/Testing/Validation including evaluations	Field Trials/Testing/Validation including evaluations for some of the new products in Optical, Satellite, Switching technology		No target defined		3	

2	Field Problems/ Advice given to DoT/BSNL/MTNL	Referred by DoT/ BSL/ MTNL				19	
3	NGN Compendium compiled by TEC released by MOC					1	
B.	**On going Project Activities**						

1	Up gradation of TEC Intranet	The speed of existing intranet shall increase and also the access. Mail Server shall be provided to improve mail access.	0.0813	0.0000	i) Placement of Order for Part-II
					
					ii) Floating of tender for Firewall
					
					iii) Opening of tender
					
					iv) Evaluation of tender
						1. All items (LAN switch etc.) have
						    been received
						    except Hardware Management
						
						2. Installation of 3 online UPS
						 completed
						
						3. For other items like Terminal
						    controller, Power cables, connectors etc. procurements is under process (Intranet Part-II)
						
						4. Tender is under process for Firewall with NAPT and IDS	

2	Procurement of testing tools and accessories for CDMA	Procurement of drive test tools and CDMA-2000 1-X subscriber card and other accessories	0.0450	0.0058	Project completed	As per PE revised for Rs.0.0624 crore. **Project completed**	
3	Procurement of PCs, Laptop etc.	Office Automation	0.1237	0.1237	i) Procurement of equipment ii)	Equipment procured and installed **Project completed.**	

					Installation of equipment		
		Total (B)	**0.2500**	**0.1295**			
C.	**New Project Activities**						
1	Procurement of PCs, Laptop etc.	Office Automation	0.0000	0.0000			
2	CPE Lab	To carry out testing and certification of NGN complaint CPEs and terminals	0.0000	0.0000		1. Various tests to be performed are being finalised. The details for the test equipment required are under process. 2. A separate case for setting up of labs for testing and certification of wireless products, services and technologies is also being processed through a Joint Venture (JV).	
3	EMF and Health	To carry out testing and development of test process related to EMF & Health	0.0000	0.0000		1. Study is being undertaken for EMF and health related issues 2. PE under preparation	

4	Transport Lab	To carry out testing and certification of NGN complaint transport equipment	0.0000	0.0000		1. Interactions were held with Test and Measurement (T&M) vendors and System Integrators (SI) for firming up of RFP. 2. First draft & RFP has been prepared 3. The project estimate has been prepared	
5	Access Lab	To carry out testing and certification of NGN complaint Access Network equipment	0.0000	0.0000		1. The Project Estimate has been prepared. 2. The technical specifications for equipment is under finalisation	
6	Control Lab	To carry out testing and certification of NGN complaint Control equipment	0.0000	0.0000		1. The Project Estimate has been prepared 2. RFP of the required items / equipments has been prepared	
7	Application/Services Lab including VoIP and IPV6 Lab	To carry out testing and certification of NGN complaint Applications/Services equipment	0.0000	0.0000		RFP for IPv6 has been prepared. Tender document is under preparation.	
8	Infrastructure	Upgrade of infrastructure for accommoding labs and staff	0.0000	0.0000		Drawings have been prepared for accommodating Labs. PE under preparation by Electrical and Civil Wings.	

9	Foreign Training of TEC Personnel	To keep the officers of TEC abreast with new developments in new technologies in the telecom Sector	0.2000	0.0000		Training proposals are under preparation.	
	Total ©		**0.2000**	0.0000			
	G. Total (B+C)		**0.4500**	**0.1295**			

WIRELESS PLANNING CO-ORDINATION [WPC]

Performance for the year 2006-07& 2007-08 (upto 31.12.2007)

(Rs. in crores)

1. Actual Physical Progress during 2006-07

1. ASMS system at Sanchar Bhawan was made operational.
2. Acceptance Testing (AT) and subsequent anomalies rectification was completed at sites viz. Hyderabad, Vishakhapatnam, Goa, Jalandhar, Jammu, Dibrugarh, Ranchi, Bangalore, Ajmer and Pushp Bhawan.
3. 09 V/UHF Mobile Monitoring System vehicles were delivered to Jammu, Jallandhar, Ajmer, Hyderabad, Vishakhapatnam, Banglore, Manglore, Chennai and Trivendum after successful completion of Acceptance Testing at Delhi.
4. Acceptance test and subsequent anomalies rectification at fixed sites and V/UHF mobile sites were in progress.

1.1 Financial Progress:

BE 2006-07:   Rs.15.31 crores

RE 2006-07:   Rs. 6.00 crores

Expenditure: Rs. 5.00 crores

2. Performance in the first 9 months of the year 2007-08

1. Out of 24 fixed sites (Wireless Monitoring Stations etc.), 20 have been accepted.
2. Out of 21 V/UHF Mobile Monitoring System (MMS) vehicles, 20 have been delivered to their respective sites after successful completion of Acceptance Testing at Delhi.
3. The Operational Acceptance Test document for final acceptance of National Radio Spectrum Management and Monitoring System (NRSMMS) has been finalized. The Operational Acceptance Test will likely to be started by February 15, 2008.

WIRELESS MONITORING ORGANISATION   [WMO]

Performance for the year 2006-07 & 2007-08 (upto 31.12.2007)

Sl. No.	Name of Schemes/Programmes	Objective/ Outcome	Outlay 2006-07/ Expenditure **(in Crores)**	Quantifiable Deliverable/ Physical Outputs	Remarks / Risk Factor
1.	**Technical Schemes** Strengthening of VHF/UHF Spectrum Analysis Capabilities	Procurement of Electronic Hardware & Software for radio monitoring activities	1.50/Nil	0%	Dropped due to ongoing World Bank Project
2.	Management of Information System	Procurement of Servers, Computers, Network equipments. Software & Hardware and integration in a network for administrative work	0.50/Nil	0%	Dropped due to ongoing World Bank Project
3.	Strengthening of HF Monitoring.	Augmentation, replacement of existing H.F. Monitoring Facilities	1.00/Nil	0%	Dropped due to ongoing World Bank Project
4.	Development Programmes for N.E Region	Development Programmes for N.E Region	1.00/Nil	0%	Subsumed in the World Bank Project.
5.	**Civil works** MH 4059/4216 {Funds under the control of Min. of Urban Development.)	Miscellaneous Civil works such as procurement of land, const. of office bldg, staff qtrs. Const. of ancillaries etc.	5.00/2.38 47.60%	#	#It is difficult to quantify different civil works under various stages of execution, preparation of drawings & preliminary estimates
	Total Outlays =		9.00/2.38 26.44%		

Contd…]
Performance for the first 9 months (2007 – 08) (In Crores)

Sl. No.	Name of Schemes/Progra mmes	Objective/ Outcome	Outlay 2007-08			Target (April, 07-Dec, 07)		Achievement during (April, 07-DEc, 07)		Remarks
			Non-Plan Budget	Plan Budget	Complemen-tary Extra Budgetary Resources	Financial	Physical	Financial	Physical	
1.	2	3	4(i)	4(ii)	4(iii)	5	6	7	8	9
1.	**Technical Schemes** Project Implementation Unit (**PIU**)	To implement the schemes at S.No.2 below	N/A	0.25	Nil	0.18	Nil	Nil	Nil	Case under submission for Administrative approval & Financial concurrence of the competent authority
2.	Expansion of Monitoring facilities (EMF) #	Augmentation, Upgradation of Wireless Monitoring Facilities	N/A	2.50	Nil	1.80	Nil	Nil	Nil	To be taken up on creation of PIU
3.	Augmentation of Training Facilities	Augmentation, Upgradation of Wireless Monitoring Training Facilities	N/A	0.25	Nil	0.18	Nil	Nil	Nil	Case is under preparation
4.	**Civil works** (in two A/C Heads, MH-5275/4552*	Various Civil works such as proc. of land, const. of office bldg, staff qtrs. Const. of ancillaries etc.	N/A	12.00	Nil	9.00	**	4.28***	**	Various civil works under different stages of execution
	Total Outlay			**15.00**	**Nil**	**11.16**	**--**	**4.28**	**--**	

* The funds for Civil works are under Demands of Grants of DOT, and the Civil works are being executed by CPWD, Ministry of Urban Development & P.A.

