Chapter 2

PERSPECTIVES ON INFORMATION TECHNOLOGY (IT) INDUSTRY IN GLOBALIZING INDIAN ECONOMY

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Perspectives On Information Technology (IT) Industry In Globalizing Indian Economy

1. Introduction

In the previous chapter, a detailed account was rendered with regard to the statement of problem, review of literature on the subject matter, scope and objectives of the study and the hypotheses along with the research methodology, scope and significance of the study. The chapter also dealt with the measures for the performance evaluation of Information Technology Industry in India since economic liberalization with a case study of Infosys Technologies Limited. The present chapter entitled, “Perspectives on Information Technology Industry in Globalizing Indian Economy,” is divided into two sections. Section-A is devoted to study the business environment for IT industry in India and the second section of this chapter deals with evolution of Indian IT and its rapid growth and development bringing revolution in the realm of Information Technology industry in India since economic liberalization.

Section - A

2. Business Environment For Information Technology (IT) Industry in India

The business environment in particular moulds business decisions and in general the business strategies. Business environment consists of all those factors that have bearings on the business. Just as the survival and success of any individual depends on his capacity likewise survival and success of a business industry depends on its strength and its adaptability to the environment and extent to which the environment is favorable to the development of the organization. Even in this globalization era domestic business is affected by certain global factors. The global environment refers to
those global factors, which are relevant to business, such as the WTO Principles and Agreements, other International Conventions, Treatise, Agreements, Declarations and Protocols.\(^2\)

The Government of India has announced IT as a thrust area in the New Economic Policy (NEP) in July 1991. Accordingly, it is providing far more liberal policy framework for this sector. Major Laws and Regulations that affect the IT industry are listed in this section. One of the major factors of excellent and consistent growth of Indian software industry can be attributed to continuous liberalization of policies of the government of India. The government has worked in close co-operation over a long time for forming and implementing these policies. During 1991, the government for the first time, announced income tax exemption from profits of software exports. Later, the government, systematically and gradually, reduced import duty on computer software from a high of 114 percent to nil. Copyright laws have also been amended. We are enlisting here, some of the fiscal and non-fiscal incentives provided by the government of India to IT industry.\(^3\)

From the mid of 1980s the government of India has been making utmost effort for the promotion of IT Industry in the country. India is on a verge of becoming a global hub of IT industry as these industries are on a fast track in India. The government has formulated some regulations and policies to move in the accelerated direction, which are briefly discussed as under in this part of the study.

The advancement of Information Technology has a profound impact on the country's economy and the quality of human life. The IT industry has contributed around 3.82 percent share in India's GDP in 2003-04 as compared to 1.22 percent share in 1997-98, an increase of about 2.6 per-cent over the span of almost of quinquennial period. The industry also registered US$ 21.5 billion revenue earning during 2003-04. The IT industry in India has shown
tremendous growth, which is far greater than any other industry of the economy during the period under study.

a. Setting Up an IT Company in India

Setting up of IT operations in India has certain rules, regulations and guidelines for interested individuals/companies, which are briefly explained as under:

(i). General Indian Citizen/ Company

An individual Indian citizen can set up IT software and services operations in India through the following:

As an Individual/ Proprietor / Partnership/ Firm/ Trust / Company registered under the Companies Act, 1956. No prior permission of the government of India is required to set up IT/ Software units in India.

(ii) Overseas Company

A foreign company or individual planning to set up business operations in India can do so as under:

As a foreign company through a Liaison Office / Representative Office, Project Office, Branch Office, an Indian company through a Joint Venture or a Wholly Owned Subsidiary.

A. Liaison Office/ Representative Office

A liaison office is not allowed to undertake any business activity in India and earn any income here. The role of such offices is limited to collecting information about possible market opportunities and providing information about the company and its products to prospective Indian customers. The Foreign Exchange Management Act (FEMA) regulates the opening and operation of such offices. Also, approval of Reserve Bank of India (RBI) is required for opening of such offices. Permission for such offices
is initially granted for a period of three years and may be extended from time to time.

B. Project Office

Foreign companies planning to execute specific projects in India can set up temporary project/site offices in India with the approval of RBI. Such approval is generally accorded in respect of projects approved by designated authorities or projects financed by an Indian bank/financial institutions or a multilateral/bilateral international financial institution. The tenure of the office is dependent upon the duration of the project and normally approval is not accorded for more than 3 years. Further, a separate approval is required for each project proposed to be undertaken.

C. Branch Office

Foreign companies may set up Branch offices in India, with the permission of RBI, for the following purposes:

- To represent the parent company/other foreign companies in various matters in India e.g. acting as buying/selling agents in India.
- To conduct research work in the area in which the parent company is engaged provided the results of the research work are made available to Indian companies.
- To undertake export and import trading activities
- To promote possible technical and financial collaborations between Indian companies and Parent/Overseas group companies.
- Rendering professional or consultancy services or services in Information Technology and development of software in India.
- Rendering technical support to products supplied by the Parent/Overseas Group Companies.

