

8.4 INFORMATION TECHNOLOGY

Information Technology (IT) has been identified as an effective tool in the Ninth Plan for tackling various issues like literacy, education, health, agriculture, population control, information infrastructure, unemployment etc. IT is bringing a transformation in almost every walk of life. While major part of the IT and electronics industry is in Private Sector, the Ministry of Information Technology (MIT) is playing a promotional and facilitating role. The share of Private Sector in IT and electronics production which was 76 per cent in 1996-97, is likely to reach a level of about 86 per cent by the year 2001-02.

2. The growth rate of electronics and IT production during the first three years of the Ninth Plan has gradually increased from 20.4 per cent in 1997-98 to 26.4 per cent in 1999-2000. While software exports exceeded the Plan targets by registering impressive growth rates of over 55 per cent in the first three years of the Ninth Plan, growth in electronics hardware sector remained stagnant at around 10 per cent. The hardware industry is facing stiff competition as a result of poor infrastructure, high cost of finance and tariff structure. It is desirable that various recommendations of the Second and Third Reports of the National IT Task Force, which mainly focussed on "Development, Manufacturer and Export of Information Technology Hardware" and "Long Term National IT Policy", are examined in the present context and implemented for accelerated growth of hardware industry.

3. The following table 8.4.1 shows actual IT and electronics production in the initial three years of the Ninth Plan.

TABLE 8.4.1
IT And Electronics Production

		(Rs. crore)		
Sl.	Item	1997-98	1998-99	1999-2000
1	Consumer Electronics	7,600	9,200	11,200
2	Industrial Electronics	3,150	3,300	3,400
3	Computers	2,800	2,300	2,000
4	Communication and Broadcast Equipment	3,250	4,400	4,400
5	Strategic Electronics	900	1,300	1,450
6	Components	4,400	4,750	5,200
	Sub-total (Hardware)	22,100	25,250	27,650
7	Software for Exports	6,500	10,940	17,150
8	Domestic Software	3,470	4,950	7,200
	Total	32,070	41,140	52,000

DEVELOPMENTS IN 1999-2000

4. During the year 1999-2000, the Government set up a new Ministry of Information Technology (MIT) to act as a nodal institution for facilitating all the initiative in the Central Government, the State Governments, Academia, the Indian private sector and successful Indian IT professionals abroad. The MIT will also accelerate Internet revolution in India, useful content in Indian languages, IT enabled services, IT education, electronics and hardware manufacturing and exports, microelectronics, silicon facilities, e-commerce and Internet based enterprises will be actively promoted. An Advisory Committee for MIT has

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also been formed to identify thrust/emerging technology areas, suggest measures and policies for proper growth of the sector. A select Group comprising successful and well known IT professionals, based at Silicon Valley, USA was formed under the chairmanship of Minister (IT) to advise Government on issues relating to development of IT, telecommunication infrastructure and software export.

5. In order to facilitate growth of e-commerce, electronic communication through Internet and accelerate induction of IT in critical sectors of the economy, an “Information Technology (IT) Law ” has been approved by the Government. It will provide legal framework for recognition of electronic contracts, prevention of computer crimes, electronic filing/documents and will legalise digital signature. A Centre of Excellence for e-commerce has been set up at CMC Ltd., Hyderabad with the objectives to provide: consultancy in the area of e-commerce covering security of server, network, web and transaction; auditing of e-commerce, procedure manual on e-commerce; development of e-commerce in Indian context and prototypes for users like Indian Railways, Electricity Boards, Road Transport Corporations etc. The Centre will provide training in the area of e-commerce and will also undertake R&D. The growth of e-commerce business transaction in India during the Ninth Plan period is as under:

	(Rs. crore)
1998-1999	131
1999-2000	450
2000-2001 (Anticipated)	3,500

6. The Government has also approved 100 per cent foreign direct investment in e-commerce and decided not to tax such transaction to promote Internet-based business. With these promotional steps, industry is hopeful for fast growth of e-commerce and anticipate transactions to the level of Rs.15,000 crore by 2001-02.