** It is difficult to physically quantify various Civil works as they are in different stages of execution by CPWD.

*** This includes Expenditure sanctions and Authorisation of funds to CPWD for various Civil works of WMO.

Note: The R.E(2007-08) for the Schemes/ Programmes at S.No. 1 to S.No. 4 is **Rs 0.104 crores** and
For the Schemes/Programmes at S.No. 5 is **Rs 6.379 crores**.

Expansion of Monitoring Facilities consists of the following schemes:
1. Establishment of Remote Wireless Monitoring Stations (8 nos.).
2. Establishment of additional Fixed Monitoring Stations (6 Nos.).
3. Augmentation / Up-gradation of Microwave Terminals (20 nos.).
4. Establishment of Satellite Monitoring Earth Station (1 No.).
5. Regional Maintenance Centres at Chennai, Delhi, Kolkata & Mumbai & Shillong

UNIVERSAL SERVICE OBLIGATION FUND
UNIVERSAL SERVICE OBLIGATION : ACTUAL PERFORMANCE DURING 2006-07,
FIRST 9 months OF 2007-08 AND TARGET PERFORMANCE FOR REMAINING 3 months OF 2007-08

			Financial Year 2006-07		Financial Year 2007-08 (Actuals + Projected)								Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14
					Annual Targets				Actual Performance upto Dec'07(9months)		Projected performance from Jan'08 to March'08 (3months)		
Sl.No	Name of Activity	Total Physical Target for the Scheme	Financial Outlay (Rs. In crores)	Physical Outcome	Financial (Rs. In crores)-ORIGINAL	Financial (Rs. In crores)-REVISED	Physical - ORIGINAL	Physical - REVISED	Financial (Rs. In crores)	Physical	Financial (Rs. In crores)	Physical	
1	Operation & Mtce of VPTs	502523	81.54		163	140			25.27		114.73		Subsidy for Operation and Maintenance of existing VPTs.
2	Replacement of MARR VPTs	182766	106.19	24454	272	280	9800	5016	54.96	4016	225.04	1000	Subsidy for MARR VPTs to be replaced and those already replaced after 1/04/02

3	Provision of RCPs	43409	41.72	11224	64	20	7370	2080	9.13	1580	10.87	500	Equated subsidy for already installed RCPs and Front Loaded and Equated subsidy for new installations.
4	VPTs in Uncovered Villages	66822	55.4	22282	136	45	20370	9373	11.17	5373	33.83	4000	Equated subsidy for already installed VPTs and Front Loaded and Equated Subsidy for new installations.
5	Rural Household DELs installed between 1/04/02 and 31/03/2005	1865690	342.74		415	115			41.74		73.26	0	Equated subsidy for already installed RDELs.
6	Rural Household DELs installed between 1/04/05 and 31/03/2007		872.41	2564577	850	850		500000	288.29		561.71	500000	Equated subsidy for already installed RDELs and Front Loaded Subsidy for RDELs installed upto 31/03/07.
7	Mobile Infrastructure -Phase-I (number of towers)	7871			900		4000	200		0	0	200	Subsidy support towards active and passive infrastructure for 7871 sites.

8	Broadband Connectivity	5000 blocks			200		0	2000	0	0	0	0	Broadband connectivity to Block Headquarters.
			1500		3000	1450			430.56		1019.44		

Notes:

1. **MARR VPTs**: Originally 1,86,872 MARR VPTs were to be replaced and the same has been reconciled by BSNL in August'2007. The revised
figure is now 1,82,766.
2. **RCP:** Originally 46,253 RCPs were to be provided by BSNL and Reliance. The same has now been reconciled to 43,409 after revision by BSNL. Further reconciliation is also under process for the number of RCPs to be provided by Reliance.
3. **VPTs in UNCOVERED VILLAGES**: Reconciliation is being carried out by BSNL and the number of VPTs to be provided may reduce by about 4000.
4. **RDEL from 1/04/05 to 31/03/07**: The cut off date for installation under the scheme has been extended for one year period from 1/04/07 to 31/03/08. About 5,00,000 new RDELs are likely
   to be provided during the extended period.
5. **Mobile Infrastructure-Phase-I**: Scheme has been launched in June 2007 and majority of the towers are likely to be installed after
December 2007.
6. The above target figures are estimated and subject to actual disbursement based on timely submission of claims by the USPs and number of facilities actually provided and/or working.
7. Subsidy claims are received and disbursed in arrears after completion of the quarter in which the facilities are provided and/or
remained operational.
8. The physical numbers during the quarter represent the number of facilities for which subsidy is to be paid during the following quarters including those existing at the beginning of the quarter and eligible for subsidy.
9. Under O & M of VPTs and RDEL installed between 1/04/02 to 31/03/05, the facilities are already existing for which subsidy
is to be paid.

Abbreviations used:
VPT: Village Public
Telephone
MARR VPT: Multi Access Radio Relay VPTs
RCP: Rural Community Phones
USP: Universal Service Provider
DELs: Direct Exchange
Lines

BHARAT SANCHAR NIGAM LIMITED [BSNL]
Performance for the year 2006-07

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2006-07 (In Rs. Crores)	Quantifiable Deliverables	Actual Achievement	Processes/ Timelines	Remarks / Risks / Constraints
1	DELs (Direct Exchange Lines)	Provision of DELs on demand	Annual Outlay for 14327 Cr	Total 100 lakh	95.64 lakh	DELs target includes	
				1st Quarter 10 lakh	5.60 lakh	(i) 90 lakh for mobile connections	
				2nd Quarter 15 lakh	19.43 lakh		
				3rd Quarter 25 lakh	25.15 lakh	(ii) 10 lakh for fixed connections	
				4th Quarter 50 lakh	45.46 lakh		
2	Rural DELs	Help raising the Rural Teledensity	1st Quarter 1433 Cr	Total 10 lakh	78.87 lakh		
				1st Quarter 1 lakh	0.34 lakh		
				2nd Quarter 1.5 lakh	-0.96 lakh		
				3rd Quarter 2.5 lakh	1.42 lakh		
				4th Quarter 5 lakh	78.07 lakh		
3	VPTs (Village Public Telephones)	Provision of VPTs as per USO agreement	2nd Quarter 2149 Cr	Total 20000	17499		
				1st Quarter 2000	2476		
				2nd Quarter 3000	3152		
				3rd Quarter 5000	4304		
				4th Quarter 10000	7567		
4	MARR Replacement	Replacement of all VPTs on MARR with WLL / LL	3rd Quarter 3582 Cr	Total 37157	25310		
				1st Quarter 3716	4852		
				2nd Quarter 5574	6050		
				3rd Quarter 9289	6642		
				4th Quarter 18578	7766		
5	RCPs (Rural Community Phones)	Provision of Second Public	4th Quarter 7163 Cr	Total 8436	5125		
				1st Quarter 844	1637		

				2nd Quarter 1265	1671		
		Telephone villages with population more than 2000		3rd Quarter 2109	935		
				4th Quarter 4218	882		
6	Internet connections		Annual Outlay for 1022 cr.	Total 8 lakh	7.97 lakh		
				1st Quarter 0.8 lakh	1.63 lakh		
				2nd Quarter 1.2 lakh	1.73 lakh		
			1st Qtr. 102 cr.	3rd Quarter 2 lakh	1.91 lakh		
				4th Quarter 4.0 lakh	2.70 lakh		
7	Broadband connections		2nd Qtr. 153 cr.	Total 6 lakh	3.91 lakh		
				1st Quarter 0.6 lakh	1.15 lakh		
			3rd Qtr. 256 cr.	2nd Quarter 0.9 lakh	0.95 lakh		
				3rd Quarter 1.5 lakh	0.46 lakh		
			4th Qtr. 511 cr.	4th Quarter 3 lakh	1.35 lakh		

