

# I. TELECOM COMMISSION

## Role and Functions

The Telecom Commission was set up by the Government of India with necessary executive, administrative and financial powers to deal with various aspects of Telecommunications. The Commission consists of a Chairman, four full time members and four part time members. During the year the composition of the Commission was as follows:

|                    |                       |                                    |
|--------------------|-----------------------|------------------------------------|
| Chairman           | Shri Shyamal Ghosh    | W.E.F. 07.02.2000                  |
| Member(Finance)    | Shri A. Prasad        | W.E.F. 31.07.1997 to<br>31.01.2001 |
|                    | Shri R. Ramanathan    | W.E.F. 31.01.2001                  |
| Member(Production) | Shri R.N. Goyal       | W.E.F. 26.03.1999                  |
| Member(Services)   | Shri N.R. Mokhariwale | W.E.F. 01.06.2000 to<br>31.01.2001 |
|                    | Shri J.Ramanujam      | W.E.F. 01.02.2001                  |
| Member(Technology) | Dr. Vijay Kumar       | W.E.F. 01.06.2000                  |

The part time Members are Secretary (IT ), Secretary (Finance), Secretary (Planning Commission) and Secretary (IP&P).

With the Corporatisation of two service providing Departments under Telecom Commission viz. Department of Telecom Services (DTS) and Department of Telecom Operations (DTO) into a Public Sector Company "Bharat Sanchar Nigam Limited" (BSNL) with effect from October 1, 2000, the role of Telecom Commission has been changed. The Telecom Commission and the Department of Telecommunications are now left with the functions of policy formulation, licensing, wireless spectrum management, administrative monitoring of PSUs, research & development and standardisation/validation of equipment etc. Having shed the direct responsibility of a service provider, the Telecom Commission is now in a position to devote greater attention to urgent policy issues facing the telecom sector as a whole including those by the Private sector.

## II. DEPARTMENT OF TELECOMMUNICATIONS

### **Role and Functions**

The telecom services have been recognized the world-over as an important tool for socio-economic development for a nation and hence telecom infrastructure is treated as a crucial factor to realize the socio-economic objectives in India. Accordingly, the Department of Telecom has been formulating developmental policies and projects for the accelerated growth of the telecommunication services. The Department is also responsible for frequency management in the field of radio connection in close coordination with the international bodies. It also enforces wireless regulatory measures by monitoring wireless transmission of all users in the country.

### **Restructuring of DoT – Corporatisation of Department of Telecom Services (DTS) and Department of Telecom Operations (DTO)**

The Department of Telecommunications had been the premier telecom service provider in India with its presence through the length and breadth of the country. Considering the overall development and country's requirement, the telecom sector in India offers an ideal environment for investment. With the opening of telecom sector to private investment and establishment of independent regulator, the matter of separation of service providing functions of the DoT and ensuring a level playing field to various service providers had been engaging the attention of the Government. On these lines, the NTP-99 had enunciated to separate the policy and licensing functions of DoT from the service providing functions as a precursor to corporatisation and that the corporatisation of the DoT shall be done keeping in mind the interests of all stakeholders by the year 2001. Accordingly, as a precursor to corporatisation, a new department, viz., Department of Telecom Services was created followed by creation of Department of Telecom Operations by carving out service provision and operational functions from the licensor, i.e. the Department of Telecommunications.

After finalisation of various financial and HRD aspects, the business of running telecom operations throughout the country except in the metros of New Delhi and Mumbai, the service providing functions of the Departments of Telecom Services (DTS) and Department of Telecom Operations (DTO) were transferred to the newly created company Bharat Sanchar Nigam Limited. The company was incorporated as a company having liability limited by shares on 15<sup>th</sup> September 2000 and it started the operations w.e.f. October 1, 2000. The company has an authorized capital base of Rs.10,000 crore with paid up capital of Rs.5,000 crore.

## **Strengthening of Regulators**

### **Telecom Regulatory Authority of India (TRAI)**

TRAI has been reconstituted through the Telecom Regulatory Authority of India (Amendment) Act, 2000. The amendments were brought about to remove certain difficulties that had arisen. The desired objectives of bringing about functional clarity, strengthening the regulatory framework and the disputes settlement mechanism have been attained by bringing about a clear distinction between the regulatory and recommendatory functions of TRAI, by making it mandatory for Government to seek recommendations of TRAI in respect of specified matters and by the setting up of separate dispute settlement mechanism. With the joining of the Chairperson, the two whole time Members and two part time Members, the reconstituted TRAI has become functional since March, 2000.

### **Telecom Dispute Settlement and Appellate Tribunal (TDSAT)**

A separate disputes settlement body known as “Telecom Dispute Settlement and Appellate Tribunal” to adjudicate any dispute between a licensor and licensee, between two or more service providers, between a service provider and a group of consumers, and to hear and dispose of appeals against any decision or order of TRAI, has been formally constituted with the appointment of Chairperson and two Members.

### **Strengthening of the Unit for Techno-Economic Analysis**

The Telecom Commission created a Policy Planning Cell in the Economic Research unit to prepare discussion papers, policy papers on national and international issues relating to the telecom sector. The Economic Research Unit (ERU) in the Department of Telecommunications which is a multi-disciplinary unit consisting of economists, statisticians, engineers and financial experts, provides various inputs on techno-economic issues relating to telecom policy formulation and planning. The ERU compiles and disseminates various data on techno-economic parameters relating to telecom sector. The Unit provides telephone demand projections for basic services to the Telecom Commission and all the Circle Heads. The projections cover the demand at the all-India level, each telecom circle and Metro telecom districts and all the stations with equipped capacity of 200 lines and above. It studies the trends in the investment by the private sector to provide various telecom services. The ERU also carries out various techno-economic studies on specific issues relating to telecommunications, apart from sponsoring studies on specific aspects. Accordingly, it has carried out techno-economic studies on tariff related issues, call distribution pattern etc. and prepared a number of reports and policy papers. It has prepared Indian Telecommunication Statistics during the

period under report. The material for the Pre-Budget Economic Survey on Telecommunication was also prepared. The Annual Report of the Department of Telecommunication is also coordinated and brought out by the Unit.

## **Manufacture of Telecom Equipments**

India is a major manufacturer of a wide range of telecom equipments. The total production of telecom equipments and cables in terms of value has increased from Rs.3985 crore in 1992-93 to Rs.8300 crore in 1996-97 which further increased to Rs.10760 crore during 1999-2000. It is expected that the production will register healthy growth during the year 2000-2001.

## **Export of Telecom Equipments & Services**

India has been recognized as a key supplier of products and technologies for rural Telecom by international organizations viz. ITU etc. Vigorous efforts are being made to increase the exports of telecom equipment and services. Growth in exports of telecom equipment and services was as follows:

(Rs. in Crore)

| Year        | 93-94 | 94-95 | 95-96 | 96-97 | 97-98 | 98-99 | 99-2000 |
|-------------|-------|-------|-------|-------|-------|-------|---------|
| Service     | 456   | 598   | 1108  | 1458  | 2232  | 2376  | 3230    |
| Consultancy | 118   | 207   | 235   | 270   | 313   | 383   | 337     |
| Hardware    | 58    | 131   | 310   | 240   | 296   | 250   | 180     |

It is noted that there was a spurt in the exports of services, consultancy and hardware during 1995-96 and the tempo was maintained both in the case of services and consultancy. However, the exports of hardware have displayed a declining trend.

## **Industrial Assistance and Export Promotion**

The Industrial Assistance and Export Promotion Group working in DoT for the telecom sector is responsible for the activities such as:

- a) assistance in formulation of Import and Export policies for the sector; b) assistance in the formulation of foreign investment policies and procedures; c) Processing of applications for foreign investment and foreign technology; d) Matters relating to promotion of Telecom Exports including sponsoring of trade delegation, setting up of Indian pavilions in International Exhibitions and organisation of seminars etc; e) examination of matters relating to customs and excise duties and other Direct and Indirect Taxes for the Telecom sector; f) Assistance in matters relating to Trade and Industrial policies; and g) Assistance to various industrial units in the Telecom Sector for implementation of their projects.

## **Teledensity-Total, Urban & Rural**

Several steps were taken to improve the tele density in the country. Targets of additional Direct Exchange Lines (DELs) were enhanced. Intensive efforts are being made to cover more villages through Village Public Telephones (VPTs). Private sector is being encouraged to provide telecom facilities at a faster pace. The progress made was reviewed by the Minister of Communication during the meetings held with circle heads and heads of SSAs.

The tele-density ( telephone per 100 population) in the country has increased from 2.34 as on March 31, 1999 to 2.86 as on March 31, 2000. The Urban teledensity was 7.64 where as rural teledensity was only 0.68, as on March 31, 2000.

## **FINANCIAL REVIEW**

### **Capital Investment**

During the year 1999-2000, the plan expenditure was Rs.12643.55 crore which consisted of Internal Resources of Rs.10074.55 Crore and Market Borrowings of Rs.2569.00 Crore. Thus, no budgetary support was required for the plan. Out of the above Plan Outlay, the Capital Investment on the fixed assets was Rs. 12532.27 Crore. With this addition, the total investment in gross fixed assets of the Department after deducting for the assests transferred to MTNL, at the end of the year stood at the level of Rs.75829.82 crore out of which dividend bearing capital (Disinvestments made in the past and repayment of part of dividend bearing Capital Outlay deducted and other minor adjustments) is Rs.1947.32 crore.

### **Revenue, Expenditure and Dividend Liability**

On a cash basis, the revenue realisation of DoT in 1999-2000 was Rs. 18256.70 crore which includes, inter-alia, network charges from MTNL and Traffic dues from VSNL. The net working expenses were Rs.10762.95 crore inclusive of depreciation. The dividend liability for the year was 172.47 Crore.

## **Tariffs**

The powers to revise/fix tariffs for Telecom services were earlier vested in the Central Government under the Indian Telegraph Act, 1885. After the creation of TRAI, the powers for fixing telephone tariffs were transferred from DoT to TRAI by virtue of the Section 11 (2) of the TRAI Act, 1997. In exercise of this power, TRAI had brought out its Telecommunication Tariff Order 1999 on 9<sup>th</sup> March 1999 and notified on 15<sup>th</sup> March, 1999. This order contains the tariff of basic telephony and value added services i.e. Cellular Mobile telephone services, Internet, Radio Paging etc. The tariffs were made effective from 1<sup>st</sup> April, 1999 except for Basic services (other than ISDN), Cellular Mobile Telecom Services (CMTS). For the ISDN services, these were made effective from 1<sup>st</sup> May 1999.

The TRAI, through their above telecom tariff order 1999, sought to increase local tariffs and rental quite substantially and reduced the long distance rates quite sharply. Accordingly, the Department of Telecom, announced a tariff package for basic services on 27<sup>th</sup> March, 1999 for a period of one year only i.e. 1<sup>st</sup> May 1999 to 31<sup>st</sup> March 2000. The rebalancing of basic telephony tariff was done with the objective that rates should move in line with costs in a manner that growth of teledensity and affordability are not affected.

In exercise of power contained in section 11 (2) of TRAI Act, 1997 the Telecom Regulatory Authority of India issued the Telecommunication Tariff (Ninth Amendment) Order 2000 (3 of 2000) for the second phase of tariff re-balancing vide Gazette notification No.301-8/2000-TRAI (Econ.) on 28<sup>th</sup> August, 2000. With this, the TRAI has reduced the Domestic Long Distance and International Call charges as envisaged in its TTO'99. However the increase in rentals mentioned therein has been withheld. The reduction in tariff was made applicable from 01<sup>st</sup> October, 2000 and the same will be in operation up to March 31,2002.

With the objective that rates should move towards the actual cost in a manner that growth of teledensity and affordability are not affected, the Department has decided that existing alternate tariff package issued by DoT (DTO/DTS now BSNL) vide tariff order No. 3-5/99-R&C dated 13.04.1999, read with corrigendums/circulars and modifications issued from time to time shall remain fully applicable up to March 31, 2002, except the reduction in STD/ISD tariff, being made now. Accordingly, Department (now BSNL) has issued order on 21<sup>st</sup> September, 2000 implementing the reduced charges.

The main features of DOT's alternate tariff package were as follows:

- (i) No increase in rental or call charges for rural and low calling urban subscribers, (who make up to 200 calls per month)
- (ii) The rental of high calling urban subscribers was adopted as the same as notified by TRAI except for the Exchange systems up to 100 lines for which as against TRAI's notified rate of Rs.120 per month, DoT fixed a rate of Rs.70 per month.
- (iii) No decrease in free call limits was made from existing level for both rural as well as high calling and low calling urban subscribers i.e. 75 and 125 for urban and rural subscribers respectively.
- (iv) Long distance calls were kept at the reduced level as per the rates notified by the TRAI. This reduction was around 20% for STD and 21% for ISD calls for peak period. The concession on NSD & ISD was allowed by DTS beyond peak hours on the existing pattern.
- (v) The duration of local call was limited to 3 minutes as notified by TRAI.
- (vi) The revised call charges in various slabs were as follows:

| <u>Call rates</u> | <u>Rural</u>     | <u>Urban</u>     |
|-------------------|------------------|------------------|
| Free calls        | up to 125 calls  | up to 75 calls   |
| Rs. 0.60          | 126 to 225 calls | ----             |
| Rs. 0.80          | 226 to 250 calls | 76 to 200 calls  |
| Rs. 1.00          | 251 to 500 calls | 201 to 500 calls |
| Rs.1.20           | above 500 calls  | above 500 calls  |

- (vii) From June 1, 1999, on request the Clip facility was provided free of any charge in case of special services like 100, 101, 1098 (Child line), 1099 (CAT), 1099 (CAT), 1919 (Eye bank) etc. to the authorities giving emergency services only.
- (viii) From June 1, 1999, Rental charges for outgoing and both ways and for incoming junction lines, call charges and free calls in case of subscriber's & service providers owned group PBX/PABX/EPABX (for office building, hotels and other parties) were modified as per DELs with additional charge of 20% for DID facilities.
- (ix) From June 1, 1999, charges for attended type local PCOs manned by handicapped and in CTOs/DTOs/Post offices/COs was reduced to Rs. 1.00 per call against TRAI's notified rate of Rs. 1.20 per call.
- (x) From June 16, 1999, tariff for special facilities of Trunk call/International Trunk call was issued.

- (xi) The changes in the 2<sup>nd</sup> phase of tariff revisions were as follows:
- STD Tariff for 2<sup>nd</sup> phase has been reduced in the range of 8 to 33%.
  - Tariff for International calls has been reduced nearly by 17% and International calls to USA has now been made cheaper than even the concessional rate for these calls prevailing prior to October 1, 2000.
  - The peak period has been shifted from 08.00 AM to 9.00 AM in the morning and from 07.00 P.M. to 08.00 P.M. in the evening whereby the total peak and off-peak periods are retained at 11 hours and 13 hours respectively.
  - Concessional tariff have been retained for three off-peak periods from 08.00 PM to 09.30 PM and 08.00 AM to 09.00 AM, 09.30 PM to 11.00 PM and 06.00 AM to 08.00 AM and from 11.00 PM to 06.00 AM.
- (xii) From November 1, 2000 Registration charges have been reduced from Rs.3000 to Rs.2000 and from Rs.1000 to Rs.500 for Urban and Rural subscribers respectively.
- (xiii) To promote community of interest and to make short distance calls more affordable to subscribers, from January 26, 2001 concessional pulse rates have been offered for the intra circle calls (i.e. calls originating and terminating within the geographical area of the Circle as defined by DoT for the licensing of the Basic services), originated by the telephone subscribers of BSNL and terminating in the basic services network. These concessional rates are also applicable for the PSTN calls between Delhi and 30 SDCAs in the NCR w.e.f. 13.2.2001. The concessional pulses are as under:

|                                 |              |
|---------------------------------|--------------|
| Above 50 Kms and up to 100 KMs. | 120 seconds. |
| Above 100 Kms & up to 200 Kms.  | 30 seconds.  |

- \* As part of the alternate tariff package, where the call charges for distance upto 200 Kms. have been significantly reduced, the rentals for subscribers except rural subscribers have now been brought at par with TRAI's Orders of 1999, from February 1, 2001. The revised rental charges in the rural areas will still be lower than the ceiling fixed by TRAI. It is, however, not out of place to mention that concession in call charges/free calls will continue to apply in all such cases.

TRAI notified Telex, Telegraphs and Bureau-fax services under "Forebearance" and Department re-issued the existing tariff order.

Tariffs notified by TRAI for leased lines have been adopted and the required tariff orders were issued. However, due to multiple representations received from the customers of these services that applicability of the revised tariff for local lead as well as for a Private Wire or Non-Exchange lines is causing hardship especially where the length of local lead/Non-Exchange lines is less than 5 Kms., the Department had re-examined the tariffs for these services and revised the tariffs for less than 5 Kms. of Private Wire or Non-

Exchange lines and local leads of telegraph circuits & circuits up to 64 kbps w.e.f. January 1, 2000.

For the Satellite Transponders charges, TRAI had kept it under “Forebearance”. The same has been issued by DOT without any revision. In view of the demands for small bandwidth, the Department has fixed and issued the tariff for small capacity of Transponders also.

All tariff orders have been placed in DoT’s website ([www.dot.india.com](http://www.dot.india.com)). As per TRAI’s requirement, the Department is now publishing Tariff booklet for various telecom services available at nominal price in most of the telecom offices in India.

## **DEVELOPMENT OF TELECOMMUNICATION FACILITIES IN SELECTED AREAS**

### **Special Component Plans**

Annual Plan of 2000-2001 (BE) and Revised Plan 1999-2000(RE), inter-alia, pay special emphasis on accelerated growth and early implementation of telecommunication facilities under Special Component Plans in (i) North Eastern Region (ii) Tribal sub-plan areas and (iii) National Capital Region Plan. The details are given below:

### **North East Region Plan**

Telecommunication facilities in North East Region are comparable technologically with the rest of the country. North East Telecom Circle is having the unique distinction of becoming first in the country to have all telephone exchanges of electronic type. However, the tele-density (number of telephones per 100 inhabitants) and the coverage of Subscriber Trunk Dialling (STD) facility are less than that of the national average. Therefore, it was decided to advance the targets for making the telephone facility available on demand and for providing reliable media to all the telephone exchanges in the North East Region by the end of 2001 as against the target of the end of 9<sup>th</sup> Plan set for this purpose for the country. It is proposed to achieve this objective irrespective of the contribution from the private sectors in basic services. It is expected that when the telephone facility is made available on demand and the services are improved through the reliable communication media, it would stimulate further demand which in turn would bring the status of tele-density to the national average progressively.

North Eastern region comprises Telecom Circles of Assam covering the State of Assam and North East Telecom Circle covering the six States of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. As on March 31,2000, there were 753 telephone exchanges in the North East Region. All the exchanges are electronic type. The switching capacity as on March 31, 2000 was 6.49 lakh lines with 4.68 lakh working connections.

Status of Number of Telephones as on March 31, 2000 and December 31, 2000 and the Tele-density State-wise for North Eastern States are given in the table below:

| State             | Projected Population March(2000) | Telephones as on March 31, 2000 | Tele density (Number of telephones per 100 population) | Telephone as on December 31, 2000. |
|-------------------|----------------------------------|---------------------------------|--------------------------------------------------------|------------------------------------|
| Assam             | 26197000                         | 273068                          | 1.06                                                   | 321802                             |
| Arunachal Pradesh | 1192000                          | 30757                           | 2.58                                                   | 34790                              |
| Manipur           | 2518000                          | 25000                           | 0.99                                                   | 27553                              |
| Meghalaya         | 2434000                          | 38146                           | 1.60                                                   | 42479                              |
| Mizoram           | 952000                           | 30615                           | 3.22                                                   | 33939                              |
| Nagaland          | 1684000                          | 26044                           | 1.55                                                   | 30009                              |
| Tripura           | 3782000                          | 44834                           | 1.19                                                   | 49583                              |
| NE Telecom Circle | 12562000                         | 195396                          | 1.56                                                   | 218353                             |
| NE Region         | 38759000                         | 468464                          | 1.20                                                   | 540155                             |
| All-India         | 996861000                        | 26511345                        | *2.66                                                  | 29365798                           |

\*excluding Cellular Mobile.

## Capital Investment

The approved Plan Outlay for North-East Sub Component Plan for 1999-2000 was Rs.354.15 Crore which was spent in full. For the North East Region, the actual expenditure during 1999-2000 was Rs.367.59 Crore. Circle wise details of Financial Outlay and Actual expenditure for the Region during 1999-2000 are given below:

| Name of Circle | Financial Outlay 1999-2000 | Actual Expenditure 1999-2000 |
|----------------|----------------------------|------------------------------|
| North-East     | 210.64                     | 201.14                       |
| Assam          | 143.51                     | 166.45                       |

**Physical Performance – State-wise position** – The status of telecom facilities as on March 31, 2000 in each of the states of North East Region namely, Assam, Arunachal Pradesh(AP), Manipur(MNP), Meghalaya (MEG), Mizoram(MZR), Nagaland(NLD), and Tripura(TRP) is shown in the following Table:

**STATUS OF TELECOM FACILITIES IN NORTH EAST REGION (STATE/CIRCLE-WISE)  
(AS ON 31.03.2000)**

| SL. No. | Item                                      | AP            | MNP           | MEG            | MZR          | NLD           | TRP          | Total NE        | Assam            | Total NE Region  |
|---------|-------------------------------------------|---------------|---------------|----------------|--------------|---------------|--------------|-----------------|------------------|------------------|
| 1       | Telephone Exchanges                       | 89            | 34            | 61             | 50           | 44            | 60           | 338             | 415              | 753              |
| 2       | Capacity                                  | 51732         | 37544         | 52596          | 42518        | 42200         | 69774        | 296364          | 352189           | 648553           |
| 3       | Direct Exchange Lines                     | 30757         | 25000         | 38146          | 30615        | 26044         | 44834        | 195396          | 273068           | 468464           |
| 4       | Waiting List                              | 1168          | 6235          | 4248           | 2340         | 2219          | 9677         | 25887           | 5475             | 31362            |
| 5       | No. of Village Public Telephones (Out of) | 596<br>(3599) | 684<br>(2394) | 1186<br>(5629) | 619<br>(770) | 595<br>(1192) | 656<br>(862) | 4336<br>(14446) | 14181<br>(22224) | 18517<br>(36670) |
| 6       | Stations with NSD/ISD (Out of)            | 59<br>(89)    | 25<br>(33)    | 48<br>(57)     | 23<br>(47)   | 23<br>(40)    | 55<br>(59)   | 233<br>(325)    | 383<br>(383)     | 616<br>(708)     |
| 7       | DHQ with NSD/ISD (out of)                 | 13<br>(13)    | 8<br>(8)      | 7<br>(7)       | 8<br>(8)     | 8<br>(8)      | 4<br>(4)     | 48<br>(48)      | 23<br>(23)       | 71<br>(71)       |
| 8       | SDHQs with NSD/ISD (out of)               | 23<br>(28)    | 15<br>(30)    | 15<br>(15)     | 9<br>(9)     | 10<br>(22)    | 11<br>(11)   | 83<br>(115)     | 48<br>(48)       | 131<br>(163)     |
| 9       | Stations on reliable media                | 59            | 23            | 48             | 19           | 23            | 29           | 201             | 279              | 480              |

### Targets for 1999-2000 and Achievements

The position with regard to targets and achievements during 1999-2000 in the states in NE Region is shown as under:

#### Assam Telecom Circle

| Development Parameter     | 1999-2000(Target) | 1999-2000(Achievement) |
|---------------------------|-------------------|------------------------|
| Direct Exchange Lines     | 60000             | 61162                  |
| Switching Capacity(Net)   | 77000             | 81810                  |
| Village Public Telephones | 3000              | 826                    |
| UHF/MW (RKM)              | 800               | 756.90                 |
| Satellite Stations (Nos.) | 5                 | 4                      |

**North Eastern Telecom Circle**  
**(Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland & Tripura)**

| <b>Development Parameter</b> | <b>1999-2000(Target)</b> | <b>1999-2000(Achievement)</b> |
|------------------------------|--------------------------|-------------------------------|
| Direct Exchange Lines        | 40000                    | 43801                         |
| Switching Capacity(Net)      | 51000                    | 79012                         |
| Village Public Telephones    | 2000                     | 303                           |
| UHF/MW (RKMs)                | 700                      | 788.30                        |
| Satellite Stations (Nos.)    | 40                       | 7                             |

**Annual Plan 2000-2001**

**Targets for 2000-2001**

| <b>S.No.</b> | <b>Item</b>                  | <b>Targets</b> |
|--------------|------------------------------|----------------|
| 1.           | Switching Capacity           | 131000         |
| 2.           | DELS                         | 105000         |
| 3.           | Village Public Telephones    | 8016           |
| 4.           | Satellite Earth Stations     | 45             |
| 5.           | Microwave/UHF Systems (RKMs) | 1410           |
| 6.           | OFC (RKMs)                   | 1075           |

**Tribal Sub-Plan (TSP) 1999-2000**

The Tribal Sub-Plan (TSP) is a part of the 9<sup>th</sup> Five Year Plan for providing telecom facilities in the tribal areas. For a balanced and faster development of telecom facilities in tribal areas, these areas are treated as Special Focus Areas. The main objectives of the Tribal Sub-Plan by the end of the Ninth Five Year Plan are (i) to provide the telephone facility on demand in tribal areas (ii) to provide NSD facility to all exchanges in Tribal areas and (iii) to provide public telephones in all tribal villages. The approved Plan Outlay for Tribal Sub-Plan for 1999-2000 was Rs.900 crore (R.E.). Statement showing the physical Targets and Achievements during 1999-2000 and Targets for 2000-2001 are given in Table 7 of Statistical Supplement.

**National Capital Region (NCR)**

In order to decongest the National Capital (Delhi) and to reduce the population pressure on it, National Capital Region consisting of 20 priority towns and 5 counter magnet towns spreading to 5 States surrounding the National Capital is being given special attention for the development of infrastructural facilities including the telecom facilities in these towns. During 1999-2000, the Department of Telecom has provided 143368 lines of Telephone Switching Capacity and 109601 Direct Exchange lines in the Region.

During the 9<sup>th</sup> plan period, efforts are being made to improve the telecom facilities of NCR and to introduce various value added services to make it at par with Delhi, as demanded by the NCR Planning Board. It is also aimed to make the telephone available on demand at the earliest during the 9<sup>th</sup> plan period in the entire NCR region.

## **PRIVATE SECTOR PARTICIPATION**

### **New Policy Initiatives**

The New Telecom Policy – 1999 (NTP-99) adopted by the Government effective from April,1999, focuses on creating an environment which enables continued attraction of investment in the Telecom Sector and allows creation of communication infrastructure by leveraging technological development. Towards this end, the New Policy Frame is intended to cover the following in the telecom service sector:

- Cellular Mobile Service Providers, Fixed Service Providers and Cable Service Providers, collectively referred to as “Access Providers”.
- Radio Paging Service Providers.
- Public Mobile Radio Trunking Service Providers.
- National Long Distance Operators.
- International Long Distance Operators.
- Other Service Providers.
- Global Mobile Personal Communication by Satellite (GMPCS) Service Providers.
- V-SAT based Service Providers.

Licensing of all Telecom Services shall now be under the policy frame work of NTP-1999.

### **Basic Services**

- National Long Distance Service has been opened to the private sector with the issue of guidelines for National Long Distance Service on August 13, 2000.
- Guidelines have also been issued for licensing of Infrastructure Providers.
- Ten companies have been registered as Infrastructure Provider-I (IP-I).
- Five companies have been approved for giving licence for Infrastructure Provider-II (IP-II).

- Seventeen exchanges commissioned – 13 (Thirteen) in Madhya Pradesh, 2 (two) in Punjab and 1(One) each in Gujarat and Rajasthan.
- M/s Shyam Telelink Limited and M/s HFCL Infotel Limited have launched commercial service in Rajasthan and Punjab circle on 05.06.2000 and 21.09.2000 respectively.
- The number of subscribers served by the private Basic Service operators is 1,91,483 as on December 31, 2000.

During the current year (upto 31.03.2001) (i) Licences are likely to be given for NLDO and IP-II, (ii) More companies are likely to be registered as IP-I and (iii) More licenses are likely to be issued for Basic Telephone Services in various telecom circles.

## **Value Added Services**

### **Licensing of Cellular Mobile Telephone Service**

- Eight licenses for Cellular Mobile Telephone Service in the four metro cities were issued to 8 companies in November 1994. 34 licenses for 18 Territorial Telecom Circles were also issued to 14 companies from December 1995 onwards.
- Services have started in all the metro cities and select cities in 18 circles. There were about 18.84 Lakhs Cellular customers in the country as on March 31, 2000.
- In terms of NTP-99 and subsequent Government approval, a Package of Migration to Revenue Sharing regime of NTP-99 was offered on July 22, 1999 to the existing Cellular Service licensees. Most of the Licensees are under Migration to New Telecom Policy regime of revenue sharing from the earlier fixed License Fee regime. The package was not offered in respect of terminated licenses. However, in terms of subsequent Government decision, the Migration Package and restoration of licenses under a Package shall be offered in respect of terminated cellular licenses to M/s. Aircell Digilink for Haryana and Rajasthan Telecom Circles, to M/s. Koshika Telecom for UP-West, Orissa and Bihar Circles and to M/s. JT Mobile in respect of Punjab Circle.
- MTNL and BSNL have been given license for operation of technology neutral Cellular Mobile Telephone Service.
- Recommendations of TRAI on percentage of revenue share towards annual license fee and other terms and conditions of cellular licenses have been sought. Filling up of certain vacant slots (two each in A&N and J&K Circles, one each in Assam and West Bengal Circles) and induction of one more private operator in each Service Area (Circles/Metros) shall be done after the conditions like entry fee, license fee as revenue share and qualifying criteria etc. are finalized after receipt of TRAI's recommendation.

## **Global Mobile Personal Communication by Satellite (GMPCS) Service**

- Government of India took a policy decision in August 1998 for introduction of GMPCS Service on certain terms and conditions such as foreign equity participation not to exceed 49% , Gateways would be located in India/maintenance of Gateways would be with organization designated by Government, license shall be awarded on “first-come-first serve basis” without any limit after clearance of individual proposals for security angle.
- A provisional license was granted to M/s. IITL on October 28, 1998 for operation of the service in India, however, the service was closed by the company in March,2000 due to non-availability of Satellite infrastructure.
- LOI was awarded to M/s. ASC Enterprises for Agrani GMPCS Service. Proposals of M/s. Shyam ACES for Garuda GMPCS Service and of M/s. VSNL for ICO Service is under consideration.

## **Radio Paging Service**

- The licence fee for the 4<sup>th</sup> and 5<sup>th</sup> year was fixed in consultation with TRAI as 5% of the gross revenue for the city paging.
- \* Migration Package based on NTP’99 was offered to the Radio Paging licensees for the city and circle paging. However, it could not be implemented due to non-acceptance by the paging licensees.
- Licence agreement for the operation of radio paging in the cities of Indore and Ernakulam granted to M/s Usha Martin Telecom Ltd. were terminated because of non-payment of license fee. However, services are operative by other licensees.
- Steps were identified for reviving of paging industry in the country based on the feedback of Indian Paging Service Providers Association and recommendation of GOT-IT.
- Four court cases in High Court of Delhi, filed by different licensee companies for the paging operations against Union of India, were fought successfully resulting in decision in favour of the Union of India. The bank guarantees were encashed to realize the government dues.

## **Voice Mail & Audiotex Service**

- 9 License Agreements have been signed with 3 companies. Currently, the service is operational in 8 cities.

## **Public Mobile Radio Trunked Service**

- Currently, 87 License Agreements are in operation. The service is being provided in 31 cities by 21 companies.

## **Internet Service Provider (ISP) Policy**

The ISP Policy was announced in November,1998. The basic features of the ISP Policy are as follows:-

- (a) Any Indian company with a maximum foreign equity of 49% is eligible. (100% also allowed, but in that case the ISP can not set up an International Gateway)
- (b) Category "A" Service Area – whole of India. Category "B" Service Area – 20 territorial Telecom Districts – Ahmedabad, Bangalore, Hyderabad and Pune. Category "C" Service Area – any Secondary Switching Areas (SSAs) of DOT with geographical boundaries as on April 1, 1998.
- (c) An applicant company may be granted any number of licenses and there will be no limit of number of licenses granted in a particular area.
- (d) Application form costs Rs.1000/-. Processing fee per application is Rs.5000/-
- (e) Period of license is 15 years. Extension may be granted at the discretion of Telecom authority.
- (f) License fee is waived upto October 31, 2003 and will be Re.1/- per annum thereafter for those ISPs who obtain licences prior to November 1, 2003.
- (g) Performance Bank Guarantee – Rs. 2 crore for Category "A" Service Area, Rs.20 lakh for Category "B" Service Area and Rs.3 lakh for each Category "C" Service Area.
- (h) International connectivity – Through gateways of DOT, VSNL or authorised public/Government organisations. Private ISPs are allowed to provide gateways after obtaining security clearance.
- (i) Establishment of transmission links – Private ISPs can obtain transmission links on lease from DOT, licensed Basic Service Operator, Railways, State Electricity Boards, National Power Grid Corporation etc. They may also establish their own transmission links within its service area for carrying traffic originated and terminated by his subscriber, provided that such

capacities are not available from authorised agencies and subject to permission of Telecom authority.

(j) Telephony on Internet is not permitted.

(k) The ISPs are free to fix their own tariffs. However, TRAI may fix a tariff at anytime which shall be binding on the licensee.

The ISP Licenses are being issued starting from November 6,1998 on non-exclusive basis. Up to December 31, 2000, 441 ISP licences have been issued in various categories namely A-80; B-177; C-184. Out of these, more than 100 ISPs have started internet service and total subscriber base in the country is more than 2.5 Million.

Private ISPs are permitted to set up their own gateways. Up to December 31, 2000, 50 ISPs have been given in-principle clearance for setting up of 220 international gateways using satellite medium. Government has also permitted ISPs to set up Submarine Cable Landing Stations for International Gateways for Internet. The liberal policy is expected to promote fast proliferation of Internet within the country and will give a boost to its applications such as Electronic Commerce.

### **Very Small Aperture Terminal (VSAT) Service**

The Government had liberalised the policy for allowing entry of private operators in value added services in telecom sector in 1992. It was decided to give license for operations of VSAT service. Proposals were invited from Indian companies for operation of 64 Kbps close user groups data network using VSAT via INSAT-II satellite system in extended C-band.

In total, 13 licences were issued for providing VSAT service (Closed User Group 64 Kbps Data Network via INSAT Satellite System using VSAT) in extended C-band on normal satellite starting from August 1994. Thereafter, one license has been issued for providing VSAT service in Extended C-band using space segment of INSAT Satellite in Inclined Orbit (i.e. for Inclined Orbit Operations). As per the existing policy for VSAT service, certain conditions have been laid down. These are (a) License Period is 10 years, (b) License fee is Rs.50,000 per VSAT per annum with a minimum of Rs.1 crore per annum for first two years. The minimum for the 3<sup>rd</sup> year is Rs.1.5 crore per annum, Rs.75 lakh per annum for 4<sup>th</sup> & 5<sup>th</sup> year and Rs.1 crore for 6<sup>th</sup> year, (c) Band of operation is Extended C-band.

DOT had sought recommendation from TRAI in May'99 regarding issue of fresh license for VSAT service under NTP 99. NTP 99 permitted the use of Ku-band also for communication purposes. Recently, recommendations have been received from TRAI. The Government is examining the recommendations and will be finalising the terms and

conditions for the new license agreement. Thereafter, it is proposed to invite proposals from new operators interested in providing VSAT service in India on non-exclusive basis. Out of total 13+1 licenses issued, 4 VSAT licenses have been terminated and the balance 9+1 VSAT licenses are operational with more than 5000 VSAT subscribers.