A branch office is however not permitted to carry out manufacturing activities on its own.
(iii). **As an Indian Company**

A foreign company can commence operations in India through incorporation of a company under the provisions of Indian Companies Act, 1956. Foreign equity in such Indian companies can be up to 100 percent depending upon the business plan of the foreign investor, prevailing investment policies of the government and on receipt of requisite approvals.

(iv). **Joint Venture with an Indian Partner**

Foreign companies can set up their operations in India by forming strategic alliances with Indian partners. Foreign investments are approved through two routes as under:

*Automatic Route:* Approvals for foreign equity up to 26 percent, 50 percent, 51 percent and 74 percent are given on an automatic basis subject to fulfillment of prescribed parameters in certain industries as specified by the Government. The RBI accords automatic approval to all such cases.

*Government Approval:* Approval in all other cases where the proposed foreign equity exceeds 26 percent, 50 percent, 51 percent or 74 percent in the specified industries or if the industry is not in the specified list, it requires prior specific approval from Foreign Investment Promotion Board (FIPB).

(v). **Wholly Owned Subsidiary (WOS)**

The foreign investor has the option of setting up a Wholly Owned Subsidiary (WOS), wherein the foreign company owns 100 percent share of the Indian company. Foreign investments may be approved through the Automatic Route or the Government Approval. Automatic route is available for establishing WOS in the Information Technology sector.

b. **Establishing outside India**

A person resident in India (including an Indian company) may make direct investment outside India subject to approval by the RBI. The RBI has
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granted general permission to any person resident in India to make investment in overseas JV/ WOS subject to inter-alia the following conditions:

- The total financial commitment of the Indian party in the JV/ WoS shall not exceed US $100 million or its equivalent in any one financial year.
- The investment should be in an entity engaged in the same core activity as is carried on by the Indian company.

(i). Investments Abroad by a Firm in India

A firm in India registered under the Indian Partnership Act, 1932, may apply to the RBI for permission to invest abroad to the extent and in the manner specified in the case of companies.

(ii). Investments by Partnership Firm without Prior Approval of RBI

A partnership firm registered in India and engaged in providing specified professional services can invest in foreign concerns engaged in similar activity without prior approval of the RBI subject to following conditions:

- Investment is made by way of remittance from India and/ or capitalization of fees/ other entitlements due to it from such foreign concerns;
- Such investments do not exceed US$ 1 million or its equivalent in one financial year; and
- The partnership firm is a member of the respective All India professional organization/ body.
- The partnership firm is required to furnish prescribed report to the RBI within 30 days of making such investments.

c. Income Tax

As per the provisions of section 80HHE of the Income tax Act, 1961, profits derived from export/ transmission outside India of computer software or provision of technical services outside India in connection with development/ production of computer software are exempt from tax up to a

(45)
specified limit. Percentage of profits that can be claimed as a deduction under section 80HHE of the Act is as follows:

<table>
<thead>
<tr>
<th>Financial Year</th>
<th>Amount of Deductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Year 2001-02</td>
<td>70 percent</td>
</tr>
<tr>
<td>Financial Year 2002-03</td>
<td>50 percent</td>
</tr>
<tr>
<td>Financial Year 2003-04</td>
<td>30 percent</td>
</tr>
<tr>
<td>Financial Year 2004-05 Onwards</td>
<td>No deduction</td>
</tr>
</tbody>
</table>

The Central Board of Direct Taxes (CBDT) has notified a number of Information Technology Enabled Services (ITES) such as back office operations, call centers, data processing, revenue accounting, payroll, medical transcription, insurance claim processing, content development and animation, website services, etc in respect of which deduction under section 80HHE of the Act can be claimed. For individuals buying IT products including computer, the expenditure shall be deductible under Section 88 of the Income Tax Act. No gift tax shall be charged for the giver or Income Tax for the receiver on PCs up to Rs. 30,000 of the original purchase price.

Depreciation on Computers and Computer Software

As per the provisions of the Income Tax Act, annual depreciation on computers and computer software can be claimed at the rate of 9 percent of written down value at the beginning of the relevant financial year for income tax purposes. Therefore, under the written down value method, 84 percent of cost of computers and software can be depreciated in first 2 years.

d. Excise Duty

Computer software attracts 'nil' excise rates (duty). Excise duty is exempted on goods purchased from the Domestic Tariff Area (DTA) by units in 100 percent Export Oriented Units (EOUs), Export Promotion Zone (EPZs), Software Technology Parks (STP), Electronic Hardware Technology Parks (EHTP).
e. **Banking Related Issues**

- IT software and services industry shall be treated as a Priority Sector by the commercial banks. This would help to meet the requirements of IT software and services exports, and also the IT industry and applications within the country. Major banks will be advised to create specialized IT financing cells in important branches, where IT Software and Services units are sufficiently large in number. The Ministry of Finance will monitor performance in this dimension.