BHARAT SANCHAR NIGAM LIMITED [BSNL]
Performance for the year 2007-08 (up to 31ˢᵗ December 2007)

(Rs. in crores)

S. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2007-08	Quantifiable Deliverables	Actual Achievement	Processes/ Timelines	Remarks / Risks / Constraints
1	DELs on Mobile	To provide DELs on demand	Annual Outlay for 8337 cr. 1st Qtr. 834 cr. 2nd Qtr. 1667 cr. 3rd Qtr. 2501 cr. 4th Qtr. 3335 cr.	Total 85 lakh 1st Quarter 8.5 lakh 2nd Quarter 17 lakh 3rd Quarter 25.5 lakh 4th Quarter 34 lakh	37.93 lakh		
1.1	DELs on landline/ WLL	To provide DELs on demand	Annual Outlay for 3632 cr. 1st Qtr. 363 cr.	Total 15 lakh 1st Quarter 1.5 lakh 2nd Quarter 3.0 lakh 3rd Quarter 4.5 lakh 4th Quarter 6.0 lakh			
1.2	VPTs (Village Public Telephones)	To provide VPTs as per USO agreement	 2nd Qtr. 726 cr.	Total 20000 1st Quarter 2000 2nd Quarter 4000 3rd Quarter 6000 4th Quarter 8000	3434		
1.3	Rural DELs	To provide DELs in rural area bridging	3rd Qtr. 1090 cr.	Total 10 lakh 1st Quarter 1 lakh 2nd Quarter 2 lakh	9.56 lakh		

		digital divide		3rd Quarter 3 lakh		
				4th Quarter 4 lakh		
1.4	Internet connections		4th Qtr. 1453 cr.	Total 8 lakh	1.55 lakh	
				1st Quarter 0.8 lakh		
				2nd Quarter 1.6 lakh		
				3rd Quarter 2.4 lakh		
				4th Quarter 3.2 lakh		
2	Broadband connections	To provide Multiplay i.e voice,video & data on demand and allied services	Annual Outlay for 2947 cr. 1st Qtr. 295 cr. 2nd Qtr. 589 cr. 3rd Qtr. 884 cr. 4th Qtr. 1179 cr.	Total 10 lakh	4.77 lakh	
				1st Quarter 1 lakh		
				2nd Quarter 2 lakh		
				3rd Quarter 3 lakh		
				4th Quarter 4 lakh		
3	TAX (Killo Circuts)	To provide connectivity for additional exchange equipment & provide POIs on demand	Annual Outlay for 1622 cr. 1st Qtr. 162 cr. 2nd Qtr. 324 cr. 3rd Qtr. 487 cr. 4th Qtr. 649 cr.	Total 1500 KCTs	324	
				1st Quarter 150 KCTs		
				2nd Quarter 300 KCTs		
				3rd Quarter 450 KCTs		
				4th Quarter 600 KCTs		
4	OFC (RKMs)	To provide Transmission network for new exchange equipment & provide Bandwidth on demand	Annual Outlay for 6343 cr. 1st Qtr. 634 cr. 2nd Qtr. 1269 cr. 3rd Qtr. 1903 cr. 4th Qtr. 2537 cr.	Total 25000 RKMs	24431	
				1st Quarter 2500 RKMs		
				2nd Quarter 5000 RKMs		
				3rd Quarter 7500 RKMs		
				4th Quarter 10000 RKMs		

MAHANAGAR TELEPHONE NIGAM LIMITED   [MTNL]

Performance for the year 2007-08 (up to 31ˢᵗ December 2007)

(Rupees in crores)

S. No	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2007-08			Target*			Achievement as on December 07		Remarks
			Non Plan Budget	Plan Budget (BE)	Complem entary Extra Budgetary Resources	Financial (RE)	Physical		Financial (unaudited)	Physic al	
							BE	RE			
1	2	3	4 (i)	4 (ii)	4 (iii)	5	6		7	8	9

| 1 | Switching(including TAX/TANDEM)and access lines(including CDMA/ WLL, Handsets, GSM)in existing and new areas | Increase in Net switching capacity | - | 1542 | - | 984.45 | 2000K | 950K | 536.74 | -2623 | 1. Orders for 750K lines of 2.5 GSM has been placed each for Delhi & Mumbai. Although PO for 750K GSM for Mumbai was placed on ITI long before , but could not deliver the equipment resulting in poor achievement. However, 750K GSM of Delhi shall be commissioned by March 08 resulting in increase in achievement. 2. AO for procurement of 48K NGN for Delhi & Mumbai has been placed. |

2	Deployment of DLC/DSLAM/Metro Ethernet (in K Ports)	-	-	-	-	-	211.70	1250K	500K		77278	Although PO for 300K BB in Delhi was placed on SOTL and 300K BB in Mumbai was placed on ITI . ITI could supply only 42.7K equipment which has already been commissioned. ITI is unable to supply the remaining equipment, therefore MTNL decide to divert 200K lines from Delhi to Mumbai. 300K BB lines delhi & 100K BB lines Mumbai are under installation.
3	IT related services	Convergent billing	-	267	-	251.18	-	-	3.85	-		Testing of various applications/service modules is in progress and

										the project is likely to be completed by March 2008.
4	Expansion in new service Areas Abroad and National Acquisition	Service in overseas operation	-	500	-	245.0	-	-	-	-	Efforts are being made for investment in SUNTEL Telecom Operator in Sri Lanka
	Grand Total			**2309**		**1692.33**			**540.59**		

CHAPTER – V
FINANCIAL REVIEW / OUTLAY

Financial review/requirement of the Programme/Schemes under Secretariat of the MOC, DOT (HQ), C-DOT, TEC, WPC, WMO, VTMs, USO, Contribution to International Telecommunications Union, Asia Pacific Telecommunity, TRAI and Telecom. Dispute Settlement and Appellate Tribunal.

(Rs. in crore)