## **Private Investment and FDI**

A Cell was created to encourage, stimulate and facilitate private investment in the telecom sector and to smoothen the implementation of projects in the private sector. Main activities of this Cell are (i) Interaction with Business Councils/Industry Associations; (ii) Interaction with India Investment Centre and other Government/Semi-Government bodies concerned with investment promotion; (iii) Formulation of policies for stimulating private investment in Telecom Sector; (iv) Printing of promotional literature and its distribution; (v) Organisation of Investment Conferences/Seminars/Exhibitions arrangements, publicity about avenues/scope of private investment in Telecom Sector; (vi) Meetings/discussions with foreign delegations/visitors on telecom related matters; (vii) Deputation of officers from DOT for attending National & International Conferences/Seminars/exhibitions in connection with Investment Promotion; and (viii) Follow up action on issues relating to project implementation in the Telecom sector;

The total private investment in the telecom services upto March 31, 2000 has been approximately Rs.16,500 crore. During the period (August,1991 – July,2000), 649 proposals of foreign direct investment of Rs.38,304 crore were approved. This accounts for 16.97 per cent of the total FDI approved for all the sectors by the Government of India. In terms of approval of FDI, telecom sector is the second largest after energy sector. During the same period the actual flow of FDI is Rs.4393 crore. The details of the FDI approved for the telecom sector are as follows:

| Sl. No. | Category                             | No. of Approvals | FDI Approval (Rs. in Crore) |
|---------|--------------------------------------|------------------|-----------------------------|
| 1.      | Radio Paging Service                 | 50               | 1231.00                     |
| 2.      | Cellular                             | 177              | 26004.53                    |
| 3.      | Manufacturing and other VAS services | 422              | 11068.42                    |
|         | Total                                | 649              | 38303.95                    |

# INTERNATIONAL COOPERATION

In the field of international cooperation workshops, seminars and training programmes are held both within the country and outside. Deliberations are held with the visiting foreign dignitaries, apart from the visits to other countries to hold discussions on the relevant subjects. The details of the programmes/discussions held during 1999-2000 and 2000-2001(April-December) are given below:

## a) Meetings/Seminars

### During 1999-2000:-

- (i) Third meeting of the Telecommunication Working Group for South – Asia TELEWORKS, and South Asian Telecommunication Regulators Council (SATRC), was organised and hosted in association with Asia-Pacific Telecommunity in New Delhi from April 26-28 & April 29-30, 1999. The position of Chairman of Steering Group of Telecommunication Standardisation (SGTS) was unanimously offered to the representative of DOT for the next year.
- (ii) Second Meeting of the Joint Project Steering Group for the Telecom Framework Project assisted by CIDA was convened on May 19, 1999 in TEC, New Delhi and work programme was finalised.
- (iii) Third Session of the India-Yemen Joint Committee for Economic, Scientific and Technical cooperation was held from July 18-20, 1999 at Sana, Yemen. Telecom has been included as priority area for mutual cooperation covering R&D / consultancy, Joint Venture, HRD & assistance in Postal Services in Yemen, Department of Posts.
- (iv) DoT hosted 19<sup>th</sup> Meeting of APT Study Groups from 2-7 September 1999 at Taj Residency Hotel, Bangalore, India. Five Questions proposed by the Indian Administration were accepted for Study during next cycle.

India was offered unanimously Chairmanship of the next study cycle 2000-2002. Sr. DDG, TEC was nominated as Chairman of Study Group.

- (v) The First Joint Working Group meeting on Posts and Telecommunications between India – Belarus was held on September 13-14, 1999 in Minsk, Belarus to discuss the initiatives for cooperation in the areas identified. Keen interest was shown for the Indian products and systems. Manufacturers of both sides had initiated fruitful dialogue.

- (vi) EC-India Working Group on Telecom held one-to-one meeting in Sanchar Bhawan on October 27, 1999 and terms of reference were finalised and action plan was finalised.
- (vii) Meeting of India – EC Sub-Commission on Trade was held in New Delhi on October 28-29, 1999.
- (viii) The 14<sup>th</sup> Session of the India-Romania Governmental Joint Commission meeting for Economic, Technical and Scientific cooperation was held in New Delhi on November 15-16, 1999.
- (ix) The third Joint Project Steering Group meeting on Telecommunication Framework Project assisted by CIDA, Department of Industry, Canada was held from November 15-19, 1999 in Canada. New projects on standardisation & R&D collaboration were identified for ATM test bed, propagation studies, R&D foundation, Type approval & planning tools and New Access Technologies.
- (x) Meeting of the Indo-EC Sub-commission on Economic Cooperation was held in New Delhi on November 30, 1999.
- (xi) 23<sup>rd</sup> Management Committee Meeting and 8<sup>th</sup> General Assembly Meeting of APT in Tehran, Islamic Republic of Iran was held from November 30 – December 6, 1999. Adviser (T) participated in the meeting. Indian proposal on collaboration among R&D institutions and to host next General Assembly meeting in 2002 in India was agreed during the meeting.
- (xii) Second Meeting of Indo-French Joint Committee on Post & Telecommunications was held at New Delhi on 18-21<sup>st</sup> January 2000.
- (xiii) Ninth Indo-Bangladesh Telecommunication Operational Coordination meeting was held on 17<sup>th</sup> and 18<sup>th</sup> January 2000 at Dhaka to review the performance of circuits / Telecom links between the two countries.
- (xiv) Eighth Session of the Indo-Turkey Joint Commission Meeting was held on February 8, 2000 in New Delhi.
- (xv) The Fourth round of dialogue between the Ministry of External Affairs (MEA), Govt. of India, and the Ministry of International Trade & Industry (MITI), Govt. of Japan, was held on March 28, 2000 in New Delhi.
- (xvi) A seminar on “Internet Protocol” (IP) of ITU was hosted by DOT/DTS from 29-31 March 2000 at Taj Residency Hotel, Bangalore. The Seminar was inaugurated by Member (T), DoT. Among others, Mr. Houlin Zhao, Director (TSB), ITU also attended the seminar.

In addition to the above, in over 14 inter-Ministerial meetings, proposals of cooperation in telecom sector were presented with other countries such as Oman, South Africa, Israel, Austria and Romania during the year 1999-2000.

During 2000-2001 (April-December):-

During the current year 2000-2001 (April-December), the following seminars/meetings/deleberations were also organised/attended by the DOT:

- (i) A seminar on “Telecom Development Symposium ITU TELECOM ASIA 2000 was held in Hong Kong from 4-9 Dec.2000. The Symposium was attended by Hon’ble Minister of State (C), Chairman Telecom Commission, Member (P) and Member (T).
- (ii) A Seminar on “Electronic Commerce Strategies” in association with United Nations Asia Pacific Centre for Technologies Transfer (APCTT) was held in August’ 2000 at Hotel Le Meridien, New Delhi. The Seminar was inaugurated by Hon’ble Minister of Communications, Shri Ram Vilas Paswan. Several dignitaries from APT/APCTT attended the Seminar.
- (iii) GM (Development), Gujarat Telecom Circle, was deputed for the first Study Visit of Multipurpose Community Telecentres (MCT), Rajkot, held in Australia from 10<sup>th</sup>-15<sup>th</sup> December2000.
- (iv) 24<sup>th</sup> Management Committee Meeting of APT was held at Hong Kong from 27<sup>th</sup> November – 1<sup>st</sup> December, 2000. Advisor (T) TCHQ participated in the meeting. Indian proposal for a Seminar on Bridging the Digital Divide (BDD) in India to be held in September, 2001 was approved by the General Assembly.
- (v) 4<sup>th</sup> Session of India-Czech Joint Committee meeting was held in New Delhi from 17<sup>th</sup>-19<sup>th</sup> April, 2000.
- (vi) The 3<sup>rd</sup> Session of Indo-Oman Joint Commission was held in New Delhi on 27-28<sup>th</sup> April,2000.
- (vii) The 10<sup>th</sup> Session of Indo-French Joint Committee meeting was held in Paris on 25 May, 2000.
- (viii) The 7<sup>th</sup> Session of Indo-Algerian Joint Commission was held in Algiers during 24-26 June,2000.
- (ix) The 1<sup>st</sup> meeting of Indo-EU Sumit was held in Lisbon on June 28, 2000.
- (x) 4<sup>th</sup> Session of Indo-Syrian Joint Committee was held in New Delhi on July 25-26, 2000.

- (xi) 12<sup>th</sup> Indo-Bhutan Telecom Operational Coordination meeting was held in Sanchar Bhawan, New Delhi on July 27-28, 2000.
- (xii) 5<sup>th</sup> Session of Project Steering Group meeting of CIDA Telecom Framework Project was held in TRAI on October 12, 2000 in New Delhi.
- (xiii) 14<sup>th</sup> Session of the Indo-Italian Joint Commission was held in New Delhi on October 17-18,2000.
- (xiv) The 2<sup>nd</sup> India-Zambia Joint Trade Committee Meeting was held in New Delhi on November 21-22, 2000.
- (xv) The 10<sup>th</sup> Session of India-Vietnam Joint Commission meeting was held in Hanoi on November 7-8,2000.
- (xvi) The meeting of Indo-EC Sub-Commission on Trade was held in Brussels on November 16, 2000.
- (xvii) 14<sup>th</sup> Session of Indo-Iraq Joint Commission Meeting on Trade was held on November 27, 2000 in New Delhi.
- (xviii) Third meeting of Joint Project Consultative Committee (JPCC) of CIDA was held on December 5, 2000 in New Delhi.

During January-March'2001:-

In addition, the meetings held/scheduled to be held during January-March 2001 are given below:

- (i) The meeting of the Indo-BLEU (Belgium Luxembourg Economic Union) Joint Commission was held in New Delhi on 8-9 January 2001.
- (ii) The Hong Kong Business delegation led by Mrs. Carrie Yau, J.P. Secretary for Information Technology and Broadcasting, Govt. of HKSAR visited DoT on January 8, 2001.
- (iii) India-EU Joint Working Group meeting on IT & Communications held on January 31, 2001.
- (iv) A four member technical study team from Bangladesh Telegraph & Telephone Board (BTTB) visited India on January 16-17, 2001 to observe IT & telecom infrastructure development.

- (v) CIDA Workshop under project C-5 Network Access Technologies and C-6 Satellite based High Data Rate Services including Internet and Broadband was held during February 4-17, 2001 where 9 officers from DOT and BSNL participated.
- (vi) The India-EC Joint Commission Meeting was held in New Delhi on February 6-7, 2001.

In the framework of the Memorandum of Understanding in the field of telecommunications between India and Mexico, the Mexican side has proposed to visit India and to analyse our Pilot Project about rural telephony during March, 2001.

About 10 Officers are expected to attend different international meetings/seminars/conferences etc., abroad during January to March, 2001 as mentioned below:

| <b>Sl. No.</b> | <b>Activity</b>                      | <b>No. of officers deputed</b> |
|----------------|--------------------------------------|--------------------------------|
| 1.             | ITU-T/ITU-D                          | 03                             |
| 2.             | APT Meetings/Seminars                | 06                             |
| 3.             | Miscellaneous International Meetings | 01                             |

## **b) Visit of Foreign Ministers and other Dignitaries to India**

During 1999-2000:-

(i)Dr. Miro Rozman, State Secretary of Transport and Telecommunications, Government of Slovenia accompanied by Mr. Milo Klemencic, representative of IskraTel called on Secretary, DoT, Secretary, DoP and Members of Telecom Commission on August 12-13, 1999.

(ii)H .E. Mr. Mehdi Tabeshian, Dy. Minister of Posts, Telegraph and Telephone for International Affairs, Iran alongwith a delegation of experts in Telecommunications and Space applications called on Secretary, DTS on November 19, 1999.

(iii)H.E. Mohammed Nasim, Minister for Home Affairs, Posts & Telecommunications, Bangladesh called on Hon'ble MOC & MOS(C) on December 23, 1999.

(iv)Mr. Hau Sing Tse, Vice President of Asian Branch of CIDA accompanied by the Head of Aid Division of Canadian High Commission, Mr. Bill Gunn, made a courtesy call on Hon'ble Minister of State for Communication on 1.2.2000.

(v)Mr. Mushtapha Terrab, Director, National Office of Regulation of Telecommunications of Morocco called on Chairman Telecom Commission on February 23, 2000 with the object to strengthen further cooperation in the field of Telecom.

(vi)Mr. J. Joseph Grandmaison, Director, Trade and Development Agency (TDA), along with Mr. Carl F. Reinhardt, Director, Overseas Private Investment Corporation (OPIC) called on Secretary, DTS, Member(T) & DDG(IR) on March 10, 2000.

During 2000-2001 (April-December):-

During 2000-2001 (April-December), following visits by the foreign dignitaries were also held:

(i)H.E. Mr. Shaikh Ali Bin Khalija, Minister of Transportation, Bahrain and Chairman of Bahrain Telecommunication Company alongwith a 15 Member delegation made a courtesy call on Hon'ble MOC on 5<sup>th</sup> April, 2000.

(ii)H.E. Mr. HAN DUCK SOO, Minister of Trade of the Republic of Korea called on Hon'ble MOC on 8<sup>th</sup> May,2000 with the object of enhancing cooperation in the area of telecommunications.

(iii)H.E. Dr. CEDOMIR STRBAC, Ambassador, Embassy of Federal Republic of Yugoslavia, New Delhi made a courtesy call on Hon'ble Minister of Communications on July 6, 2000 with the purpose to further improve bilateral relations in the field of telecommunications and posts by signing of an MOU between the two countries.

(iv)Dr. Enis OKSUZ, Minister of Transport and Communications, Turkey, along with a four membe delegation made a Courtesy call on Hon'ble MOC on September 21, 2000 to discuss general telecom scenario.

(v)Mr. Willian E. KENNARD, Chairman, U.S. Federal Communications Commission (FCC) called on Hon'ble MOC on September 22, 2000 with the object of obtaining an over view on New Telecom Policy and Liberalization and transparent regulatory structure.

(vi)Mr. LEONID REMEN, Minister of Communications, Russia, along with a six member delegation of the Russia specialists from Scientific organizations, made a courtesy call on Hon'ble MOC on October 3, 2000.

(vii)A high level official delegation led by Mr. Alan Chan, Permanent Secretary of the Singapore Ministry of Communication and Information Technology visited Sanchar Bhawan on October 31, 2000 to discuss issues of mutual interest with members of Telecom Commission.

(viii)Mr. George Saibel, Director General, India-Nepal-Srilanka programme of Canadian International Development Agency called on Chairman, Telecom Commission on

November 29, 2000, to discuss matters of mutual interest and to re-acquaint himself with the development scene in India and particularly CIDA programme here.

(ix)H.E. Mr. Oidov NYAMDAVAA, Ambassador, Embassy of Mongolia, New Delhi made a courtesy call on Hon'ble Minister of Communication on December 4, 2000 with the purpose to get acquaintances with the telecommunication system of India.

(x)H.E. Senator Richard Alston, Australian Minister for Communications, Information Technology and Acts called on Hon'ble Minister of Communication on December 8, 2000 with the purpose to hold formal discussions on the areas of mutual interest.

(xi)H.E. Mr. Richard E. Celeste, U.S. Ambassador New Delhi paid a courtesy call on Hon'ble Minister of Communication on December 14, 2000 with the purpose to discuss the areas of mutual interest.

### **c)Visit of DOT Delegation to other Countries**

To further the interests of India in the field of telecommunications and its associated Public Sector undertakings in the world arena, a number of delegations were sent to foreign countries. The important ones are given below:

#### During 1999-2000:-

(i)A three member DoT delegation led by Secretary / Chairman, Telecom Commission visited USA during June 4-14, 1999 for participation in Super Com'99.

(ii)A high level official business delegation led by Secretary, DoT visited Zimbabwe during September 20-24, 1999 on the occasion of commissioning of 256 Port RAX C-DOT System in Zimbabwe. The equipment was gifted to President of Zimbabwe during his visit to India.

(iii)A three –member delegation from TEC was deputed to Canada during October 27 – November 9, 1999 for the 2<sup>nd</sup> Fact-Finding Mission for the TEC component under CIDA assisted Project on Telecommunication Framework Project.

(iv)Under Indo-French cooperation, two senior level officers from WPC were deputed to France during November 15-19, 1999 for training in Frequency Spectrum Management Plan.

(v)Under Indo-French cooperation, two senior level officers from WPC were deputed to France during November 25-26, 1999 to visit ANFR Technical Centre and study the French System.

(vi) Under Indo-French cooperation, four officers from DoT were deputed to France during December 14-20, 1999 for attending Seminar on New Technologies in Telecommunications at Paris.

(vii) A high level technical mission of four Members headed by Secretary, DTS, visited Canada during March 16-23, 2000 on the invitation extended by CIDA, Department of Industry, Canada. The purpose of the visit was to consider Canadian technologies and for implementation of CIDA assisted Telecom Operation Project.

Important training programmes and study visits were also organised in which officials visited industry and training facilities of France under Indo-French Co-operation in Telecom and as well in Canada under Indo-Canada Agreements with CIDA.

In addition to above, 57 officials were deputed to foreign countries during 1999-2000 for participating in ITU-T, ITU-R, ITU-D meeting of ITU and other international and regional organisations like APT, APSCC, UNDP etc. In all, during 1999-2000, 148 deputations/delegations to visit other countries were approved in which 268 officers participated. An expenditure of Rs.307.93 lakh was sanctioned for the purpose.

For further interests of DOT and its associated Public Sector undertakings in the world arena, a) number of delegations were sent to foreign countries. The important ones are given below:

- (i) A high level delegation led by Secretary, DoT including PSUs and C-DOT visited Israel in the period May 5-7 `2000 to explore the opportunities of business in the field of Telecommunications.
- (ii) A DoT delegation led by DDG (IR) comprising representatives from ITI, TCIL & C-DOT visited Mexico during 26-30<sup>th</sup> June 2000 with the purpose to follow implementation of MOU signed with Mexico.
- (iii) Under CIDA assisted Telecom Framework Project, three officers from DoT were deputed to Canada from 10<sup>th</sup> to 12<sup>th</sup> July, 2000 for participating in Wireless 2000 Conference at Calgary, Alberta.
- (iv) An eight-member DOT delegation was deputed for an orientation visit in various areas of Telecom to USA during 18-31<sup>st</sup> August' 2000.
- (v) Under CIDA assisted Telecom Framework Project, six officers from DoT were deputed for participation in World Telecommunication Standardization Assembly (WTSA-2000) at Montreal, Quebec, Canada, from 27 September-6<sup>th</sup> October, 2000.

- (vi) A four Member DoT delegation headed by Secretary, DTO, visited Nepal during 27-29<sup>th</sup> September, 2000 to participate in Indo-Nepal Telecom operational coordination meeting held at Kathmandu.
- (vii) Under CIDA assisted Telecom Framework Project (Standard Component), 15 officers from DoT/BSNL were deputed to visit Canada from 23<sup>rd</sup> November-8<sup>th</sup> December,2000 for participating in training course “ Upgradation of Copper Plant (CI) – Fibre Optic Transmission & Design (C3).

25 officials were deputed to foreign countries during the period for participating in ITU-T, ITU-R, ITU-D meeting of ITU and other international and regional organisations like APT, APSCC, UNDP etc. as listed below:

| SL. No. | Activity   | No. of officers deputed | Place of deputation                         |
|---------|------------|-------------------------|---------------------------------------------|
| 1.      | ITU-T/IT-D | 07                      | Paris, Geneva, Beijing, Bangkok, Petersburg |
| 2.      | APT        | 15                      | Hong Kong, Tokyo, Bangkok, Seol, Phuket     |
| 3.      | Misc.      | 03                      | Nice, Seoul, Santiago (U.S.A.)              |

World Telecommunication Day, 1999 was celebrated on May 17, 1999 at the India Habitat Centre, New Delhi by organising a Seminar on the theme “Electronic Commerce”.

## PERSONNEL

### (a) Staff Employment

The position of total number of staff employed and their distribution in different services is brought out in Table 17 of the Report. The total staff employed at the end of 1999-2000 was 4.21 lakh as compared to 4.24 lakh during the preceding year. This includes staff in D.O.T., MTNL, BSNL and industrial workers in the telecommunication factories. Of

these employees, 72426 belonged to the Scheduled Castes and 18633 to the Scheduled Tribes categories. This included 955 sweepers. The detailed group-wise break-up is given in Table 18. There were 52,336 women employees. Further, 4426 ex-servicemen (4355 Abled and 71 Disabled) employees were also working in the Department as on March 31, 2000.

## **(b) Training**

Keeping in view the rapid technological innovations and changes in the Telecom Sector, training programmes were organized to upgrade and up-date the knowledge and skills of the telecom personnel.

The strategy adopted by the Department in this direction comprises strengthening and modernizing the training infrastructure; imparting appropriate trainings for various cadres; and deputing personnel for training to institutions in developed countries to acquire knowledge and expertise in the latest technologies in telecom field and managerial practices.

Presently the Department has 44 Telecom Training Centres comprising two apex level training centres, namely, Advanced Level Telecom Training Centre (ALTTC), Ghaziabad and Bharat Ratna Bhim Rao Ambedkar Institute of Telecom Training (BRBRAITT), Jabalpur for training of telecom officers, 15 RTTCs located at different regions in the country to provide training to supervisory staff/Junior Telecom Officers of the department and 27 CTTCs/DTTCs to cater to the training needs of working level staff. In addition to the above, temporary Branch Telecom Training Centres in various circles were operated as per requirement to expedite the training of staff in restructured cadres.

The training equipment at various training centres were also upgraded to keep pace with the changing technology.

## **(c) Personnel Trained**

A total of 64009 persons were trained in various training centres during the year 1999-2000. This includes 47 foreigners trained in ALTTC, Ghaziabad and BRBRAITT, Jabalpur. 95 officers of the Department were deputed abroad during 1999-2000 for training in modern switching, transmission technologies etc. and management. About 50,500 persons are proposed to be trained during 2000-2001 against which, during April-December, 2000, 53315 employees were already trained. This includes 67 officers deputed abroad for training.

### **(d) Training Under Cadre Restructuring**

A total of 11911 Telecom Mechanics, 2481 TTAs and 15926 Sr. TOAs were trained during the year 1999-2000.

## **USE OF HINDI**

During 1999-2000 and 2000-2001 (April-December), Official Language Branch followed Rules and Regulations prescribed by the Department of Official Language. The main activities and achievements during 1999-2000 and 2000-2001 (April-December) are shown as under:

- (i) Informed/advised all the Telecom Circles/Administrative offices/Undertakings about the O.L. Act, Rules and instructions issued thereunder for their compliance for achieving the targets fixed by O.L. Department in their Annual Programme for the year under Report.
- (ii) Reviewed the Quarterly Progress regarding progressive use of Hindi received from all the Sections of DOT(Hq.) and all the Telecom Circles/other Admn. Offices/Undertakings etc. and took necessary corrective measures in respect of those wherein deficiencies were noticed.
- (iii) Provided Hindi information through Hindi Videsh Seva (177) and monitored the same. This service has been extended by the Department in 31 cities.
- (iv) Arranged nominations for Hindi training for those officers/officials who had not acquired working knowledge of Hindi. Similarly, Stenographers/Typists who had not undergone training in Hindi Stenography/Typing were nominated for the above respective training courses. 23 employees in Prabodh, 24 in Parveen, 21 in Pragya, 8 in typing and 1 in Hindi stenography were given training.
- (v) Carried out inspections of Telecom Circles/Admn. Offices/Undertakings to assess as to what extent, the provisions of O.L. Act/Rules and instructions issued thereunder were adhered to. 3 inspections were carried out during 1999-2000 and 2 inspections during 2000-2001 (April-December).
- (vi) Hindi Fortnight was organised during September 14 to 30, 1999 which is a regular activity of each year prescribed by Department of Official Language. During 2000-2001, the Hindi Pakhwada was celebrated during September, 2000. Competitions were organised on this occasion and winners were awarded certificates/prizes.

- (vii) Official Language Branch works as a co-ordinator from D.O.T.(Hq.) during the course of inspection of circles etc. by Committees of Parliament on Official Language which is also a regular feature every year.
- (viii) Translated all the documents in Hindi/English specified in section 3 (3) of Official Language Act 1963 and Official Language Rule 1976, and all the papers/reports to be laid by DOT on the table of both the Houses of Parliament. These included the Annual Report of the DOT, Performance Budget, Document containing Demand For Grants, Parliament questions etc.
- (ix) Quarterly meetings of the Departmental Official Language Implementation Committee were held at regular intervals during the period under review.
- (x) Four Hindi Workshops were conducted in DOT(Hq.) during the period from 22 to 25 June, 22 to 23 September, 27 to 28 October,99 and 17 to 18 February, 20 and 21 June, and November 6, 2000 to inculcate confidence among officials in doing their daily official work in Hindi.
- (xi) To ensure compliance of Section 3(3) of Official Language Act,1963 various orders have been issued from time to time. Special emphasis was laid to ensure publications of advertisements in Hindi, re-circulation of incentive scheme, proper and optimum utilisation of staff trained in Hindi stenography and typing.
- (xii) Akhil Bhartiya Rajbhasha Sammelans were organised in various Circle offices.
- (xiii) Nominated 5 candidates for computer training with N.I.C., New Delhi.
- (xiv) On the occasion of Golden Jubilee year of Rajbhasha Hindi, the Branch (a) conducted Akhil Bhartiya Door Sanchar Rajbhasha Sammelan in August, 2000 (b)purchased 86760 Hindi books during April 1999 to March 2000 and (c) provided Hindi Software in computers installed at Hqrs. (d) organised poetry and story writing competition.

## **WELFARE AND SPORTS**

An amount of Rupees Thirty Nine Lakh Sixty Eight Thousand and Two Hundred Fifty was disbursed to the different Circles/Units for welfare and sports activities during 1999-2000. During the current year ( till December,2000) an amount of Rs.4.43 crore has been disbursed to the Circle Welfare Boards/Regional Sports and Cultural Boards for implementation of the programmes.

A provision of Rs.8 Crore has been made for the welfare and sports activities of Telecom Staff for the year 2000-2001. Allocation of funds to different Circles/Units for meeting their welfare and sports expenditure is being made.

During the current year, the Telecom Sports and Cultural Board held its 7<sup>th</sup> meeting on April 27, 2000 under the Chairmanship of Shri Shyamal Ghosh, Secretary, DOT and Chairman(TC). In this meeting several decisions were taken to promote sports and cultural activities in the Department. Recruitment of outstanding sports persons at circle level against 5% vacancies, enhancement of rates of Daily Allowance(DA) for sports persons participating in All-India Tournaments, increase of cash awards for continuous good performance, enhancement of kit money to those participating in national level tournaments are some of the highlights.

On July 14, 2000, the 6<sup>th</sup> Meeting of the Telecom Staff Welfare Board was held in New Delhi under the Chairmanship of Shri Tapan Sikdar, Hon'ble Minister of State for Communications and decisions were taken to promote the welfare of the employees and their dependents. Scholarship amounts for college going children, book award and incentives for meritorious school going children, conveyance allowance/hostel subsidy for mentally retarded/handicapped children of Telecom employees and financial assistance programmes for the employees in distress were considerably enhanced.

Sports calendar for 2000-2001 for conducting All-India Telecom Meets in 17 sports disciplines and one in the cultural field in different Telecom circles was issued and by the end of December,2000 eight All-India Sports Meets and one Cultural Meet were conducted. .

## **WORK STUDY & EFFICIENCY BUREAU & INSPECTION**

### **Work Study**

3 Norms studies and 11 work measurement studies were conducted during 1999-2000. During April-December,2000, 2 norms studies and 6 work measurement studies were conducted. Moreover, in 4 norms studies, observation and collection of data have been completed and the report was under finalisation. During January-March,2001 another 8 norms studies and 2 measurement studies are likely to be conducted and completed.

### **EB & I**

The questionnaires were reviewed and revised by the TCHQ team for (i) Telecom Circles/Metro Districts and (ii) Functional Units (iii) Telecom Regions.

The Hand Book on Technical Inspections of field has been reviewed and revised. Administrative inspection of 32 Telecom Circles/Functional Units were carried out during the period 1999-2000.Two Heads of Telecom Circle Conferences were convened during the year i.e. on 13-14<sup>th</sup> May, 1999 and 1<sup>st</sup> November,1999.19 orders regarding

delegation/enhancement of financial powers were issued during the year. During April-December 2000, administrative inspections of 24 Telecom Circles/functional units were carried out. One Head of Circles conference was also conducted during September, 2000. Further, 11 orders regarding delegation/enhancement of financial powers have been issued during the period. During January-March 2001, administrative inspections of 19 telecom circles/functional units are likely to be completed and another 8 orders regarding delegation of financial powers are expected to be issued.

### **III. CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DOT)**

**Introduction-** Centre for Development of Telematics was established by the Government of India in 1984 as an autonomous body with the objective of developing a new generation of digital switching systems. Its scope now includes Transmission and Access products also. Since its inception, C-DOT has developed a wide range of switching and transmission products for the rural and urban applications. C-DOT Main Automatic Exchange can connect upto 40,000 subscribers and supports features like Integrated Service Digital Network (ISDN), Intelligent Network (IN), V5.X interfaces. The Medium Capacity Exchange SBM RAX also supports all these state-of-the art features. The C-DOT Main Exchange can also function as Mobile Switching Centre for GSM Cellular service. The small Capacity Rural Automatic Exchange has been developed for rural environment and can work without air-conditioning. C-DOT has also developed an integrated Time Division Multiple Access – Point to Multi-Point (TDMA-PMP) for serving 256 subscribers sparsely distributed within a radius of 30 Km. Some of the Transmission products developed by C-DOT include Optical Amplifier, 8 Mbps Optical Line Terminating Equipment (OLTE) and 2<sup>nd</sup> Line Multiplexer.

As a result of very efficient technology transfer process, a number of manufacturers have established a production capacity of seven million lines per annum. A total of 176 lakh lines of switching equipment have been supplied by these manufacturers. C-DOT extends pro-active support for the operation and maintenance of its products in the Telecom network.

C-DOT small capacity RAX has been exported to a number of countries in Asia and Africa. C-DOT is also committed to safeguard the investments made by telecom service providers in its technology by upgrading the existing systems with the latest features for the entire life span of the equipment.

#### **Major Achievements During the Year 1999 – 2000 and April-December, 2000**

**C-DOT Extra Large Digital Switch ( MAX-XL) -** C-DOT MAX-XL with 800K BHCA (Busy Hour Call Attempts) traffic handling capacity was given technology approval after successful field trial at Bangalore. The latest software release supports signalling scheme CCS7, ISDN (Integrated Services Digital Network), supplementary services and Network Synchronization. The system has technology and features compared with any other world-class equipment.

**Integrated Software Release for MAX features- Further Enhancement-**An integrated software release (2\_2\_1\_3) has been developed for C-DOT DSS family of exchanges. The release supports all hardware configurations viz. SBM-RAX (Single Base Module-Rural Automatic Exchange), MAX-L, MAX-XL (Main Automatic Exchange- Large & Extra Large) and TAX-XL (Trunk Automatic Exchange – Extra Large). The features supported in the release are PSTN, ISDN, CCS7 signalling, 800K BHCA (Busy Hour Call Attempts), network synchronization, IN services, V 5.X access network interfaces etc. The release has been retrofitted in MAX-L exchanges at Bhiwadi (Rajasthan), Ulsoor (Bangalore) after TEC testing in the lab. TEC testing was completed at Bhiwadi and Ulsoor.

**Intelligent Network (IN) Services** – A total of 88 Intelligent Network – Service Switching Points (IN-SSP) stations have been installed of which 79 are commercially operational. The services under these are free-phone, virtual card calling, premium rate services etc. based on C-DOT technology. Based on C-DOT technology, Bharat Sanchar Nigam Ltd. has plans to provide IN Services to all Secondary Switching Areas (SSAs).

**Computerized Digital Trunk Manual Exchange (C-DOT CDTMX)** - CDTMX equipment provides multiple operator positions for various manual trunk call operations. It also serves the functionality of local, tandem and Service Switching Point (SSP) functionality. The system has been installed at Surat in Gujarat and the field trial which is in progress is expected to be completed by March, 2001.

**Remote Line Concentrator (RLC)** – Environmental testing and field trial of C-DOT RLC, as an Access Network Product (AN) supporting Public Switches Telephone Network (PSTN) subscribers and 56 ISDN Basic Rate Access (BRA) subscribers has been completed. This can handle services like IN and ISDN.

**Asynchronous Transfer Mode (ATM) Technology** - The first ever National Broadband Network consisting of five ATM nodes providing video, data and voice services. C-DOT ATM has been installed with core switches at Delhi, Mumbai, Kolkata, Chennai and Bangalore. TEC validation for ATM switch is in progress and expected to be completed by the end of March, 2001. Provisioning of services based on switch virtual connections will be made available by the end of March, 2001.

**Time Division Multiplexed Point to Multi-point (TDMA PMP)** - TDMA PMP version 3.0 was validated by TEC and its installation was completed at Mohali in Punjab for field trials. Twenty five TDMA systems with a number of remotes were despatched to different circles for installation in the field.

## **Development and progress of Key Projects**

**Personal Communication System (PCS)**- C-DOT has completed the development of a new software release 3-1-1-1 for its SBM and MAX-XL exchanges that provides combined capabilities of serving the existing fixed lines (PSTN, ISDN, V5.1/ V5.2), SSP functionality (for IN services) and Mobile Switching Centre (MSC) based on GSM 2 protocols. C-DOT has also completed the development of other GSM network sub-systems (NSS), namely, Home Location Register (HLR), Short Message Service Centre (SMS), Authentication Centre (AUC), Equipment Identification Register (EIR), and Voice Mail System (VMS).

BSNL has given India Mobile Personal Communication Services (IMPCS) project for providing Cellular services in 18 cities across 5 circles (Andhra Pradesh, Tamil Nadu, Bihar, West Bengal and Punjab). Initially, radio sub-systems will be procured to work with C-DOT NSS.

Launch of commercial services under IMPCS are scheduled during January-March 2001.

**Higher Erlang Capacity Switch (HECS)**-The project has been undertaken to enhance the C-DOT DSS Erlang capacity from 8000 to 16,000 and address the issue of component obsolescence. The project also aims at the development of 32K port switch. The design implements a T-T-T switch architecture and employs value engineered BMs (VEBM) which is compact in terms of floor area occupied with increased connectivity and performance developed as part of the separate project, namely, **SBM Exchange Catering Upto 4K Subscribers**. The Central Module (CM) capacity is enhanced to 32 K ports capacity as against the 16K ports. The HECS's hardware design has been completed and the architecture for Generic Controller unit finalized. The Generic Controller unit employs enhanced hardware technology for catering to a variety of interfaces.

**SBM Exchange Catering Upto 4K subscribers**-The development of this product has been undertaken for enhancing the connectivity and performance of existing Single Base Module (SBM-XL). The overall connectivity of a SBM can be enhanced to 1K ports. It employs 256 port terminal unit and enhanced time switch unit (with 1K ports). With 4:1 concentration, the SBM supports 4K subscribers. The new hardware addresses the issue of obsolescence of some of the components being used in the existing MAX-XL system. This development reduces floor space requirement by 50%. Hardware, Software development activities and testing for Enhanced Terminal Unit (ETU) with 256 termination capacity, VSU (Enhanced Time Switch Unit with 1K ports) and Compact Digital Trunk Unit (CDU). The Major features have been offered for internal validation.

**Fibre Access System (FAS)** - The equipment based on Passive Optical Network (PON) technology would provide Optical Fibre To The Curb (FTTC) and Fibre To The Building (FTTB) solutions in the access part of the telecom network. Lab realisation is in-progress.

The equipment will also serve village clusters which can be connected to SBM type of exchanges. The product development is scheduled to be completed by March 31, 2001.

**Synchronous Digital Hierarchy ( SDH ) Systems**-This project constitutes a product of different hierarchical rates namely, STM-1 (155 Mbps), STM-4 (622 Mbps) together with Network Management System. Presently, developments of STM-4 is in advanced stages. The STM-1 system has been offered to TEC for validation and after incorporating feedback from TEC has been offered again for validation with additional features. This is expected to be completed by March 2001.

**Digital Enhanced Cordless Technology (DECT) System**-This system provides Wireless In the Local Loop (WLL) solutions for both urban and rural applications. While, one of the solutions uses Base Station Controller (BSC), Base Station Units (BSU) and remote radio units installed at subscribers premises, the other uses an interface card in the remote unit of the TDMA PMP system. The later can serve wireless subscribers instead of wired subscribers usually supported by TDMA PMP systems respectively. A Base Station (BS) with 8-line interface to TDMA-PMP System has been offered to TEC for validation. The wireless local loop system based on DECT standards is being internally validated.

**Optical Line Terminal Equipment (OLTE) & 2/8 Digital MUX**-The development of single card version of 8 Mbps MUX and 8Mbps OLTE were completed. Technology approval has been received after TEC testing and field trial.

**Optical Amplifier System (OAS)**-The development of Optical Booster Amplifier System has been completed and internally validated. The feedback has been incorporated and cleaned up version has been made. TEC testing of the system has been completed and field trial which has been started between Delhi and Panipat is expected to be completed by March 2001.

**Satellite**- Various VSAT platforms including various low data rate systems and MCPC in Extended C and Ku Band have been developed. With this combination, the porting for internet has been done. Similarly, High Data Rate VSAT (HDVSAT) modem development has been done. Intermediate Data Rate (IDR) work has been taken up which consists of two products, namely 2 Mb/s and 8 Mb/s. 2 Mb/s is being offered for internal validation. Development of the second product is in process.