7. The Government has initiated institutional mechanism to facilitate initiatives towards greater utilisation of IT as an enabling tool for efficiency and effectiveness in Government and public utility services. Three pilot projects in the area of electronic governance have been initiated in close association with the Government of Andhra Pradesh. Experience of these pilot projects could be used by other states for replication. A Centre for E-Governance has been set up at the headquarter of Ministry of Information Technology to showcase existing tools and applications in E-Governance. The Centre would also help to identify/develop various applications of immediate concern to Central Ministries/Departments and the State Governments. A web-site (<http://www.egov.mit.gov.in>) exclusively for e-governance has been set up by MIT to create greater awareness. E-Governance is also being promoted by other measures like:

- Putting up information by various Ministries/Departments on web-sites for public use.
- Implementation of Court Information System, District Information System and Land records Computerisation in 534 districts by NIC in association with Ministry of Rural Areas & Employment.
- Availability of various application forms and results of various examinations etc. on Internet.

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- Large scale Computerisation in Banks/FIs, Road Transport organisations, Railways, Airlines and Hospitals etc.
- Induction of IT by Central Governments and State Governments/UTs by incurring 1-3 per cent of their budget for applying IT in their establishments.

BOX 8.4.1 Major Initiatives In IT Sector

- Setting up of a new Ministry of Information Technology.
- Information Technology Venture Capital Fund set up with a provision of Rs.100 crore for triggering the growth of IT Industry.
- Upgradation of Education & Research Network (ERNET) by connecting all the Universities and Regional Engineering Colleges through high speed network.
- All major sectors of the economy were made Y2K compliant.
- Development of PARAM supercomputer having 100 giga floating point operation per second (GFLOP) peak computing power by C-DAC.
- Growth of software exports over 55 per cent.
- Setting up of Indian Institutes of Information Technology (IIITs) by various State Governments.
- Approval to “Information Technology (IT) Law” to cater to the legal requirements of Internet and E-Commerce.
- Setting up of a Centre of Excellence for E-Commerce at CMC Ltd., Hyderabad.

8. India has achieved a capability of designing and building supercomputers using massively parallel processing technology. The Centre for Development of Advanced Computing (C-DAC) has released its latest model-the PARAM 10000 having a peak computing power in excess of 100,000 million floating point operations per second (MFLOPS). C-DAC has initiated a national project for the proliferation of the PARAM high-performance computers, under which a configuration of the PARAM 10000 along with software and training, will be supplied to 12 Premier academic institutions around the country. Efforts are being made to commercialise supercomputing technology developed by India.

9. An Information Technology Venture Capital Fund of Rs.100 crore with financial participation from SIDBI and Financial Institutions was launched in December 1999 for software companies to promote R&D and innovations.

10. Upgradation of Education & Research Network (ERNET) has been approved by the Government at a cost of Rs.196.20 crore, to be completed in the Ninth Plan, under which the network will be further upgraded in terms of quality and speed. The Network is being connected through high speed links and will be used for imparting distance education. All the 217 Universities and Regional Engineering Colleges will be connected on the new high speed backbone.

11. In the area of health care, a project on Hospital Waste Treatment System based on Microwave Technology has been completed and the system is under elaborate test. Initial report suggests that with the exposure of 30 minutes the waste becomes totally disinfected. Another project on "Neonatal Open Care System" for rural application has been developed

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and is undergoing field test. A programme on Computerised Braille Transcription System to provide nation-wide networking for facilitating Braille literacy throughout the country has been taken up for development. An interactive software "Can Scan" for early detection of Breast Cancer is being developed in Windows environment with Internet compatibility and multilingual features.

12. To promote information processing in Indian languages a project has been taken up in 13 Educational and R&D Institutions spread across the country. The objective is to increase IT penetration in the society, improve the quality of life of people of India by enabling to use IT through Indian Languages, development of new products and services in Indian Languages, promote content creation (on web sites) efforts in Indian Languages for better dissemination of information among the Indian masses, apart from facilitating research in technology intensive areas of Language Engineering.