	BE 2007-08			RE 2007-08			BE 2008-09		
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
Budgetary Provision									
MH 3451-Secretariat Economic Services:									
(a) Secretariat (MOC)	0.00	6.10	6.10	0.00	5.76	5.76	0.00	6.22	6.22
(b) Directorate General Administration	0.00	80.08	80.08	0.00	68.96	68.96	0.00	76.47	76.47
(c) Administrator USO Fund	0.00	1.87	1.87	0.00	1.84	1.84	0.00	3.30	3.30
(d) C-DOT	116.10	0.00	116.10	89.00	0.00	89.00	137.00	0.00	137.00
(e) TEC	0.25	8.80	9.05	0.25	7.40	7.65	0.25	7.58	7.83
(f) VTM	0.00	7.59	7.59	0.00	11.42	11.42	0.00	15.15	15.15
(g) Telecom Testing & Security Certfication Centre	6.00	0.00	6.00	4.00	0.00	4.00	5.00	0.00	5.00
Total -MH 3451	**122.35**	**104.44**	**226.79**	**93.25**	**95.38**	**188.63**	**142.25**	**108.72**	**250.97**
MH 2071 – Pension									
Pension	**0.00**	**1540.00**	**1540.00**	**0.00**	**1537.00**	**1537.00**	**0.00**	**1590.00**	**1590.00**
MH 2852 - Industries									
(b) Write off of Loans to ITI Ltd.	0.00	0.00	0.00	0.00	377.00	377.00	0.00	0.00	0.00
Total -MH 2852	**0.00**	**0.00**	**0.00**	**0.00**	**377.00**	**377.00**	**0.00**	**0.00**	**0.00**
MH 3275 –Other Communications Services:									
(a) Wireless Planning and Co-ordination	0.40	2.18	2.58	0.32	2.25	2.57	1.00	2.38	3.38
(b) Wireless Monitoring Services	2.75	12.58	15.33	0.10	12.15	12.25	7.50	13.35	20.85
(c) Contribution to International Telecommunications Union	0.00	6.00	6.00	0.00	12.00	12.00	0.00	12.00	12.00
(d) Contribution to Asia Pacific Telecommunity	0.00	1.70	1.70	0.00	1.40	1.40	0.00	1.40	1.40
(e)Telecommunication Commonwealth Organisation	0.00	0.48	0.48	0.00	0.90	0.90	0.00	0.90	0.90
(e) Transfer to Telecom Authority of India General Fund	3.00	21.69	24.69	3.00	25.34	28.34	3.00	24.80	27.80
(f) Telecom Dispute Settlement and Appellate Tribunal	1.25	4.85	6.10	1.25	5.50	6.75	1.00	5.00	6.00
(g) Compensation to I.T.I	0.00	6.08	6.08	0.00	6.08	6.08	0.00	6.45	6.45
(h) Transfer to USO Fund	0.00	1800.00	1800.00	0.00	1450.00	1450.00	0.00	2000.00	2000.00
(i) Compensation to Service Providers	0.00	1800.00	1800.00	0.00	1450.00	1450.00	0.00	2000.00	2000.00
(j) Reimbursement to BSNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(k) Technology Development & Investment Promotion	2.00	0.00	2.00	4.00	0.00	4.00	2.00	0.00	2.00
Total - MH 3275	**9.40**	**3655.56**	**3664.96**	**8.67**	**2965.62**	**2974.29**	**14.50**	**4066.28**	**4080.78**

	BE 2007-08			RE 2007-08			BE 2008-09		
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
MH 2552 -Provision for North East Region									
(a) C-DOT	13.00	0.00	13.00	10.00	0.00	10.00	16.00	0.00	16.00
(b) WPC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
© WMO	0.25	0.00	0.25	0.00	0.00	0.00	1.50	0.00	1.50
Total - MH 2552	**13.25**	**0.00**	**13.25**	**10.00**	**0.00**	**10.00**	**17.50**	**0.00**	**17.50**
Total - Revenue Section	**145.00**	**5300.00**	**5445.00**	**111.92**	**4975.00**	**5086.92**	**174.25**	**5765.00**	**5939.25**
Capital Section:									
MH 5275 - Capital Outlay on Other Communication Services									
(a) TEC	18.00	0.00	18.00	0.18	0.00	0.18	8.75	0.00	8.75
(b) WPC	10.00	0.00	10.00	15.00	0.00	15.00	2.60	0.00	2.60
(c) WMO	10.25	0.00	10.25	5.65	0.00	5.65	5.40	0.00	5.40
(d) Undersea Cabling -Land & A&N	1.00	0.00	1.00	1.00	0.00	1.00	5.00	0.00	5.00
(e) Net work for Defence Services	134.00	0.00	134.00	95.25	0.00	95.25	152.00	0.00	152.00
(f) TRAI	0.00	0.00	0.00	5.00	0.00	5.00	7.00	0.00	7.00
Total - MH - 5275	**173.25**	**0.00**	**173.25**	**122.08**	**0.00**	**122.08**	**180.75**	**0.00**	**180.75**
MH- 6859 - Loans to I.T.I Ltd	1.00	0.00	1.00	1.00	352.00	353.00	0.00	0.00	0.00
MH 4552 -Prov. for North East Region	20.75	0.00	20.75	15.00	0.00	15.00	20.00	0.00	20.00
Total - Capital Section	**195.00**	**0.00**	**195.00**	**138.08**	**352.00**	**490.08**	**200.75**	**0.00**	**200.75**
Total Telecommunications Services	**340.00**	**5300.00**	**5640.00**	**250.00**	**5327.00**	**5577.00**	**375.00**	**5765.00**	**6140.00**

Position of Utilisation Certificates:- No utilisation certificate for the Grants released up to 31.3.07 is outstanding.

REVIEW OF PERFORMANCE OF STATUTORY AND AUTONOMOUS BODIES

1. Telecom Regulatory Authority of India (TRAI)

The Institutional Capacity Building Project of TRAI

1. During the year 2005-06, five consultancies were completed and 18 officials attended international training under this project.

2. During the year **2006-07** Nine Consultancy Studies were proposed out of which One Consultancy was completed, One Consultancy was dropped, One Consultancy was conducted in-house and Six remaining Consultancies were spilt/carried over to the next financial year. 4 officials attended international training under this project

3. The following consultancies/studies were proposed during the financial year **2007-08**

(i) Regulatory and licensing requirement for Spectrum Trading in India
(ii) Spectrum and Licensing related issues for new technologies – IMT 2000 and beyond – WIMAX/SDR
(iii) Satellite Communications related issues
(iv) Studies on Digitalization
(v) Studies on impact of CAS
(vi) Consultancy project on usage of Forward Looking Long Run Incremental Cost (FLRIC) Model for Telecom Sector
(vii) Objective Assessment of QoS and Customer Satisfaction Survey through an independent agency
(viii) Proposal to hire Drive Test Equipment and personnel to carry out selected drive tests in the networks of various service providers so as to assess the Quality of Service in their network
(ix) Capacity Building/training with respect to Migration/implementation process of NGN in developed countries
(x) Workshop/Seminar on Regulatory & Technical issues related to NGN

During the course of financial year, the Authority reviewed the need for these consultancies depending upon the prevailing market conditions and requirement for new studies to deal with the emerging regulatory issues. The Authority, therefore, decides to pursue following 8 studies:-

(i)   Regulatory and licensing requirement for Spectrum Trading in India
(ii) Satellite Communications related issues
(iii) Studies on impact of CAS
(iv) Consultancy project on usage of Forward Looking Long Run Incremental Cost (FLRIC) Model for Telecom Sector
(v) Objective Assessment of QoS and Customer Satisfaction Survey through an independent agency

(vi) Workshop/Seminar on Regulatory & Technical issues related to NGN
(vii) Survey on CAS issues in four metropolitan cities
(viii) Audit Standards performance of MSOs for the quarter of April 07 to June 07.

Out of these 8 studies, two studies namely (i) Audit Standards performance of MSOs for the Quarter of April' 07 to June'07and (ii) Studies on impact of CAS, have been completed. Studies on 'Satellite Communications related issues' has been deferred for next financial year. One study namely Survey on CAS issues in Four Metropolitan Cities has been dropped. One Workshop/Seminar on Regulatory and Technical issues relating to NGN has been carried out during the year 2007-08 and it will spread over 2008-09. Three remaining studies are in the various stages of completion and are likely to be completed by March 2008.

The review of the performance for the year 2006-2007 and for the year 2007-2008 (up to 31st December 2007) is placed at **Annexure - "Q"**.

2.   Telecom Disputes Settlement & Appellate Tribunal (TDSAT)

2.1   The TDSAT has organized a seminar on "Dispute Settlement and Protection of Consumer Rights in the Telecom and Broadcasting Sectors" at Srinagar, J& K on 20th October 2007. The purpose of this seminar was to generate awareness among the stakeholders about the dispute resolution mechanism in the telecom and broadcasting sector in India, and to also make them familiar with the national scenario in this regard.

TDSAT has updated the Comprehensive Compendium on Telecom and Broadcasting Laws, rules, regulations and tariff orders including articles by experts on various issues relevant to stake holders.