**INSAT MSS**- The field trials after successful TEC validation of various portable and maritime terminals were done using dish antenna at the sites allocated in Karnataka. Calls are being made successfully. Demonstration of both portable and maritime terminals with normal antennas has been carried out. The portable terminal working has been demonstrated in various circles of BSNL. Army also has tried portable terminals. The maritime terminal was validated at ship near Cochin by Indian Navy.

**Features Upgradation, Retrofitting and Value Addition for Product Support-** Country adaptations of 256P RAX software for Comoros & Malawi were completed and delivered to M/s. ITI. Revised RAX software and CoMAC software were delivered for Ghana and Ethiopia. A problem-solving visit was made to Ethiopia. Revised software for the RAX was also released for Nepal, Uganda and Rwanda. A trouble-shooting visit was made to Rwanda. Support for Zimbabwe RAX was provided.

**Status of Products and Field Deployment-** The status of the exchanges/systems of C-DOT deployed is given in the following tables:

| PRODUCTS            | Production Status (as on March 31, 2000) |              | Production Status (as on December 31, 2000) |              |
|---------------------|------------------------------------------|--------------|---------------------------------------------|--------------|
|                     | Exchanges / Systems                      | Lines (Lakh) | Exchanges/Systems                           | Lines (lakh) |
| <b>Switching</b>    |                                          |              | <b>Switching</b>                            |              |
| 256 RAX             | 27742                                    | 39.24        | 30523                                       | 44.90        |
| SBM                 | 6226                                     | 56.62        | 7465                                        | 68.32        |
| MAX-L / XL          | 1184                                     | 49.78        | 1332                                        | 63.07        |
| IN Systems          | 50 (cities)                              |              | 88(cities)                                  |              |
| <b>Transmission</b> |                                          |              | <b>Transmission</b>                         |              |
| TDMA PMP            | 25                                       |              | 29                                          |              |
| VSAT 16Kbps         | 67                                       |              | 82                                          |              |
| 6RU-10              | 1031                                     |              | 1031                                        |              |
| 8Mbps OLTE          | 649                                      |              | 649                                         |              |
| 2/8 MUX             | 780                                      |              | 780                                         |              |
| 8/34 MUX            | 899                                      |              | 899                                         |              |

## Orders Under Execution

### SBM-XL / MAX-XL

C-DOT's MAX-XL, 800K BHCA has been given the technology approval. Orders have been placed for about 40 lakh lines of SBM-XL / MAX-XL on C-DOT equipment manufacturers. Apart from this, different circles are also placing orders for about 3000 exchanges (about 6 lakh lines) of 256P RAX.

**Export Promotion-** C-DOT continued its efforts on the promotion of its technology to other countries. The Centre participated in many telecommunication exhibitions and forums abroad displaying its products and presenting the details of its technology solutions. C-DOT participated in various national and international exhibitions including India Tech 99 in Lagos, Nigeria; World Telecom 99 (ITU) in Geneva, Switzerland; IT COM 99 in Bangalore; India International Trade Fair 99 at Pragati Maidan, New Delhi.

These apart, C-DOT also released (i) COMaC software ver CM-GH-1-1-1 & BGEN software ver 2.1c and release of RAX software for Ghana (ii) new COMaC software version CM-GH-1-1-3 and RAX software version RX-ET-1-6-6 incorporating new requirements, namely, removal of meter pulse time out and change of length of meter counter to 5 digits were done for Ethiopia (iii) RAX software version RX-NP-1-5-3 incorporating new requirement of call routing to mobile subscriber was to Nepal (iv) RAX software version RX-UG-1-6-2 incorporating new requirement of delinking STD charge counter from CRI-F for Uganda (v) software solutions to the problems found in Rwanda during visit of C-DOT Engineers (vi) solutions to the problems faced in Zimbabwe and (vii) Software to ITI RX-CM-1-5.2 for Comoros and RX-MA-1-5.2 for Malawi.

## **Infrastructure**

New tools and equipments were added to the development of infrastructure during the year. The equipment included new workstations, servers, emulators, protocol analyzers and various types of test and measuring instruments. The infrastructure set-up at C-DOT Captive exchange, Bangalore was upgraded with one SBM-4 K system, 32K port Central Module (CM) and a Compact Digital BM. The lab and CAD infrastructure were also strengthened with variety of new DSP software development tools, CAD software emulation system, ADSL / HDSL line simulator equipment etc. Additional tools for PCB design, FPGAs, system stimulation, software development, unit and integrated testing, and electronic packaging were added this year. Various upgrades for existing tools were procured. Structured cabling for computer networking was installed.

## **Technical Support to the Manufacturers and Field Formations**

C-DOT continued to provide product support to about 17 million lines of C-DOT technology in the network in terms of upgrading, retrofitting and imparting training to field staff. One of the major efforts in 1999-2000 in terms of technical support was towards ensuring Y2K compliance of C-DOT equipment in the field. Two software versions 1\_4\_10.5\_3 and 2\_1\_1\_1 were developed for Y2K compliance. C-DOT supported in the process of retrofitting of some 4000 exchanges with Y2K compliant software. Apart from supply of software deliverables, documents and on-site help, 16 workshops were also conducted in various circles to train the personnel. Hands-on training followed these workshops on retrofitting working exchanges with Y2K compliant software.

C-DOT provided installation, commissioning and post commissioning support to Intelligent Network sites which have grown to over seventy nine.

An ISO 9002 certified card repair facility has been established in C-DOT at Pusa Road, New Delhi to provide quick support to field systems. In addition, requisite support was

also extended to Department of Telecom in setting up nineteen new regional repair centres which brings the total number of RRCs as 25 across the country.

Interaction continued with C-DOT licensees to provide technical information, training , fabrication of prototypes and their quality approvals. The technology transfer for TDMA –DECT Interface (TDI-8) to M/s BEL, Bangalore and the technology for TDMA-PMP (version 3) to three additional vendors were completed. Transfer of technology (TOT) process has also been initiated for DECT-1000 and SDH. TOT process is also being initiated for ATM to the lead manufacturer M/S Bharat Electronics Limited. Vendor development programme at C-DOT has also been pursued actively and resulted into conversion of single source supply to multiple source for 103 components and approved 58 new vendors.

## IV. TELECOM ENGINEERING CENTRE

The Telecom Engineering Centre is engaged in (i) Standardisation and development of technical specifications/Generic Requirements(GRs), Interface Requirements(IRs), and Test Schedules for telecom equipment, services, and products (ii)Evaluation of equipment, services, and products including study and trials of new technologies (iii)Technical support to Bharat Sanchar Nigam Limited (BSNL) for major network problems (iv)Network and Technical support to Telecom(Hqrs.) especially to the planning units and (v) Technical support to Telecom (Hqrs.) for preparation of Fundamental Telecom Plans and advisory support to planning units on technical issues. The specialised Groups of Telecom Engineering Centre evolve the technical specifications and provide the required support to perform the tasks assigned to TEC. For according approvals, the Regional Centres of Telecom Engineering Centre located at Bangalore, Calcutta, Delhi, Hyderabad and Mumbai carry out evaluations as per the GRs/IRs/Test Schedules.

During 1999-2000 and April – December, 2000 the achievements of the Telecom Engineering Centre were as follows:-

- (i) 56 Technical specifications were framed which included the products like VRLA Batteries, Fraud Management & Control Centre, Dense Wavelength Division Multiplexing (DWDM), Indian Mobile Personal Communication System (IMPCS), Internet & IP related items, Satellite & Radio products, and External Plant items, etc. In addition, the thrust was also on development of technical specifications for Rural Wireless Local Loop and Urban Wireless Local Loop Systems. During April-December 2000; 32 GRs / IRs were issued. The GRs issued included High Count Free Optical Fibre Cable (Ribbon type) for access network, 20/50/100/250 W Solid State Power Amplifier in Ku-Band, 4/6 GHz Wave Guide, Remote Access Server TCP/ IP, Multiline Telephone System, Wirreless Access Protocol (WAP) network etc.
- (ii) While reviewing the GRs issued earlier, it required revision & amendment and consequently, 76 GRs were revised and amended and 20 GRs were withdrawn from usage. During April – December 2000, 32 GRs/IRs were issued, 47 GRs were revised/amended and 16 GRs were withdrawn. During the same period 79 Test Schedules were prepared for GR issued/revised. The GRs issued included High Count Free Optical Fibre Cable (Ribbon type) for access network, 20/50/100/250 W Solid State Power Amplifier in Ku-Band, 4/6 GHz Wave Guide, Remote Access Server TCP/IP, Multiline Telephone System, Wireless Access Protocol (WAP) network etc.

- (iii) Field Trials and Testing including the evaluations were carried out for some of the new technology products in the Optical, Satellite, Switching and Radio areas. These were the first time introduction of the products and extensive testing were carried out by TEC. During April – December 2000, 86 such trials and testing were carried out.
- (iv) As a part of its on-going activities, TEC was consulted on many of the major field problems especially on the switching and the transmission sides which were looked into and attended to. During April – December 2000, 24 major problems were looked into and attended by TEC.
- (v) With a view to provide technical support, various technical papers, Memoranda were prepared like documents on – Telecommunication Technologies – Forecast and Assessment, contingency plan for Y2K, concept paper on call centres and its application in network, IP technology concept and Introduction in the Network, implementation of the various Numbering Schemes and Introduction of the National Internet Backbone for Internet. In addition, many Engineering Guidelines for various products like SDH Radio, IP Addressing, Intelligent Network Services, Scheme for Charging of Premium Rate Services, etc. were prepared and submitted to the Department of Telecom. As a part of this job, about 10 technical papers viz., Telecom Technology – Forecast and Assessment, SIM Card, International Gateway Connectivity Project report on E-Commerce, Technical Presentation on Voice over IP were prepared and 6 engineering guidelines like installation guidelines for Armoured OFC underground in the Switching areas (SSA) for analyzing the calls for incorrect charging for NSD calls, for use of STP in India and revised tariffs etc. were prepared/issued during April – December 2000.
- (vi) During 1999-2000, 668 Type Approvals were issued for various products. Further, 346 approvals were issued during April – December 2000. In addition, 337 Interface Approvals were issued for the products interfacing with the Network. During April – December 2000 another 364 interface Approvals were issued. For testing the licensed private networks for coverage of their service and Point of Interconnect (POI), 208 Service Test Certificates/POI Test Certificates were issued during 1999-2000. Another 207 service Test Certificates were issued during April – December 2000.
- (vii) To keep the officers of TEC abreast with new developments in new technologies in the Telecom sector, 28 officers of TEC were deputed to different inservice courses and 6 officers were deputed to different Seminars. Officers were also nominated to attend the Study Group Meetings of ITU/APT. During April – December 2000, 17 Officers were deputed to different training centers in India. Another 8 Officers attended the training on “Upgradation of Copper Plant/Digital Subscriber Lines” in

Canada under CIDA Project as per agreement between Government of India and Canadian International Development Agency, Government of Canada.

(viii) During April – December 2000, 15 DCC meetings and 30 Manufacturers forum were conducted for various generic requirements (b) 5 GRs/IRs (c) 4 Engineering Guidelines (d) 27 Test Schedules/Test procedure (e)20 testing/validation and field trial of products/systems (f) 130 Type approvals, 150 Interface approvals and 75 Service Test Certificates were issued.

(ix) Apart from these (a) 49 New GRs/ IRs, (b) 5 GRs/ IRs (revised), (c) 4 Engineering Guidelines, (d) 27 Test Schedules/ Test Procedures, (e) 20 Testing/ Validation and Field trial of products/ Systems, (f) 130 Type approvals, 150 Interface approvals and 75 Service Test Certificates are anticipated to be issued during January-March 2001.

## V. WIRELESS PLANNING AND COORDINATION

The Wireless Planning and Coordination Wing in the Department of Telecommunications deals with the policy of spectrum management, licensing, frequency assignments, international coordination for spectrum management and administration of Indian Wireless Telegraphy Act.

### **Performance during 1999-2000 and 2000-2001**

#### **Wireless Planning Coordination Committee (WPCC)**

In pursuance of New Telecom Policy-1999(NTP-99) Government of India has constituted an empowered interministerial committee called the Wireless Planning Coordination Committee(WPCC) under the chairmanship of Secretary, Department of Telecommunications. Broad functions of the WPCC includes, inter-alia, evolving broad spectrum allocation policies, adoption of National Frequency Allocation Plan (NFAP), relocation of spectrum usages and broad policies related to spectrum charging. During the year 1999-2000, the committee held two meetings and took decision on various frequency allocation issues which included adoption of National Frequency Allocation Plan – 2000 (NFAP-2000), simplified procedures for expediting clearances in respect of Information Technology (IT) related sites and methodology for replanning of Broadcast Satellite service in 11.7 – 12.2 GHz frequency band.

#### **National Frequency Allocation Plan (NFAP)**

In pursuance of the New Telecom Policy 1999(NTP-1999), the National Frequency Allocation Plan-2000 (NFAP-2000) has been developed by NFAP Committee under the chairmanship of Wireless Adviser to the Government of India. The Committee had wide participation of wireless users and equipment manufacturers from the Government Departments as well as the Private Sector and the Industry. The NFAP-2000 has been evolved within the overall framework of the international Radio Regulations and taking into account competing and conflicting requirements of the Government and Private Sector in the country so that various Radio Communication Services and applications including public telecommunications services, Law and Order, Security, Safety, Shipping & Aviation, Broadcasting, Electricity Grids, Information technology application etc., could function appropriately in an interference-free environment. The Wireless Planning & Coordination Committee chaired by Secretary, Department of Telecommunications adopted the NFAP-2000 which was released by Hon'ble Minister for Communications on 27.12.1999. This Plan forms the basis for development manufacturing and spectrum utilization in the country and has come into force from January 1, 2000.

## **Satellite System Coordination**

International coordination of satellites is required to be undertaken as per the provisions of the international Radio Regulations (RR) of the International Telecommunication Union (ITU). Coordination of frequency assignments for the individual satellite network is necessary with satellite networks of other administrations for mutual coexistence and interference free operations of these networks. The satellite coordination is a continuous process. Accordingly, the national and international activities for coordination and protection of our satellite systems vis-à-vis existing/ planned systems of other countries were continued during 1999 –2000. Salient aspects are given below:

### **Insat Satellite Networks**

India has a large and ambitious space communication programme having six operating INSAT satellite networks at 55E, 74E, 83E and 93.5E orbital locations, which are having fixed and mobile communication, television Broadcasting and meteorological payloads in Ku-band, C-bands, including extended C-band and S-bands.

After completion of necessary coordination with all concerned administrations notices of frequency assignments in respect of INSAT –2K at 83E orbital location have been sent to the ITU for international recognition and protection. Due diligence information in respect of INSAT –2E at 83E was also sent to ITU.

Detailed technical analysis for ensuring electromagnetic compatibility was undertaken during bilateral satellite coordination meetings with the Administrations of Australia, UK and China for the INSAT-2, INSAT-2E, INSAT-2M, INSAT-2T, INSAT-2K, INSAT-EK, INSAT-EKR, INSAT-AF, INSAT-EKADD, INSAT-Ka, INSAT-ES, INDAB at various orbital locations and frequency bands. Coordination of Indian Remote Sensing (IRS) satellite networks was also undertaken during these meetings as well as through correspondence with other administrations. Notices of frequency assignments in respect of IRS-P4 have been sent to ITU, after completion of coordination with respective administrations, for registration and international protection.

### **Protection of INSAT space, terrestrial and radio astronomy services from the satellite networks of other countries**

A large number of new satellite networks have been planned by other countries in various frequency bands in the GSO arc of interest to India and the interference potential

from these systems to INSAT Space and Terrestrial networks was assessed/evaluated regularly to protect our national interests. India has large number of filings for orbital locations in various frequency bands in the geostationary arc(GSO) as well as for non-GSO satellites to cater for number of Indian space programmes, which are in various stages of coordination with different countries. In accordance with the provisions of the International Radio Regulations, several actions, including detailed examination of Special Sections of Weekly Circulars published by the ITU, were undertaken on a continuous basis with a view to protect national frequency assignments and satellite orbital positions.

## **Frequency assignments to satellite based services**

Frequency assignments for public/ captive satellite communication network including that of VSAT networks were made to various service providers/ users. Frequency assignments were also made to several broadcasters for operation of TV uplinking earth stations from Indian soil and also for ISP Gateways earth stations.

During January to March 31, 2001 coordination with all concerned administrations will be pursued to achieve coordination of various INSAT satellite systems and orbital locations. About 600 frequency assignments are anticipated to be made for the government sector as well as to private sectors including licenced operators such as VSATs ISPs, TV uplinking etc., during the period. Coordination with various national agencies are expected to be undertaken to resolve various coordination issues.

## **GSM Cellular**

**GSM Cellular in Metro areas-** Assignment of additional GSM mobile channels in 800/900 MHz band has been made in four metro cities i.e. Delhi, Mumbai, Chennai and Calcutta in order to meet growth in Cellular subscriber density. Assignment of GSM Mobile channels in 800/900 MHz has also been earmarked to third operator i.e. MTNL & DOT.

**GSM Cellular in Circles-** The frequency assignments for GSM mobile and intra-city microwave access network have been made to Cellular service providers for operation of GSM Mobile Network at various cities in all the Telecom. Circles. Additional assignment for GSM mobile channels in 800/900 MHz band has been made in Circles. So far as inter-city microwave backbone networks are concerned, most of the assignments have been made after extremely complex task of frequency coordination with other users to ensure the electromagnetic compatibility.

## **Radio Paging Service**

After successful coordination of frequencies for introduction of radio paging service, assignment of suitable frequencies, including link frequencies have been made, for operation of paging service on city wise basis as well as on circle basis, to radio paging service operators.

## **Radio Trunking Services**

Assignment of frequencies for operation of city-wise radio trunking networks, as per channeling plans evolved for the purpose, have been made to the licenced radio trunking services operators.

## **Basic Services**

**Basic Telephone Services (WLL)** - Radio Frequency assignments have been made to various Basic Telephone Services Providers including DOT & MTNL to operate their networks. Basic Telephone Service operators have already commenced their operations. In so far as MW Access and backbone networks are concerned frequency are continued to be coordinated on case by case basis.

## **Request from Foreign Diplomatic Missions**

Special requirements projected by foreign diplomatic mission for radio communications were considered and appropriate frequencies assigned.

## **Automation of Spectrum Management & Monitoring System**

The project “Design, Supply, Installation & Commissioning of National Radio Spectrum Management & Monitoring System” is being implemented with the assistance of World Bank. Under the project Spectrum Management & Monitoring functions will be automated and LAN/WAN connectivity will be provided to WPC, MHQ, RHQs and all monitoring stations. The bids have been invited. Based on technical evaluation, the contract is expected to be awarded in the year 2001-2002.

## **International Conferences and Meetings**

National preparations, participation and follow up actions for various International and regional conferences under the aegis of International Telecommunication Union (ITU) and Asia Pacific Telecommunity (APT) were undertaken to protect national interest especially in the context of spectrum management and related matters. One of the important elements of these activities, has been preparation in the context on World Radio Conference – 2000 (WRC-2000) in various national, regional and international fora.

During the period 1.1.2001 to 31.3.2001 (i) Meeting of Radio Communication Advisory group and meeting of ITU-R study groups, working parties and task groups, (ii) National and regional preparation for WRC-2003 and (iii) National preparations for Plenipotentiary Conference – 2002 of ITU are anticipated.

## WIRELESS MONITORING

Wireless Monitoring Organisation continued to provide technical and allied data on the basis of Wireless Monitoring Observations for effective and efficient Radio Frequency Management and Radio Regulatory aspects. Details of performance data during the year 1999-2000 and 2000-2001 are given below:-

| Particulars                                                                             | Performance during                   |                                       |                                           |
|-----------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------------|
|                                                                                         | 1.4.1999 to<br>31.3.2000<br>(Actual) | 1.4.2000 to<br>31.12.2000<br>(Actual) | 1.1.2001 to<br>31.3.2001<br>(Anticipated) |
| a) Channel days utilized for Radio Monitoring                                           | - 9317                               | 7389                                  | 2111                                      |
| b) Monitoring Assignments handled                                                       | - 14707                              | 11020                                 | 3980                                      |
| c) No. of Wireless Stations inspected                                                   | - 14922                              | 5104                                  | 4896                                      |
| d) No. of Radio Noise Measurements                                                      | - 72117                              | 657579                                | 50000                                     |
| e) No. of Wireless Transmissions monitored                                              | - 154310                             | 116800                                | 33200                                     |
| f) Infringements communicated to users for remedial action                              | - 24643                              | 8582                                  | 3418                                      |
| g) Technical Assistance to users to maintain their operation within specified standards | - 2934                               | 1938                                  | 562                                       |

Many important Radio Noise 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 emission, characteristics and interference potential. The measurements on terrestrial microwave LOS links and radars are also being carried out regularly to ensure compatibility. Assistance was also being provided to the users by way of conducting noise surveys for wireless/earth stations and site selection. Microwave Terminals of Wireless Monitoring Organisation have earned a revenue of Rs. 3.5 lakhs till 31.3.2000 by way of its services to various user agencies.

An Integrated Mobile Monitoring Terminal having Monitoring capabilities upto 40 GHz has been procured under the scheme "Specialised Monitoring Terminal at Delhi". The terminal has been functioning well with the primary objective to monitor transmissions in the satellite communication bands to ensure adherence to the authorized parameter.

The satellite Monitoring Earth Station at Jalna is capable of monitoring emissions from satellites parked in geostationary Orbit from 20° E to 140° E operating in C and S bands to ensure protection to Indian space and terrestrial radio communication services. A number of geostationary satellites in the arc were also tracked.

Wireless Monitoring Training & Development Centre has conducted seven inservice courses and imparted training to 96 officials of the organisation in various disciplines during the year 1999-2000 and to 61 officials upto December 2000. It is expected that at least 5 more officers will get training prior to 31.3.2001.

The Science & Technology Unit undertakes development of some hardware and software modules required for monitoring systems and sub-systems. In addition, this unit also fabricates accessories to the main monitoring equipments to enhance their capabilities in terms of precision measurements.

Three Direction finding systems in different frequency bands are being procured to enhance the monitoring capabilities.

Three VHF/UHF Direction Finding (DF) systems and three HF DF systems are being procured to meet the desired objectives. The purchase orders have already been issued and the system are likely to be operational during 2001-2002.

The scheme for augmentation of existing 4 Microwave Mobile Monitoring Terminals and provision of one new Microwave Mobile Monitoring Terminal has been approved. The tender for the necessary procurement is likely to be issued by 31.3.2001.

The details of achievements during 1999-2000 and 2000-2001 (April-December) in the field of radio frequency spectrum management, new frequency assignments/licences issued etc. are given below:

|  | (1.4.1999 to 31.3.2000)<br>(Actual) | 1.4.2000 to 31.12.2000<br>(Actual) | 1.1.2001 to 31.3.2001<br>(Anticipated) |
|--|-------------------------------------|------------------------------------|----------------------------------------|
|--|-------------------------------------|------------------------------------|----------------------------------------|

### Radio Frequency Spectrum Management

|                                                                                          |   |       |       |      |
|------------------------------------------------------------------------------------------|---|-------|-------|------|
| New Radio Frequency authorized to various users                                          | - | 21221 | 15665 | 4650 |
| Frequency assignments intimated to Radiocommunication Bureau of the ITU for registration | - | 514   | 337   | 308  |
| Radio Frequency Assigned for visits of VVIPs                                             | - | 82    | 6347  | 2120 |
| WPCC(Wireless Planning Coordination Committee) Meetings held                             | - | 2     |       |      |
| SACFA(Standing Advisory Committee on Frequency Allocations) meeting held                 | - | 10    | 9     | 3    |
| Inter-departmental meetings held                                                         | - | 55    | 56    | 19   |

|                                         |   |      |      |      |
|-----------------------------------------|---|------|------|------|
| Sites cleared for new wireless stations | - | 7597 | 6347 | 2120 |
| No. of special Monitoring               | - | 25   | 17   | 4    |

**Wireless Licences Issued**

|                                                   |   |       |       |      |
|---------------------------------------------------|---|-------|-------|------|
| No. of Import Licences Issued                     | - | 729   | 592   | 139  |
| No. of Licences Issued to New Wireless Stations   | - | 9639  | 6516  | 1780 |
| No. of Licences Renewed for old Wireless Stations | - | 17275 | 11625 | 5500 |

**Certificate of Proficiency (COP) Examination/Licences**

|                                                         |   |      |      |      |
|---------------------------------------------------------|---|------|------|------|
| No. of COP Examination conducted                        | - | 26   | 16   | 6    |
| No. of candidates admitted                              | - | 3990 | 3350 | 1000 |
| No. of Licences issued                                  | - | 3645 | 1997 | 500  |
| No. of Licences renewed                                 | - | 2391 | 1438 | 450  |
| No. of Licences issued to New Radio Amateur Stations-   |   | 363  | 193  | 113  |
| No. of Licences renewed for Old Radio Amateur Stations- |   | 415  | 254  | 200  |
| No. of Certificates of importation issued               | - | 5    | 8    | 9    |

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## VI. VIGILANCE ACTIVITIES

During the year 1999-2000, the number of complaints handled during the year were 4565, covering both the Gazetted (GO) and Non-Gazetted (NGO). The number of Officers suspended due to vigilance complaints included 31 GOs and 135 NGOs. During the year, 89 gazetted and 164 non-gazetted officers were chargesheeted for major penalty and 113 GOs and 342 NGOs were chargesheeted for minor penalty. While the major penalty was imposed on 65 GOs and 132 NGOs, the minor penalty was imposed on 97 GOs and 259 NGOs. Further, prosecution sanctions were issued against 32 GOs and 114 NGOs. In 88 cases, investigation reports were examined and sent to CVC for advice and 56 CBI reports were referred to CVC for advice.

Vigilance clearance was issued in 6171 cases and 26 cases received from Anti Corruption Unit of Prime Minister's Office were disposed off after investigations. As a preventive measure, 6706 surprise inspections were carried out. Five appeal cases of Group A officers and 49 cases of Group B officers were settled. These apart, 12 adverse entry cases against Group A and 5 adverse entry cases against Group B employees were also settled.

During the year 2000-2001 (April-December) , (i) 3221 complaints were handled,(ii) 31 Gazetted Officers and 72 Non-Gazetted Officers were suspended due to vigilance complaints, (iii) 123 and 100 Gazetted Officers were chargesheeted for major penalties and minor penalties respectively while the number was 106 and 132 for Non-Gazetted officers, (iv) the number of Gazetted Officers punished for major penalties and minor penalties was 77 and 119 respectively, while in case of Non-Gazetted Officers these numbers were 129 and 170 respectively, (v) the number of prosecution sanctions issued was 40 and 23 respectively for Gazetted and Non-Gazetted officers,(vi) 113 investigations reports were examined and sent to CVC (other than CBI cases),(vii) 48 CBI reports were submitted to CVC for advice,(viii) 7025 vigilance clearance were issued, (ix) 17 cases received from Anti Coeuption Unit of Prime Minister's Office were disposed off after investigations, (x) 4761 surprrise inspections were carried out, (xi) appeal cases of 4 Group 'A' and 29 Group 'B' officers were settled and (xii) 5 adverse entry cases were settled.

### **Preventive vigilance:**

During the year, prevention of revenue leakage due to high tech fraud was chosen as one of the areas of "Action Plan on Anti-Corruption measures" . Working on this, five cases of misuse of VSAT were detected during the period. Further, a source information was developed and zeroed down to misuse of international connectivity by an Internet Service Provider. The premises were raided with the help of CBI and misuse stopped. In all these

cases, the culprits were using highly sophisticated technique/equipment for illegally routing of ISD calls and thereby causing revenue loss to the Government. Keeping this in mind, after detailed technical study, suitable instructions were circulated to all the field units to prevent such misuse in future. Software commands of 5 new switching technologies in the telecom network were got categorised and the sensitive commands were put under the highest security password.

As per the directions of CVC, sensitive posts in the Department were identified and circulated to all field units recommending rotational transfer on these posts. Further, continuing with the project of setting up of Fraud Management & Control Centre (FMCC), a proposal was got approved from Telecom. Commission and the tenders have been called for, which are under evaluation. In the first phase, FMCCs are being set up in Delhi, Mumbai and Hyderabad.

### **Strengthening of vigilance organisation**

Various steps were taken during 1999-2000 to strengthen vigilance machinery in the field units as well as at the Telecom headquarters.

- (a) A Vigilance Technical Cell was made functional with the strength of 1 Director, 2 ADGs and 1 AD. Efforts are also being made to provide additional personnel for functional circles like maintenance regions, project circles and ALTTC etc. as per the revised norms.
- (b) A case for up-gradation and strengthening of vigilance sections in different field units in the country was prepared and is under sanction.
- (c) Norms in respect of vehicles for the use of vigilance staff were got approved.

### **Vigilance awareness**

During 1999-2000, a training calendar was drawn up and implemented for imparting training to the officers in various Circles throughout the country. Fifteen 5-day vigilance training courses were organised in various telecom circles in which around 400 officers of various levels were acquainted with various activities relating to vigilance and disciplinary proceedings. Similar training was drawn up for 2000-2001 and eleven 5-day vigilance training courses were organised during April-December, 2000 in various telecom circles and 283 officers of various levels were acquainted with various vigilance and disciplinary activities. These trained officers will provide a pool of officers to work as IOs, POs and VOs.

Laying stress on preventive vigilance and in order to make the officers aware of their responsibilities, a booklet on `Dos` and `Donts` for trainee officers was brought out during the year. This will go a long way to familiarise the new entrants about the various rules and regulations prevailing in the Department and also guide them regarding the pitfalls of committing irregularities.

### **Expeditious completion of preliminary investigations/ inquiries.**

During 1999-2000, the investigations into the complaints were closely monitored with a view to expedite investigations for initiating action against the delinquent officials. The oral inquiries were also closely monitored. During the year, 42 inquiry reports in respect of Group `A` officers and 81 reports in respect of Group `B` officer were received and processed for second stage advice of CVC. During April-December,2000 46 inquiry reports in respect of Group`A` and 79 Group `B` Officers were received and processed for second stage advice of CVC.

### **Periodical Inspections**

In order to streamline the working of Vigilance Section of field units, a programme was chalked out and a total 35 units were inspected by the officers from the Headquarters during 1999-2000. During April-December,2000, 13 units were inspected. Apart from normal inspections, 4761 surprise inspections were also conducted during April-December,2000 by the vigilance staff at various points in the telecom network and administrative disciplinary action was initiated wherever irregularities were noticed. It has been emphasised to prevent high tech frauds and also to follow CVC procedures and guidelines strictly.

Emphasis has also been given to make scheduled inspections in the Department to be more effective. It is expected that with this, it should be possible to catch most of the irregularities during scheduled inspections of the telecom network being carried out by the field officers/headquarters officers. Detailed instructions on this were worked out and circulated to all field units for compliance.

### **Monitoring of cases forwarded by Anti Corruption Cell of PMO**

During 1999-2000, 26 cases received from Anti Corruption Unit of Prime Minister's Office were investigated and disposed off. Similarly during April-December 2000, in all, 17 such cases were got investigated and disposed off.

## VII. BHARAT SANCHAR NIGAM LIMITED

### Role and Functions

The year 2000 witnessed one of the momentous events in furtherance of the ongoing reforms in the telecom sector, i.e. Corporatisation of two service providing Departments, viz., Department of Telecom Services (DTS) and Department of Telecom Operations (DTO), ahead of the schedule. A Public Sector Company “ Bharat Sanchar Nigam Limited (BSNL) has taken over w.e.f. October 10, 2000 all service providing functions including telecom network (except Delhi and Mumbai) and telecom factories of the two Departments. The Company has an authorised Capital base of Rs. 10,000 crore with a paid up Capital of Rs.5,000 crore. The initiative is expected to provide a level playing field in all areas of telecom services between government operators and private operators. An account of major activities undertaken and performance during 1999-2000 and 2000-2001 of BSNL (formerly the Department of Telecom Services and Department of Telecom Operations) is given below:

Bharat Sanchar Nigam Ltd. runs the telecom services in 20 telecom circles which have 29219 exchanges as on November 30, 2000 and 25202754 DELs as on December 31, 2000.

### Activities & Achievements

**New Telephone Connections-** During 1999-2000, a record number of 45.40 lakh new telephone connections were provided by the BSNL, bringing the total number of DELs to 224.8 lakh. This represents an increase of 25.31 % over the previous year. During the current year (April-December 2000), 27.23 lakh lines have been installed.

**Public Call Offices-** In the urban areas, since there is a long waiting list for telephone connections and also considering the fact that telephone facility is needed by general public who can not afford to have a telephone of their own, it was decided that the accessibility should be improved by providing a large number of PCOs for general public. Accordingly, a total number of 208249 Local PCOs, 326574 STD PCOs, 5449 NHPTs have been provided upto March 31, 2000. During the year 2000-2001 (April-December 2000), 1,52,150 PCOs have been provided. In the rural areas, against a target of 45,136 Village PublicTelephones(VPTs), 33965 were provided in the villages during the year1999-2000. As on March 31, 2000, the number of villages having VPTs was 374605 out of the total 607491 villages. VPT target for the year 2000-2001 is

1,00,000. It is proposed to cover all the remaining villages with telecom facility with the joint efforts of private Fixed Service Providers (FSPS).

**Provisions of Cellular Mobile Phones-** It has been planned to introduce WLL technology in the network. The salient features of WLL are its fast and easy deployment, flexibility, limited mobility etc. The tender was floated for the procurement of WLL. During the year 2000-2001, it is expected that, 56000 (CDMA) lines at 800MHz, shall be provided in 16 cities, in addition to 25000 (Cor-DECT) lines at 1800 MHz in 24 cities. The Bharat Sanchar Nigam Ltd. has also decided to introduce this service in its network. Initially this service is being introduced in 27 cities of the country in the form of a pilot project. The estimated cost of this project shall be about Rs. 50 crore.

**Telephone Services-** 3010 New telephone exchanges (Net addition) were commissioned during 1999-2000 raising the total number of exchanges to 27569. The equipped capacity of Telephone Exchanges rose to 281.28 lakh lines with the net addition of 63.02 lakh new lines during the year representing an increase of 28.87% over the previous year. 1305 new telephone exchanges were commissioned during April to November, 2000 bringing the total number of exchanges to 28874 exchanges. The equipped capacity as on December 31, 2000 was 311.31 lakh lines.

**MAX-I Switching Equipment-** The achievements of MAX-I exchanges during 1999-2000 and April - December, 2000 were as follows:

**Table 1**

| SL. No. | Type                          | Gross 1999-2000 | Net 1999-2000 | Gross 1.4.2000 to 31.12.2000 | Net 1.4.2000 to 31.12.2000 |
|---------|-------------------------------|-----------------|---------------|------------------------------|----------------------------|
| 1.      | New Technology                | 3039537         | 2946421       |                              |                            |
| 2.      | E-10B                         | 733341          | 413653        | 232,362                      |                            |
| 3.      | C-DOTL/XL                     | 1808293         | 1735215       | 10,31,614                    |                            |
| 4.      | PRX(Decommissioned)           | 0               | -10432        |                              |                            |
| 5.      | Electro-Mechanical (Scrapped) | 0               | -372150       |                              |                            |
| 6.      | Ex. Large                     |                 |               | 11,19,758                    |                            |
|         | Total                         | 5581171         | 4712707       | 23,83,734                    | 21,42,858                  |

All electromechanical exchanges in the country have been scrapped and decommissioned. Now the total switching network is electronic type.

**Subscriber Trunk Dialling-**As on March 31, 2000, there were 369 TAXs in the country. The equipped capacity was increased by 480000 bringing the total to 1948000 lines. The number of stations connected to the National Subscriber Dialling Network

through these TAXs were increased by 3364 bringing the total to 21576. As on December 31, 2000 the total number of TAXs increased to 374 and 258000 lines were added to TAX network bringing the TAX switching capacity to 2206000.

**STD Stations-** The direct dialling facility is very useful for accessing distant stations instantly. The BSNL has, therefore, been constantly increasing the number of STD stations in the country. It was decided to increase the number of NSD/STD stations at a faster rate and accordingly 3364 new stations were added during 1999-2000. There were 21576 NSD/STD stations in the country as on March 31, 2000. During April-December, 2000, 1576 new stations have been connected to Tax network bringing the total number of stations connected on STD to 23152.

**Transmission Systems-**19881 RKM of microwave systems were added with 53292 number of channels during the year. The total RKM and total number of channels on microwave media were 106482 RKM and 197734 respectively at the end of March, 2000. Further, 63265 RKM of Optical Fibre systems with 759030 channels were commissioned during the year bringing the total to 171297 RKM of the fibre and 1655610 channels as on March 31, 2000. The status of microwave systems was 117704 as on December 31, 2000. 29704 RKM of optical fibre systems have been added bringing the total to 201001 RKM as on December 31, 2000.