13. The Government has taken up a project for setting up of Community Information Centres (CICs) in 486 blocks in the North-East and Sikkim at an estimated cost of Rs.220 crore for socio-economic development of NE States.

14. All critical sectors of the economy were made Y2K compliant. After intensive monitoring and co-ordination by the Y2K Action Force and the Committee of Secretaries, the roll over to the year 2000 was smooth and no major incidents were reported.

15. Availability of trained manpower is the most vital input for growth of IT industry especially in software exports. The Government has been supporting a number of Institutions by way of providing hardware and software. Special Manpower Development for Software Export scheme has been launched at National Centre for Software Technology (NCST), Mumbai. NCST is also going to launch an Internet-based Post-Graduate Diploma in Software technology. In addition to the existing engineering colleges, Government institutions like Centre for Electronics Design & Technology (CEDT), Centre for Development of Advanced Computing (C-DAC), Electronics Research & Development Centres (ERDCs), STQC (Standardisation, Testing & Quality Control) Labs and DOEACC (Department of Electronics Accreditation of Computer Courses) Society are making a significant contribution in creating a manpower base. Various State Governments are also setting up Indian Institutes of Information Technology (IIITs) as Centres of Excellence.

16. Internet Service Providers (ISP) have been permitted to set up international gateways and hire bandwidth on foreign satellites. This will enable increased availability of Internet bandwidth and facilitate Internet expansion in the country. The projections and growth of Internet users in India are as under:

	Internet Connections (million)	Internet Users (million)
31.3.1997	0.09	0.45
31.3.1998	0.14	0.70
31.3.1999	0.28	1.40
31.3.2000 (estimated)	0.77	2.80
31.3.2001 (estimated)	1.60	5.00
31.3.2002 (estimated)	3.50	10.00

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17. National Informatics Centre (NIC) have established NICNET facilities in all Central Government Departments, 32 States/UTs and in about 540 District Centres to facilitate informatics development for decision support and information exchanges. NIC in 1999-2000 further upgraded quality of NICNET based computer services. Internet services were extended by NIC during 1999-2000 to 380 districts by using VSATs and transponder capacity was increased to 148 MHz to handle increased network load. Video Conferencing facility was made operational at the Secretariat of Assam, Manipur, Tripura and Mizoram. Some of the major programmes being pursued by NIC are: NICNET based land records computerisation, implementation of Grass Roots Input to Districts (GRID), extension of NICNET services to newly created districts in the country, expansion of videoconferencing network, Modelling Graphics & Design Programme, Treasury Accounting Project, implementation of Court Information System Programme for High Courts and District Courts and Bibliographic Information System etc. The NIC has also prepared Five Year IT Plan for various Ministries and developed web sites of Government departments.

ALLOCATION FOR 2000-2001

18. An outlay of Rs.541.70 crore (GBS Rs.360 crore) has been approved for various schemes of Ministry of Information Technology for Annual Plan 2000-01, as against Rs.450.55 crore (GBS Rs.327.16 crore) for the year 1999-2000 outlay allocated. The expenditure of MIT has been to the tune of Rs.305.40 crore (GBS) in 1999-2000. Scheme wise break up of the outlay is at Annexure 8.4.1.

ISSUES:

- Second and Third Reports of the National IT Task Force which mainly focus on "Development, Manufacturer and Export of Information Technology Hardware" and "Long Term National IT Policy" should be examined in the present context and implemented for accelerated growth of hardware industry which is stagnating for the last 5/6 years;
- Large scale applications of IT by State Governments in Public Utility Services and Electronic Governance;
- Encouragement of IT development in Indian languages so as to increase degree of PC penetration and IT awareness in the society;
- Promotion of e-commerce and strengthening of Internet infrastructure in the country including providing at least 300 GB of Internet bandwidth by 2005,
- Proliferation of Distance Education through Internet;
- Upgradation of Regional Engineering Colleges to the level of IITs and opening more IITs and IIITs,
- Involvement of private sector in IT Education and human resource development;
- Rapid implementation of Cyber Laws; and
- Coordination of all round development of IT thereby leading to formation of a knowledge based society.