2.2   The TDSAT has organized a seminar on "Dispute Settlement and Protection of Consumer Rights in the Telecom and Broadcasting Sectors" at Kolkata, West Bengal on 20th January 2008. The purpose of this seminar was to generate awareness among the stakeholders about the dispute resolution mechanism in the telecom and broadcasting sector in India, and to also make them familiar with the national scenario in this regard.

The review of the performance for the year 2005-2006 and for the year 2006-2007 (up to 31st December 2006) is placed at **Annexure – "R"**.

3.   Centre for Development of Telematics (C-DOT)

Details of Achievement, Activities and Performance of C-DOT

Schemes / Project deliverables undertaken during FY 2006-07

- Innovative Services For Business & Industry

  ➢ NMS Enhancements

  ➢ Call Interception & Intelligent System (CIIS)

  ➢ Operating Support System (OSS)

- Advanced Intelligent Networks Services

  ➢ IN Enhancements & IN Based Services

- High Bit Rate Network Backbone On Fibre & Satellite
  - WDM Technology
  - Gigabit – Passive Optical Network (G-PON)
  - Broad Band Transport Via Satellite (BBTS)
- Cell & Packet Technologies For Voice & Data Convergence
  - Next Generation Network (NGN)
  - Network Reliability Optimization for AISDN-17 Navy
- Wireless & Mobile Communication
  - Wireless Access System
- Campus

Status of Various Technology Development Projects during the Year

- **INNOVATIVE SERVICES FOR BUSINESS & INDUSTRY**

  - Trunk Automatic Exchange Network Management System (TAX NMS) deployment activities in the field are in progress.
  - Field trial completed for GSM Network Management System (GNMS) with 32 nodes across the country to provide network management functions for BSNL based mobile network.
  - As part of Operations Support System (OSS) project, internal validation and load testing for version-1 for clearing house application and field trial set up has been completed for national roaming; while pilot trial is under progress with processing on actual billing data files of MTNL and BSNL.

  - In the field of Lawful Enforcement Interception Function (LEIF) feature and capacity implementation completed during the year and load stabilization is ongoing, whereas LEIF interfaces to two more technology switches, namely, OCB & EWSD, and Lawful Enforcement Monitoring Function (LEMF) FAX deduction implemented. As part of LIS implementation for packet network development SIP based (protocol) LEIF and LEMF functionality completed.
  - C-DOT has developed a Missed Call Alert System (MCA) for GSM network of MTNL and BSNL. The system has been installed for field trial at Bangalore, Chennai, Hyderabad, Pune, Chandigarh and Kolkata to cater South (includes Tamil Nadu and AP circles), Western, Northern and Eastern circles respectively. The field trial for the same has been successfully completed. MTNL and BSNL have also accepted commercial proposals for its implementation in the network

- **Advanced Intelligent Network (AIN)**

  - Internal validation for WIN (Wireless IN) for TLF (Toll-Free) and PPC (Pre Paid Charges) services to be provided in the BSNL network is under progress.
  - The field trial for C-DOT WIN solution is likely to be concluded by the end of the FY 2006-07

- **High Bit Rate Network Backbone on Fibre & Satellite**

  ➢ Technology approval obtained after successful completion of field trial for Dense Wavelength Division Multiplexing system (DWDM).   Transfer of technology has already commenced.

  ➢ After completion of internal validation, Coarse WDM (CWDM) system has been offered to TEC for further validation. The system has also been installed in the MTNL network at Laxmi Nagar, Janpath and Jorbagh and working satisfactorily with live traffic.

  ➢ Internal validation completed for STM-1 Ku band Broadband Satellite System (BBTS) which include RF up/down converter, modem switch over unit. Design implementation in progress for Gigabit – Passive Optical Network (GPON) system.

  ➢ The technology approval for the deliverables, CWDM (Coarse WDM technology) is scheduled for completion during the year. The development work for Broad Band Transport via Satellite (BBTS) and GPON system is also proposed to be completed by the year end.

- **Cell & Packet Technologies for Voice & Data Convergence**

  ➢ Pilot Trial of C-DOT NGN (Next Generation Network) Solution in the BSNL Network

    ◆ MOU signed with BSNL for the field trial of C-DOT NGN solution in the network. Pilot field trial site allocated at Noida, Gurgaon and Bangalore for trial of Class-4 (IP TAX) and Class-5 (subscriber) services of C-DOT Next Generation Network (NGN) solution with strategic partners.

    ◆ The installation and configuration of Class 4 and Class 5 Soft-switch, Trunk Media Gateway, Signaling Gateway, Announcement Server, Billing and Pre-paid Server have already been completed at NOIDA. The installation of Trunk Media Gateway at Gurgaon is also completed. Trunk Media Gateway and Signalling Gateway have been installed in Bangalore at Ulsoor Exchange and an additional Class 5 Soft-switch at Bangalore East Exchange. These gateways would be controlled by the Signaling gateway and the Class 4 Soft-switch located at NOIDA.

    ◆ The internal Validation for Class-5 Soft-switch installed at NOIDA has been completed, while internal testing is going on for the Class-4 Soft-switch and Class-5 Soft-switch installed at Bangalore East Exchange.

    ◆ Indigenous developments for various components are also in progress.

  ➢ Acceptance testing (AT) of ATM for Defence Customization and Network Reliability & Optimization for ATM Based Integrated Shipboard Data Network (AISDN-17) project for Navy has been completed and the feedback incorporated. The project includes customization for ATM switch, Network Interface Unit (NIU), Network Health Monitoring system (NHMS), Performance Modeling & Latency Measurements, etc. The System has been reoffered for validation, which is nearing completion.

- **WIRELESS & MOBILE COMMUNICATION**

  ➢ Prototype for the rural wireless system developed and installed in the field for trial.
  ➢ The field trial is to commence in a specific Radio frequency Band by the end of the year.

Technical Support Services

Product Support Enhancements / Field Support

C-DOT continued to provide Product Support to the existing network in the field by retrofitting and imparting training to Field Staff, wherever required.

➢ A new software 2218 (3.6) has been developed and being lab-tested for C-DOT switching systems (MAX-XLs and SBM-XLs) to take care of metering and IOP stability related issues reported from various field sites. The software link will be released to field sites shortly for mass propagation after successful lab validation.

➢ A new clean link 2_2_1_9 has also been developed to cater additional requirements such as the CENTREX features etc, currently under lab testing. The link will be updated to cater other requirements of BSNL like Personalized Ring Back Tone (PRBT), Call Completion to Busy Subscribers (CCBS) and Message Waiting indication (MWI) etc.

➢ C-DOT AN RAX has been enhanced with following new capabilities:

- Auto restoration of link to eliminate manual reset operation as required in previous version (the software version ANR-FO2-012.2 supporting the same) successfully completed the TEC testing and the field trial at 8 sites of AN RAXs connected to C-DOT MAX-XL in the BSNL network at Salem, Tamilnadu and approval accorded for its propagation at sites.

- ISDN capability with development of additional Compact ISDN Terminal (CIT) Unit hardware as a separate set-top box and the complete system is named as AN-RAX (ISDN). The system with software version ANR-FO2-110 has been accorded technology approval after successful completion of its TEC testing and field trial with OCB-283 and C-DOT SBM-VE as Local Exchanges. The existing C-DOT 256P RAXs and AN RAXs in the field can be upgraded with the ISDN capability.