1459 speech channels on open wire carrier systems were commissioned during the year raising the total number of such channels to 94560 as on March 31, 2000. On PCM systems, 25770 channels have been added raising the number of channels to 623866 as on March 31, 2000. However, further induction of Coaxial cable systems has been stopped. During the year 2000-2001, the target is to cover 100000 villages out of which 14216 villages have already been covered till December 31, 2000 bringing the total to 388821 villages by the end of December 2000. The remaining villages are expected to be linked with telephone lines by the end of March, 2002.

### **Rural Telephony-**

**(a) Coverage:-** As envisaged in the NTP 1999, the objective is to provide telecom facility in all the revenue villages and telephones on demand in rural areas to meet the universal service obligation (USO) by March 2002. As stated earlier, 3.74 lakhs VPTs had been provided upto March 31, 2000. Total number of DELs in the rural areas were 48.42 lakhs at the end of March 2000.

The target of providing village public telephones (VPTs) for the year 2000-2001 is being realised by using new technologies such as Wireless in Local Loop (WLL), G-DOT TDMA/PMP and Satellite based telephones for remote and inaccessible villages, in addition to land lines. The target of providing DELs in rural areas for 2000-2001 is 14.2 lakhs by opening 3431 new exchanges.

The equipment-wise Net Lines achievement of Small and Medium Capacity Exchanges for the year 1999 –2000 is given below:

**Table 2**

**Type of Equipment and the lines Commissioned**

| SL.No. | Type of Equipment           | Net lines commissioned |
|--------|-----------------------------|------------------------|
|        |                             | As on March 31, 2000   |
| 1.     | MILT 64P                    | 10953                  |
| 2.     | C-DOT 128 P RAX             | 33356                  |
| 3.     | C-DOT 256 P RAX             | 696961                 |
| 4.     | 512 P C-DOT SBM             | 195818                 |
| 5.     | 1K/1.4 K C-DOT SBM          | 299033                 |
| 6.     | LM I/LM II                  | 525115                 |
| 7.     | Line Cards                  | 97340                  |
| 8.     | Upgradation Kits(128P-256P) | 128961                 |
| 9.     | ILT/E-PAM/Other Exchanges   | -7596                  |

**(b)New Technology options-** With the economic, social and educational developments in rural areas, large number of people in rural and remote areas are coming forward to subscribe for telephone in spite of available/planned VPTs/PCOs. In order to cope with the demand of both Direct Exchange Lines (DELs) and Village Public Telephones (VPTs), switching systems of varied capacity i.e. 256/512/1000/1400 lines integrated with under-ground cables, WLL systems, medium capacity satellite systems and radio systems are planned. Stand alone single channel satellite terminals are also proposed for VPTs. The specific Technologies proposed to be deployed are as under:

**(i) C-DOT TDMA/PMP-**This is a wireless-cum-wired technology. The system comprises 1 Base Station Unit and maximum of 32 Remote Station Units. The maximum capacity of the system is 296 lines. This will be utilised to provide VPTs and to meet the scattered demand of telephones in rural areas.

**(ii) Wireless in Local Loop (WLL)-** This is a fully wireless technology for the access network in rural areas with a line of sight range of about 25 km. It is planned to provide one system in each SDCA of the country in the next two years. The system will consist of one Base Station Controller in each SSA with multiple Base Stations located in different SDCAs. The capacity of the system can be up to 10,000 lines. The system will be used to provide VPTs and scattered demand of telephones in rural areas. Non-functional MARR based VPTs may also be replaced by such systems.

**(iii) Satellite based VPT**-Villages in remote and isolated places which can not be covered by any terrestrial means are proposed to be provided with telecom facility using satellite based VPTs.

### Status of Telecom Services

The status of telecommunication services (including MTNL) as indicated by various service para-meters is given in the following table:

**Table 3**  
**Status of Telecom Services**

|                                                                         | Status as on  |               |                   |
|-------------------------------------------------------------------------|---------------|---------------|-------------------|
|                                                                         | April 1, 1999 | April 1, 2000 | December 31, 2000 |
| <b>A) Additions</b>                                                     |               |               |                   |
| Direct Exchange Lines (Lakh Lines)                                      | 37.92*        | 49.18         | 27.23*            |
| Net Equipped Capacity (Lakh Lines)                                      | 47.90*        | 67.17         | 30.03*            |
| <b>B) Accessibility</b>                                                 |               |               |                   |
| Direct Telephone Exchange Lines working (Lakhs)                         | 179.40*       | 224.80*       | 252.03*           |
| Trunk Automatic Exchanges                                               | 388           | 369           | 374               |
| Computerised Directory Enquiry(SSAs)                                    | 280           | 295           | 300**             |
| Computerised Fault Repair Service (Towns)                               | 1222          | 2149          | 3637**            |
| Total Public Telephones (Urban)                                         | 520680        | 643940        | 801101            |
| Telephone facility in villages                                          | 340640        | 374605        | 388821            |
| International Subscriber Trunk Dialing(ISD) facility to other countries | 236           | 236           | 236               |
| District H.Q. provided with STD facility                                | 565           | 565           | 565               |

\* excluding MTNL

\*\*upto Nov.2000

**Inspection and monitoring of the systems**-Telecom observation team had carried out technical inspections of 10 telephone systems during the period March, 1999

to March, 2000. Factors which adversely affected the performance of telephone systems were analysed and brought to the notice of the concerned field units.

During March,99 to March,2000, an independent agency e.g. Indian Marketing Research Bureau (IMRB) has conducted a study twice on “Quality of Telephone Service (QTS) appraisal” at 75 stations.

## Performance Parameters

**Table 4**

| <b>Activity</b>                         | <b>As on<br/>31.3.1999</b> | <b>As on<br/>31.3.2000</b> | <b>As on<br/>30.09.2000</b> |
|-----------------------------------------|----------------------------|----------------------------|-----------------------------|
| Faults/100 station/month<br>(Telephone) | 16.9                       | 15.5                       | 14.6                        |
| Trunk Efficiency(%)                     | 82.7                       | 84.2                       | 80.4                        |

**Public Grievances-** PG&I Section of Bharat Sanchar Nigam Ltd. receives complaints from all over India. It monitors complaints for their early and timely settlement. There are several means for redressing public grievance through Public Grievance Cells, Telephone Adalats, Open House Sessions and Customer Service Centres. During 1999-2000, out of 8056 complaints received by PG&I Cell, 7781 complaints were disposed off. During 2000-2001 (April-December) 5681 complaints were received and 4642 complaints were disposed off.

## Telegraph Services-

As on March 31, 2000, there were 973 Telegraph Offices ; 978 Telecom Centres and 42931 Combined offices. During the current year upto September 30, 2000 one Telegraph office was opened bringing the total to 974. The number of Telecom Centres and Combined Offices, however, came down to 955 and 41742 because of decline of use of these services.

Express Money Transfer Services (EMTs) are working in A.P., Tamilnadu, Maharashtra and Kerala Circles with limited transactions with in the Circles. The progress made during the year 1999-2000 and April 1 to November 30, 2000 is shown in the following Table:

**Table 5****Particulars of EMT's during 1999-2000**

(Amount in Rupees)

| Name of Circle  | No. of EMT Booked |                         | Amount Transacted |                         | Commission Earned |                         |
|-----------------|-------------------|-------------------------|-------------------|-------------------------|-------------------|-------------------------|
|                 | 31 March 2000     | 1.4.2000 to 30.11. 2000 | 31 March 2000     | 1.4.2000 to 30.11. 2000 | 31 March 2000     | 1.4.2000 to 30.11. 2000 |
| i) A.P.         | 273889            | 179632                  | 256603873         | 166436366               | 6658881           | 4354604                 |
| ii) T.N.        | 131015            | 41776                   | 112524186         | 38493400                | 3135884           | 1022216                 |
| iii) Kerala     | 1046              | 578                     | 1283790           | 568750                  | 25826             | 14305                   |
| iv) Maharashtra | 16589             | 11509                   | 16411603          | 11362311                | 412551            | 286088                  |

In an effort to modernise the telegraph services, three Formatted Terminal Concentrators (FTC's) have been installed at CTO Ajmer, RTTC Rajpura and CTO, Ludhiana during 1999-2000. EKBC's have been installed in Bihar Telecom Circle, Ranchi; M.P. Telecom circle Bhopal; Hoshangabad; Maharashtra Telecom Circle; and in U.P.(E) Telecom Circle Ballia, Gorakhpur, Ghazipur, Banda, Deoria, Farrukhabad, Sitapur, and Jhansi. 5 EKBCs have been installed upto December 31, 2000 in Orissa circle at Bolangir, Baripada, Sambalpur, Keonjhar and Balasore.

**Quality of Services-** 96% of Telegrams were delivered within 12 day light hours during the year against the yearly target of 95% and 96.4% of telegrams were delivered within 12 day light hours during the period April – November, 2000 as against the yearly target of 95%.

**Particulars of Bureaufax-** Total number of bureaufax centers as on March 31, 2000 in the country was 1427, through which 29.82 lakh messages were booked during 1999-2000. 11.61 lakh messages were booked during April – September, 2000. The number of incoming FAX messages which were delivered during April-September, 2000 was 4.12 lakh. Another 1.70 lakh FAX messages were delivered during April-September 2000. During 1999-2000, the total revenue earned from the outgoing Fax messages was Rs.11.07 crore and from the delivery of incoming FAX messages was Rs.40.89 lakh. The income from incoming FAX messages delivered during April-September was Rs.16.52 lakh. The revenue earned from outgoing FAX messages was Rs.4.20 crore during April-September, 2000.

## **Telex Services**

Due to the introduction of FAX, better STD facilities & other new technologies, the demand for telex connections are reducing day by day due to which, at some places, working exchanges are being closed. In fact, the telex has become an obsolete technology.

The number of telex working connections were 18,714 as on March 31, 1999 and 14331 as on March 31, 2000.

## New Technologies

New technologies are being adopted to expand and strengthen the telecom services in the country. These technologies are briefly as follows:

**Very Small Aperture Terminals(VSATs)** - Under this scheme, BSNL is providing STD facility by using Satellite Based Multi Channel Per Carrier (MCPC) VSATs at various places in the country which cannot be covered through terrestrial system. Such places are mostly located in remote, hilly and inaccessible areas including islands having small telephone exchanges with low volume of traffic. Capacity of one MCPC-VSAT is 7 channels. A new model of 10 channel capacity is also under supply. 125 MCPC-VSATs(7 Channel capacity each) were made operational during the financial year 1999-2000, making total number of MCPC-VSATs as 351 at the end of financial year. During the current year (2000-2001), 164 MCPC VSATs have been targeted out of which, upto December 31, 2000, 43 MCPC VSATs have been made operational.

**C-Band IDR schemes** - Intermediate Data Rate (IDR) digital facility is provided to augment the channel capacity of existing Satellite earth stations to 2 MB(30 channel) and 8 MB(120 channel) using additional IDR equipments. IDR facility was provided at 9 Routes during the financial year 1999-2000. There are 39 Routes in the country having IDR facility at the end of the year. During the current year upto December 2000, IDR facility was provided to 15 Routes out of a target of 23 for the year 2000-2001.

**HVNET – High Speed VSAT Network** - A satellite based network using VSATs to provide high speed (64 Kbps) switched data service known as HVNET was made operational few years back. The Network has access to packet Switched Public Data Networks (INET/RABMN) and International data networks through the Gateway Packet Switching System of VSNL. The Network envisages voice facility amongst VSATs including connectivity to Public Switched Telephone Network (PSTN). The Hub station is co-located with satellite earth station at Mumbai. HVNET-VSATs were commissioned during the financial year 1999-2000, bringing the total number to 69 at the end of the year.

**Remote Area Business Message Network-RABMN-(VSATs)-** These VSATs are Low Speed Data Terminals (1.2 Kbps & 9.6 Kbps). Now with the availability of high speed data terminals in the market there is not much demand for such VSATs. These VSATs are directly purchased by the customers from suppliers. These terminals are also able to switch on to the Telex Network of the country, INet (i.e. Terrestrial Packet Switched Public Data Network) and to GPSS i.e. Gateway Packet Switched System for International connectivity. 17 of RABMN Terminals were commissioned during the financial year 1999-2000, bringing the total number of RABMN VSATs to about 350 working till end of the year.

**Intelligent Network (IN) Services-** Presently, the Intelligent Network services which have been introduced/planned to be introduced include (i) Free phone (FPH), (ii) Premium rate (PRM), (iii) Virtual Card Calling (VCC), (iv) Account Card Calling (ACC), (v) Tele Voting (VOT), (vi) Universal Access Number (UAN) and (vii) Virtual Private Network (VPN). During the year 1999-2000, the IN services have been introduced at 47 stations by way of stand alone SSPs. During April - November, 2000 IN services have been introduced in 34 stations taking the total number to 81 cities. During December, 2000 to March, 2001, IN services are likely to be extended at 20 more locations by BSNL.

**Internet-** Plans have been drawn to provide full range of Internet services. Under the National Internet Backbone (NIB), 14 Type A and 31 Type B stations have been planned. It was also decided to set up Internet nodes at all the Secondary Switching Areas (SSA) in the first phase. The achievements during the year 1999-2000 were (i) Purchase Order for procurement of equipments for National Internet Backbone (NIB) nodes was issued. (ii) Equipments as per the Purchase Order issued on July 22, 1999 were received except AAA Radius Software and Billing Software (iii) Training of Officers in National Internet Backbone (NIB) was completed and (iv) 56 internet nodes have been commissioned during the period, making a total of 89 BSNL nodes with customer base of 97,330 and 110 leased subscribers as on March 31, 2000. During April to November, 2000, internet services have been provided in 133 cities with a customer base of 79216. Thus, as on November 30, 2000 Internet facilities were available from 222 Nodes with a customer base of 1.77 lakh. However, Internet facility has been made available in all district headquarters of the country on local call basis from the nearest Internet Node. During December, 2000 to March, 2001, it is proposed to provide Internet Nodes in the remaining SSAs. It is planned to open Internet Dhabas in all block head quarters in the country by March, 2001.

**Asynchronous Transfer Mode (ATM)-** Asynchronous Transfer Mode (ATM) offers a solution to meet higher bandwidth for introduction of multi-media applications, high speed LAN inter-connections, interactive video etc. and provide platform supporting the integrated delivery of a variety of high speed digital communication services. It has also been planned to install ATM switches at Delhi, Mumbai, Bangalore, Calcutta and Chennai.

During April – December, 2000, ATM switches were installed at Delhi and Bangalore and their testing is in progress. Equipment has been supplied to other locations also. The five nodes Delhi, Mumbai, Bangalore, Calcutta & Chennai are expected to be commissioned. A tender is planned to be floated for another three ATM nodes of Hyderabad, Ahemdabad and Pune.

**Digital Loop Carrier(DLC) Systems-** The DLC is an important step towards fibre in local loop which results in significant saving in copper cable. This is cheaper as compared to the copper connection and Network reliability is ensured. During 1999-2000, 79 DLC systems were completed and installed at a cost of about Rs. 13 crore.

**Highbitrate Digital Subscriber Line (HDSL) Systems-** The HDSL is a Pair gain system and works on the existing copper cable. It helps in reducing TNF areas and is cost effective. Transportation of 2 MB streams on copper cable up-to 4KM without regenerators is possible on this system. During 1999-2000, orders were placed for supply of 1586 systems, of which 955 were supplied. It was expected that the balance systems shall be supplied by December, 2000. The estimated cost is Rs. 16.8 crore. During January-March 2001, 100 systems are expected to be supplied.

The tender for procurement of additional 2985 systems of HDSL has also been finalized and placement of orders is under process.

**Information Technology-** With a view to improving quality of the service, during 1999-2000, 655 more towns have been Computerised for providing Fault Repair Service (FRS). 11 more SSAs have been Computerised for Directory Enquiry (DQ) and DOTSOFT has been implemented in 15 SSAs .

The status of Computerisation of Customer Services as on December 31, 2000 is shown below:

**Table 6**

| Sl. No. | IT Activities                                                                   | Total Towns / SSAs as on 31.8.2000 | Computerisation as on 31.12.2000  | Computerisation during January - March 2001 (anticipated) |
|---------|---------------------------------------------------------------------------------|------------------------------------|-----------------------------------|-----------------------------------------------------------|
| I       | Directory Enquiry (DQ)                                                          | 322 SSAs                           | 300                               | 305                                                       |
| II      | Fault Repair services (FRS)                                                     | 3174 Towns                         | 3637exchanges (Demand>1000 lines) | 400                                                       |
| III     | Commercial Service (waiting list computerised in towns having demand > 10K)     | 261 Towns                          | 113                               | N.A.                                                      |
| IV      | Integrated Software Package for Customer Services –<br>(i) DOTSOFT<br>(ii) CSMS | 322 SSAs<br>-----                  | 15 SSAs<br>2                      | 22                                                        |
| V       | TR Billing                                                                      | 325 Billing Units                  | 297 Billing Units                 |                                                           |

## **Management Information System (MIS) and Network Management (NM)**

MIS Cell prepares various time bound monthly/annual output reports for the top management of BSNL, Minister of Communications, Chairman, Members, Advisors, functional heads at TCHQ, Board of Directors and Chairman-cum-Managing Director of BSNL and CGMs of the field units. These reports are helpful in taking timely decisions by the top management and functional heads for achieving the targets and for improving service performance in respect of maintenance, development and financial aspect of the organisation. In addition to this, the compilation of data are used as reference material for other reports.

The NM Cell coordinates with various field units regarding disposal of STD complaints from public/VIPs. It also coordinates with field units for setting up and maintenance of Network Management systems for long distance telephone network. Presently, one Network Management system is functional in Chennai for telephone traffic monitoring of various TAXs and transmission system of Southern Telecom Region. Network Management systems are also being set up at New Delhi, Mumbai and Calcutta for monitoring of TAXs and transmission systems of Northern, Western and Eastern Telecom regions respectively. One National Network Management and Surveillance System has also been commissioned at New Delhi. NM Cell also issues guidelines/clarifications regarding routing including High Usage and alternative routing of telephone calls to field units.

**Materials Management and Stores-** The Material Management Cell is looking after the material procurement action, allocation of line materials, Power Plant, Batteries, supply of A&B items manufactured by Telecom Factories to Circles. It is also liaising with the Planning/Maintenance Cells to obtain the Circle wise requirements and issues allotments to Circles/CGM TS, Calcutta in respect of non-decentralised items. Processing of Purchase Proposals of Cables and other non-decentralised items exceeding the powers of CGM TS, Calcutta is done by the Cell.

Inventory Control relating to items of External Plant (PIJF U/G Cable, L&W and A&B Stores), monitoring of supplies and review of procurement, placement of APOs in respect of Cables and authorizing the Circles to place purchase orders, placement of Educational Orders for vendor base development, allocation of LJUs to Telecom Circles, monitoring the supply and price of EPBTs procured by Circles, monitoring the procurement of decentralised items, procurement of Telecom Equipments by MMT Section through Tenders which includes examination of proposals received from Planning Cell, issue of Tenders, issue of clarifications and amendments to tender document, opening of tenders in presence of bidders, etc. are some other functions performed by the materials management cell which is now functioning in BSNL.

The position of procurement and allocation of various items made during 1999-2000 and 2000-2001 (upto December 2000) is given below:

**Table 7**

**Procurement of Telecom Material**

(Rs. in Crore)

| Sl. No. | Description of the Achievement                                                            | 1999-2000     |         | 2000-2001<br>(April-December) |                             |
|---------|-------------------------------------------------------------------------------------------|---------------|---------|-------------------------------|-----------------------------|
|         |                                                                                           | Qty. Procured | Value   | Qty. Procured                 | Value                       |
| 1.      | Procurement of Batteries and Power Plant of Various Capacities (Through CGM TS, Calcutta) | 5245 Nos.     | 120     | 5416 Nos.                     | 138                         |
| 2.      | Procurement of PIJF U/G Cables of various sizes                                           | 448.22 LCKM   | 3209.00 | 439.31 LCKM                   | 3240                        |
| 3.      | Allocation of LJUs to Telecom Circles                                                     | 4669000 Nos.  | 37.35   | 5219289 Nos.                  | 22.73<br>(Provisional)      |
| 4.      | Procurement of Telecom Equipments by MMT Section by floating tenders                      | 29 Items      | 9000.00 | 18 items                      | 4925.46<br>(Estimated cost) |

**Civil Works**

The Civil wing is responsible for executing and maintaining the buildings, services and other Civil infrastructure works for the BSNL. Its activities include construction of Telecom buildings for housing Telecom Equipment, Administrative offices, Staff Quarters, Cable ducts and Civil works for transmission towers. The activities of the Civil Wing have increased manifold over the years. The work load of the Civil Wing has progressively increased to Rs.783 crore in the year 1999-2000. The sanctioned grant for Capital Building Works is Rs.1039 crore for the current year. In order to cater to the stringent requirement of high technology telecom equipment, the Civil Wing is constantly upgrading the technology of design and construction of buildings and services. It has made substantial progress in computerizing its various activities. There is also a focus on construction of staff quarters for improving the satisfaction ratio among the employees. The physical achievements of the Civil Wing during the period 1999-2000 and 2000-2001 are given in the following table:

**Table 8**

**Civil Works – Physical Achievements**

| Sl. No. | Type of Work          | No. of works completed/in progress |                         |
|---------|-----------------------|------------------------------------|-------------------------|
|         |                       | 1999-2000                          | 2000-2001 (Anticipated) |
| 1       | Tech. Buildings       | 713                                | 1133                    |
| 2       | CTO                   | 11                                 |                         |
| 3       | Admn. Buildings       | 22                                 | 45                      |
| 4       | Store Depot           | 5                                  |                         |
| 5       | Other Buildings       | 88                                 | 82                      |
| 6       | Cable Duct (in RKms.) | 373                                | 556                     |
| 7       | OFC Duct (in RKms.)   |                                    | 1141                    |
| 8       | Staff Quarters        | 2959                               | 4374                    |

**Staff/Personnel**

**P&T Building Works Service - Group'A'** - To perform the civil works in the Telecom sector, the sanctioned strength of officers as on March 31, 2000 is 772 Gazetted officers (Group-A) and 1895 Group-B officers.

**Electrical Works**

The Electrical Wing of the Bharat Sanchar Nigam Ltd. is providing supporting services to the Telecom Network and is mainly responsible for providing all the electrical and electro-mechanical services like building electrification, AC plants, standby generator sets, sub- stations, fire fighting and fire detection systems etc. in the telecom technical and administrative buildings and staff quarters of the Bharat Sanchar Nigam Ltd.

In physical terms during the year 1999-2000, a capacity of 41758 TR of Air conditioning, 92794 KVA of sub-stations and 237744 KVA of stand by generator sets was installed.

In financial terms, an amount of Rs.526.55 crore was spent during 1999-2000.

## **FINANCIAL PERFORMANCE OF DTS/BSNL**

The Budget and the Revised Estimates of the erstwhile DTS (now BSNL) for the year 2000-01 and actuals upto September, 2000 and Revised Estimates from October 1, 2000 to March 31, 2000 of the BSNL are given below:

### **The Budget and Revised Estimates for 2000-01 and the Actuals upto September 2000 of DTS**

(Rs. in Crore)

|                                | <b>2000-01<br/>(B.E)</b> | <b>2000-01<br/>(R.E)<br/>Upto September<br/>2000</b> | <b>2000-01<br/>(Actuals)<br/>Upto September 2000</b> |
|--------------------------------|--------------------------|------------------------------------------------------|------------------------------------------------------|
| Revenue Receipts               | 19184.06                 | 10001.08                                             | 10001.08                                             |
| Working<br>Expense(Net)        | 9265.84                  | 5023.62                                              | 4995.60                                              |
| Net Receipts                   | 10548.22                 | 4977.46                                              | 5005.48                                              |
| Dividend to General<br>Revenue | 223.00                   | 111.50                                               | 70.00                                                |
| Surplus                        | 10318.22                 | 4865.96                                              | 4935.48                                              |
| Appropriation of<br>Surplus    |                          |                                                      |                                                      |
| Capital Reserve<br>Fund        | 10318.22                 | 4865.96                                              | 4935.48                                              |
| Revenue Reserve<br>Fund        | 0.00                     | 0.00                                                 | 0.00                                                 |

## TELECOM QUALITY ASSURANCE

The Telecom Quality Assurance Organization of the BSNL was formed in 1979 in the erstwhile Department of Telecom Services as a part of Technical and Development Circle but later in 1986 an independent Telecom Quality Assurance Circle was created. Telecom Quality Assurance (TQA) Circle has been one of the most vital organizations covering all the aspects of quality assurance work thereby enabling standardization and uniformity of approach and procedure. It is entrusted with the responsibility of assuring quality of a wide range of products and equipments inducted into Telecom network. To carry out the above work, the Telecom Quality Assurance Circle with headquarters at Bangalore, functions with 81 Quality Assurance Centres located all over India and two Apex Laboratories, namely, the Telecom Testing Laboratory (TTL) and Component Approval Centre for Telecom (CACT). The TTL has three branches at New Delhi, Hyderabad and Calcutta.

**Facilities added in TTL/CACT-** During the year 1999-2000, environmental stress cracking resistance apparatus for testing of polyethylene plastics, compressed moulding machine and two roll mill for preparation of test specimens of polyethylene and PVC components were procured. A Return loss measuring set procured from M/s. JDS Fatel, along with specialised calibration FC-PC patch cords and FC-PC adaptors from Canada and an X-Ray Inspection Unit, Microsectioning equipments and Oven were also purchased. For testing 6 new types of components, test programmes were developed.

**Activities of CACT-** During 1999-2000, 25676 Components were tested in various laboratories at CACT and 364 Components Approvals issued. Infrastructure of 51 Component Manufacturers was assessed. CACT also utilised 26555 Chamber Hours for Climatic and Environmental tests. Further, 890 Components were subjected to Failure Analysis. 172 Source Approval Certificates for raw materials were issued. 1860 Telecom Products subjected to Environmental tests.

During April-Dec., 2000 the test facility was augmented by (i) Return loss measuring test set installed and commissioned (ii) X-ray, inspection unit, micro sectioning equipment, oven thermal stability apparatus, dissipation factor & dielectric constant test equipment, Hardness tester, Shore A and Shore D are added and 504 components type were approved, 28 components manufacturer's infrastructure were assessed, 19266 components were tested in various laboratories, 456 products were subjected to climatic and environmental tests, 16161 climatic chamber hours were utilised, 313 devices were subjected to failure analysis, 7 failure analysis reports released and 28 reports were generated by SCRAM.

During January-March 2001 the following activities are anticipated to be achieved: 70 components likely to be type approved, 10 components manufacturers' infrastructure likely to be assessed, 4800 components likely to be tested in various laboratories, 30 equipments, 100 components and 20 other products are likely to be subjected to climatic and environmental tests, 5000 climatic chamber hours likely to be utilised, 100 devices likely to be subjected to failure analysis, 5 reports likely to be generated at SCRAM.

Important Feedback cases settled were (i) Feedback complaint on 5 ESS equipment of M/s. Lucent Technologies Hindustan Ltd., Bangalore from Bangalore Telephones that man machine communication was not possible due to some fault at Indiranagar 5 ESS exchange. M/s. LTHL in consultations with Lucent Technologies, USA rectified the fault (ii) There was a complaint from Kurarawada (Mehasana) that 3 ESL cards of 23 KL RSU supplied by M/s. United Telecom Ltd., Bangalore were found faulty. After investigation, it was found that these cards were sent to the field as replacement for ESM cards (as requested by the field unit) without offering to QA. The manufacturer was requested to re-offer the same to BSNL-QA. Cards were despatched after QA testing and are reported to be working satisfactorily (iii) There was a complaint on HDSL remote terminals of M/s. Avantel Softech Ltd., Hyderabad. Inadequate lightning protection, fault in alarm circuit and system hanging were the defects noticed. On investigation it has been found that the ICs in subscriber line interface circuit (SLIC) failed during lightning. Now for protection MOV was replaced with protection circuit consisting of poly switch, GD tube and zener bridge rectifier circuit. Secondly, the burnt tracks were found in the alarm PCB. Alarm circuit has been suitably modified to avoid clashing of rack alarm earth with the exchange earth. The problem of system hanging was found due to clash of different interrupts in the system software. The EPROM (27C512) in the RT were loaded with revised software and replaced in the main board.

**Major Quality problems-** (i) C-DOT 256 RAX of ITI, Bangalore:- The maintenance panel (MP) used with C-DOT 256P RAX was modified as IC 1871 was obsolete. A new change note ECN 14115 was issued. A new child card was given by C-DOT for implementation of ECN and when the child card was used login was not taking place sometimes. MP was hanging when printer was connected and key functions were erratic and not matching the assigned functions. This was referred to C-DOT. The firm ware was modified by C-DOT and the aproblem was resolved. (ii) TAX-XL of M/s. ITI ECU, Bangalore:- While testing TAX-XL equipment with the HPC card, the following problem was noticed. During PSU alarm test when MU is put out of service (OOS) and PSU is switched off and on, SBY HPC does not come into service on its own. It has to be brought into service(INS) bygiving command. The matter was referred to C-DOT and they have informed that this is a software related problem and will be taken care fo in the new batch (iii) During PQT of DTA of M/s. MAC, Bangalore, jitter levels were not meeting and values are having high variations. Clock is varying. This has been circumvented by changing the clock circuitry.

Quality Control at Major Factories:- (i) Quality Audit for the following factories were carried out:

| <u>Factories</u>   | <u>Product</u> |
|--------------------|----------------|
| UTL, Bangalore     | C-DOT Systems  |
| ITI, Bangalore     | CSN Equipment  |
| ITI, ECU Bangalore | C-DOT Systems  |

(ii) Maintenance evaluation of MAX-XL of M/s. ITI ECU were carried out (iii) WPT failure rate has been reduced to a great extent by use of improved flooding jelly (Thixotropic) in Sterlite Industries, Aurangabad (iv) For proper traceability, cable numbering pattern has been changed in GTCL, Ahmedabad. The new pattern of cable number indicates date, month, machine number in which manufactured, which is unique for each cable. This ultimately provides a transparent traceability.

### **Quality Improvement Measures**

- a) For the Drop Wire, to improve the quality of SSDW, long term remedial measures were under taken. These were:
- (i) PVC Compound is being source approved by CACT. Specification has been further improved by TEC for PVC Compound
  - (ii) The Strength Member viz., the fibre glass roving has been refixed as a single roving with a minimum of 2400 tex
  - (iii) A revised Sampling Plan as per latest amended ISI specification No.JS 2500 Part I has been implemented requiring higher acceptable quality level
  - (iv) Surveillance testing has been introduced at the consignee point also before releasing clearance for payment
  - (v) Additional tests have been introduced at QA level, as per latest TEC Specification of July 1999
  - (vi) The need for erecting dropwire with standard accessories has been impressed up on the Heads of Circles in the country.

During April-December,2000 the following activities were performed:

- (i) Surveillance checks are conducted on various components periodically
  - (ii) Qualimetry data submitted by manufacturers was monitored regularly
  - (iii) Validation of test equipments/jigs was carried out periodically
  - (iv) To improve the quality of EPBTs, climatic tests such as humidity, dust and salt spray tests were being conducted quarterly on sample basis
  - (v) New packing guidelines were issued for jointing Kits, VLRA Battery and Power Plant to avoid transit damages.
- b) For VRLA Batteries, in order to prevent the recurrence of the problems like low capacity during installation, voltage, dropping to zero in some of the cells, few cases of cell bursting as reported by field units, the quality measures suggested were
- (i) Cell matching be done based on OCV and capacity
  - (ii) Process

improvements be undertaken to avoid water loss due to microcracks in the containers and heat sealing (iii) Introduce pressure testing for cells and safety valves on 100% basis and (iv) Infrastructure improvements for production process/testing be taken up.

During April-December, 2000 to improve the process quality the additional infrastructure such as helium gas detection for leak testing, automatic microprocessor controlled acid facility machine, electronic safety valve test jigs were insisted by QA and implemented by all VRLA battery manufacturers. Consequent on the revision of VRLA battery specification the infrastructural requirements were revised and additional infrastructures were added.

Also, for the improvements of performance of the VRLA battery several suggestions were given by QA to TEC which are incorporated in the new specification.

- c) For the SMPS, the quality problems faced such as failure of components in AC Input Circuit, use of large quantity of trim pots and malfunctioning etc. were suggested to be remedied. In this regard, the suggestions made were (i) Protection (Class B) should be provided in the AC input circuit (ii) Manufacturers were asked to use test selected components instead of presents as far as possible to keep the presents to a minimum (iii) Use of micro-controller where the settings are programmable, so that field units can make these settings with ease, without making any hardware changes.

During April-December 2000, quality improvement measures undertaken for SAMs were (i) Wave soldering and power coating were implemented for assembly of PCBs for better reliability (ii) A.C. cut off facility at input of SMPS was insisted by QA and implemented (iii) Provision of MCBs/MCCBs in place of knife switch for battery isolation was implemented (iv) For improvement of performance of power plant several suggestions were given by QA to TEC which are incorporated in the new draft specification.

- d) In the case of EPBTs, the main actions taken were (i) In order to improve the quality of the EPBTs, a new tightened sampling plan was introduced and the bulk testing commenced with the new sampling plan (ii) Surveillance tests introduced at CSDs/CTDs were being carried out and follow up action was taken on quality problems noticed and (iii) Punitive measures to be taken were suggested against the defective supplies by manufacturers at different stages for quality improvement in respect of the above said items. During April-December 2000, the minimum infrastructure requirements for 40/60 metre towers were finalised and implemented.

The following additional measures were implemented for testing and clearing OF Cables and cable accessories: (i) The fibre count on the both the ends have to be

checked physically, in the finished cable, and the loose tube as in process checks (ii) Stripping and splicing has to be checked in the loose tube and fibre testing stage as an in process check (iii) All optical fibre accessories and tool kits of different manufacturers are to be checked with every size design construction of cable for end preparation/termination/joining/splicing to ensure compatibility and to avoid field complaints (iv) Submission of IGI report and the optical fibre manufacturer's report at the time of offer for fibre testing of DoT QA, before loose tube manufacturing (v) The fibre spool is to be tested for splice loss with other spools selected randomly for same lot, apart from other tests (vi) The splice loss has to be measured by OTDR. The value should not exceed 0.3db in any individual case, and average shall be below 0.1db as per the latest requirement of T&D circle (vii) The spool number reference of the optical fibre given by the manufacturer of the optic fibre as well as name of fibre manufacturer used for the manufacture of each cable drum is to be furnished at the time of offer of OF cable (viii) A single route should be supplied with one manufacturer's fibre having same refractive index (ix) The attenuation of the cable, the cable factor and refractive index of the fibre used is to be supplied along with each drum. The report is to be covered in a polythene bag, and nailed on the drum after keeping in a plastic cap (x) For a given route, fibre having the same index profiling and group refractive index is to be offered to avoid undue increase in splice loss (xi) To the extent possible, the mode field diameter variations have to be kept to minimum among the different fibres of a cable route, since large variations in MFD between two fibres being spliced, increases splice loss.

## **Computer Networking of TQA Circle**

Telecom QA Circle has implemented an integrated networking package for QA applications which is developed in-house. The package shall enable the QA Centres to issue the Inspection Certificate (ICs) on-line through the Network. In addition, it shall also enable QA Circle in monitoring and getting information of Supplies, Delivery rating for DOT tenders, Feedback, failure analysis etc. The package is developed with Active Server pages (ASP) and Java using SQL7 on Windows NT Platform. The Network comprises Main server at CGM's office, 9 secondary servers at Bangalore, Chennai, Hyderabad, Mumbai, Calcutta, New Delhi, Chandigarh, Naini and Mankapur. 157 Clients at different QA Centres spread through out the Country are also part of the network. The Central Server at CGM's office is programmed to pool the replicated data at regular interval of three hours.

## **Seminars and Meetings-**

A Seminar on "Wireless in Local Loop System" manufactured by M/s. Crompton Greaves, Bangalore was conducted on November 19, 1999 in the office of CGM, TQA Circle, Bangalore. Presentations on the same was given by IIT, Madras. Representatives from QA Circle also participated in the Seminars/training programmes conducted by outside agencies.

Anti-Terrorism Day was observed on May 19, 2000 and pledge was taken by all the officers and staff of the telecom QA circle.

**Achievements-** During 1999-2000, the performance in terms of several activities is shown below:

- (i) Five New QA Centres were opened at the premises of (1) M/s. Paramount Communications Ltd., Dharuhera (Haryana) (2) M/s. Sabnife Power Systems, Kothur, Mehaboobnagar District (A.P.) (3) M/s. Uniflex Cables Ltd., Umbergaon, Valsad District (Gujarat) (4) M/s. Sudarshan Telecom, Mysore (Karnataka) and at Gwalior (M.P.).
- (ii) 171 Infrastructure Assessments were carried out for Conventional products and 216 for TEC Products.
- (iii) 731 Type Approval Certificates were issued.
- (iv) 15 major quality problems were identified based on QA Testing/Field Feedback.
- (v) Approved Inspection Scheme was introduced for 10 products.
- (vi) Delegated Inspection Scheme was introduced for 2 products.
- (vii) First Product Qualification testing was completed for 334 products.
- (viii) 37 Telecom products were taken up for Maintenance Evaluation.
- (ix) 4 Documents were issued during the year as Quality Manuals on various Telecom Products.
- (x) Rs.1179.65 lakh of non-plan and Rs.192.19 lakh of plan expenditure was incurred during 1999-2000.

During the year 2000-2001 (April-December 2000). The following activities were undertaken:

- (i) Stores of the value of Rs.5461 crore were accepted upto December 2000.
- (ii) Three QA centres were opened at the premises of (1) Finolex Cables Ltd., Verna Industrial Estate, Goa (2) G.R. Cables, Ranagareddyguda, Mehaboobnagar (A.P.) & (3) M.P. Telelinks Ltd., Malanpur, Bhind Dist. (M.P.)
- (iii) Three QA centres closed at the premises of (1) M/s. Numeric Electronic (P) Ltd., Chennai (2) M/s. Meltron Semi Conductors, Kudal (3) M/s. Punjab Wireless Systems Ltd., Mohali.
- (iv) 168 Infrastructure assessments were carried out.
- (v) 535 type approval certificates were issued.4 important meetings held.
- (vi) 253 first product qualification cases were completed.
- (vii) 3 major quality problems were settled.
- (viii) 18 AIS were accorded including 5 renewals and 3 DIS were accorded including 1 renewal.
- (ix) The total working strength of QA circle was 695.

During January - March 2001, the following activities are anticipated to be performed:

- (i) Value of stores to the tune of Rs.2,500 crore are to be accepted.
- (ii) 55 infrastructure assessments to be carried out.
- (iii) 150 type approval certificates are to be issued.
- (iv) 90 first production qualification cases are to be completed
- (v) 2 major quality problems are to be settled.
- (vi) 3 AIS and 1 DIS are to be accorded.

### **World Telecom Day**

The World Telecom Day was celebrated on May17,1999 in the telecom QA circle and on this occasion “Sanchar Shree”and “Sanchar Sarthi” awards were distributed to 6 outstanding telecom workers (2 Sanchar Shree and 4 Sanchar Sarthi). A lecture each on “Electronic Commerce” and “Mobile Communication” was arranged in the O/o CGM, TQA Circle, Bangalore.

## TELECOM FACTORIES

The Telecom Factories previously known as P&T Workshops are as old as Indian Telegraph itself. The oldest workshop was set up at Alipore, Calcutta as a repair workshop in 1855. It gradually started production of Telegraph and Telecom equipment required by the Department. At present there are seven Telecom factories located at Mumbai, Calcutta (Alipore & Gopalpur), Jabalpur (Wright Town & Richhai), Bhilai and Kharagpur. The factories are Central Government Units like Ordnance Factories and Railway Workshops.

**Role of Telecom Factories-** Over the years, Telecom Factories have provided valuable in-house production support to the Department of Telecom (now BSNL) in the provision and maintenance of telecom services in the Country. These factories work as a strong deterrent against cartelization by the private suppliers. During 1999-2000, production of Drop Wire in Telecom Factory, Calcutta successfully broke the cartel of private vendors. Telecom factories have been producing quality Stores for utilization in the telecom network. New technology products have been, and continue to be, inducted in the product-profile of the factories in keeping with the changes which keep occurring in telecom technology. In the present environment of liberalization, these factories have been instrumental, to some extent, in reducing the dependence of the Department (now BSNL) on private manufacturers.

**Financial Turnover-** Telecom Factories have achieved a turnover of Rs.271.62 crore during 1999-2000 against the target of Rs.278.5 crore, which is 15% more than the turnover of Rs. 237.11 crore achieved during 1998-99. During the current year up to December, 2000, the turnover was Rs.178.44 crore and the expected achievement for the year 2000-2001 is Rs.268.95 crore as shown in the following table:

### Financial Performance:

(Rs. in crore)

| Telecom Factory               | Target 2000-01 | Achievement up to Dec.2000 | Expected Achievement January-March 2001 | Total Expected Achievement 2000-01 |
|-------------------------------|----------------|----------------------------|-----------------------------------------|------------------------------------|
| (Alipore & Gopalpur) Calcutta | 83.00          | 54.10                      | 28.90                                   | 83.00                              |
| Kharagpur                     | 7.50           | 5.41                       | 2.09                                    | 7.50                               |
| Bhilai                        | 6.75           | 4.30                       | 0.30                                    | 4.60                               |
| (Richhai) Jabalpur            | 29.00          | 21.69                      | 7.31                                    | 29.00                              |
| (Wright Town) Jabalpur        | 64.00          | 33.17                      | 22.68                                   | 55.85                              |
| Mumbai                        | 89.00          | 59.77                      | 29.23                                   | 89.00                              |
| Total                         | 279.25         | 178.44                     | 90.51                                   | 268.95                             |

The new products that have been introduced during 1999-2000 through the Telecom Factories are (i) 5-Pair D.P. Boxes (ii) 0.5mm Self Supporting Drop Wire (iii) Discrete Wire Connectors and (iv) 56Kbps Modems. Further, other new products being considered for manufacturing during the next three years are Electronic Push Button Telephones, SMPS Power Plants and HDSL. The details of the physical performance are given below:

**Physical Performance:**

| SL.No. | Item                | Target 2000-01 | Production up to December 2000 | Expected Production January-March 2001 | Total Expected Production during 2000-01 |
|--------|---------------------|----------------|--------------------------------|----------------------------------------|------------------------------------------|
| 1.     | Bkt.Ch.Ir.4W        | 1500000        | 994000                         | 395000                                 | 1389000                                  |
| 2.     | Buttenski Telephone | 10000          | 18078                          | 3172                                   | 21250                                    |
| 3.     | CBT-95              | 23000          | 12320                          | 6000                                   | 18000                                    |
| 4.     | C.D.Cabinets        | 24000          | 15135                          | 9065                                   | 24100                                    |
| 5.     | C.T.Boxes 100 pair  | 180000         | 123515                         | 56500                                  | 180015                                   |
| 6.     | D.P.Boxes           | 600000         | 332414                         | 291175                                 | 623589                                   |
| 7.     | Line Jack Unit      | 3400000        | 2580280                        | 920000                                 | 3500280                                  |
| 8.     | MDFs                | 5799           | 3451                           | 2345                                   | 5796                                     |
| 9.     | Modems              | 4500           | 1989                           | 0                                      | 1989                                     |
| 10.    | MW Towers (in MT)   | 4000           | 3053                           | 1763                                   | 4821                                     |
| 11.    | Saddle A&B          | 600000         | 571925                         | 0                                      | 571925                                   |
| 12.    | Socket B            | 30000          | 16500                          | 2500                                   | 19000                                    |
| 13.    | Sole Plate B & C    | 150000         | 16000                          | 16000                                  | 32000                                    |
| 14.    | Stalks              | 600000         | 342090                         | 180000                                 | 522090                                   |
| 15.    | Support Bracket     | 1500000        | 515190                         | 536000                                 | 1051190                                  |
| 16.    | Tube of sorts       | 825000         | 488610                         | 234285                                 | 720895                                   |
| 17.    | U-Back              | 1200000        | 804050                         | 233000                                 | 1037050                                  |
| 18.    | Repair of Cards     | 2000           | 2125                           | 900                                    | 3025                                     |
| 19.    | Drop Wire (in Kms)  | 25000          | 6896                           | 5600                                   | 12496                                    |

A total number of 5404 persons were employed as on in all the telecom factories of the Bharat Sanchar Nigam Limited, including 74 Group "A", 117 Group "B" officers and 866 and 482 officials in Group "C" & "D" respectively. The total employees also included 3865 industrial workers.

Telecom Factories have participated in India International Trade Fair 2000 held at Pragati Maidan from 14<sup>th</sup> to 27<sup>th</sup> November 2000.

# 1. MAHANAGAR TELEPHONE NIGAM LIMITED

Mahanagar Telephone Nigam Limited (MTNL) came into existence on 1st April 1986 as a company wholly owned by the Government of India under the Department of Telecommunications, Ministry of Communications. MTNL is entrusted with the management, control and operations of Telecom services except telegraph services in metropolitan cities of Mumbai (including Navi Mumbai and Thane) and Delhi. The authorised capital of Company is Rs. 800 crore. (At present, Government of India holds 56.25% of the equity of Rs. 630 crores, rest of the equity is held by Financial Institutions, FIIs, GDR holders and private individuals. )

## **Performance**

### **Physical**

**Tele Services** - There has been an all round development and growth in the number of Direct Exchange Lines alongwith improved operational efficiency. A variety of phone plus services have been made available to the customers connected to electronic exchanges, computerised morning alarm, voice mail, radio paging, automatic changed number announcement etc. Sustained efforts are being made to maintain a high level of various operational parameters such as STD and Local call completion rate and manual trunk efficiency. 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 centres are run at all divisional offices for catering to the day-to-day needs of customers for accessories, phone plus services, STD barring/restoration, local shift telephone, ISDN, Internet connections, and IN Services.

During the year 1999-2000, the MTNL Delhi added 3.26 lakh switching lines and 1.77 lakh DELs, against the new registration for telephones of 3.10 lakh. During the year 515 local PCOs and 1443 STD PCOs were also provided. An additional 1.38 lakh switching capacity was created and 54 thousand DELs were provided against the new registration of 94 thousand during the current year (April – December, 2000). Further, about 1.8 thousand local and 2.2 thousand STD PCOs were also added during the period.

In the case of MTNL Mumbai, during the year 1999-2000, 3.22 lakh switching capacity was created and 2.01 lakh DELs were provided against the new registration of 2.94 lakh. During the year 12275 Local PCOs and 3935 STD PCOs were also provided. In the current year (April – December, 2000) additional 2.12 lakh switching capacity were added and 77 thousand DELs were provided against the registration of 1.8 lakh for new telephone connections. The number of Local and STD PCOs added during the period stood at about 12 thousand and 2.5 thousand respectively. The details of achievement made are given in Annex. I and Annex.II of this chapter.

### **Fault Rate**

#### **No. of faults/100 telephones/month**

| <b>Units</b> | <b>March'86</b> | <b>March'97</b> | <b>March'98</b> | <b>March'99</b> | <b>March' 2000</b> |
|--------------|-----------------|-----------------|-----------------|-----------------|--------------------|
| Mumbai       | 21.20           | 13.75           | 11.72           | 10.52           | 13.3               |
| Delhi        | 34.90           | 24.20           | 26.6            | 25.09           | 30.38              |

However, during 1999-2000, the fault rate was high because of large scale road construction, digging of roads and other developmental works taking place in the two cities.

### **Call Completion Rate**

(In Percent)

|                                | <b>March 1999</b> | <b>March 2000</b> | <b>December 2000</b> |
|--------------------------------|-------------------|-------------------|----------------------|
| <b>Mumbai</b>                  |                   |                   |                      |
| Call Completion Rate (Network) | 44.76             | 45.61             | 57.75                |
| Call Completion Rate (STD)     | 37.89             | 37.19             | 40.66                |
| <b>Delhi</b>                   |                   |                   |                      |
| Call Completion Rate (Network) | 42.0              | 44.06             | 50.3                 |
| Call Completion Rate (STD)     | 36.0              | 31.88             | 32.3                 |

Presently Call Completion Rate is monitored on live traffic basis & not on free to free calls as in previous years.

### **Clearance of Waiting List**

With sustained efforts and timely implementation of various projects, the waiting list was “NIL” in Mumbai as on 31st March, 2000. MTNL is providing telephone on demand except in technically non-feasible areas.

### **New Services & Computerisation**

#### **MTNL Integrated Computer Network (MICN)**

A Wide Area Network (WAN) inter connecting all the computer systems of Fault Repair Service(FRS), Directory Enquiry(DQ) & Customer Service Management System(CSMS) at Delhi and Mumbai, viz. MTNL Integrated Computer Network (MICN) provides free flow of information on real time basis between systems (FRS, CSMS & DQ etc.) and maintains integrity of data access various platforms and also provide single window computer service centre.

#### **Managed Leased Data Network (MLDN)**

MLDN system was commissioned in March, 1999 in Delhi and Mumbai. The new data leased lines are being provided through MLDN network. With the commissioning of MLDN network, it has become possible to monitor all leased lines end to end. Further, MTNL is meeting the requirement of 64 Kbps data (and higher rate) ccts. which provides end to end manageability upto subscriber's premises. Next three year expansion plan of MLDN envisages capacity expansion of 64 Kbps NTUs by 6500, 8000 and 8000. In case of N x 64 Kbps NTUs the expansion plan for next 3 years are by 100, 100 & 150.

#### **Fault Repair/Reporting System (FRS)**

In MTNL Mumbai, FRS has been computerised in all the exchanges. Monsoon cable fault system and fault analysis system has also been implemented. In MTNL, Delhi also the system is working in all the exchanges.

## **Automatic Telephone Complaint Booking system (2198)**

**MTNL Delhi/Mumbai-** To supplement the conventional operator booking of complaints on 198/2198 Interactive Voice Response System(IVRS) has been introduced in all the FRSs. The salient features of IVRS include Booking of Telephone Complaint 198 (PSTN), Automatic Testing of Telephone line through FRS, Acceptance of clearance report from line man and Clearance of complaint after confirmation from subscriber.

**Directory Enquiry(DQ)**-CD ROM for MTNL Delhi/Mumbai Telephone Directories with retrieval software developed by IT unit, has been made available for public with latest information.

**Change Number Announcement System** - A 64 port change number announcement service has been commissioned in three languages i.e. 1951 (Hindi), 1952 (English) & 1953 (Marathi) in Mumbai.

**National Directory Enquiry Service (NDQ)** has been implemented between a number of cities through I-NET.

**Telecom Revenue Billing** have already been computerised. The printing of bar code in all the telephone bills have been introduced to facilitate speedy, and accurate data capture of the payment details.

## **Customer Service Management System(CSMS)**

A computerised CSMS at Delhi & Mumbai has been implemented to provide an Integrated Financial & Commercial Service which will enable on line updating of subscribers account and a quicker implementation of inter exchange shifts. CSMS consists of Pre & Post connection modules, Telephone Billing, Commercial records, Telephone Revenue accounting, Works Accounting, Pay Bill Accounting, PF Accounting and Financial Accounting.

**Work Order Compliance System** - The new system developed on UNIX platform using ORACLE RDBMS has been implemented centrally for all exchanges.

## **Wireless in Local Loop**

MTNL will be introducing wireless in local loop in Delhi and Mumbai. 4+4 carriers for Mumbai in 824-849 Mhz/869-895 Mhz band have been allotted by Wireless Planning Cell(WPC). In Delhi 3+3 carriers have been allotted to existing CDMA –IS95A, a system installed in Bhikaji Cama Place.

**INTERNET-** MTNL is an Internet Service Provider (ISP) from 9th February, 1999. It started with an installed base of 5000 lines in each city, which has been expanded to 35,000 lines in each city viz. Delhi and Mumbai. There is a plan to expand this capacity by another one lakh lines in both the cities. With innovative tariffs and better connectivity MTNL is likely to get major share in the Internet market. Presently, the Nigam is providing following Internet services :

- a) Dial Up Service
- b) ISDN Dial Up Service
- c) Internet Leased Line Service
- d) Web Page Hoisting Service
- e) Web Server Hoisting Service

Presently, it has category 'B' license. However, in order to provide internet services from all the stations in the country MTNL has applied for ISP license in Category 'A' in the name of its subsidiary "Millenium Telecom Ltd". The ISP Tender and International Gateway Tender is being floated to have ISP expansion for MTNL and for broad band network.

During April-December, 2000 MTNL has obtained CAT 'A' license for introduction of Internet Service in various cities. Internet Kiosks for Access Internet, E-Mail, Telephony using credit cards for Delhi and Mumbai is in final phase of testing and likely to be introduced shortly.

MTNL is also planning to have its own International Gateway so that the bandwidth requirement for internet does not remain a constraint..

**Intelligent Network(IN) Services** - MTNL is providing IN services since 14th November, 1998 in both the cities. The following IN services have been offered :-

- a) Free Phone
- b) Premium Rate Service
- c) Virtual Card Calling/Account Card Calling
- d) Virtual Private Network
- e) Televoting (Local)
- f) Televoting

**Direct Internet Access Systems (DIAS)** has been procured and commissioned on trial basis in Mumbai. DIAS system has a DSU that combines voice & data packets on a single twisted copper pair at the subscriber's premises. The subscriber can use Telephone (Voice) & Internet on the same copper pair.

**Asymmetrical Digital Subscriber Line (ASDL) equipment-** Tender for 2048 subscribers each at Delhi and Mumbai was opened on May 10, 2000 and evaluation was in process for MTNL Internet Subscribers to have both voice and data facility simultaneously on the same physical pair. It will provide broad band services on Internet

and services such as video conferencing, video on demand, telemedicines MTNL has also introduced Tele-medicine for facilitating customers to have direct access to Apollo Hospital for diagnostic tests for heart patients.

**ATM Network-** ATM Network is under installation at Delhi and Mumbai and is likely to be commissioned shortly. This will cater to the needs of high speed data service, video conferencing, broadband ISDN etc.

**Call Centres-** In its efforts to ensure that the subscribers have all their legitimate questions promptly answered, the MTNL is proposing to set up Automatic Call Centres in both Delhi and Mumbai. With this facility, a subscriber can address his queries either through PSTN, GSM or through the Web based software on his computer.

**Finance-** The financial performance of MTNL during 1999-2000 has been as follows:

During 1999-2000, MTNL has achieved a financial turnover of Rs. 5182.20 crore, with an increase of 2.98% over the previous year's turnover of Rs. 5032.46 crore. However, the profit of MTNL has declined during 1999-2000. MTNL has registered a profit of Rs. 1399.95 crore before tax and prior period adjustments as against the profit of Rs. 1889.86 crore in the previous year. The decrease of Rs.489.91 crore in profit before tax is due to tariff rebalancing and diversion of traffic due to competition in basic services in Mumbai. The net profit decreased from Rs.1297.24 crore in 1998-99 to Rs.1087.85 crore in 1999-2000.

MTNL's net worth increased to Rs.7120.38 crore, an increase of 13.94% over the previous year's net worth of Rs. 6249.26 crore. This increase is on account of asset build up. During the year under review, the total revenue expenditure excluding prior period adjustments was Rs.3956.95 crore registering an increase of 17.43% over the previous year's expenditure of Rs. 3369.43 Crore. The details of the financial results during 1998-99 and 1999-2000 are given in Annex.III and IV of this chapter.

**Dividend -** MTNL paid 30% dividend on the paid-up share capital of Rs. 630 crore for the full year(1999-2000) including shares represented by GDRs.

**Capital Expenditure on Technology -** During the year, MTNL has spent an amount of Rs. 872.33 crore during 1999-2000 as against Rs. 977.44 crore in the previous year on account of capital expenditure. This was achieved entirely through internal resource generation. The year-wise details of capital expenditure are given in Annex. V.

**Trading of MTNL Shares** - Shares of MTNL which are listed with principal stock exchanges in the country are being traded regularly in the stock exchanges of Mumbai, Calcutta, Delhi and Chennai as well as the National Stock Exchange of India. The share fluctuation during the year were in the range of Rs.378.55 to Rs.139.00 per share, but improved/deteriorated as compared to the preceding year due to market trend.

**Redemption of Bonds** - During the year, MTNL has redeemed bonds worth Rs. 3344 crore pertaining to DOT.

**Productivity Improvement** - During the year 1999-2000, MTNL registered a significant increase in the productivity by improving the ratio of telephones per employees. The other parameters such as MCUs per employee, Revenue per employee and profit per employee are given as under:

|                                              | <b>31.03.1999</b> | <b>31.03.2000</b> |
|----------------------------------------------|-------------------|-------------------|
| DEls per employee                            | 58.70             | 66.0              |
| MCUs per employee                            | N.A.              | N.A.              |
| Revenue per employee(Rs. in lakh)            | 8.49              | 8.77              |
| Profit before tax per employee (Rs. in lakh) | 3.05              | 2.29              |

## **Manpower**

The total employees of MTNL is 61,104 as on 31<sup>st</sup> March, 2000 belonging to different categories. Of the total employees, the number of employees belonging to Scheduled Caste are 11,137 which constitute 18.23 percent of the total employees. The total number of employees belonging to Scheduled Tribe is 1,971 which is 3.23 percent of total employees.

| <b>Group</b> | <b>Total Staff<br/>as on 31.3.2000</b> | <b>SC<br/>as on 31.3.2000</b> | <b>ST<br/>as on 31.3.2000</b> |
|--------------|----------------------------------------|-------------------------------|-------------------------------|
| A            | 1045                                   | 154                           | 27                            |
| B            | 5978                                   | 676                           | 105                           |
| C            | 34814                                  | 5642                          | 740                           |
| D            | 19071                                  | 4665                          | 1099                          |
|              | 60908                                  | 11137                         | 1971                          |
| DRM          | 196                                    |                               |                               |
| <b>TOTAL</b> | <b>61104</b>                           | <b>11137</b>                  | <b>1971</b>                   |

**Annex.-I**

**I. Development Targets/Achievements - Delhi**

|                                                         | <b>Target</b>    | <b>Achievements</b> | <b>Targets</b>   | <b>Achievements</b>        |
|---------------------------------------------------------|------------------|---------------------|------------------|----------------------------|
|                                                         | <b>1999-2000</b> | <b>1999-2000</b>    | <b>2000-2001</b> | <b>April-<br/>Dec.2000</b> |
| <b>A. SWITCHING</b>                                     |                  |                     |                  |                            |
| i. Gross Capacity<br>(In 000' lines)                    | 482.9            | 326.401             | 248              | 138.486                    |
| ii. Scrapping<br>(In 000' lines)                        | 158              | 114.50              | 48               | 18                         |
| iii. Withdrawn for Re-<br>deployment<br>(In 000' lines) | ---              | ---                 | --               | 5.75                       |
| iv. Net Capacity<br>(In 000' lines)                     | 324.9            | 211.901             | 200              | 114.736                    |
| v. DELs(In 000' lines)                                  | 200              | 176.733             | 155              | 54.438                     |
| vi. TAX(In 000' lines)                                  | 95               | 25                  | --               | --                         |
| <b>B. Subscriber External Plant</b>                     |                  |                     |                  |                            |
| i. Cable Laying<br>(In LCKM)                            | 20               | 15.169              | 13               | 10.894                     |
| ii. Ducting (in Kms)                                    | 70               | 34.905              | 40               | 27.727                     |

|      |                                  |     |         |      |        |
|------|----------------------------------|-----|---------|------|--------|
| C.   | Transmission<br>(Name of System) |     |         |      |        |
| a)   | PDH                              |     |         |      |        |
| i.   | 8 Mbs                            | --  | 2       | --   | --     |
| ii.  | 34 Mbs OF System                 | --  | 29      | 17   | 17     |
| iii. | 140 Mbs OF Sys                   | --  | 20      | 21   | 21     |
| iv.  | 565 Mbps OF sys                  | --  | --      | 3    | 3      |
| b)   | SDH                              |     |         |      |        |
| i.   | STM-16                           |     |         |      | 6      |
| ii.  | STM-1                            |     |         | 12   | --     |
| iii. | STM-4                            |     |         | 32   |        |
| D.   | Optical Fibre Cable (in<br>Kms)  | 700 | 322.884 | 1000 | 267.14 |
| E.   | ISDN                             |     |         | 1250 | 1934   |
| F.   | INTERNET                         |     |         | --   | 6074   |
| G.   | Waiting List                     |     | 2280    |      | 54483  |
| H.   | New Registration                 |     | 309777  |      | 94344  |
| I.   | PCOs                             |     |         |      |        |
|      | a)Local                          |     | 515     |      | 1770   |
|      | b)STD                            |     | 1443    |      | 2206   |

**Annex.-II**

**Development Targets/Achievements - Mumbai**

|      |                                                    | <b>Target</b>    | <b>Achieve-<br/>ments</b> | <b>Target</b>    | <b>Achieve-<br/>ments</b>  |
|------|----------------------------------------------------|------------------|---------------------------|------------------|----------------------------|
|      |                                                    | <b>1999-2000</b> | <b>1999-2000</b>          | <b>2000-2001</b> | <b>April-<br/>Dec.2000</b> |
| A.   | SWITCHING                                          |                  |                           |                  |                            |
| i.   | Gross Capacity<br>(In 000' lines)                  | 443              | 321.692                   | 309              | 212.006                    |
| ii.  | Scrapping<br>(In 000'lines)                        | 96               | 118.430                   | 23               | 23                         |
| iii. | Withdrawn for Re-<br>deployment<br>(In 000' lines) | ---              | ---                       | 56               | 48.842                     |
| iv.  | Net Capacity<br>(In 000' lines)                    | 347              | 203.262                   | 230              | 140.064                    |
| v.   | DELs (In 000' lines)                               | 225              | 200.978                   | 170              | 76.982                     |
| vi.  | TAX(In 000'lines)                                  | 120              | 60                        | 20               | Nil                        |
| vii. | TANDEM<br>(In 000' lines)                          |                  |                           | 79               | 8                          |
| B.   | Subscriber External<br>Plant                       |                  |                           |                  |                            |
| i.   | Cable Laying<br>(In LCKM)                          | 29.585           | 15.216                    | 16.269           | 6.011183                   |
| ii.  | Ducting (in Kms)                                   | 125              | 115.559                   | 75               | 66.249                     |
| C.   | Transmission<br>(Name of System)                   |                  |                           |                  |                            |
| a)   | PDH                                                |                  |                           |                  |                            |
| i.   | 8 Mbs                                              | 25               | 12                        | 28               | 15                         |
| ii.  | 34 Mbs OF System                                   | 25               | 7                         | 28               | 10                         |
| iii. | 140 Mbs OF Sys 278                                 | 73               | 65                        | 33               | 13                         |
| iv.  | 565 Mbps OF sys                                    | --               | --                        | --               | --                         |

|     |                   |     |        |           |         |
|-----|-------------------|-----|--------|-----------|---------|
| b)  | SDH               |     |        |           |         |
| i.  | STM-16            |     |        | 6 Nodes   | 4       |
| ii. | STM-1             |     |        | 26 routes | 17      |
| D.  | OF Cable (In Kms) | 383 | 407.35 | 330       | 108.382 |
| E.  | ISDN              |     |        |           | 3505    |
| F.  | INTERNET          |     |        |           | 3104    |
| G.  | Waiting List      |     | Nil    | Nil       |         |
| H.  | New Registration  |     | 293501 |           | 179590  |
| I.  | PCO's             |     |        |           |         |
|     | a)Local           |     | 12275  |           | 11706   |
|     | b)STD             |     | 3935   |           | 2542    |

**Annex.-III**

**Profit and Loss Account for the period ended on 31.03.2000**

|                                            | <b>For the year<br/>ended 31.3.1999<br/>(Rs. In Million)</b> | <b>For the year<br/>ended 31.3.2000<br/>(Rs.in Million)</b> |
|--------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------|
| <b>INCOME</b>                              |                                                              |                                                             |
| Income from Services                       | 50324.62                                                     | 51821.97                                                    |
| Other Income                               | 2268.33                                                      | 1747.00                                                     |
|                                            | <b>52592.95</b>                                              | <b>53568.97</b>                                             |
| <b>EXPENDITURE</b>                         |                                                              |                                                             |
| Employees' Remuneration & Benefits         | 6164.67                                                      | 10899.08                                                    |
| Charges for use of National Network        | 10911.89                                                     | 10504.17                                                    |
| Licence Fee                                | 3066.07                                                      | 3288.55                                                     |
| Administrative, Operating & Other Expenses | 6251.96                                                      | 7700.72                                                     |
| Depreciation                               | 6570.52                                                      | 7092.81                                                     |
| Interest                                   | 729.22                                                       | 84.16                                                       |
|                                            | <b>33694.33</b>                                              | <b>39569.49</b>                                             |
| Profit Before Tax                          | 18898.62                                                     | 13999.48                                                    |
| Provision for Taxation                     | 6016.00                                                      | 1630.00                                                     |
| Profit After Tax                           | 12882.62                                                     | 12369.48                                                    |
| Prior period adjustments                   | (89.78)                                                      | 1491.02                                                     |
| Profit for the year                        | 12972.40                                                     | 10878.46                                                    |
| Bond Redemption Reserve Written Back       | 1219.22                                                      | 85.49                                                       |
| Profit Available for Appropriation         | <b>14191.62</b>                                              | <b>10963.95</b>                                             |
| Appropriation :                            |                                                              |                                                             |
| Bonds Redemption Reserve                   | 60.78                                                        | --                                                          |
| Interim Dividend                           | --                                                           | 1260.00                                                     |
| Proposed Dividend                          | 1890.00                                                      | 630.00                                                      |
| Tax on Dividend                            | 207.90                                                       | 277.20                                                      |
| General Reserve                            | 12032.94                                                     | 8796.75                                                     |
|                                            | 14191.62                                                     | 10963.95                                                    |

**Annex.-IV**

**Balance Sheet as on 31.3.2000**

|                                             | <b>As on 31.03.1999<br/>(Rs.in Million)</b> | <b>As on 31.03.2000<br/>(Rs.in Million)</b> |
|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| <b>SOURCES OF FUNDS</b>                     |                                             |                                             |
| Shareholder's funds :                       |                                             |                                             |
| Share Capital                               | 6300.00                                     | 6300.00                                     |
| Reserves & Surplus                          | 56192.56                                    | 64903.82                                    |
| Loan Funds                                  |                                             |                                             |
| Secured Loans                               | 2499.67                                     | --                                          |
| Unsecured Loans                             | 35701.63                                    | 30901.93                                    |
| <b>Total</b>                                | <b>100693.86</b>                            | <b>102105.75</b>                            |
| <b>APPLICATION OF FUNDS</b>                 |                                             |                                             |
| Fixed Assets                                |                                             |                                             |
| Gross Block                                 | 89461.37                                    | 98591.78                                    |
| Less Depreciation                           | <b>42996.78</b>                             | <b>49273.99</b>                             |
| <b>Net Block</b>                            | <b>46464.59</b>                             | <b>49317.79</b>                             |
| <b>Capital Work-in-Progress</b>             | 7106.34                                     | 6699.23                                     |
| <b>Current assets, Loans &amp; Advances</b> |                                             |                                             |
| Inventories                                 | 2273.95                                     | 2650.82                                     |
| Sundry Debtors                              | 6549.28                                     | 6502.23                                     |
| Cash & Bank Balances                        | 13564.21                                    | 18350.81                                    |
| Other Current Assets                        | 5884.38                                     | 6433.26                                     |
| Loans & Advances                            | 55019.58                                    | 61552.52                                    |
|                                             | <b>83291.40</b>                             | <b>95489.64</b>                             |
| Less: Current Liabilities and provisions    |                                             |                                             |
| Current Liabilities                         | 22454.97                                    | 31889.01                                    |
| Provisions                                  | 13713.50                                    | 17511.90                                    |
| Net Current Assets                          | 47122.93                                    | 46088.73                                    |
| <b>Total</b>                                | <b>100693.86</b>                            | <b>102105.75</b>                            |

**Annex.-V**

**Capital Expenditure**

| Year      | (Rs. in Crore) |
|-----------|----------------|
| 1987-88   | 291            |
| 1988-89   | 390            |
| 1989-90   | 525            |
| 1990-91   | 558            |
| 1991-92   | 613            |
| 1992-93   | 704            |
| 1993-94   | 837            |
| 1994-95   | 998            |
| 1995-96   | 984            |
| 1996-97   | 885            |
| 1997-98   | 912            |
| 1998-99   | 977            |
| 1999-2000 | 872            |

\*\*\*\*\*

## 2. VIDESH SANCHAR NIGAM LIMITED

### Introduction

Currently, the VSNL is the exclusive service provider for all basic telecommunication services from India to other countries. The services provided by the Nigam include (i) Basic services, which cover telephony, telegraph, telex (ii) Specialized services, which cover a broad range of data services and (iii) Value Added Services such as the Internet connectivity etc.

### A. Basic Services

The basic services such as Telephony, Country Direct Services & India Direct Service, the Home Country Direct Service, India Direct Service, ISDN Service and Telegraph Service contribute more than 85% of VSNL's revenue. To perform the task, the Telephone Circuits were increased from 17,922 as on March 31, 1999 to 19,722 lines as on March 31, 2000. These are likely to be increased to 20,800 lines by March 31, 2001. The actual achievement till December 31, 2000 was 20,235 circuits.

### B. Internet Services and other Value Added Services

VSNL introduced *INTERNET* services on a *commercial* scale in 1995-96. The growth in the number of *INTERNET* connections has been remarkable since then. The number of subscribers which was only 4151 as on March 31, 1996 increased to 2.13 lakh as on March 31, 1999, and 3.66 lakh as on March 31, 2000. The number of customers has reached a level of 5.20 lakh by December 31, 2000 and is anticipated to be 5.50 lakh by March 31, 2001. Major initiatives taken to attract the customers for using internet services include reduction in leased line tariffs and other facilities to companies to host home pages on the VSNL WWW servers. Dial-up tariffs have also been reduced (by about 50%) by extending usage hours from 250 to 500. A new category of accounts for students is being introduced at a concessional tariff of Rs.500 per annum.

### C. Inmarsat Services

INMARSAT is a global mobile satellite system providing mobile communication services to ship-based, land-mobile and aeronautical terminals.

VSNL began offering INMARSAT satellite services from May 1992 and presently providing these services through Inmarsat A, Inmarsat C, Inmarsat M, Inmarsat B and Inmarsat Mini M Services.

## **D. Submarine Optical Fibre Cables**

Submarine cables based on optical fibre technology are the digital highways of the Global Communications System. These are a powerful and primary medium for networking applications offering large capacity, high quality and low transmission delays.

Compared to a satellite-based transmission where there is a delay of 250 msec, optical cables reduce transmission delays, depending on the distance, to 10-30 milliseconds. This makes them ideal for a variety of networking, interactive and transaction processing applications.

VSNL is a signatory to the SEA-ME-WE-2 & FLAG optical fibre submarine cable system which, using digital transmission technologies, provide networking capacities around the globe. Digital capacities on the optical fibre systems for networking applications are available through the VSNL's International Digital Leased Line Service.

## **E. Telecommunications Infrastructure**

VSNL today provides a comprehensive network within India for high-quality and efficient international telecommunications services through Gateways, Earth Stations, Submarine Cables, Gateway Switches and Packet Switches.

### **Gateways**

VSNL has four Gateways which are located in the metropolitan cities of Mumbai, Kolkata, New Delhi and Chennai. In addition, facilities are also available at Bangalore for IBS services. All VSNL's Gateways have international outlets through dedicated Earth Stations. Mumbai and Chennai gateways are also connected to the outside world by submarine cable links.

### **Earth Stations**

VSNL has at present six Standard A Earth Stations which cater to the Gateways of Mumbai, New Delhi, Kolkata (Calcutta) and Chennai. The Earth Stations associated with the Mumbai gateway are the Vikram Satellite Earth Stations, at Arvi near Pune, while those associated with the New Delhi Gateway is the Ahmed Satellite Earth Station at Dehradun.

The Vikram Satellite Earth Station has at present two Standard A antennas (VIK01A & VIK-02A) which currently work with the 60E and 359E satellites, respectively. 359E antennas provide dedicated satellite services to USA using only a single satellite hop transmission. In addition, a Land Earth Station (LES) has also been installed at Arvi to

operate with INMARSAT satellites. It provides INMARSAT A, B/M, C, Mini-M services for mobile communications.

There is also an F3 antenna at Arvi which can be dedicated for VSAT or business networking applications. The Vikram Satellite Earth Station has a TDMA terminal which enables provision of digital services via the TDMA mode, in addition IDR carriers are also used from Vikram as well as from other Earth Stations.

The Dehradun Earth Station (AHM-01A) operates with the 63E satellite. The Arvi and Dehradun Earth Stations are connected to the Gateways at Mumbai and New Delhi respectively by rearward microwave links (RWC Links) as well as optical fibre links. The international outlets at Chennai and Calcutta have modified Standard A antennas at Korattur and Halisahar respectively as well as rooftop (F2) Earth Stations working with IOR major path satellite (63EE). The Delhi and Mumbai Gateways also have the F2/F3 antennas, in addition to the Standard A Earth Stations. Having F2/F3 Earth Stations at all four Gateways enables establishment of IDR carriers on which high quality digital leased circuits at 64 Kbps can be provided.