Business Promotion

➢ C-DOT has made a Compact Embedded System (CES) ready for online collection of CDRs from its MAX - L / XL exchanges in the BSNL network. The system is required for providing a solution to the short-listed System Integrators (SIs) bidding for the BSNL's tender reissued for 'CDR based Customer care and Convergent Billing System'. Commercial proposal has been sent to the respective SIs.
➢ Commercial proposal has been sent for C-DOT Subscriber Management (SM) product to SIs for integration with the third party provisioning solution-having interfaces with customer care and inventory management system etc.
➢ C-DOT, along with the technology partners, submitted its bid for Supply, Installation, Commissioning and Technical Support of VoIP Equipment on turnkey basis, against a tender requirement of BSNL, Kolkata.
➢ C-DOT, along with M/s XALTED Information Systems Pvt. Ltd. submitted the Expression of Interest against the requirement of G-PON based Fibre to the home (FTTH) systems by BSNL , New Delhi

- Techno-Commercial Proposal for the C-DOT's Lawful Interception System has been sent to the Directorate of Enforcement, Government of India and to MTNL, Delhi.
- Commercial proposal for 'First Call Activation' of Virtual Card Calling (VCC) cards, part of IN services, has been sent to MTNL, Delhi as per their requirements and approval received for its implementation for GSM network at Delhi & Mumbai

Events & MoUs Signed

- C-DOT actively participated in the TEC Sponsored Manufacturers' Forum to contribute towards finalization of TEC GRs on Personalized Ring Back Tone (PRBT) for PSTN, proposed changes for Large size Local cum Tandem Exchanges and amendments on Soft-switch for Transit applications.
- C-DOT has entered into an agreement with BSNL for installation of Local Network Management System (LNMS) at 40 sites.
- C-DOT has signed an MOU with BSNL for joint implementation and deployment of C-DOT's GSM Network Management System (GNMS) in BSNL Network, used for performance monitoring of MSCs, Base Station Controllers (BSCs) and Base Transceiver Systems (BTSs).
- C-DOT has signed an MOU with Red hat India Pvt. Ltd. for working together to promote Linux and Open Source Solutions in the Telecom Sector besides extensive use in C-DOT.
- A TOT agreement has been signed with ITI Limited for High Voltage Protection (HVP) Unit, required for alleviating the damage / recurring repair of Line Cards due to lightening, in BSNL network.

- **Patents & IPR**

  - C-DOT has filed the US patent application #10595538 on 'A novel architecture for a message bus'.
  - C-DOT applied for Intellectual Property Right (IPR) on C-DOT High Voltage Protection (CHVP). It is the main Protection module, which provides Primary Protection, Secondary Protection and Co-ordination between Primary and Secondary Protection on the Subscriber lines of AN-RAX (C-DOT Rural Exchange). The field deployment opportunities include – improved protection and thereby improve the performance of the existing systems and new Installations too. CHVP developed for RAX/AN-RAX systems can also be used in C-DOT MAX Switches.

Human Resource Development
Women Empowerment

C-DOT's management has always been sensitive to gender issues and has consistently worked towards creating organizational culture reflecting gender equality.
- Presently, about 33 % of staff in C-DOT is women.

Existing Policies
- All female staff members are allowed to avail up to 135 days maternity leave for delivery and up to 270 days leave subsequent to that (inclusive of 135 days maternity leave). For miscarriage/abortion, leave of a total of 45 days in the entire service is permissible.

- C-DOT offers accommodation and transport benefits to all its women employees with different options that maybe availed as per individual suitability. This ensures the safety and security of all women employees in the company.
- Career growth opportunities for women are available to women employees in C-DOT. In the last financial year, of the total employees promoted to higher grades, 37% of them were women. In management cadres (Team Leaders, Group Leaders, Technical Experts and Sr. Technical Experts) about 24 % are women.

Benefits for Persons with Disabilities

- C-DOT follows guidelines issued by Government of India with respect to reservations in jobs for persons with disabilities.
- The C-DOT Campus at Delhi has been constructed in such a manner to ensure barrier free environment for the persons with disabilities. The main entrance/exit can be approached through a ramp together with stepped entry. Even elevators connecting the various working areas have been installed in a way to facilitate persons with disabilities to move around freely from one wing to another.

Employee's Welfare
For giving employees the benefit of coverage for hospitalization expenses, to be met from their medical entitlement. C-DOT has taken Tailor-made group medi-claim insurance. Staff members (and their families) in executive cadres have coverage of Rs. 5 Lakhs and staff in non-executive cadres have been covered for Rs. 3.5 Lakhs. The policy has been made effective from 01 April 2006.

Library
The collection of C-DOT Library consists of more than 20, 000 books which includes Reference Books, Conference Proceedings, Hindi Books and over 100 periodicals, magazines and leading English & Hindi Newspapers. The entire collection of Library is accessible through OPAC (Online Public Access Catalogue) with the help of Library Intranet site. Digital information resources & services are available on server as well as online. Currently   the Library has the following resources:
- Association of Computing Machinery (ACM)

- IEE / IEEE Electronic Library (IEL)

- ITU-T & ITU-R recommendations

- The European Telecommunications Standards Institute (ETSI)

- ISO/IEC Standards on Information Technology (JTC-1)

Apart from this, C-DOT Library is member of DELNET (Developing Library Networks), British Council Library, American Centre Library and NISCAIR (INSDOC).

Campus Infrastructure
- Bangalore office was shifted to its premises, acquired from ITI in Electronic city and is operational with all facilities suitable for R&D work after retrofitting and refurbishing the building.

The review of the performance for the year 2006-2007 and for the year 2007-2008 (up to 31st December 2007) is placed at **Annexure - "S"**.

TELECOM REGULATORY AUTHORITY OF INDIA [TRAI]

Performance for the year 2006-07

(Rs. in crore)

Sl. No.	Name of the Scheme / Programme		Actual outlay 2006-07			Actual Physical performance during 2006-07 (Rs.)	Remarks
			Non-Plan	Plan	Complimentary Extra-Budgetary resources		
1.	Institutional Capacity Building Project of TRAI	Consultation studies	0.00	2.00 crores	0.00	1,16,09,310	
		Training				33,51,599	

Performance in the first 9 months of year 2007-08 (i.e., upto December 2007)

Sl. No.	Name of the Scheme / Programme		Actual outlay 2006-07			Actual Physical performance upto Dec. 2007 (Rs.)	Remarks
			Non-Plan	Plan	Complimentary Extra-Budgetary resources		
1.	Institutional Capacity Building Project of TRAI	Training	0.00	3.00 crores	0.00	1,96,53,347	

TELECOM DISPUTES SETTLEMENT AND APPELLATE TRIBUNAL [TDSAT]

Performance for the year 2006-07 & 2007-08 (up to 31st December 2007)

(Rs. in crore)

Sl. No.	Scheme/Project	2006-07 R.E.	2007-08 R.E.	Physical Targets	Outcome 2006-07	Outcome 2007-08
1	Study Tour/Training	0.6 5	0.75	Study tour by Hon'ble Chairperson and members and training of officers of TDSAT	Training of officers of TDSAT and study tours of officers	Training of officers of TDSAT and study tours of officers
2	Setting up of TDSAT reference Library	0.05	0.10	Purchase of books and hardware/software for up gradation of Reference Library	Books purchased for Reference Library and computers purchased	Books purchased for Reference Library and computer s purchased
3	Holding of Seminars/Consultancy	0.30	0.40	Holding of domestic seminars on subject relating to Telecom Disputes settlement in five cities, Appointment of Legal Consultant	Seminar held at Jaipur, Hyderabad, Guwahati, Kochi and Patna	Seminar held at Srinagar and Kolkatta (20-01-08)
	Total	**1.00**	**1.25**			

(Rs. in crores)