VSNL has two IBS Earth Stations at Bangalore which provide 64 Kbps leased data services to customers. In addition, VSNL manages the Earth Stations for the Software Technology Parks (STP) and International Business Service (IBS) customers.

## **Submarine Optical Fibre Cables**

The VSNL Gateway at Mumbai is connected to the optical fibre digital highway SEA-ME-WE-2 which extends from Singapore in Asia to Marseilles (France) in Europe. This submarine cable has the capability of fully digital connectivity around the globe.

The Mumbai Gateway is also linked to Fujairah (UAE) through the Gulf Cable (with a capacity of 1380 circuits). This cable primarily handles Gulf region traffic. The Chennai Gateway is connected to Penang in Malaysia, through the IOCOM Cable with a capacity of 480 circuits.

## **Gateway Switches**

All the four Gateways of VSNL are equipped with modern digital gateways which provide facilities for international telephony. The capacity of all GDS has recently been augmented. In additions, four new state-of-the-art Gateway digital switches, one each at every gateway have been installed and commissioned. This has added an additional 11,850 circuits to VSNL's international circuit capacity. In addition to the telephony Gateways, telex international Gateways have also been installed at Mumbai, New Delhi and Chennai. However over the past few years, there has been a continuous decline in telex traffic, with more and more people using other text-based communications such as fax, database access and E-mail

## Packet Switches

VSNL's first Packet Switch has been operating at Mumbai, since 1988 which is gaining wide acceptance throughout the country. The Gateway Packet Switch Services (GPSS) are the mainstay of computer communications, E-mail and database access. In view of the high demand, a Gateway Packet Switching Node (GPSN) was commissioned at New Delhi in June'93 and also at Kolkata. A new GPSS system was also installed at Mumbai to replace the existing system.

## F. Current and Future Plans

The Ninth Five Year Plan of VSNL envisaged an expenditure of about Rs. 5200 crore on the following Schemes:

**I. Transmission Schemes** – These schemes include (i) Mumbai (LVSb)-Pune-Arvi microwave system (140 MBPS 2+1) configuration (ii) New Delhi-Dehradun microwave system (140 MBPS 2+1) (iii) New Digital microwave link between VSB Kolkata and Halisahar (iv) Capacity augmentation of Mumbai-Pune-Arvi optical fibre system (2.4 GBPS, 1+1 Configuration) (v) New Delhi-Dehradun optical fibre system (560 MBPS, 1+1 Configuration) (vi) Augmentation of Kolkata - Halisahar optical fibre system (STM-4 1+1 Configuration) (vii) Flag Project (viii) SEA-ME-WE-3 Submarine optical fibre system (ix) Intelsat STD-A Earth station at Arvi (x) Standard A Earth station at Halisahar, Calcutta (xi) Standard-A Antenna for Ambattur, Chennai (xii) Standard "B" Earth station at Ernakulam & associated building (xiii) Standard 'B' Earth station at Kanpur & associated building (xiv) Standard "B" Earth station Bangalore and associated building (xv) Standard "C" Earth station at Jullundur & associated building (xvi) Additional equipments for Earth station and building for gateway at Gandhinagar (xvii) Earth station and associated building at Hyderabad (xviii) VSNL roof top Earth stations (xix) Transportable Earth stations (xx) Customer premises IBS/VSAT Earth stations (xxi) Augmentation of point to multipoint systems at 4 gateways (xxii) Augmentation of INMARSAT mobile services (INMARSAT A, C, B/M) (xxiii) Purchase of digital circuit multiplication equipment at the gateway digital switches (xxiv) Multiples equipments at gateway centres (xxv) Purchase of satellite digital equipment for the 4 gateways (xxvi) Purchase of SDH transmission equipment (xxvii) India M multimedia network (xxviii) South Africa Far East (SAFE) – cable project (xxix) RWC link at VSB , Ambattur (xxx) INMARSAT M4, D+ PMC service (xxxi) Short haul microwave links.

**II. Switching Schemes** – The Switching Schemes include (i) Gateway digital switch expansion (ii) Establishment of international super highway gateways (iii) Packet switching systems augmentation and frame relay services (iv) Additional international gateways (v) Metro switches & advanced services switches at four locations.

**III. Mobile Satellite Services** – Setting of gateways – These include (i) Satellite Access Node (SAN) (ii) Gateway for Iridium Mobile Satellite System and (iii) Afro-Asian Satellite Communications (ASC) Gateway.

**IV. Management Facilities** - Creation of management facilities has been given special attention. The new initiatives include:

**(i) Integrated Network Management Centre**

An Integrated Network Management Centre is proposed to be set up. This centre will provide a full fledged display of the entire network and will be capable of monitoring the status of all transmission systems as well as the efficiency of traffic routing on the major routes. The network would be automatically reconfigured by the network management centre based upon the network conditions to optimize the traffic handling by the system.

VSNL management is drawing up fresh specifications for the above system keeping in view of the fact that VSNL is moving its backbone for inter-gateway traffic to ATM technology and the new Network Management System is required to control both the transmission and switching to be able to interface with the new inter-gateway transmission systems. The total outlay is Rs. 50 crore.

**(ii) Centralised Transmission Management System**

VSNL under the present expansion plans is constructing several Earth Stations for meeting the future requirements. To be able to manage the Earth Station working from a central location the alarms and control's of various equipment to the central location are being extended. The estimated cost of the project is Rs.15 crore. The management system is being implemented in phases during the 9th Plan.

**(iii)** In order to provide efficient service to customers, VSNL is proposing to provide integrated customer response system to enable them to contact and obtain information in respect of service features, tariffs and billing information for all the value added service provided by it from any centre in India. The approved outlay is Rs. 0.10 crore.

**V. Restoration Schemes**

In order to ensure smooth flow of traffic in the event of major breakdowns such as disruptions in optical fibre cable or faults in gateway transmission & switching systems, it is planned to provide alternative transmission media for access to international facilities. The switch over to restoration equipment would be activated by the network management centres.

The provision of alternative routing schemes would require procurement of extensive amount of Digital Cross Connect (DCC), multiplex equipment, satellite modems and other transmission equipments. The estimated cost is Rs.10 crore. The scheme is implemented in phases during the 9<sup>th</sup> Plan period.

**VI. Other Value Added Services provided by the VSNL include (i) Message Handling Services (ii) Internet Access Services (iii) Managed Data Network Services (iv) Video Conference Facilities (v) Telecommunications Facility Provision and (vi) Gateway Electronic Data Interchange Services.**

**E-COMMERCE / VOIP:-** E-Commerce and VOIP have assumed special significance recently and accordingly, VSNL has taken certain steps in this regard, the position is briefly stated as follows:

**E-Commerce :** VSNL has planned to develop Electronic Commerce platform called as E-Commerce and procure solution and its components to be installed in Mumbai. The E-Commerce platform would consists of the modules like merchant end server , payment gateway system , customer end electronic wallet, certification authority structure etc.The system features will also provide the essential commerce functions. The E-Commerce function will support the secured and authorised transactions using digital certificates between net users , merchants and financial institutions / acquirers / banks to enable on-line ECommerce in India .

**VOIP :** VOIP enables provision of telephone calls and send facsimiles over IP based data networks with suitable Quality of Service ( QoS ) and a much superior cost / benefit ratio.The immediate goal of VoIP service providers would be to reproduce existing telephone capabilities at a significantly lower total cost of operation and to offer a technically competitive alternative to the PSTN. Some applications of VoIP that are likely to be useful would be PSTN gateways , Internet aware telephones , Inter office trunking over the corporate intranet , remote access from a branch office , voice calls from a mobile PC via internet , Internet call centre access etc.

The total outlay provided for this scheme is Rs. 50 Crore.

## **VII. Video Facilities**

### **(i) Video Uplinking Facilities**

The government has permitted TV up-linking facilities from Indian soil for private broadcasting through VSNL's facilities. Accordingly VSNL's facilities require extensive augmentation to meet the demand for TV up-linking. The video up-linking facilities would include the necessary equipment for providing studio transmission links and GCE equipment. The up-linking facilities are associated with the earth station located in different regions in the VSNL network. These are designed to carry upto 50 number 8MBPS video carriers and the project will be completed in phases by year 2000-01. The video up-linking facility at Korattur, Chennai was commissioned on 27.8.98. Similar facility is coming up at Dehradun. Digital Video Equipment for nine VSNL centres were commissioned in June, 2000.

### **(ii) Direct To Home ( DTH) Satellite Systems Facilities**

Intelsat and other major satellite system owners are planning to introduce Direct to Home TV Service using Ku frequency Band satellites in the near future. VSNL is contemplating to form a Joint Venture Company with INTELSAT in introducing this service. For this purpose, an investment of upto Rs. 1 Crore is envisaged in the Satellite System and in up-link facilities.

## **VIII Research & Development**

### **(i) Establishment of Standardisation Facility**

The advent of new technologies and the rapid pace of their additions in the network requires the testing out of the prototypes before actually introducing them into the live system. VSNL plans to develop such facilities to test prototypes in the near future. The outlay is Rs. 5 Crore. The scheme is likely to be implemented by June 2001.

### **(ii) Other Activities**

The R&D activities in VSNL are proposed to be enhanced during the 9th plan period in order to support the high technology operating environment and to derive benefits of continuous innovations in technology. For this purpose, the R&D centre at Pune is to be refurbished completely with the development and provision of five modern laboratories. It is proposed to take up R&D activities on a large scale in Mumbai, Pune and Bangalore during the 9th Five Year Plan pertaining to (a) ATM technologies and multi-media services (b) Networking technologies and design of fault tolerant networks (c) International VSAT

technologies (d)Managed Data Network services (e) Intelligent network services and customer configurable services (f) Satellite system technologies and higher frequency band operation (g) SDH technologies and network synchronization for Satellite systems and microwave engineering; Computer networks; Switching systems and intelligent network systems; ATM and digital transmission systems; and Electronic test and systems design.

In addition, the facilities for CAD ,CAM etc. will also be refurbished. The outlay provided for is Rs. 2.52 Crore. The whole project has been taken up in phases and are under different stages of implementation.

## **IX General**

### **(i) Office Automation Scheme**

During the 8th plan, an office automation scheme was implemented in VSNL covering the senior officers in all the branches on an integrated office automation network. The scope of the OA is being extended to cover all operating sections and divisions during the 9th plan. In addition, the capabilities of the OA system are proposed to be extended to include data base servers for various VSNL data including employee data, service data and engineering data; decision support systems for review of appropriate data for each application; operations systems based upon the automation of routine movement of papers in VSNL. The approved outlay for the project to be completed by 2001-2002 is Rs. 5.13 crore.

### **(ii) Electronic Data Processing**

An integrated computer system is being planned to provide for the management of the finance and accounts in VSNL and upgrade office Automation network of VSNL using a fully integrated system with the Office automation facilities. The scope of the projects includes Billing Mediation System, Enterprise-wide Resource Planning, Financial Accounting System, Enhancement of EDP System, etc and these projects are under various stages of implementation. The outlay of the scheme is Rs.50 Crore.

## **X. Training**

### **Upgradation of Training Institute to Telecom Management School**

Upgradation of Pune training facility to provide a management course with special emphasis on Telecom management is also being planned during the 9th Five year plan. Management courses would be conducted for the engineers, professionals in Telecom field in India and other developing countries. The outlay for the project is Rs. 50 crore and would be completed by 2001-02.

## **XI. Office Equipment**

### **(i) Office Machinery, Work Processing, Computers etc.**

A provision has been made for purchase of office equipment including word processing equipment, printing equipment and Xerox copiers etc. These requirements will include all branches of VSNL and headquarters. The total outlay is Rs.33.23 Crore. It is a continuing scheme.

### **(ii) Furniture & Fixtures**

A provision has been made for furniture & fixtures for various units of VSNL for replacement as well as addition as necessary during the 9th plan. It is a continuing scheme. The total outlay is Rs. 6.62 Crore.

**G. Collaboration and Joint Ventures :** The VSNL has entered into collaborations and joint ventures which include (i) Joint Venture with Telstra to provide VSAT Services (ii) Installation and management of facilities Gateways with Afro Satellite Communication Ltd., to provide regional personal services (iii) Collaboration with US Sprint for the provision of SPRINTNET Services (iv) Collaboration with TMI, Hong Kong for Data Leased Lines and Value Added Services (v) Collaboration with Cable and Wireless, UK, for Globally Managed Data Services, Frame Relay and Value Added Services (vi) Providing distribution services for World partners / World Source and other Operators (vii) Collaboration with other INMARSAT Signatories to provide personal mobile Satellite communications services through hand held terminals (viii) Arrangements for providing non-exclusive services with: a) Other operators and (b) Other companies.

## **H. Manpower**

The total number of employees of the company as on March 31, 2000 was 3014 which consisted of 694 Group "A" officers, 432 of Group "B" officers, 1368 Group "C" and 467 Group "D" category of staff. The employees belonging to Scheduled Caste (SC) were 22.32% of the total employees and those belonging to Scheduled Tribes (ST) were 6.33%. (Annexure-IV).

## **I. Physical Performance**

The international telecommunication traffic in terms of telephone paid minutes increased by more than 16% i.e. from 1935 million in 1998-99 to 2246 million in 1999-2000. This is expected to increase further to 2480 million minutes during 2000-2001. The television traffic in terms of minutes has also significantly gone up from 92530 in 1998-99 to 135500 in 1999-2000, an increase of more than 46%. This is further expected to go up to 160000 during 2000-2001. The number of internet access

customers has also increased from 2.13 lakh in 1998-99 to 3.66 lakh in 1999-2000, an increase of 71.8% which is expected to reach to a level of 5.50 lakh during 2000-2001. The international telephone circuits has also gone up from 17922 in 1998-99 to 19722 in 1999-2000 and is expected to be 20800 in 2000-2001. The number of satellite circuits has increased by 7.5% from 10609 in 1998-99 to 11409 in 1999-2000. This is expected to go up to 11440 in 2000-2001. Similarly, the number of cable circuits has also gone up from 7313 in 1998-99 to 8313 in 1999-2000, an increase of 13.7%. It is expected that this will reach to a level of 9360 in 2000-2001. (Annexure-I).

The details of other physical achievements are given in Annex.I.

## **J. Financial Performance**

The Net Current Assets of the Company appreciated by 32 percent during 1999-2000 when compared with its value in 1998-99. The amount of “profit after tax” reduced by 37 percent during 1999-2000 when compared with the figures in 1998-99.

The details of physical performance are given in Annex. II & III.

## **K. Use of Hindi in day to day Official Work**

Provision of Official Language Act, Rules made hereunder and Orders issued by the Department of Official Language, Ministry of Home Affairs, Government of India, regarding the progressive use of Hindi, are implemented in Videsh Sanchar Nigam Limited, effectively.

Videsh Sanchar Nigam Ltd. continuously made all possible efforts for accelerating the growth of Hindi, in day-to-day Official work. Efforts are also being made to increase the correspondence in Hindi.

The meeting of the Official Language Implementation Committee is held regularly for reviewing the progress made in the use of Hindi in day-to-day official work in Videsh Sanchar Nigam Ltd.

Quarterly reports received from branches are reviewed and shortcomings are pointed out to them. Revised reports after doing away the shortcomings are again called for. These are again checked and necessary instructions are passed on to the Branches to help them to implement the provisions of Official Language Policy. Visits to Branches at regular intervals are also paid by the Manager (Hindi) from HQ for purpose of ensuring the progress made by the Branches, in the matter of implementation of O.L. Policy.

A lucrative incentive scheme has been introduced in VSNL to give boots to the Official Language Policy of the Government of India. Training programs are also

conducted. The incentive scheme prescribes cash awards for working in Hindi. The awards are not limited to those who work in Hindi but awards is also given to those officials who vouch the work of their sub-ordinates. With the implementation of the scheme, more and more staff Members has shown willingness to work in Hindi. During the year under review, several steps were taken to promote, the use of Hindi in Official Work, such as:

- I. Hindi workshops were organized at regular intervals for the Officer and employees appraised of the Official Language Policy of the Government of India. A large-scale response is imparting training noting and drafting in Hindi and to keep generally received from staff participating in quarterly conducted Hindi Workshops. Continuous efforts are made to ensure that more employees start working in Hindi.
- II. Bilingual Software has been provided in VSNL to facilitate increasing use of Hindi in Official Work. Software training is held regularly for benefit of the employees and employees have started working on these packages. In addition to this, recently “WINKY” bilingual software packages (Window Base) have been installed in Personnel/FA Wings as well as PA to CVO of HQ office to meet demands in this behalf.
- III. VSNL has also started conducting Probodh; Praveen and Pragya classes in-house, for training its staff, with effect from August 1994 and so far 62 employees have passed prescribed examination.
- IV. Hindi Stenography and Typing classes are also being conducted in-house in VSNL.
- V. VSNL Codes, Manuals, Formats and Brochures regarding VSNL Service have been printed bilingually.
- VI. A Book named “STANDARD DRAFT” have been published from Hindi Section and distributed to all VSNL Region/Units. The above book contains all the standard drafts, which are used in day-to-day Official Work.
- VII. On the Occasion of “Rajbhasa Swarn Jayanti Varsh” Hindi Divas and Hindi Pakhwara was observed from September 14 to 28, 1999 and various types of Hindi Competitions were held at all Centres/Units of VSNL during this period.
- VIII. As per Directives of DOT, “Rajbhasa Swarna Jayanti Varsh” is being observed in VSNL.

## Achievements and New Initiatives for Infrastructure Development

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Telecommunications</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Consistently achieved “Excellent” ranking as against MOU targets for seven years.</b></li> <li>• <b>VSNL ADR listed on New York Exchange from 15<sup>th</sup> August 2000.</b></li> <li>• <b>All India ISP licence given by DOT on 22 November 2000.</b></li> <li>• <b>Issued Bonus Shares in the ratio of two new shares for each existing share held during November 2000.</b></li> <li>• <b>Standard F1 Earth Station at Guwahati, Standard F3 Earth Stations at Tidel Park Chennai, Kolkata, Guwahati and Bhubaneswar were commissioned.</b></li> <li>• <b>Mumbai – Arvi – Pune Optical Fibre STM-16 System (2.4 Gbps, 1+1 configuration) commissioned.</b></li> <li>• <b>Digital Video Codes commissioned at nine locations for TV uplink.</b></li> <li>• <b>Internet Services commissioned at Coimbatore, Jallandar and Ernakulam.</b></li> <li>• <b>Standard B Earth Station commissioned at Dehradun and Hyderabad for TV uplink.</b></li> <li>• <b>Augmentation of International Internet Bandwidth by commissioning of 3 x 155 Mbps stream to a total of more than 800 Mbps.</b></li> <li>• <b>High Capacity Internet Gigabit Exchange commissioned</b> <ul style="list-style-type: none"> <li>• <i>ANTICIPATED BY MARCH 2001</i></li> </ul> </li> <li>• <b>Completion of SAFE Cable laying at Kochi.</b></li> <li>• <b>New Delhi – Dehradun STM-4 Optical Fibre System (560 Mbps 1+1 configuration).</b></li> <li>• <b>Award of Contract for ATM Switches.</b></li> <li>• <b>Commencement of Internet Services from Hyderabad, Kanpur, Patna and Gandhinagar.</b></li> </ul> |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## PHYSICAL ACHIEVEMENTS AT A GLANCE

| DESCRIPTION                                        | 1998/99 | 1999-2000 | 2000-2001<br>(Estimate) |
|----------------------------------------------------|---------|-----------|-------------------------|
| <b>I. INTERNATIONAL TELECOMMUNICATIONS TRAFFIC</b> |         |           |                         |
| 1.1 a) Telephone Paid Minutes (Millions)           | 1935.01 | 2245.83   | 2480                    |
| b) Transit Telephone Paid Minutes (Million)        | 9.05    | 4.27      | NIL                     |
| Telex Paid Minutes (Million)                       | 11.06   | 9.89      | 7.2                     |
| 1.2 1.3 Telegraph Words (Million)                  | 14.63   | 8.75      | 6.6                     |
| 1.4 Photo Telegraph in Sq.Cms. (Million)           | NIL     | NIL       | NIL                     |
| 1.5 Television Traffic (in Minutes)                | 92,530  | 135,500   | 160,000                 |
| 1.6 Bureaufax (Pages)                              | 40,000  | 22,000    | 20,000                  |
| 1.7 Data transmission (GPSS)                       |         |           |                         |
| Minutes (in 000)                                   | 7929    | 7116      | 4,000                   |
| Segments (Million)                                 | 469     | 267       | 142                     |
| 1.8 Inmarsat Traffic                               |         |           |                         |
| Telephone (,000 Minutes)                           | 1961    | 1953      | 3006                    |
| Telex (,000 Minutes)                               | 272     | 97        | 25                      |
| 1.9 Internet Access Customers **                   | 21,3045 | 36,6432   | 550000                  |
| ** Commissioned on 15-08-95                        |         |           |                         |
| <b>2. GROWTH OF INTERNATIONAL CIRCUITS</b>         |         |           |                         |
| 2.1 Telephone Circuits                             | 17,922  | 19,722    | 20800                   |
| 2.2 Telex Circuits                                 | 787     | 682       | 682                     |
| 2.3 Telegraph Circuits                             | 34      | 25        | 24                      |
| 2.4 Leased Telegraph Circuits                      | 48      | 38        | 38                      |
| 2.5 Leased Voice/Data Circuits #                   | 25      | 23        | 23                      |
| 2.6 Leased High Speed Data Circuits                | 661     | 659       | 820                     |
| 2.7 Satellite Circuits                             | 10609   | 11409     | 11440                   |
| 2.8 Cable Circuits                                 | 7313    | 8313      | 9360                    |
| (IOCOM, Gulf & Sea-Me-We-2)                        |         |           |                         |
| <b>3. INTERNATIONAL AUTOMATIC SERVICES</b>         |         |           |                         |
| 3.1 ISD Telephone Service to Countries             | 236     | 237       | 237                     |
| 3.2 IXSD Telex Service to Countries                | 237     | 237       | 237                     |
| 3.3 Bureaufax Service to Countries                 | 32      | 32        | 27                      |

**Annex.II****BALANCE SHEET AS On 31<sup>ST</sup> March, 2000****Auditd****(Rs.in million)**

| PARTICULARS                                        | YEAR ENDED        | YEAR ENDED Unaudited |                                              |
|----------------------------------------------------|-------------------|----------------------|----------------------------------------------|
|                                                    | 31/03/2000        | 31/03/1999           | 30 <sup>th</sup> Sept. 2000<br>(Provisional) |
| <b>I SOURCES OF FUNDS</b>                          |                   |                      |                                              |
| <b>1. SHARE HOLDERS FUNDS</b>                      |                   |                      |                                              |
| (A) SHARE CAPITAL                                  | 950.000           | 950.000              | 950.00                                       |
| (B) RESERVE & SURPLUS                              | 60,792.179        | 53,255.558           | 68338.303                                    |
| <b>2. LOAN FUNDS:</b>                              |                   |                      |                                              |
| SECURED LOAN                                       | 45.701            | 25.545               | 16.656                                       |
| <b>TOTAL</b>                                       | <b>61,787.880</b> | <b>54,231.103</b>    | <b>69,304.959</b>                            |
| <b>II APPLICATION OF FUNDS:</b>                    |                   |                      |                                              |
| <b>1. FIXED ASSETS</b>                             |                   |                      |                                              |
| (A) GROSS BLOCK                                    | 22,820.294        | 17,697.807           | 24,304.199                                   |
| (B) LESS: DEPRECIATION                             | (6,377.815)       | (5,419.980)          | (6933.028)                                   |
| (C) NET BLOCK                                      | 16,442.479        | 12,277.827           | 17,371.172                                   |
| (D) CAPITAL WORK-IN-PROGRESS                       | 887.574           | 3,170.067            | 70.577                                       |
| (E) INVESTMENTS IN COMMUNICATIONS SATELLITES       | 2,641.176         | 2,310.573            | 2,737.287                                    |
| <b>TOTAL</b>                                       | <b>19,971.229</b> | <b>17,758.477</b>    | <b>20,179.036</b>                            |
| <b>2. INVESTMENTS</b>                              | 1,158.190         | 5,744.950            | 1158.191                                     |
| <b>3. CURRENT ASSETS, LOANS &amp; ADVANCE</b>      |                   |                      |                                              |
| (A) INVENTORIES                                    | 31.616            | 21.644               | 32.951                                       |
| (B) SUNDRY DEBTORS                                 | 25,426.297        | 20,107.400           | 24,351.004                                   |
| (C) CASH AND BANK BALANCE                          | 28,081,207        | 24,510.042           | 36,391.784                                   |
| (D) OTHER CURRENT ASSETS                           | 160.714           | 134.257              | 381.545                                      |
| (E) LOANS AND ADVANCES                             | 23,208.339        | 13,978.425           | 31,873.609                                   |
| <b>TOTAL(A)</b>                                    | <b>76,908.173</b> | <b>58,751.768</b>    | <b>93,030.896</b>                            |
| <b>LESS: CURRENT LIABILITIES &amp; PROVISIONS:</b> |                   |                      |                                              |
| (A) CURRENT LIABILITIES                            | 18,119.238        | 16,290.220           | 23,518.585                                   |
| (B) SUNDRY DEBTORS                                 | 18,130.474        | 11,733.862           | 21,544.575                                   |
| <b>TOTAL(B)</b>                                    | <b>36,249.712</b> | <b>28,024.082</b>    | <b>45,063.160</b>                            |
| <b>NET CURRENT ASSETS(A-B)</b>                     | <b>40,658.461</b> | <b>30,727.686</b>    | <b>47,967.733</b>                            |
| <b>TOTAL</b>                                       | <b>61,787.880</b> | <b>54,231.103</b>    | <b>69,304.959</b>                            |

**ANNEX.III****Profit & Loss account for the year ended  
31st March' 2000****(Rs.in million)**

| PARTICULARS                                                                            | YEAR ENDED<br>31/03/2000 | YEAR ENDED 30 <sup>th</sup><br>31/03/1999 September<br>2000<br>Unaudited<br>Provisional |                  |
|----------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------|------------------|
|                                                                                        |                          |                                                                                         |                  |
| <b>INCOME :</b>                                                                        |                          |                                                                                         |                  |
| TRAFFIC REVENUE                                                                        | 68,939.126               | 67,560.203                                                                              | 33,294.30        |
| REVENUE FROM INTELSAT/INMARSAT                                                         | 736.840                  | 754.461                                                                                 | 455.94           |
| OTHER INCOME                                                                           | 2,629.122                | 3,441.016                                                                               | 3090.57          |
| <b>TOTAL (A)</b>                                                                       | <b>72,305.088</b>        | <b>71,755.680</b>                                                                       | <b>36,840.81</b> |
| <b>EXPENDITURE:</b>                                                                    |                          |                                                                                         |                  |
| STAFF COST                                                                             | 977.589                  | 789.949                                                                                 | 550.73           |
| NETWORK COST                                                                           | 49,735.588               | 49,511.427                                                                              | 23,906.11        |
| OPERATING AND OTHER EXPENSES                                                           | 653.176                  | 547.343                                                                                 | 364.15           |
| ADMINISTRATIVE EXPENSES                                                                | 565.518                  | 452.606                                                                                 | 299.25           |
| INTEREST                                                                               | 11.502                   | 0.228                                                                                   | 0.66             |
| DEPRECIATION                                                                           | 937.525                  | 802.536                                                                                 | 547.87           |
| LESS: TRANSFERRED FROM CAPITAL RESERVE                                                 | (3.063)                  | (3.438)                                                                                 |                  |
| <b>TOTAL (B)</b>                                                                       | <b>52,877.835</b>        | <b>52,100.651</b>                                                                       | <b>25668.77</b>  |
| <b>PROFIT BEFORE EXTRAORDINARY ITEMS, PRIOR PERIOD<br/>ADJUSTMENTS AND TAXES (A-B)</b> | <b>19,427.253</b>        | <b>19,655.029</b>                                                                       | <b>11,172.03</b> |
| EXTRAORDINARY ITEMS.                                                                   |                          |                                                                                         |                  |
| INVESTMENT IN ICO GLOBAL COMMUNICATIONS<br>( HOLDING) LTD. WRITTEN OFF                 | (5,127.596)              |                                                                                         |                  |
| PRIOR YEAR ADJUSTMENT                                                                  | 478.407                  | (511.500)                                                                               | (411.40)         |
| PROVISION FOR TAXATION                                                                 | (6,375.300)              | (5,894.026)                                                                             | (3460.00)        |
| [ INCLUDING RS.300,000/-(1998-99; RS.200,000/-) FOR WEALTH TAX ]                       |                          |                                                                                         |                  |
| <b>PROFIT AFTER TAX</b>                                                                | <b>8,402.764</b>         | <b>13,249.503</b>                                                                       | <b>7,300.630</b> |
| <b>SURPLUS BROUGHT FORWARD FROM PREVIOUS YEAR</b>                                      | <b>99.682</b>            | <b>93.779</b>                                                                           |                  |
| <b>AMOUNT AVAILABLE FOR APPROPRIATION</b>                                              | <b>8,502.446</b>         | <b>13,343.282</b>                                                                       |                  |
| <b>APPROPRIATIONS:</b>                                                                 |                          |                                                                                         |                  |
| <b>DIVIDENDS:-</b>                                                                     |                          |                                                                                         |                  |
| a) INTERIM DIVIDEND DECLARED ON 27 <sup>TH</sup> MARCH,2000                            | 570.000                  |                                                                                         |                  |
| b) PROPOSED DIVIDEND                                                                   | 190.000                  | 760.000                                                                                 |                  |
| TAX ON DIVIDEND                                                                        | 104.500                  | 83.600                                                                                  |                  |
| TRANSFERRED TO GENERAL RESERVE                                                         | 7,500.000                | 12,400.000                                                                              |                  |
| SURPLUS CARRIED TO BALANCE SHEET                                                       | 137.946                  | 99.682                                                                                  |                  |
|                                                                                        | <b>8,502.446</b>         | <b>13,343.282</b>                                                                       |                  |

**ANNEX.IV****P E R S O N N E L & REPRESENTATION OF SCs/STs****As on March 31, 2000**

| <b>Group</b>                          | <b>Total No. of Employees</b> | <b>Total No. of SCs out of Col. 2</b> | <b>% age to Total</b> | <b>Total No. of STs out of Col.2</b> | <b>% age to Total</b> |
|---------------------------------------|-------------------------------|---------------------------------------|-----------------------|--------------------------------------|-----------------------|
| <b>1</b>                              | <b>2</b>                      | <b>3</b>                              | <b>4</b>              | <b>5</b>                             | <b>6</b>              |
| <b>Group `A`</b>                      | 694                           | 107                                   | 15.41%                | 21                                   | 3.02%                 |
| <b>Group `B`</b>                      | 432                           | 73                                    | 16.89%                | 35                                   | 8.10%                 |
| <b>Group `C`</b>                      | 1368                          | 292                                   | 21.34%                | 94                                   | 6.87%                 |
| <b>Group `D` (Excluding Sweepers)</b> | 467                           | 157                                   | 33.61%                | 39                                   | 8.35%                 |
| <b>Group `D` Sweepers</b>             | 53                            | 44                                    | 83.01%                | 02                                   | 3.77%                 |
| <b>Total</b>                          | <b>3014</b>                   | <b>673</b>                            | <b>22.32%</b>         | <b>191</b>                           | <b>6.33%</b>          |

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## **3. ITI LIMITED**

### **Introduction**

ITI Limited was formed in 1948 and was the first Public Sector Undertaking to be set up by the Government of India in telecom sector. The Company has seven manufacturing units located at Bangalore (two units), Naini, Rae Bareli, Srinagar, Palakkad and Mankapur and Networks System Unit with headquarters at Bangalore to provide Value Added Services like VSAT, Paging, E-Mail, Voice Mail etc.

ITI manufactures a wide range of equipments which include Electronic Switching Equipments, Transmission Equipments, V-Sat Equipments and Telephone Instruments of various types. ITI is also providing Value Added Services like VSAT, MRTS etc. The Company has been responsible for building about 75% of the country's telecom infrastructure. This has been possible through its countrywide network and state of the art technology.

The major customer of its products is the Department of Telecommunications (now the Bharat Sanchar Nigam Ltd. - BSNL). ITI is also supplying telecom products to Railways, Defence and Corporate sectors. ITI is making all out efforts to become a key player in the global market and has exported its products to Camros, Nepal, Srilanka, Rwanda, Vietnam, Uganda, Nigeria, Malaysia, Malawi and Zambia during the year 1999-2000.

ITI has 3 Joint Ventures, namely, (i) M/S India Satcom Ltd., Bangalore, (ii) M/S ITI Communications PTE Ltd., Singapore, and (iii) M/S Fibcom India Ltd., Gurgaon, Haryana.

### **Capital Structure**

The Authorised Share Capital of the Company as on 31.03.2000 was Rs.100 Crore made up of ten Crore equity shares of Rs.10/- each. The Paid-up Share Capital as on that date was Rs.88 Crore.

### **Physical Performance**

The Company has achieved all time high physical production during 1999-2000. Almost all the Plants have recorded higher production as compared to the last year. The physical performance achieved during 1999-2000 and 2000-2001 (April-December) is shown in the following table:

| PRODUCT               | ACCTG. UNIT | 1999-2000 | 1998-99 | % INCR-EASE | 2000-2001 (April-Dec.) | 2000-2001(Jan.-March) Anticipated |
|-----------------------|-------------|-----------|---------|-------------|------------------------|-----------------------------------|
| OCB-283 Local         | KL          | 1393.70   | 1330.50 | 5%          | 332.10                 | 595.00                            |
| OCB 283 TAX/TANDEM    | KC          | 565       | 362     | 56%         | 143.50                 | 200.00                            |
| DOT Exchange          | KL          | 2027.50   | 1394.30 | 45%         | 1697.60                | 1054.20                           |
| SMPS                  | Rs.Crores   | 102.39    | 73.75   | 39%         | 63.23                  | 35.00                             |
| Digital Radio TX/Rx   | TRS         | 2392      | 1400    | 71%         | 880.00                 | 532.00                            |
| Optic Fibre PDH       | Nos.        | 7505      | 2375    | 216%        | 5938                   | 2550                              |
| Optic Fibre SDH       | Nos.        | 2779      | 517     | 438%        | 2903                   | 993                               |
| C-DOT TDMA            | Nos.        | 21        | 10      | 110%        | 1                      | 50                                |
| WLL                   | KL          | --        | --      | --          | --                     | 100                               |
| MCPC VSAT in "C" Band | Nos.        | --        | --      | --          | --                     | 65                                |
| DLC-PDH               | Nos.        | --        | --      | --          | 49                     | 1                                 |
| DLC-SDH               | Nos.        | --        | --      | --          | 2                      | 214                               |

## Financial Review

The Company has shown a marked improvement in its performance during 1999-2000 as compared to 1998-99. The highlights of the performance for the year 1999-2000 are as follows:-

Profit is Rs.46 Crore during the year as against a profit of Rs.27 Crore during the year 1998-99.

Networth of the Company has increased from Rs.105 Crore to Rs.138 Crore.

Interest as a percentage of production has reduced to 6.95% as against 7.65% in 1998-1999. The reduction is mainly on account of better working capital management.

Highest ever production (including Excise duty) of Rs.2182 Crore.

Highest ever turnover (including Excise duty) of Rs.2085 Crore.

During 2000-2001 (April-December), the ITI has achieved a turnover of Rs.1254.13 Crore and anticipates to achieve a turnover of another Rs.1005.87 Crore during January - March 2001.

### **Manpower Position**

The total strength of the employees in the Company at the end of the year 1999-2000 was 23,567 as compared to 23,945 as at the end of the preceding year. A total of 333 employees have taken Voluntary Retirement during the year and 11 Employees have availed Special Lien Scheme. Details of the number of employees belonging to Scheduled Caste, Scheduled Tribe, Ex-service personnel and Physically Handicapped categories are given below:

| <b>Category</b>        | <b>As on<br/>31.3.1999</b> | <b>As on<br/>31.3.2000</b> |
|------------------------|----------------------------|----------------------------|
| Scheduled Caste        | 4609                       | 4832                       |
| Scheduled Tribe        | 149                        | 154                        |
| Ex-service personnel   | 396                        | 378                        |
| Physically Handicapped | 262                        | 253                        |

### **New Products**

Some of the products which were introduced during the year were : (i) ISDN & CCS in C-DOT MAX-L/XL, (ii) High Powered Amplifier, (iii) Low Noise Amplifier, (iv) Network Synchronisation Equipment and (v) STM-4 with ADM-SDH. During 2000-2001, the products introduced are i) Digital loop carrier – SDH, ii) Global System for Mobile Communication (GSM), iii) Wireless Local Loop (WLL), iv) 6GHz MW on SDH, v) High Bit Rate Digital Subscriber Loop (HDSL), vi) New Design of MDF, vii) Smart Cards, viii) Voice Over Internet Protocol (VOIP) and ix) Managed Leased Line Network (MLLNS).

## Exports

Exports for the year 1999-2000 amounted to Rs.393.75 Lakh. Countrywise details of the exports are furnished below:

| <b>COUNTRY</b> | <b>Rs. in Lakh</b> |
|----------------|--------------------|
|                | <b>1999-2000</b>   |
| Camros         | 68.00              |
| Srilanka       | 241.23             |
| Rwanda         | 29.00              |
| Vietnam        | 3.30               |
| Uganda         | 28.27              |
| Nigeria        | 0.70               |
| Zambia         | 9.97               |
| Malawi         | 5.25               |
| Malaysia       | 0.72               |
| Services       | 7.31               |
| <b>Total</b>   | <b>393.75</b>      |

## Conservation of Energy

To conserve energy, during 1999-2000, the Company has provided Tube Lights instead of bulbs, Sodium Vapour Lamps, Electronic Fan Regulators, Solar Water Heaters for Canteen and Hospital, Timer for Street Lights/Garden Lights, Electronic Ballasts and Low loss Electro-Magnetic Chokes.

## Highlights of Performance

- Formation of Calender of events and its implementation.
- Creation of System of monitoring and Continuous monitoring of the performance.
- Posting of an Executive Director exclusively for Operation Group.
- All Plants are ISO 9000 Certified.
- Advance Planning and Procurement of Materials six months in advance.
- Constant review by an exclusive committee on cost reduction, component obsolescence and single source items and implementation of its suggestions.
- Capacity expansion and creation of new capacities wherever required to meet the customer demand as well as to increase the volume of production/optimum utilization of available infrastructure.
- Quick decisions on technology transfers and to select the technology partner.
- Reduce the time for adoption of technologies from 2-3 years to 6-9 months and its productionisation.

- Revitalization of R&D with Object Oriented to Applied Research with time bound goals, shifting focus from academic to commercial.
- The Company has appointed a Consultant viz., M/s. Price Waterhouse Cooper for both Organisational and Financial Restructuring to make the Company a World Class Company which is fully market driven, customer oriented and highly competitive.
- Manufacturing facility of VLSI-II (One Micron Technology) has been established.
- Special efforts made to improve the competitive edge by re-designating the existing products, changing the technology partner and other related actions.
- Customer care assumed and new direction with fully integrated network geared for prompt and efficient service.
- Transformed the marketing strategy from a passive to aggressive one with pro-active customer support.
- Creation of New Information System viz., Order Tracking System(OTS) to give order-wise supply status to customers for better interaction.
- Opening up of Regional Repair Centres to support maintenance activities of the customers.
- Equip Plants with processes to undertake assembly and testing of SMT level cards.
- Introduction of ERP BAAN, e-commerce.
- Computerisation of all the activities.
- Set up strategic alliance with leading partners to address emerging market due to convergence and liberalization.
- Procurement of special type of testing instruments wherever required.
- Successfully entered into IT Market and captured some of the market shares in new generation technology like GSM and WLL.
- The Company has entered into business as value-added resaler.
- The Company has entered into servicing business also, like Installation, Commissioning and cable-laying etc.
- The Company has entered into annual maintenance contract with customers for the products supplied by ITI.
- Self-Certification and reduction of testing times for some of the products.
- Redeployment and retraining of manpower.
- Downsizing the manpower by introducing VRS and lucrative lien scheme.
- Changing the mindset of workforce by indoctrinating them with the brief “SELF HELP IS THE BEST HELP” to involve work force in the operation of the Company.
- Involvement of one and all in the Company through various movement like “OPERATION PRAGATI”, “OPERATION NAV SHATABADHI” AND NAV CHETNA”, i.e., profitability, Rejuvenation and Repositioning.

The summarised Profit & Loss Account for the year 1999-2000 and the Balance Sheet as at 31<sup>st</sup> March 2000 are furnished below:

**Profit and Loss Account for the year ended 31.03.2000**

(Rs. in Crore)

| <b>PARTICULARS</b>                  | <b>AMOUNT</b>  |
|-------------------------------------|----------------|
| <b>INCOME</b>                       |                |
| Sales & Services(incl. Excise Duty) | 2085.18        |
| Accretion/Decretion to Stock        | 97.20          |
| Value of Production                 | 2182.38        |
| Other Income                        | 94.04          |
| <b>Total</b>                        | <b>2276.42</b> |
| <b>EXPENDITURE</b>                  |                |
| Material Cost                       | 1157.09        |
| Employee Cost                       | 347.48         |
| Depreciation                        | 42.36          |
| Interest(Net)                       | 151.71         |
| Other Expenses(incl. Excise Duty)   | 557.94         |
| <b>Total</b>                        | <b>2256.58</b> |
| Profit for the year                 | 19.84          |
| Prior Period Adjustments            | 25.95          |
| Profit before Tax                   | 45.79          |
| Provision for Tax                   | 0.00           |
| Profit after Tax                    | 45.79          |

## Balance Sheet as at 31st March 2000

(Rs.in Crore)

| PARTICULARS                                     |                | AMOUNT         |
|-------------------------------------------------|----------------|----------------|
| <b>SOURCES OF FUNDS:</b>                        |                |                |
| <b>Own Funds:</b>                               |                |                |
| Share Capital                                   |                | 88.00          |
| Reserves and Surplus(including Grant-in-Aid)    |                | 176.65         |
| Loan Funds:                                     |                |                |
| Cash Credit and other Secured Loans             |                | 698.85         |
| Bonds                                           |                | 271.85         |
| Unsecured Loans                                 |                | 88.91          |
| <b>Total</b>                                    |                | <b>1324.26</b> |
| <b>APPLICATION OF FUNDS:</b>                    |                |                |
| Net Fixed Assets including Capital WIP          |                | 320.82         |
| Net Current Assets                              |                |                |
| Current Assets, Loans and Advances              | 2027.56        |                |
| Less:Current Liabilities and Provisions         | <u>1035.61</u> | 991.95         |
| Investments                                     |                | 5.10           |
| Misc. Expenditure to the extent not written off |                | 6.71           |
| <b>Total</b>                                    |                | <b>1324.26</b> |

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## 4. H.T.L. LIMITED

The HTL Ltd. (formerly known as Hindustan Teleprinters Limited) was set up in 1960. It has been involved in manufacturing of teleprinters and other related equipments. Since then the company has diversified its product range and manufacturing equipments relating to switching, transmission and datacom products. The Paid Up capital of the company remained at Rs.15 crore as on March 31, 2000 as against the Authorised Capital of Rs.20 crore.

The Gross revenue of the company rose to Rs.463.08 crore during 1999-2000 from Rs.359.49 crore in the preceding year. During the year the Company achieved a record sales turnover of Rs. 450.98 crore. During 1999-2000, 13.6 lakh lines of Switching Equipment were produced against 8.31 lakh lines during 1998-99 which was an increase of 64%. It also recorded production of 24.63 lakh lines of Main Distribution Frames against the production of 20 lakh lines during the preceding year. The value of sales of different products during 1999-2000 and 2000-2001 (April-December) is as follows:

(Rs. in Crore)

| PRODUCTS                                 | 1999-2000 | 2000-2001<br>(April-December) |
|------------------------------------------|-----------|-------------------------------|
| 1. Digital Telephone Exchange Equipments | 356.03    | 203.78                        |
| 2. Mechanical products & Accessories     | 63.31     | 36.13                         |
| 3. Transmission, Data & Access Products  | 29.60*    | 24.64                         |

\* Validation of urban WLL/SDH Project though completed, order implementation is scheduled for 2000-2001.

The Production Performance during the year 1999-2000 was as follows:

| ITEMS                                    | UNIT          | QUANTITY<br>1999-2000 |
|------------------------------------------|---------------|-----------------------|
| 1. Digital Telephone Exchange Equipments | In lakh lines | 13.59                 |
| 2. Main Distribution Frames              | In lakh lines | 24.63                 |
| 3. Line Jack Units                       | Nos.(in lakh) | 17.49                 |
| 4. MLDN                                  | Rs.in crore   | 10.19                 |
| 5. Internet Products & Others            | Rs. in crore  | 18.28                 |
| 6. Data Networking Products              | (Nos.)        | 65                    |

The financial position of the company was as follows:

(Rs. in Crore)

|                                                          | 1998-99 | 1999-2000 |
|----------------------------------------------------------|---------|-----------|
| a) Capital employed                                      | 67.80   | 86.76     |
| b) Gross fixed assets including capital work in progress | 44.42   | 50.06     |
| c) Net fixed assets including work in progress           | 19.13   | 22.76     |
| d) Net working capital                                   | 49.14   | 66.48     |
| e) Net worth (paid up capital + reserves)                | 45.25   | 56.60     |
| f) Reserves & surplus                                    | 30.25   | 41.60     |

The working results of the operations of the company during the year 1999-2000 and 2000-2001 (April – December) were as follows:

(Rs. in Crore)

|                                                 | 1998-99 | 1999-2000 | 2000-2001 |
|-------------------------------------------------|---------|-----------|-----------|
| 1. Gross revenue                                | 359.49  | 463.08    |           |
| 2. Sales and services                           | 358.85  | 450.98    | 525.00    |
| 3. Profit before tax, depreciation and interest |         |           |           |
| a) Profit before tax                            | 8.54    | 20.67     | 9.94      |
| b) Profit after tax                             | 6.83    | 12.45     | 6.11      |
| c) Depreciation                                 | 3.13    | 3.59      | 4.55      |
| d) Interest                                     | 5.91    | 22.84*    | 8.72      |
| e) Provision for tax                            | 1.71    | 8.22      | 3.83      |

\*On advances received for the period from 1995-96 to 1998-99

The company, paid a dividend of 3% amounting to Rs.49.50 lakh for the financial year 1998-99 which increased to Rs. 90 lakh during 1999-2000. The company, during the year, contributed a sum of Rs.98.27 crore to the Exchequer in the form of Excise Duty, Customs Duty and Sales Tax.

## Research & Development

The R & D activities carried out during 1999-2000 were as follows:

**Development Projects-** For V-90 Bis Modem – Data only, the basic hardware and software design has been completed. Further for the V 90 Subscriber – End Modem with DSVD option, the basic hardware design was completed and a software design is in progress. Proto type EKBC-PSTN version has been developed and field trial was completed. TEC has evaluated the equipment 2/34 MUX (indigenous) and its field trial is in progress. Chip sets of various manufacturers are being studied by the company to make its own design for ADSLI. For SDH, HTL has obtained TEC approval for SDH and the first unit was given to the field.

## Technology absorption, adaptation and innovation-

**C-DOT Equipments-** HTL has developed proto unit and obtained TEC approval for MAX-XL with ISDN, No.7 signalling and NSC & IN. SBM - XL equipment was tested for V 5.2 Interface with WLL Motorola products. EWSD software was updated to Version V.11, having V 5.2 Intelligent network features and approval was obtained and supplied. HTL is to introduce the Internode features and supply LTGN cards. The Field trial of CDMA WLL with EWSD Switch and Urban Motorola Radio System was completed. The field trials for Rural WLL was under progress in Bihar. MLDN 64 kbps links has been provided to National Stock Exchange. HTL has submitted the documents to TEC for type approval of DLC-SDH Product.

## Manpower

The total number of employees on the rolls of the company as on March 31, 2000 was 1177 including 328 Officers as against 1171 including 293 Officers as on March 31, 1999. Further, 270 Employees belonging to SC/ST were on the rolls of the company as on March 31, 2000 as against 266 employees as on March 31, 1999. The company, which started implementing the Voluntary Retirement Scheme in 1994, continued to implement it during 1999-2000 also under which 19 employees were granted VRS. The total strength of employees in different groups was as follows:

|                                             | No. of employees<br>As on<br>31.3.2000 | SC         | ST        | %<br>SC      | %<br>ST     |
|---------------------------------------------|----------------------------------------|------------|-----------|--------------|-------------|
| Group "A"                                   | 116                                    | 15         | 02        | 12.93        | 1.72        |
| Group "B"                                   | 212                                    | 37         | 08        | 17.45        | 3.77        |
| Group "C"                                   | 776                                    | 166        | 11        | 21.39        | 1.42        |
| Group "D" (excluding Sweepers)              | 71                                     | 29         | 01        | 40.85        | 1.41        |
| Group "D"<br>(cleaners & sanitary services) | 2                                      | 01         | --        | 50.00        | --          |
| <b>Total</b>                                | <b>1177</b>                            | <b>248</b> | <b>22</b> | <b>21.07</b> | <b>8.87</b> |

As on March 31, 2000 the company also employed 163 women, 37 ex-servicemen, and 17 physically handicapped persons.

## Awards

The DPE MOU Award for enterprises in the Excellent category for 1998-99 was given to top ten enterprises and HTL ranked third. Under the Government of India MOU Scheme, HTL consecutively won EXCELLENT Rating for 9 years since inception of the Scheme. In appreciation of the safety measures adopted in the company, the company

has won the State Safety Award for the year 1997 which was presented to HTL by the Hon'ble Chief Minister of Tamil Nadu on December 16, 2000.

### **Implementation of Official Language Policy**

The company continued its efforts to promote the progressive use of Hindi by organising training classes in Hindi during the year. As in the past, Hindi elocution contest, Hindi essay competition and Workshop were organised and Hindi Day was celebrated during the year.

### **Disinvestment of HTL Stake**

To implement the Disinvestment Commission's recommendations of selling 74 per cent of HTL's shares to strategic partner, the Government of India has appointed a Global Advisor.

### **Outlook for the future**

The company has a healthy order book for the next year to maintain its record of growth. The company proposes to raise its turnover to Rs.9 billion in the next five years. The company is continuously making efforts to penetrate into non-DOT sectors like Bombay Stock Exchange, National Stock Exchange, Indian Railways and expand its export markets as well. The marketing strategy undertaken by the company includes focussing on customer requirements, exports with a special thrust on African Countries, entering into joint ventures, emphasising on quality, cost, delivery and after sales service and is making continuous scanning of the market for new products, facilities and services.

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# **5. TELECOMMUNICATIONS CONSULTANTS INDIA LIMITED**

## **Introduction**

Telecommunications Consultants India Ltd., (TCIL) was set up as a public sector undertaking under the Deptt of Telecommunications in August, 1978 with a paid-up capital of Rs.10 lakh for providing know-how in all the fields of Telecommunications at global level. In 1982-83, the paid-up capital of the company was increased to Rs.30 lakh. The paid-up capital of the company after 4 Bonus issues in 1987-88, 1992-93, 1994-95 and 1996-97 stands at Rs.7.20 crore.

## **Mission**

The Mission statement of the company is **“To excel in providing Communication Solution in telecommunication service sector globally”**.

## **Objectives**

(i)To provide world-class technology and Indian expertise globally in all fields of telecommunications.

(ii)To sustain, expand and excel in its operations in overseas / Indian markets by developing proper marketing strategies.

(iii)To acquire State-of-the-Art technology on a continuing basis.

## **Core Competence**

The Company is undertaking projects in all the fields of telecommunications in India and abroad. The core competence of the Company is in Network projects, Software Support, Switching and Transmission Systems, Cellular Services, Rural Telecommunications and Optical Fibre based backbone network. The Company is planning to enter into Global Mobile Personal Communications through JV route besides Cellular Services in Rajasthan already in operation on similar basis. It secures business by participating in international competitive bidding.

## **Dividend Paid**

Company has been paying dividend from the very first year of its full operations and the dividend paid for the last 5 years has been 100% or more. The dividend declared for 1999-2000 was 220%. Company has paid total dividend of about Rs.50 crore so far.

## **Overseas Operations**

So far the company has worked in 45 countries. Presently, its projects are in progress in Mauritius, Sri Lanka, Madagascar, Indonesia, Kingdom of Saudi Arabia, Kuwait, Ghana, Republic of Yemen, Oman, Zimbabwe, Malawi, Botswana, Ethiopia, Comoros, Mozambique, Netherlands, Palestine, Syria, Nigeria, Tanzania, Eritrea, Kyrgyzstan, East Timor, Kosovo, Labanon, Congo, Sierra Leone, Bangladesh and Togo.

**Major Achievements:-** During the year 1999-2000, a record turnover of Rs.741 crore was realised. Foreign exchange repatriation of Rs. 62 crore was effected as against Rs. 46 crore during 1998-99. The networth of the Company has also increased from Rs. 266 crore in 1998-99 to Rs. 297 crore in 1999-2000 and likely to go further to Rs.328 crore in 2000-2001. The Company paid a dividend of 210% on the Paid-up Capital for the year 1998-99. For the year 1999-2000, Company has declared a dividend of 220% including interim dividend of 210%. Recognising its performance, the Company was awarded Prime Minister's MOU Award for outstanding performance as among the Top 10 PSUs'. It has also been adjudged a "Mini Ratna" PSU of Category-I. As per the audited results for the year 1999-2000, the company is expected to be adjudged "Excellent" again.

TCIL has been accorded a 'Trade House' status by the Ministry of Commerce. Earlier, the company was "Export House". A Joint Venture of the Company – Tamilnadu Telecommunications Ltd. (TTL) has given a maiden interim dividend of 7.5% which has also started commercial production of Optic Fibre Cables. TTL is likely to declare a dividend.

TCIL has successfully completed an ADB funded External Plant Network in Malawi for US\$ 19 million ahead of schedule. It has also entered into new area of Postal Consultancy.

## **Other Highlights of Performance**

- TCIL has been awarded 5 (five) Regions in Kenya as Basic Operator for the first time. The five Regions represent 75% of Kenyan population. It shall be a project worth US\$ 220 Million. TCIL is entering for the first time as a Basic Operator of Fixed Line Services through JV route with 30% equity participation.
- A GSM Operator in one of the Circles in India viz. Rajasthan. GSM services are being operated through a Joint Venture with TIW of Canada and Shyam Telecom.
- Participated in a bid in Nepal for operation of WLL based Basic Services.
- Secured contracts for supply and turnkey installations for UN peace Keeping Missions.
- Secured contract for software development for Customer Care and Billing in Swaziland and Nepal.
- Secured contract for software development for e-Governance in Cambodia.

## **Major Orders Secured During 1999-2000 and 2000-2001**

During 1999-2000, the Company has secured orders worth Rs. 580 crore. Notable orders secured include (i) Two External Plant Network projects in Mauritius under stiff international competitive bidding valuing over US\$ 22 Million (ii) External Plant Network in Bangladesh valuing US\$ 5.5 Million (iii) Satellite Maintenance Project in the Kingdom of Saudi Arabia valuing SR 10 Million (iv) Part of Access Network project, on trial basis, for 550 K in the Kingdom of Saudi Arabia valuing SR 10 Million (v) External Plant Network in Oman valuing Rs. 10 crore (vi) Transmission project in Ethiopia valuing US\$ 1 Million (vii) Entry in a new market area – TOGO where a contract for US\$ 1.5 Million has been awarded (viii) Large number of contracts valuing over Rs.300 crore have been obtained in setting up access and OFC networks in India (ix) Secured a prestigious Postal Consultancy contract in India and (x) A prestigious contract from Govt. of Gujarat for setting up WAN / e-governance.

During the year 2000-2001 (till December 31, 2000), Company has secured orders worth Rs.854 crore. The major orders booked during the year 2000-2001 are as under:

- Extension of Telephone Network in Togo valuing over Rs. 15 crore.
- Various supply orders and other contracts from United Nations valuing Rs. 231 crore including Radio Trunking Project for Peace Keeping Missions.
- 550 K Project from Kingdom of Saudi Arabia for Rs. 60 crore.

- Contract for provision of computer networking (nation wide computer integration system) in Cambodia. Value : US\$ 28.80 Million, equivalent to Rs. 132.48 crore.
- Customer Care and Billing System in Swaziland for Rs. 15.5 crore.
- Billing System in Nepal valuing Rs. 12 crore.
- Company has been awarded two contracts in Ethiopia valuing Rs. 18 crore.
- Construction of GSM Network in Kingdom of Saudi Arabia valuing SR 52 Million equivalent to Rs. 57 crore.
- Operation & Maintenance of GSM Network in Kingdom of Saudi Arabia valuing SR 57 Million equivalent to Rs. 63 crore.
- Company has also secured contracts in Oman, Kuwait, Nigeria and Mauritius.

Company has also secured contracts from Private Operators' in India namely HUGHES TELECOM., AIRTEL, AIRCELL, BPL and DISHNET valuing over Rs. 50 crore.

Besides above, contracts secured from BSNL/MTNL in various Circles works out to Rs. 200 crore.

Company's bids in Kuwait, Nepal and Kingdom of Saudi Arabia are well placed and Company is likely to secure more orders in these countries during 2000-2001.

## **Technology Absorption**

There have been vast changes in technology in telecommunication industry. The Company is keeping itself abreast with the new developments and has taken a plan for 'On Job Training' of its officers in the new technologies. In this connection, Company has entered into MOU with the world leaders in new technologies and participating in the tenders jointly with these companies. These include FUJITSU, ITOCHU, FURUKAWA, TOMEN AND SIEMENS. Indigenously developed C-DoT technology is also being adopted.

## **Diversification**

With privatization / liberalization becoming reality over the globe and particularly in the target market of TCIL, the projects in the regular business / core competence of TCIL are reducing resulting in innovative marketing strategies and plans. Company, therefore, decided to diversify in the operating business through the JV route which shall provide (i) The project implementation opportunity through JVs (ii) The operation and maintenance of the network. (iii) Return on investment as well as capital appreciation.

Company has recently been awarded 5 (five) Regions in Kenya as Basic Operator. The project shall cost about US\$ 220 Million. It shall be for the first time that Company shall be venturing into Basic Services as a Operator. The Joint Venture has been formed alongwith a Kenyan Partners.

Company has recently participated in a bid for operation of WLL Services in Nepal. Company is well placed there as it is only TCIL's bid which is under consideration.

## **Joint Ventures of TCIL**

### Existing Joint Ventures

i) **Hexacom India Ltd.**

TCIL is operating Cellular telephones through HEXACOM INDIA LTD., a Joint Venture promoted by TCIL with M/s. Shyam Telecom and foreign partners. An investment of Rs. 53.76 crore in equity has been made by the Company till 31.03.2000. This JV has achieved subscriber strength of over 30,000. HEXACOM has expanded its capacity from 15 K (container) to 34 K (main) switching capacity.

ii) **Joint Venture for Cable Manufacturing and Optical Fibre Cables**

Tamilnadu Telecommunications Ltd. (TTL) was promoted with Tamilnadu Industrial Development Corp. (TIDCO). Company has diversified into manufacturing of Optic Fibre Cables and has also expanded its capacity of Jelly Filled Cable to 17 LCKM and 17200 KM of optical fibre cable. TCIL has an investment of Rs. 6.95 crore in TTL. Company has given final dividend of 7.5% for the year 1999-2000.

iii) **TCIL Bellsouth Ltd.**

TCIL had promoted TCIL BELLSOUTH LTD. (TBL) with BellSouth of USA. TCIL's share in the equity of this company is Rs. 84 lakh. TBL has executed projects in a number of countries including Malaysia, Zimbabwe, Bolivia etc. The Company has made profit of Rs. 1.90 crore in the year 1999-2000 which has been retained for developmental activities..

iv) **TCIL Saudi Company Ltd.**

TCIL had promoted a company – TCIL SAUDI CO. LTD. (TSCL) with NATIONAL TELECOMMUNICATIONS LTD. (NATEL) of Kingdom of Saudi Arabia to undertake Access Network and other projects in that country as there are restrictions on foreign companies to participate in certain type of works. TCIL has a share-holding of 40% of TSCL which is Rs. 66.84 lakh. Other Joint Ventures of TCIL where Company has equity participation of less than Rs. 50 lakh are Telecommunications Consultants (Nigeria) Ltd. in Nigeria and Intelligent Communications Systems India Ltd. in New Delhi.

## New Joint Ventures

**(i) Joint Venture for I S P :** TCIL is planning to promote a Joint Venture Company with J M S WORLDWIDE of USA for Internet services. It shall develop and operate all India services for providing state-of-art services in India. TCIL's equity participation in the JV would be about Rs. 39 crore which would be 46% of the equity of the new JV.

**(ii) Joint Venture for Basic Services in Kenya :** Under global competition, Company has recently been awarded 5 (five) Regions in Kenya for operations of Basic Telephone Services. This shall cover about 75% subscriber base of Kenya. Company has promoted a Joint Venture Company with Kenyan partners for operations of Basic Services there. The project cost shall be approx. US\$ 220 Million.

## Financial Performance - Highlights

The value of overseas bidding by the company was worth Rs. 1047 crore. The total value of orders booked was Rs.580 crore during the year 1999-2000 and Rs.854 crore during the period April-December 2000. The networth of the Company was Rs.297.47 crore as on March 31, 2000 as compared to Rs.266.01 crore on March 31, 1999. It is anticipated to reach Rs.327.77 crore as on March 31, 2001. The turnover of the Company which was Rs.667.15 crore on March 31, 1999 appreciated to Rs.741.10 crore as on March 31, 2000 and expected to be Rs. 800 crore by March 31, 2001. Similarly, profit before tax which was Rs.56.91 crore on March 31, 1999 appreciated to Rs.58.74 crore on March 31, 2000 and anticipated at Rs.61.50 crore by March 31, 2001. The dividend paid also appreciated marginally from Rs.15.12 crore on March 31, 1999 to Rs.15.84 crore on March 31, 2000 and expected to increase to Rs.61.50 crore by March 31, 2001.

|                                       | Unit        | 1998-99 | 1999-2000 | 2000-2001<br>(Anticipated) |
|---------------------------------------|-------------|---------|-----------|----------------------------|
| Turnover                              | Rs.in crore | 667.15  | 741.10    | 800.00                     |
| Profit before tax                     | Rs.in crore | 56.91   | 58.74     | 61.50                      |
| Amount of dividend                    | Rs.in crore | 15.12   | 15.84     | 16.56                      |
| Rate of Bonus to Employees            | %age        | 20%     | 20%       | 20%                        |
| Foreign Exchange repatriated to India | Rs.in crore | 45.88   | 62.44     | 63.00                      |
| Networth                              | Rs.in crore | 266.01  | 297.47    | 327.77                     |

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## IX. STATISTICAL SUPPLEMENT

**TABLE 1**

**Telephone Exchanges, Stations and DELs as on 31.3.2000**

| SL. No. | Circle/Metro Distts.             | No. of Telephone Exchanges | Total Telephone Stations | Direct Exchange Lines(DELs) |
|---------|----------------------------------|----------------------------|--------------------------|-----------------------------|
|         | <b>CIRCLES</b>                   |                            |                          |                             |
| 1.      | A&N                              | 38                         | 24777                    | 24463                       |
| 2.      | Andhra Pradesh                   | 2402                       | 2280057                  | 2227487                     |
| 3.      | Assam                            | 415                        | 281215                   | 273068                      |
| 4.      | Bihar                            | 990                        | 648814                   | 627400                      |
| 5.      | Gujarat                          | 2173                       | 1952782                  | 1921850                     |
| 6.      | Haryana                          | 868                        | 648718                   | 642001                      |
| 7.      | Himachal Pradesh                 | 710                        | 289474                   | 285130                      |
| 8.      | Jammu & Kashmir                  | 285                        | 135834                   | 130021                      |
| 9.      | Karnataka                        | 2354                       | 1880715                  | 1829400                     |
| 10.     | Kerala                           | 924                        | 1725217                  | 1705139                     |
| 11.     | Madhya Pradesh                   | 2928                       | 1120596                  | 1095952                     |
| 12.     | Maharashtra                      | 3501                       | 2407721                  | 2331793                     |
| 13.     | North East                       | 338                        | 200378                   | 195396                      |
| 14.     | Orissa                           | 862                        | 434385                   | 423309                      |
| 15.     | Punjab                           | 1184                       | 1316815                  | 1292252                     |
| 16.     | Rajasthan                        | 1958                       | 1123609                  | 1109400                     |
| 17.     | Tamil Nadu                       | 1614                       | 1952802                  | 1926967                     |
| 18.     | U.P.(E)                          | 1736                       | 1125122                  | 1106574                     |
| 19.     | U.P.(W)                          | 1050                       | 996751                   | 994004                      |
| 20.     | West Bengal                      | 932                        | 544431                   | 541131                      |
|         | <b>Total for Circles</b>         | <b>27262</b>               | <b>21090213</b>          | <b>20682737</b>             |
|         | Metro Districts                  |                            |                          |                             |
| 21.     | Mumbai                           | 148                        | 2414757                  | 2213388                     |
| 22.     | Kolkata                          | 192                        | 1106816                  | 1029121                     |
| 23.     | Delhi                            | 192                        | 1970954                  | 1818236                     |
| 24.     | Chennai                          | 115                        | 807897                   | 767863                      |
|         | <b>Total for Metro Districts</b> | <b>647</b>                 | <b>6300424</b>           | <b>5828608</b>              |
|         | <b>Grand Total</b>               | <b>27909</b>               | <b>27390637</b>          | <b>26511345</b>             |

**TABLE 2****Telex Exchanges and Telegraph Offices as on 31.3.2000**

| Circle/Metro District     | No. of Telex Exchanges | Telegraph Office |              |
|---------------------------|------------------------|------------------|--------------|
|                           |                        | Departmental     | Combined     |
| Circle                    |                        |                  |              |
| A&N                       | 1                      | 1                |              |
| Andhra Pradesh            | 20                     | 117              | 3834         |
| Assam                     | 6                      | 29               | 448          |
| Bihar                     | 1                      | 59               | 4219         |
| Delhi                     | -                      | 27               | 6            |
| Gujarat                   | 27                     | 40               | 2250         |
| Haryana                   | 10                     | 17               | 376          |
| Himachal Pradesh          | 2                      | 13               | 1380         |
| Jammu & Kashmir           | 2                      | 9                | 138          |
| Karnataka                 | 24                     | 69               | 4494         |
| Kerala                    | 11                     | 39               | 1986         |
| Madhya Pradesh            | 15                     | 67               | 1946         |
| Maharashtra               | 27                     | 99               | 2864         |
| North East                | 5                      | 13               | 251          |
| Orissa                    | 17                     | 30               | 3397         |
| Punjab                    | 7                      | 27               | 332          |
| Rajasthan                 | 14                     | 47               | 2263         |
| Tamil Nadu                | 63                     | 108              | 6549         |
| Uttar Pradesh(E)          | 6                      | 69               | 3813         |
| Uttar Pradesh(W)          | 14                     | 49               | 411          |
| West Bengal               | 11                     | 44               | 1974         |
| <b>Total for Circle</b>   | <b>283</b>             | <b>973</b>       | <b>42931</b> |
| Metro Districts           |                        |                  |              |
| Mumbai                    | 12                     | -                | -            |
| Kolkata                   | 1                      | -                | -            |
| Delhi                     | 13                     | -                | -            |
| Chennai                   | 7                      | -                | -            |
| Total for Metro Districts | 33                     | -                | -            |
| <b>Total</b>              | <b>316</b>             | <b>973</b>       | <b>92931</b> |

**TABLE 3****Rural Telephones (DELs)**

| Sl.No | Circles/States     | Direct Exchange Lines as on 31.03.2000(All India) | Rural Direct Exchange Lines as on 31.03.2000 | Proportion of rural DELs |
|-------|--------------------|---------------------------------------------------|----------------------------------------------|--------------------------|
| 1     | Andaman & Nicobar  | 24463                                             | 11110                                        | 45.42                    |
| 2     | Andhra Pradesh     | 2227487                                           | 532857                                       | 23.92                    |
| 3     | Assam              | 273068                                            | 45615                                        | 16.70                    |
| 4     | Bihar              | 627400                                            | 126046                                       | 20.09                    |
| 5     | Gujarat@           | 1921850                                           | 342330                                       | 17.81                    |
| 6     | Haryana            | 642001                                            | 139583                                       | 21.74                    |
| 7     | Himachal Pradesh   | 285130                                            | 161779                                       | 56.74                    |
| 8     | Jammu & Kashmir    | 130021                                            | 7738                                         | 5.95                     |
| 9     | Karnataka          | 1829400                                           | 439017                                       | 24.00                    |
| 10    | Kerala**           | 1705139                                           | 906997                                       | 53.19                    |
| 11    | Madhya Pradesh     | 1095952                                           | 533074                                       | 48.64                    |
| 12    | Maharashtra#       | 4545181                                           | 227139                                       | 5.00                     |
| 13    | North East\$       | 195396                                            | 40014                                        | 20.48                    |
| 14    | Orissa             | 423309                                            | 110741                                       | 26.16                    |
| 15    | Punjab#\$          | 1292252                                           | 303805                                       | 23.51                    |
| 16    | Rajasthan          | 1109400                                           | 256794                                       | 23.15                    |
| 17    | Tamil Nadu%        | 2694830                                           | 177972                                       | 6.60                     |
| 18    | Uttar Pradesh(E+W) | 2100578                                           | 278149                                       | 13.24                    |
| 19    | West Bengal***     | 1570252                                           | 201305                                       | 12.82                    |
| 20    | Delhi              | 1818236                                           | 0                                            | 0.00                     |
|       | All India          | 26511345                                          | 4842065                                      | 18.26                    |

@ Gujarat+Dadar & Nagar Haveli+Daman & Diu

\*\* Kerala+Lakshdweep

# Maharashtra+Goa+Mumbai

\$ Arunachal+Manipur+Meghalaya+Mizoram+Nagaland+Tripura

% Tamilnadu+Pondicherry+Chennai

\*\*\* W.B.+Sikkim+Kolkata

#\$ Punjab+Chandigarh

**TABLE 4****Number of Villages with Direct Access to Telecom Facilities  
(As on 31.03.2000)**

| Sl.No | Telecom Circle       | Total Villages | Villages covered by VPTs | % of Villages Covered | VPTs on MARR | VPTs O/H |
|-------|----------------------|----------------|--------------------------|-----------------------|--------------|----------|
| 1     | A & N Islands        | 282            | 274                      | 97.2                  | 146          | 128      |
| 2     | Andhra Pradesh       | 29460          | 23379                    | 79.4                  | 12399        | 10980    |
| 3     | Assam                | 22224          | 14181                    | 63.8                  | 9293         | 4888     |
| 4     | Bihar                | 79208          | 24923                    | 31.5                  | 14281        | 10642    |
| 5     | Gujarat @            | 18125          | 13923                    | 76.8                  | 7413         | 6510     |
| 6     | Haryana              | 6850           | 6807                     | 99.4                  | 3634         | 3173     |
| 7     | Himachal Pradesh     | 16997          | 10364                    | 61.0                  | 2842         | 7514     |
| 8     | Jammu & Kashmir      | 6764           | 3793                     | 56.1                  | 2601         | 1178     |
| 9     | Karnataka            | 27066          | 25801                    | 95.3                  | 14692        | 11108    |
| 10    | Kerala **            | 1530           | 1530                     | 100.0                 | 32           | 1498     |
| 11    | Madhya Pradesh       | 71526          | 46498                    | 65.0                  | 25553        | 20923    |
| 12    | Maharashtra #        | 42467          | 31541                    | 74.3                  | 18848        | 12420    |
| 13    | North-East \$        | 14446          | 4336                     | 30.0                  | 3622         | 987      |
| 14    | Orissa               | 46989          | 22928                    | 48.8                  | 11542        | 11381    |
| 15    | Punjab \$\$          | 12687          | 12123                    | 95.6                  | 6195         | 5928     |
| 16    | Rajasthan            | 38634          | 23727                    | 61.4                  | 17703        | 6024     |
| 17    | Tamil Nadu %         | 17991          | 17845                    | 99.2                  | 7229         | 10616    |
| 18    | Uttar Pradesh (East) | 75698          | 46492                    | 61.4                  | 27352        | 19065    |
| 19    | Uttar Pradesh(West)  | 39551          | 23531                    | 59.5                  | 13751        | 9780     |
| 20    | West Bengal ***      | 38337          | 19997                    | 52.2                  | 12129        | 7868     |
| 21    | Calcutta             | 468            | 421                      | 90.0                  | 56           | 365      |
| 22    | Chennai              | 0              | 0                        |                       | NA           | NA       |
| 23    | Delhi                | 191            | 191                      | 100.0                 | 0            | 191      |
| 24    | Mumbai               | 0              | 0                        |                       | 0            | 0        |
|       | All India            | 607491         | 374605                   | 61.7                  | 211313       | 163167   |