S.no.	Scheme / Program Name	Objective / Outcome	Outlay 2006-07 (Rs. in crores)	Quantifiable Deliverable	Process Time line	Achie w.r.t. on M (antic
1	2	3	4	5	6	
1	Innovative Services for Business & Industry	• To develop & pilot trial a Call Interception & Intelligent system (CIIS) • To enhance the NMS & OSS systems & support for NMS deployment in the field for GSM & National TAX NMS	17.99	• Pilot trial commencement for Call Interception System (CIS) • NMS enhancements & deployment in the field • Pilot trial commencement for OSS's clearing house application for National Roaming Q1: • Field trial of CIIS for TDM based LEIF & LEMF for interception of CDOT MAX • Implementation of data & fax interception features in LEMF functionality for circuit switch • LNMS support in the field & commencement for installation & commissioning of GNMS & TAX NMS systems' deployment in the field progressively • Pilot / field trial commencement for OSS's clearing house appln for National Roaming Q2: • Field trial completion for CIIS system (TDMA network) • Commencement of design & implementation of LEIF functionality of CIIS for packet switch network. • LNMS support in the field & Deployment for GNMS, TAX NMS & Subscriber network mgmt services nationwide, contd. • As part of NMS enhancement development completion for south bound interfaces towards EMS using TMF standards • Development for OSS enhancement for SMS based value added services & clearing house • Commencement of OSS study for CDOT NGN soln.	-	All the delivera planned scheme CIIS, N enhancr OSS tri complet scheme

				Q3:	• Development completion for LEIF functionality of CIIS for packet switch network • Commencement of design implementation for ISDN interfaces in LEIF & LEMF functionality of CIIS for circuit switch • LNMS support in the field & Deployment for GNMS, TAX NMS & Subscriber network mgmt services nationwide, contd. • Development for NMS enhancements including NMS for transmission equipment monitoring • Pilot testing commencement for some of OSS enhancements completed for field requirements & continuation of OSS enhancements' development • OSS study for C-DOT NGN soln continuation & finalization of requirements	
				Q4:	• Field trial commencement of CIIS for packet-based LEIF & LEMF functionality for interception of CDOT MAX including ISDN interfaces for circuit switch • Design implementation for LEIF interfaces for interception of switches other than C-DOT MAX technologies • Nationwide GSM mgmt system (GNMS), TAX NMS, Subscriber mgmt deployment incl transmission equipment monitoring, contd. • LNMS support • Support for OSS enhancements deployment in the field • Study of OSS for CDOT NGN solution & commencement of phased implementation for some of the OSS services for NGN	
2	Advanced Intelligent Network (IN)	To demonstrate a pilot IN system for Converged Network	7.15	• IN for Converged Network with progressive deliveries - both legacy & broadband networks; initial trial for IP network	-	The sch target h achieve of 90-9

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		(includes broadband and legacy networks) and also Enhanced IN services for WIN & CDMA 2000 networks		Q1: • Field trial completion of WIN (IN for CDMA network) soln for 2 services, namely pre-paid & toll-free • IP/SRP development completion for INAP protocol (corresponds to Wireline subscribers)		complet various planned scheme over to period f year (2 only to some of enhance
				Q2: • Pilot testing / trial IP/SRP services with WIN & INAP protocol • Development commencement for IN for converged networks - IP networks		
				Q3: • Field trial completion for IP/SRP services with WIN & INAP protocols • Development for IN for converged networks (contd)		
				Q4: • Development completion for IN for converged networks - for IP network & commencement of pilot testing		
3	High Bit Rate Network Backbone on Fibre & Sat.	• Technology Approval for DWDM technology followed by its transfer of technology to lead manufacturer for its productionisation & during the year the technology will also be supported for component obsolescence & technology upradation, if required• To commence & conclude the pilot/ field trial for CWDM	9.34	Technology Approval for WDM tech namely, DWDM & pilot / field trial completion of CWDM (linear config), BBTS in Ku band, ToT for these technologies for productionization; pilot trial commencement for GPON system. Q1: • Technology approval for DWDM system & commencement of ToT activity • Internal validation & commencement for CWDM system (linear config) • Development completion & integrated testing of Ku band up/down converters with 140 Mhzs interface (IF) • STM-1 modem completion for broadband satellite system & system readiness to offer for TEC testing. • Design implementation for GPON system.	-	The deli namely, tech, Bl complet total tar achieve approx. the deli GPON design develop will con the 1st y plan per cater to requiren specific enhance

		system in linear configuration, boadband satellite in Ku band (BBTS) followed by transfer of tech for technology productionisation• To develop & pilot try a GPON system		Q2:	• CWDM internal val completion with incorporation of feedback, etc, if any • Completion of development & testing of STM1 MODEMs & integrated testing of modems with up/down converters • Commencement of field trial for broadband satellite system in ku band • Design implementation for GPON system, cointd.. • DWDM technology support to manufacturer(s) for productionisation & addressing component obsolescence issue & tech upgradation, if required	
				Q3:	• Offer for CWDM system (linear config) to TEC for testing in lab • Field trial completion followed by ToT activities for STM-1 satellite equipment in Ku band & completion of development of 34 Mbps Modem • Design implementation completion, followed by system integration testing for GPON system and commencement of its TEC testing • Support to manufacturer for production of DWDM system & design enhancements contd. for component obsolescence & tech upgradation	
				Q4:	• Field trial commencement for CWDM system in field for tech approval & initiation of ToT activities in parallel. • Field trial of 34 Mbps C or Ku band IDR depending on requirements of BSNL & support to manufacturer for productionisation of broadband satellite system • Commencement of pilot / field trial for GPON system • Support to manufacturer for production of DWDM system & design enhancements contd. for component obsolescence & tech upgradation	

| 4 | Cell & Packet Tech for voice & data convergence | • To conduct pilot / field trial for class 4 & class 5 VoIP networks of C-DOT NGN soln with strategic partnership.
• Indigisation of remaining components of the NGN soln being currently outsourced from strategic partners.
• Pilot / field trial for C-DOT integrated NGN solution; marketing & commercialisation of C-DOT NGN soln for operators
• Acceptance testing completion of ATM NIU & ATM switch for AISDN-17 Navy project on network reliability & optimization
• Undertake new defense projects on commercial basis | 3.6 | • Pilot trial for Class 4 & Class 5 VoIP network of C-DOT NGN solution
• Pilot trial for C-DOT integrated NGN solution with indigenous NGN components - enhanced capacity, media gateway, MPLS routers, etc
• Acceptance testing completion for AISDN-17 Navy project

Q1: • Pilot / Field trial for class-4 & class 5 VoIP networks of C-DOT NGN solution with strategic partnership
• Acceptance testing completion for AISDN-17 Navy project

Q2: • Development completion of VoIP trunk media gateway, signalling gateway & MPLS router

Q3: • Integration testing & stabilisation of media gateway, signaling gateway & MPLS router
• Pilot trial commencement for C-DOT integrated NGN soln.

Q4: • C-DOT integrated NGN pilot trial completion | - | All the delivera related tech nam ATM & customi complet whereas & field the pacl commer Overall target achieve range o and sch planned continu over in plan per 1st year focus pr on the p complet |
| 5 | Wireless & Mobile Communication | • Pilot / field trial for integrated C-DOT rural wireless & broadband soln for commercial acceptance• Rural wireless appln software for providing e governance, educational and online business services | 4.5 | • Pilot / field trial of integrated C-ODT rural wireless access solution• Pilot trial commencement for rural wireless application software for e-governance, education & other services

Q1: • Commencement of integrated pilot/ field trial for C-DOT rural wireless & broadband access soln.
• Spec formulation & finalization to commence development as per requirement for rural wireless appln software for e-governance, educational & on-line business services, etc

Q2: • Field trial for C-DOT rural wireless and access soln, contd
• Design & implementation of rural application software development | - | The sch target h achieve range o with the prototyp complet rural wi system equipm in the fi field tri commer yet to ta |

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				Q3:	• Conclusion of the pilot / field trial for integrated C-DOT rural wireless & broadband access solution; preparation for its field deployment & commercialization • Development completion of rural applications software followed by its system integration & testing		
				Q4:	• Field support in the deployment of integrated rural wireless and broadband access solution in the field • Pilot trial commencement for rural wireless application software for e-governance, educational & on-line business services and their propagation in field		
6	Campus	Commencement of housing complex and part completion	10.31	Award of contract & commencement of housing complex, construction activities	-	The pla the appr the statu bodies
				Q1: • Commissioning of Building mgmt. system, external lighting completion, land scaping /& murals		
				Q2: • Commencement of housing complex: construction		
				Q3: •Housing complex: construction contd.		
				Q4: •Housing complex: construction and part completion		
7	Product Support Enhancement / Field Support	Technology upgradation to take care of obscelence	46.31	Feature enhancement / upgradation for technology deployed in the field	-	Targets as plann year
	Study / Explorative Projects (New)	The projects proposed under the scheme may facilitate the C-DOT Project Board to undertake the full scale development under proposed programs.	5.5	The study is planned in some of the following areas : IP Over Satellite, Broadband over Power Lines (BPL), Optical Cross Connect (OCX) System, High Channel Count DWDM system. At the end of the financial year a study report is expected as per ABP 2006-07 document on these projects		
8	CARC [#]		39.00			
	Total		**143.70**			

Abbreviations:
AISDN: ATM Based Integrated Shipboard Data Network; ATM : Asynchronous Transfer Mode; CARC : C-DOT Alcatel Researc
Interception & Intelligence System; CRS : Customer Registration System; CMS : Complaint Management System; CWDM : Coar

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Division Multiplexing; GPON : Gigabit Passive Optical Network; GNMS : GSM Network Management System; IN : Intelligent I
IP/MPLS : Internet Protocol / Multi Protocol Lable Switching; ISDN: Integrated Services Digital Network; LEIF/LEMF: Lawful E
function; LNMS : Local Network Mgmt System; NGN: Next Generation Network; OSS : Operation Support System; ToT : Trans
Multiplexing; VoIP: Voice Over IP; WIN: Wireless Intelligent Network

Rs.39.00 crores include equity participation of Rs.26.00 crores and loan of Rs.13.00
crores

** Remarks / Risk Factors : Some of the risk factors anticipated in the above R&D activities are as follows:

1. Research work results may not conform fully with specifications in the first instance may require some iteration

2. The major changes in the specifications by the international standard bodies may also affect the development schedule

3. Various sub components of the research activities may have problems during overall system integration

4. The completion targets may get shifted in case R&D efforts on priority basis are devoted to fulfill the operators' commitments w

Note : Quarterly targets (Q1 to Q4) are based on FY 2006-07 and indicate the physical targets to
be achieved by the end of quarter

CENTRE FOR DEVELOPMENT OF TELEMATICS [C-DOT]

Performance for the year 2007-08 (up to 31st December 2007)

(Rupees in crores)

Sl. No.	Name of Scheme/ Programme	Objective/ Outcome	Outlay 2007-08 (Rs. in crores)			Cumulative Target upto 3rd Quarter (till Dec-07)		Cumulative A
			Non-Plan Budget	Plan Budget	Comple-mentary Extra-Budgetary Resources	Financial (Rs. in crores)	Physical	Financial incl. commitment (Rs. in crores) (prov.)
1	2	3	4(i)	4(ii)	4(iii)	5	6	7
Name of Unit: **CDOT**								
A- Continuing Scheme								
1	Advanced Intelligent Services	Development of converged Intelligent Networks (IN) solution that would provide the convergence of NGN network with the fixed line IN network		2.50		1.71	• Field trial for WIN. Field support for fixed IN solution & upgradation for MTNL network • Design & development of IN for converged network	2.20
2	High bit rate network on Fiber & Satellite	Development of high capacity systems for transport over Fiber & Satellite		7.10		4.88	• Design of different types of GPON ONTs • System integration & validation for enhanced E3 IDR modem in	4.90

121

				122			C band	
3	Cell & Packet Technologies for Voice & Data Communi-cations	Development and integration of IP/MPLS routers, VoIP Media gateways and the signaling gateways		5.30		3.66	• Development completion for indigenous NGN sub-system e.g. IP /MPLS Router, Signalling & Media Gateway • Specification formulation for new NGN services. • Enhancements in the features and function for C-DOT NGN solution with strategic partners installed at BSNL field trial site	5.10

4	Product Support/ Enhance-ments	To add/enhance features/facilities to the C-DOT developed technologies					• Feature enhancements on C-DOT developed technologies e.g. CIIS, clearing house application, C-DOT MAX/RAX, Wireless IN, WDM, etc.		
				40.90		32.80			36.20

#		Description						
5	Field Support Activities	Support for C-DOT technology installed in the field					• Support for C-DOT switching system & field trial support for rural wireless system	
6	Campus Infrastructure	Construction of residential facilities for CDOTians within the Delhi campus area, to facilitate flexible working hours conducive for R&D culture		6.57		4.53	• Evaluation of offers against the tender inquiries for construction of dwelling and hostel facility	0.50
7	Communication & Security Research and Monitoring (Security Management for Law Enforcement Agencies)	With the massive foreseeable increase in subscriber base from the existing about 150 millions to 400 millions over the next five years period there is need for development of computational approaches using artificial intelligence techniques, biometric devices, crypto analysis, voice recognition technologies, grid surveillance, encryption/ decryption, mining data bases etc. for security of the telecom and data networks and to provide useful inputs to the national security agencies				20.23	• Study of end-to-end secure workflow, identity matrix database design and social networking analysis	23.70
a)	Development			15.40				
b)	Security Infrastructure creation			34.60				
8	Technologies for North Eastern Region (New)	To provide IP based Broadband access & transport for VoIP & Multi-media for NER		13.00		9.23	• Study of standards & specs. formulation for point-to-multipoint packet tech. for access over ku-band (or suitable band) satellite for providing IP transport over satellite	6.50

9	Rural Technolo-gies (New)	Provisioning of broadband and end-to-end VoIP services in rural areas		2.50		1.71	• Study of specification & architecture for VoIP based rural broadband access node	1.60	
10	Broadband Technolo-gies	i) Development Multichannel metro aggregation platform for transport of multiple types of client interfaces ii) Broadband delivery on VDSL2		1.70		1.15	• Study of standards and architecture for multi channel metro aggregation basic platform, VDSL2 interfaces for EPON	0.00	
11	Strategic & Enterprise Solutions (New)	Development of state of art Transmission Network Management system for centralized supervision and analysis of a diverse set of transmission technologies for enhancing operational efficiency, fast service delivery with Business layer integration for various types of Transmission technologies

Project-wise customization and deployment of CDOT ATM based systems for multiple defense applications and multiple projects Provisioning of innovative computer based voice applications and solutions | | 2.30 | | 1.57 | • Study of transmission networks - network elements, EMSs, services, policies and administrative / operational requirements

• Study analysis of adaptation for additional defence applications of C-DOT ATM technology | 0.90 | |
| 12 | Enhance-ments/ New Features/ Up-gradation/ Adaptation/ Technical support for developed technolo-gies | | | 2.20 | | 1.52 | | 0.60 | |

13	Basic Research on Telecom Network & Enabling Technolo-gies/ Study/ Pilot Projects (New)	This scheme focuses on conducting basic research on areas like Spectrum management, Quality of service, Network and service optimization, enabling technologies and techniques, feasibility studies on emerging/ green field technologies and on piloting trials through partnerships to gain operational insights and an appreciation of technical/logistic issues		1.00		0.71			0.00	
14	C-DOT Alcatel Research Centre (CARC) (Cabinet Approved Schemes)	CARC is a joint venture program between C-DOT & Alcatel approved by the Cabinet during the 10th plan period to establish Broadband & Wireless Research Centre in India		26.00		13.00		• Design & development for mobile WiMax technology	13.00	
		Total		**161.07**		**96.70**			**95.20**	