@ Gujarat+Dadar & Nagar Haveli+Daman & Diu

\*\* Kerala+Lakshdweep

# Maharashtra+Goa-Mumbai

\$ Arunachal+Manipur+Meghalaya+Mizoram+Nagaland+Tripura

% Tamilnadu+Pondicherry-Chennai

\*\*\* W.B.+Sikkim-Kolkata

\$\$ Punjab+Chandigarh

**TABLE 5****Status of Cellular Mobile Phones (As on 31.03.2000)**

| Sl. No. | States/Circles    | No. of Cellular Subscribers |
|---------|-------------------|-----------------------------|
| 1       | Andaman & Nicobar | -                           |
| 2       | Andhra Pradesh    | 105469                      |
| 3       | Assam             | 5823                        |
| 4       | Bihar             | 21901                       |
| 5       | Gujarat @         | 146175                      |
| 6       | Haryana           | 25047                       |
| 7       | Himachal Pradesh  | 5048                        |
| 8       | Jammu & Kashmir   | -                           |
| 9       | Karnataka         | 127967                      |
| 10      | Kerala **         | 106560                      |
| 11      | Madhya Pradesh    | 40544                       |
| 12      | Maharashtra #     | 115086                      |
| 13      | North East \$     | 722                         |
| 14      | Orissa            | 9139                        |
| 15      | Punjab \$\$       | 94403                       |
| 16      | Rajasthan         | 20025                       |
| 17      | Tamil Nadu %      | 90956                       |
| 18      | Uttar Pradesh (E) | 113587                      |
| 19      | Uttar Pradesh (W) | 55950                       |
| 20      | West Bengal ***   | 3978                        |
| 21      | Kolkata           | 90036                       |
| 22      | Chennai           | 54256                       |
| 23      | Delhi             | 332330                      |
| 24      | Mumbai            | 319309                      |
|         | All India         | 1884311                     |

@ Gujarat+Dadar & Nagar Haveli+Daman & Diu

\*\* Kerala+Lakshdweep

# Maharashtra+Goa-Mumbai

\$ Arunachal+Manipur+Meghalaya+Mizoram+Nagaland+Tripura

\*\*\* W.B+Sikkim

% Tamilnadu+Pondicherry-Chennai

\$\$ Punjab+Chandigarh

**TABLE 6****Telephone Per 100 Population-Urban/Rural (Tele-density)  
(As on 31.03.2000)**

| Sl.No. | Circles/States      | Tele-density<br>per 100<br>population<br>All-India | Urban<br>Tele-density<br>per 100 Urban<br>population | Rural<br>Tele-<br>density per<br>100<br>population |
|--------|---------------------|----------------------------------------------------|------------------------------------------------------|----------------------------------------------------|
| 1      | Andaman & Nicobar   | 6.34                                               | 12.72                                                | 3.95                                               |
| 2      | Andhra Pradesh      | 3.13                                               | 7.99                                                 | 1.01                                               |
| 3      | Assam               | 1.06                                               | 7.34                                                 | 0.20                                               |
| 4      | Bihar               | 0.65                                               | 3.50                                                 | 0.15                                               |
| 5      | Gujarat @           | 4.26                                               | 9.53                                                 | 1.12                                               |
| 6      | Haryana             | 3.36                                               | 9.77                                                 | 0.97                                               |
| 7      | Himachal Pradesh    | 4.32                                               | 20.88                                                | 2.65                                               |
| 8      | Jammu & Kashmir     | 1.31                                               | 4.95                                                 | 0.10                                               |
| 9      | Karnataka           | 3.76                                               | 8.62                                                 | 1.27                                               |
| 10     | Kerala **           | 5.60                                               | 9.10                                                 | 4.05                                               |
| 11     | Madhya Pradesh      | 1.54                                               | 3.29                                                 | 0.91                                               |
| 12     | Maharashtra #       | 5.40                                               | 12.20                                                | 0.42                                               |
| 13     | North East \$       | 1.56                                               | 4.84                                                 | 0.43                                               |
| 14     | Orissa              | 1.21                                               | 5.43                                                 | 0.37                                               |
| 15     | Punjab # \$         | 5.67                                               | 13.15                                                | 1.88                                               |
| 16     | Rajasthan           | 2.11                                               | 6.47                                                 | 0.64                                               |
| 17     | Tamil Nadu %        | 4.52                                               | 11.38                                                | 0.45                                               |
| 18     | Uttar Pradesh (E+W) | 1.33                                               | 5.22                                                 | 0.21                                               |
| 19     | West Bengal ***     | 2.09                                               | 6.50                                                 | 0.35                                               |
| 20     | Delhi               | 15.40                                              | 17.74                                                | 0.00                                               |
|        | All-India           | 2.86                                               | 8.35                                                 | 0.68                                               |

@ Gujarat+Dadar & Nagar Haveli+Daman & Diu

\*\* Kerala+Lakshdweep

# Maharashtra+Goa+Mumbai

\$ Arunachal+Manipur+Meghalaya+Mizoram+Nagaland+Tripura

% Tamilnadu+Pondicherry+Chennai

\*\*\* W.B+Sikkim+Calcutta

# \$ Punjab+Chandigarh

**TABLE 7**

**Tribal Sub Plan (1999-2000)  
Targets and Achievements 1999-2000  
& Targets 2000-2001 (BE)**

| SL. No. | Item                          | 1999-2000 |             | 2000-2001 Target | Achievements (April-Dec. 2000) |
|---------|-------------------------------|-----------|-------------|------------------|--------------------------------|
|         |                               | Target    | Achievement |                  |                                |
| 1.      | Telephone Exchanges(Nos)      | 160       | 327         | 214              | 165                            |
| 2.      | Net Switching Capacity(Lines) | 266000    | 419564      | 366200           | 225258                         |
| 3.      | DELS(Nos)                     | 200000    | 305905      | 274600           | 179583                         |
| 4.      | VPTs(Nos)                     | 10000     | 4959        | 10000            | 1227                           |
| 5.      | Microwave(RKms)               | 1500      | 1586        | 1000             | 967.30                         |
| 6.      | OFC(RKms)                     | -         | 3604        | 3000             | 4530.12                        |
| 7.      | Satellite Stations (Nos)      | 73        | 49          | 72               | 21                             |

**TABLE 8****Average Revenue Per DEL**

| SL.No | Name of the Circle | Average Revenue Per DEL p.a.on actual cash basis |           |            | Revenue Realisation on actual cash basis |           |            |
|-------|--------------------|--------------------------------------------------|-----------|------------|------------------------------------------|-----------|------------|
|       |                    | 1998-1999                                        | 1999-2000 | % Increase | 1998-1999                                | 1999-2000 | % Increase |
|       | 1                  | 2                                                | 3         | 4          | 8                                        | 9         | 10         |
| 1.    | A&N                | 11926                                            | 7051      | -40.88     | 9.51                                     | 12.52     | 31.65      |
| 2.    | A.P.               | 9229                                             | 8330      | -9.74      | 1165.12                                  | 1456.30   | 24.99      |
| 3.    | Assam              | 8759                                             | 7915      | -9.64      | 149.72                                   | 179.22    | 19.70      |
| 4.    | Bihar              | 8450                                             | 7793      | -7.78      | 339.87                                   | 397.49    | 16.95      |
| 5.    | Gujarat            | 9829                                             | 8943      | -9.01      | 1318.79                                  | 1461.38   | 10.81      |
| 6.    | Haryana            | 8170                                             | 7908      | -3.21      | 362.67                                   | 436.42    | 20.34      |
| 7.    | H.P.               | 4924                                             | 4344      | -11.78     | 91.30                                    | 101.52    | 11.19      |
| 8.    | J&K                | 9978                                             | 10317     | 3.40       | 93.57                                    | 115.10    | 23.01      |
| 9.    | Karnataka          | 10039                                            | 9368      | -6.68      | 1294.30                                  | 1449.69   | 12.01      |
| 10.   | Kerala             | 6897                                             | 6422      | -6.89      | 778.70                                   | 896.30    | 15.10      |
| 11.   | M.P.               | 7860                                             | 7104      | -9.62      | 645.25                                   | 682.67    | 5.80       |
| 12.   | Maharashtra        | 9331                                             | 8332      | -10.71     | 1492.86                                  | 1631.01   | 9.25       |
| 13.   | North East         | 5364                                             | 5713      | 6.51       | 64.70                                    | 88.71     | 37.11      |
| 14.   | Orissa             | 7702                                             | 6917      | -10.19     | 205.85                                   | 232.27    | 12.83      |
| 15.   | Punjab             | 8587                                             | 7585      | -11.67     | 787.59                                   | 862.65    | 9.53       |
| 16.   | Rajasthan          | 7778                                             | 7437      | -4.38      | 612.94                                   | 716.69    | 16.93      |
| 17.   | Tamil Nadu         | 7850                                             | 7726      | -1.58      | 973.12                                   | 1253.73   | 28.84      |
| 18.   | U.P.(E)            | 8022                                             | 7300      | -9.00      | 577.88                                   | 674.92    | 16.79      |
| 19.   | U.P.(W)            | 8613                                             | 8275      | -3.92      | 579.74                                   | 687.20    | 18.54      |
| 20.   | West Bengal        | 7035                                             | 6194      | -11.95     | 186.77                                   | 242.61    | 29.90      |
| 21.   | Calcutta Distt.    | 10224                                            | 9123      | -10.77     | 774.32                                   | 828.97    | 7.06       |
| 22.   | Chennai Distt.     | 16583                                            | 14842     | -10.50     | 873.41                                   | 982.68    | 12.51      |

**TABLE 9**

**Income and Expenditure Account for the Year  
1999-2000  
(Provisional)**

(Rs. In Million)

| <b>PARTICULARS</b>                                          | <b>1998-99<br/>(Actual)</b> | <b>1999-2000<br/>(Provisional)</b> | <b>% change<br/>over 1998-99</b> |
|-------------------------------------------------------------|-----------------------------|------------------------------------|----------------------------------|
| <b>OPERATING INCOME:</b>                                    |                             |                                    |                                  |
| Telephones                                                  | 153296                      | 164911                             | 7.58                             |
| Telegraphs                                                  | 714                         | 586                                | -17.93                           |
| Telex                                                       | 591                         | 303                                | -48.73                           |
| Railway Communications                                      | 1991                        | 1832                               | -7.99                            |
| Miscellaneous                                               | 19783                       | 18654                              | -5.71                            |
| <b>Total (A)</b>                                            | <b>176375</b>               | <b>186286</b>                      | <b>5.62</b>                      |
| <b>OPERATING EXPENSES:</b>                                  |                             |                                    |                                  |
| Staff Expenses                                              | 40751                       | 43661                              | 7.14                             |
| Cost of other operation                                     | 3238                        | 1684                               | -47.99                           |
| Depreciation                                                | 21866                       | 25715                              | 17.60                            |
| Provision for Bad Debts                                     | 1240                        | 1103                               | -11.05                           |
| <b>Total (B)</b>                                            | <b>67095</b>                | <b>72163</b>                       | <b>7.55</b>                      |
| NET OPERATING INCOME<br>(A-B)=(C)                           | 109280                      | 114123                             | 4.43                             |
| ADD: Other Income (D)                                       | 8361                        | 9611                               | 14.95                            |
| Total Profit before payment of<br>interests etc.(C+D) = (E) | 117641                      | 123734                             | 5.18                             |
| LESS: Interest Payment<br>To MTNL                           | 9154                        | 3532                               | -61.42                           |
| Total (F)                                                   | 9154                        | 3532                               | -61.42                           |
| NET PROFIT (E-F) = (G)                                      | 108487                      | 120202                             | 10.80                            |
| <b>APPROPRIATION OF PROFIT</b>                              |                             |                                    |                                  |
| To Telecom Capital Reserve Fund                             | 77869                       | 74122                              | -4.81                            |
| To Telecom Revenue Reserve<br>Fund                          | 817                         | 1268                               | 55.20                            |
| Dividend to Govt.                                           | 2519                        | 1725                               | -31.52                           |
| Own Resources                                               | 27282                       | 43088                              | 57.94                            |
| Ave. Plant-in-Service                                       | 430061                      | 510195                             | 18.63                            |
| Operating Ratio                                             | 38                          | 39                                 | 2.63                             |
| Rate of Return                                              | 25                          | 22                                 | -12.00                           |

**TABLE 10****Sources and Application of Funds (1999-2000)  
(Provisional)**

(Rs. In Million)

| <b>PARTICULARS</b>           | <b>1998-99 (Actual)</b> | <b>1999-2000<br/>(Provisional)</b> | <b>% change<br/>over<br/>1998-99</b> |
|------------------------------|-------------------------|------------------------------------|--------------------------------------|
| <b>SOURCES OF FUNDS</b>      |                         |                                    |                                      |
| Internal Resources           | 81619                   | 109910                             | 34.66                                |
| Depreciations                | 21866                   | 25715                              | 17.60                                |
| Funds                        | -404                    | -460                               | 13.86                                |
| Total Sources of fund        | 1030811                 | 135165                             | 31.13                                |
| <b>APPLICATION OF FUNDS:</b> |                         |                                    |                                      |
| Construction Funds           | 94503                   | 125323                             | 32.61                                |
| Accounts with Govt.          | -404                    | -460                               | 13.86                                |
| Accounts with MTNL           | -91                     | -214                               | 135.16                               |
| Working Capital              |                         |                                    |                                      |
| Stores                       | 456                     | 604                                | 32.47                                |
| Others                       | 3617                    | 9912                               | 174.17                               |
| Repayment of Loan            | 5000                    | 0                                  | 100.00                               |
| Total Application of Funds   | 103081                  | 135165                             | 31.13                                |

**TABLE 11****Balance Sheet as on 31.03.2000  
(Provisional)**

(Rs. In Millions)

| <b>1998-99</b>                                                 | <b>LIABILITIES</b>                | <b>1999-2000</b>                                                        | <b>% change over<br/>1998-99</b> |
|----------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------|----------------------------------|
| <b>Actual (Exclusive<br/>of Mumbai &amp;<br/>Delhi Phones)</b> |                                   | <b>Provisional<br/>(Exclusive of<br/>Mumbai &amp; Delhi<br/>Phones)</b> |                                  |
|                                                                | <b>CAPITAL</b>                    |                                                                         |                                  |
| 479917                                                         | Internal Resources                | 597577                                                                  | 29.87                            |
| 37960                                                          | Borrowing from<br>MTNL            | 30210                                                                   | -88.09                           |
| 30427                                                          | Borrowed Funds                    | 30427                                                                   | -                                |
| 548304                                                         | Total                             | 658214                                                                  | 20.06                            |
|                                                                | <b>FUNDS</b>                      |                                                                         |                                  |
| 18687                                                          | Capital Res. Funds                | 18219                                                                   | -2.5                             |
| 773                                                            | Revenue Res. Funds                | 781                                                                     | 1.03                             |
| 19460                                                          | Total                             | 19000                                                                   | -2.36                            |
|                                                                | <b>CURRENT<br/>LIABILITIES</b>    |                                                                         |                                  |
| 2525                                                           | Accounts Payable                  | 2911                                                                    | 15.29                            |
| 6260                                                           | Advance Rental                    | 4983                                                                    | -20.40                           |
| 8785                                                           | Total                             | 7894                                                                    | -10.14                           |
| 576549                                                         | <b>LIABILITIES</b>                | 685108                                                                  | 18.83                            |
| <b>1998-99</b>                                                 | <b>ASSETS</b>                     | <b>1999-2000</b>                                                        | <b>% change over<br/>1998-99</b> |
| <b>Actual(Exclusive of<br/>Mumbai &amp; Delhi<br/>Phones)</b>  |                                   | <b>Provisional<br/>(Exclusive of<br/>Mumbai &amp; Delhi<br/>Phones)</b> |                                  |
|                                                                | <b>FIXED ASSETS</b>               |                                                                         |                                  |
| 610817                                                         | Fixed Assets at Cost              | 734321                                                                  | 20.22                            |
| 106153                                                         | Less: Accumulated<br>Depreciation | 130049                                                                  | 22.51                            |
| 504664                                                         | Total                             | 604272                                                                  | 19.74                            |

|        |                                           |        |        |
|--------|-------------------------------------------|--------|--------|
|        | <b>CURRENT ASSETS</b>                     |        |        |
| 5168   | Inventories                               | 5771   | 11.67  |
| 38911  | Accounts Receivable                       | 47929  | 23.16  |
| 3      | Prepaid Expenses                          | 6      | 100.00 |
| 44082  | Total                                     | 53706  | 21.83  |
|        | <b>INVESTMENT IN PUBLIC SECTOR – MTNL</b> |        |        |
| 6000   | Equity                                    | 6000   | -      |
| 0      | Loan                                      | 0      | -      |
| 6000   | Total                                     | 6000   | -      |
| 2344   | <b>ACCOUNTS WITH MTNL</b>                 | 2130   | -9.13  |
| 19459  | <b>ACCOUNTS WITH GOVT.</b>                | 19000  | -2.36  |
| 576549 | <b>ASSETS</b>                             | 685108 | 18.83  |

**TABLE 12****Financial Working 1998-99 and 1999-2000 (Cash Basis)**

(Rs. in Crore)

| <b>1998-99</b> |                                      | <b>1999-2000</b> |
|----------------|--------------------------------------|------------------|
| 17744.23       | Receipts                             | 18256.70         |
|                | Expenditure                          |                  |
| 665.50         | General Administration               | 758.99           |
| 1001.61        | Operation                            | 1082.58          |
| 2.28           | Stores and Factories                 | -20.87           |
| 8.92           | Research and Development             | 9.28             |
| 47.95          | Accounts and Audit                   | 51.62            |
| 2910.70        | Engineering & Maintenance            | 3246.71          |
| 38.37          | Amenities to Staff                   | 38.97            |
| 451.65         | Pensionery Charges                   | 437.02           |
| 21.82          | Stationery and Printing              | 22.01            |
| 2186.65        | Depreciation on Historical Cost      | 2571.47          |
| 1.52           | Social Security & Welfare Programmes | 1.18             |
| 3501.33        | Other Expenditure                    | 3890.45          |
| 10838.30       | Total Expenditure                    | 12089.41         |
| 994.58         | Credit to Working Expenses           | 1326.46          |
| 9843.72        | Net Working Expenses                 | 10762.95         |
| 7897.93        | Net Receipts                         | 7493.75          |
| 251.88         | Dividend to General Revenues         | 172.47           |
| 7646.05        | Surplus                              | 7321.28          |

**TABLE 13****Summary of Financial Working for 10 Years (Cash Basis)**

(Rs. in Crore)

| <b>Expenditure</b> |                |                                                    |                     |                 |              |                |
|--------------------|----------------|----------------------------------------------------|---------------------|-----------------|--------------|----------------|
| <b>Year</b>        | <b>Revenue</b> | <b>Net Working Expenses Excluding Depreciation</b> | <b>Depreciation</b> | <b>Dividend</b> | <b>Total</b> | <b>Surplus</b> |
| 1                  | 2              | 3                                                  | 4                   | 5               | 6            | 7              |
| 1990-91            | 3404.79        | 1468.29                                            | 388.66              | 220.27          | 2077.22      | 1327.57        |
| 1991-92            | 3874.52        | 1652.90                                            | 491.71              | 246.61          | 2391.22      | 11483.30       |
| 1992-93            | 4757.71        | 1923.70                                            | 638.89              | 257.13          | 2819.72      | 1937.99        |
| 1993-94            | 6094.87        | 2960.71                                            | 777.31              | 230.33          | 3968.35      | 2126.52        |
| 1994-95            | 7799.12        | 2886.31                                            | 977.16              | 269.76          | 4133.23      | 3665.89        |
| 1995-96            | 9760.55        | 3066.35                                            | 1223.04             | 279.19          | 4568.58      | 5191.97        |
| 1996-97            | 12266.10       | 4564.38                                            | 1524.43             | 292.34          | 6381.15      | 5884.95        |
| 1997-98            | 14586.91       | 5721.73                                            | 1834.04             | 286.50          | 7842.27      | 6744.64        |
| 1998-99            | 17744.23       | 7659.65                                            | 2186.65             | 251.88          | 10098.18     | 7646.05        |
| 1999-2000          | 18256.70       | 8191.48                                            | 2571.47             | 172.47          | 10935.42     | 7321.28        |

**TABLE 14****Capital Outlay During and up to the end of 1999-2000  
(Fixed Assets)****(Rs. in Crore)**

| Sl.No.    | Other Assets                                                                  | During the year<br>1998-99 | During the year<br>1999-2000 | Total as on<br>March 31,<br>2000 |
|-----------|-------------------------------------------------------------------------------|----------------------------|------------------------------|----------------------------------|
| 1.        | Land                                                                          | 59.86                      | 83.47                        | 555.37                           |
| 2.        | Building                                                                      | 728.36                     | 859.70                       | 5129.12                          |
| 3.        | Cables                                                                        | 4486.82                    | 6082.54                      | 31225.84                         |
| 4.        | Telegraph & Telephone Lines<br>Radio Masts & Aerials                          | 714.22                     | 851.07                       | 5370.54                          |
| 5.        | Apparatus & Plant                                                             | 3174.15                    | 4366.19                      | 30611.44                         |
| 6.        | Motor Vehicles                                                                | 34.34                      | 28.90                        | 268.82                           |
| 7.        | General Admn./Directions &<br>Execution Establishment &<br>other Charges etc. | 56.88                      | 57.06                        | 388.56                           |
| 8.        | Other Expenditure                                                             | 195.71                     | 203.34                       | 2280.13                          |
| <b>9.</b> | <b>Gross Fixed Assets</b>                                                     | <b>9450.34</b>             | <b>12532.27</b>              | <b>75829.82</b>                  |
|           | (Total of Items 1 to 8)                                                       |                            |                              |                                  |
| 10.       | Deduct Receipts & Recoveries<br>on Capital A/C.                               | 1.99                       | 17.12                        | 39.56                            |
| 11.       | Total Fixed Assets                                                            | 9448.35                    | 12515.15                     | 75790.26                         |
| 12.       | Deduct Amt. met from Advance<br>Rental under OYT & other<br>Schemes           | -19.59                     | -23.09                       | 538.74                           |
| 13.       | Deduct Expenditure met from<br>Telex Deposits                                 | -0.76                      | -0.83                        | 28.95                            |
| 14.       | Deduct Expenditure met from<br>Telecom Capital Reserve Fund<br>*              | 7827.64                    | 7458.97                      | 46092.30                         |
| 15.       | Deduct Amt. from Contribution<br>Works                                        | 0.00                       | 0.00                         | 460.01                           |
| 16.       | Deduct Depreciation on<br>Historical Cost Transferred<br>from Revenue         | 2186.65                    | 2571.47                      | 14583.79                         |
| 17.       | Repayment of Loan by MTNL                                                     | 0.00                       | 0.00                         | 317.00                           |
| 18.       | Deposit by MTNL for<br>Financing Telecom Projects<br>(Bonds)                  | 0.00                       | 2569.00                      | 11263.87                         |

|                                                                                                                  |                                                                                                                                                                  |                |               |                |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|----------------|
| 19.                                                                                                              | Total Deduction<br>(ITEMS 12 TO 18)                                                                                                                              | 9993.94        | 12575.52      | 73284.66       |
| <b>20.</b>                                                                                                       | <b>Net Fixed Assets (Items 11-19)</b>                                                                                                                            | <b>-545.59</b> | <b>-60.37</b> | <b>2505.60</b> |
| 21.                                                                                                              | Consumers Co-operative<br>Society                                                                                                                                | 0.00           | 0.00          | 0.00           |
| 22.                                                                                                              | Stores and Manufacture<br>Suspense                                                                                                                               | 68.7           | 82.10         | 659.02         |
| 23.                                                                                                              | Civil Engg. Stores Transactions                                                                                                                                  | -23.11         | -21.73        | -81.88         |
| 24.                                                                                                              | Total other Assets<br>(TOTAL 21 TO 23)                                                                                                                           | 45.59          | 60.37         | 577.14         |
| 25.                                                                                                              | Dividend Bearing Capital<br>Outlay<br>(ITEM 20-24)                                                                                                               | -500.00        | 0.00          | 3082.74        |
| 26.                                                                                                              | (a) Deduct Amt. met by Setting<br>Off of the Credit Balance<br>Equivalent to the Debit Balance<br>Under DOT in the P&T<br>Revenue Reserve Fund as on<br>1-4-1985 | 0.00           | 0.00          | 938.48         |
|                                                                                                                  | (b) Disinvestment of MTNL<br>Assets **                                                                                                                           | 196.94         | 0.00          | 196.94         |
| 27.                                                                                                              | Net Dividend Bearing Capital<br>Outlay(Item 25-26)                                                                                                               | -696.94        | 0.00          | 1947.32        |
| NOTE: * Includes Repayment of Borrowed Capital Outlay to MOF<br>** Disinvestments made in the past are included. |                                                                                                                                                                  |                |               |                |

**TABLE 15****Summary of Stores Suspense 1999-2000**

(Rs. in Crore)

|                                                      | <b>Opening<br/>Balance as on<br/>1.4.99</b> | <b>Receipts<br/>during the<br/>year</b> | <b>Issues during<br/>the year</b> | <b>Closing<br/>Balance as on<br/>31.3.2000</b> |
|------------------------------------------------------|---------------------------------------------|-----------------------------------------|-----------------------------------|------------------------------------------------|
| <b>Stores and<br/>Manufacture<br/>Suspense</b>       |                                             |                                         |                                   |                                                |
| General Stores                                       | 378.58                                      | 708.32                                  | 648.82                            | 438.08                                         |
| Working Stores                                       | 16.16                                       | 361.52                                  | 339.87                            | 37.81                                          |
| Manufacture<br>suspense                              | 182.16                                      | 431.46                                  | 430.51                            | 183.11                                         |
| <b>Total Stores and<br/>Manufacture<br/>Suspense</b> | <b>576.90</b>                               | <b>1501.30</b>                          | <b>1419.20</b>                    | <b>659.00</b>                                  |
| <b>Civil Engg. Stores</b>                            |                                             |                                         |                                   |                                                |
| Civil Engg. Stores                                   | -26.11                                      | 143.14                                  | 148.78                            | -31.75                                         |
| Purchases                                            | -66.44                                      | 67.37                                   | 84.27                             | -83.34                                         |
| Misc. Civil Engg.<br>Works Advances                  | 32.41                                       | 35.01                                   | 34.20                             | 33.22                                          |
| Total Civil Engg.<br>Stores                          | -60.14                                      | 245.52                                  | 267.25                            | -81.87                                         |
| <b>Total Stores<br/>Suspense</b>                     | <b>516.76</b>                               | <b>1746.82</b>                          | <b>1688.45</b>                    | <b>577.13</b>                                  |

**TABLE 16****Reserve Fund**

(Rs. in Crore)

| <b>Item</b> | <b>Balance<br/>as on<br/>1.4.99</b> | <b>Appropriation<br/>from surplus</b> | <b>Interest on the<br/>Balance at the<br/>Credit of the<br/>fund</b> | <b>Withdrawals</b> | <b>Closing<br/>Balance as<br/>on<br/>31.3.2000</b> |
|-------------|-------------------------------------|---------------------------------------|----------------------------------------------------------------------|--------------------|----------------------------------------------------|
| Revenue     | 77.28                               | 117.97                                | 8.80                                                                 | 125.97             | 78.08                                              |
| Capital     | 1868.65                             | 7203.31                               | 208.90                                                               | 7458.97            | 1821.89                                            |

**TABLE 17**

**Personnel-Actual Strength  
(Including those on Deputation)  
[As on 31.03.2000]**

| <b>Gazetted</b>                                         | Group A     | Group B      | Total        |
|---------------------------------------------------------|-------------|--------------|--------------|
| <b>Chairman Telecom Commission &amp; Secretary- DOT</b> | 1           | -            | 1            |
| Secretary-DTS & Member – TC                             | 1           | -            | 1            |
| <b>Secretary – DTO</b>                                  | 1           | -            | 1            |
| Member Telecom Commission                               | 3           | -            | 3            |
| Advisors Telecom Commission                             | 5           | -            | 5            |
| <b>Additional Secretary</b>                             | 1           | -            | 1            |
| <b>Joint Secretary</b>                                  | 2           | -            | 2            |
| <b>Deputy Secretary</b>                                 | 5           | -            | 5            |
| Chief General Managers                                  | 64          | -            | 64           |
| <b>Total</b>                                            | <b>83</b>   | -            | <b>83</b>    |
| <b>Telecom Accounts &amp; Finance Service-Group A</b>   |             |              |              |
| Higher Administrative Grade                             | 3           | -            | 3            |
| Senior Administrative Grade                             | 44          | -            | 44           |
| Junior Administrative Grade                             | 151         | -            | 151          |
| Senior Time Scale                                       | 448         | -            | 448          |
| Junior Time Scale                                       | 282         | -            | 282          |
| <b>Total</b>                                            | <b>928</b>  | -            | <b>928</b>   |
| <b>Telecom Accounts &amp; Finance Service-Group B</b>   |             |              |              |
| Accounts Officer                                        | -           | 2110         | 2110         |
| Assistant Accounts Officer                              | -           | 2479         | 2479         |
| <b>Total</b>                                            | -           | <b>4589</b>  | <b>4589</b>  |
| <b>Indian Telecom Services – Group A</b>                |             |              |              |
| Senior Administrative Grade                             | 317         | -            | 317          |
| Junior Administrative Grade                             | 1069        | -            | 1069         |
| Senior Time Scale                                       | 3718        | -            | 3718         |
| Junior Time Scale                                       | 338         | -            | 338          |
| <b>Total</b>                                            | <b>5442</b> | -            | <b>5442</b>  |
| <b>Indian Telecom Services-Group B</b>                  |             |              |              |
| Telegraph Engineering Services                          | -           | 22218        | 22218        |
| Jr. Telecom Officers                                    | -           | 21084        | 21084        |
| <b>Total</b>                                            | -           | <b>43302</b> | <b>43302</b> |

| <b>Central Secretariat Service</b>                   |                     |                           |                |              |
|------------------------------------------------------|---------------------|---------------------------|----------------|--------------|
| Under Secretaries                                    | 10                  | -                         | 10             |              |
| Section Officers                                     | -                   | 99                        | 99             |              |
| Sr.Principal/Principal Private/Private Secretary     | 7                   | 65                        | 72             |              |
| <b>Total</b>                                         | <b>17</b>           | <b>164</b>                | <b>181</b>     |              |
| <b>General Central Service (GCS)</b>                 |                     |                           |                |              |
| GCS                                                  | 877                 | 2459                      | 3336           |              |
| <b>Total</b>                                         | <b>877</b>          | <b>2459</b>               | <b>3336</b>    |              |
| <b>Grand Total (Gazetted)</b>                        | <b>7347</b>         | <b>50514</b>              | <b>57861</b>   |              |
| <b>Non-Gazetted</b>                                  |                     | <b>Group C</b>            | <b>Group D</b> | <b>Total</b> |
| Telecom Directorate                                  | 1204                | 555                       |                | 1759         |
| <b>Telegraph Engineering Service-Group C</b>         |                     |                           |                |              |
| Telephone Operators                                  | 12615               | -                         | 12615          |              |
| Technician (including S.G.)                          | 5771                | -                         | 5771           |              |
| <b>Line Staff</b>                                    |                     |                           |                |              |
| (i) Inspectors                                       | 1003                | -                         | 1003           |              |
| (ii) Sub-Inspectors                                  | 2557                | -                         | 2557           |              |
| (iii) Lineman                                        | 18988               | -                         | 18988          |              |
| Telephone Inspectors                                 | 1106                | -                         | 1106           |              |
| Telephone Supervisors                                | 16047               | -                         | 16047          |              |
| Telegraphists                                        | 12371               | -                         | 12371          |              |
| Telegraph Masters(HSG/LSG)                           | 2250                | -                         | 2250           |              |
| Telegraph Overseer                                   | 258                 | -                         | 258            |              |
| Others                                               | 183718              | -                         | 183718         |              |
| <b>Total</b>                                         | <b>256684</b>       | <b>-</b>                  | <b>256684</b>  |              |
| <b>Telegraph Engineering Service Group D</b>         |                     |                           |                |              |
| Telegraph-man(Indoor & Outdoor)                      | -                   | 4368                      | 4368           |              |
| Others                                               | -                   | 83822                     | 83822          |              |
| <b>Total</b>                                         | <b>-</b>            | <b>88190</b>              | <b>88190</b>   |              |
| CAO Telegraph Check Office                           | 133                 | 41                        | 174            |              |
| Telecommunications Factories                         | 881                 | 743                       | 1354           |              |
| Telecom Stores                                       | 1024                | 1020                      | 2044           |              |
| Telecom Training Centres                             | 544                 | 534                       | 1078           |              |
| Civil Engineering Wing                               | 5309                | 2149                      | 7458           |              |
| <b>Total Non-Gazetted</b>                            | <b>265779</b>       | <b>92962</b>              | <b>358741</b>  |              |
| <b>Industrial Workers (including Telecom Stores)</b> |                     |                           | <b>4758</b>    |              |
| <b>Total Staff</b>                                   |                     |                           | <b>421360</b>  |              |
| <b>SUMMARY</b>                                       |                     |                           |                |              |
| <b>Gazetted</b>                                      | <b>Non-Gazetted</b> | <b>Industrial Workers</b> | <b>Total</b>   |              |
| <b>57861</b>                                         | <b>358741</b>       | <b>4758</b>               | <b>421360</b>  |              |

**TABLE 18**

**Number of Employees-Scheduled Castes/Tribes  
As on 31.03.2000 (Provisional)**

| <b>Class</b>                                                      | <b>Total No. of Employees</b> | <b>Scheduled Cast Employees</b> | <b>%age of Total No. of Employees</b> | <b>Scheduled Tribe Employees</b> | <b>%age to Total No. of Employees</b> |
|-------------------------------------------------------------------|-------------------------------|---------------------------------|---------------------------------------|----------------------------------|---------------------------------------|
| <b>Group "A"</b>                                                  | 7347                          | 1052                            | 14.32                                 | 295                              | 4.02                                  |
| <b>Group "B"</b>                                                  | 50514                         | 4593                            | 9.09                                  | 1038                             | 2.05                                  |
| <b>Group "C"</b>                                                  | 265779                        | 44486                           | 16.74                                 | 12294                            | 4.63                                  |
| <b>Group "D"<br/>(Excluding Sweeper &amp; Industrial Workers)</b> | 96017                         | 21389                           | 22.28                                 | 4957                             | 5.16                                  |
| <b>Sweeper</b>                                                    | 1703                          | 906                             | 53.20                                 | 49                               | 2.88                                  |

**TABLE 19**

**Number of Ex-Servicemen as on 31.03.2000 (Provisional)**

| <b>Class</b> | <b>Total Number of Employees</b> | <b>Ex-Servicemen Abled</b> | <b>%age to total No. of Employees<br/>Ex-Servicemen Disabled</b> | <b>Ex-Servicemen Disabled</b> | <b>%age to total No. of Employees</b> |
|--------------|----------------------------------|----------------------------|------------------------------------------------------------------|-------------------------------|---------------------------------------|
| Group "A"    | 7347                             | 6                          | 0.08                                                             | -                             | -                                     |
| Group "B"    | 50514                            | 95                         | 0.19                                                             | -                             | -                                     |
| Group "C"    | 265779                           | 2890                       | 1.09                                                             | 60                            | 0.02                                  |
| Group "D"    | 97720                            | 1364                       | 1.40                                                             | 11                            | 0.01                                  |

**TABLE 20****Summary of Personnel Trained in various Training Centres During the Year 1999-2000**

| Sl. No. | Name of TTC                                | No. of Participants |           | Total |
|---------|--------------------------------------------|---------------------|-----------|-------|
|         |                                            | Induction           | Inservice |       |
| 1.      | <b>ALTTC,<br/>Ghaziabad</b>                |                     |           |       |
| (i)     | Departmental persons                       | 115                 | 4857      | 4972  |
| (ii)    | Non-Departmental persons                   |                     | 28        | 28    |
| (iii)   | Foreigners                                 |                     | 28        | 28    |
| 2.      | <b>BRBRAITT,<br/>Jabalpur</b>              |                     |           |       |
| (i)     | Departmental persons                       | 341                 | 2411      | 2752  |
| (ii)    | Non-Departmental persons                   |                     | 11        | 11    |
| (iii)   | Foreigners                                 |                     | 19        | 19    |
| 3.      | <b>RTTCs</b>                               |                     |           |       |
| (i)     | Departmental persons                       | 2460                | 10381     | 12841 |
| (ii)    | Non-Departmental persons                   |                     | 33        | 33    |
| 4.      | <b>CTTCs/DTTCs<br/>/Br.CTTCS</b>           |                     |           |       |
| (i)     | Departmental persons                       | 29596               | 13684     | 43280 |
| (ii)    | Non-Departmental persons                   |                     | 45        | 45    |
|         | Total                                      | 32512               | 31497     | 64009 |
| 5.      | No. of Departmental persons trained abroad |                     | 95        | 95    |