- Against the estimate of Rs. 400 crores of working capital for the industry, the amount shall be increased to around Rs. 1200 crores subject to the broad criteria of pro-rata increase for the prospective requirements 24 months ahead as compared to the actual of the current requirements at any given time.

- Bank lending to IT Software and Services exporters shall be made eligible for RBI refinancing with sufficiently low interest rates.

- The banks shall be allowed to invest in the form of equity in dedicated venture capital funds meant for IT industry as part of the 5 percent of increment in deposits currently allowed for shares.

- Banks/FIs like ICICI, IDBI, UTI and SBI shall set up joint ventures with Indian or foreign companies for setting up of at least four different venture capital dedicated funds of a corpus of not less than Rs. 50 crores each to cater to the credit need of the industry.

- Banks will be advised to sanction working capital finance to IT companies engaged in software services, project services and software products.

- For Credit facilities up to Rs. 10 crore, Banks will have freedom to sanction credit facilities by way of cash credit facility or overdraft.

- For Credit facilities above Rs. 10 crore. Cash credit component will be restricted to 20 per cent of the aggregate credit limit after excluding export credit sanctioned with the balance being disbursed as a demand loan component.

- RBI may on an application by an Indian software company permit resident employees of the company (including working directors) to purchase foreign securities under ADR/GDR Linked Stock Option Schemes. However, consideration for such purchase should not exceed USD 50,000 or its equivalent in a block of 5 calendar years.

- RBI has clarified that International Credit Cards, ATM Cards, Debit Cards can be used on the internet for any purpose for which foreign exchange can be purchased from an authorized dealer in India such as import of books,
purchase of software by downloading from the internet and any other item permitted to be imported under the EXIM policy.\textsuperscript{13}

f. **Custom Related Issues** \textsuperscript{14}

The Department of Revenue, Ministry of Finance, Government of India has issued Customs Notification No 21/2002 dated March 1, 2002 that inter alia exempts the following goods from customs duty:

- Information Technology Software Products
- Document of title conveying the right to use Information Technology Software; and
- CD-ROMs containing books of educational nature, journals, periodicals or newspapers. Customs duty on import of CD-ROMs or Optical Disc Media or Magnetic Media containing text, data or multimedia, as content shall be charged only on the media and not on the contents.

Duty exempted on import of second hand computers/ computer peripherals received by schools as donation from a donor outside India.

g. **Exim Policy** \textsuperscript{15}

- Exim Policy allows import of all kinds of computers in India without obtaining any licenses. Prior to 1999, this was not allowed.
- Capital goods can be imported free of cost or on loan from clients for approved activity by EOU\textsubscript{s} and units operating in EPZ / STP / EHTP.
- 5 per cent Duty EPCG Scheme for software sector (minimum threshold of capital goods of Rs.10 lakhs removed).
- Duty free imports of capital goods on loan by units located in EOU / EPZ / EHTP / STP units.
- Units located in EOU / EPZ / EHTP / STP are permitted to import goods, including capital goods, free of cost or on loan from their clients, subject to various stipulations of re-export.
- Imported IT Products shall be permitted to be taken out of bonded offices or out of Electronics/IT Units under EOU/EPZ/STP/EHTP Schemes after a period of 2 years from the date of import if these are donated to recognized educational institutions, Government organizations and registered charitable hospitals, etc., as defined in the Clause 9.19 of the Handbook of Procedures (Volume I) of the EXIM Policy through a customs notification.
• The value limit for import of IT Products including personal computers shall be reduced from Rs. 1.50 lakhs (c.i.f) to Rs. 70,000 (c.i.f).

• Private and public organizations providing IT infrastructure shall be included for duty exemption for importing capital goods. Such service providers, in view of such capital goods imported, shall undertake the export obligations as provided for import of capital goods in the EPCG Scheme.

• Export of IT products through courier will be made possible and duty draw back for this will be permitted.

• For exports of IT products to Russia and other CIS countries, the following relaxations will be allowed under the EXIM policy:
  
i) Export of goods against non-convertible currency will be counted towards discharge of export obligations under various schemes of the EXIM Policy.

ii) DEPB will be given at the rate of 70 per cent entitlement for exports under rupee payment

• Under DEPB Rupee trade arrangement, IT Software, IT Services and IT product export to Russia shall be permitted with promotional support given by the Electronics and Software Export Promotion Council (ESC), STP, etc.

h. **Indian Companies Act 1956**

• Dollar Linked Stock Options to employees of Indian Software companies were announced in the 1998 Budget and detailed guidelines on this have been issued by Ministry of Finance.

• Employee Stock option schemes for stock listed in India would also be encouraged. Also, clarification shall be issued that income tax is applicable only at the time of sale and not at the time of exercise of option.

• Acquisition of overseas IT Company, as per RBI norms, will not require any separate permission from the Department of Company Affairs under Section 372 of the Companies Act, 1956.

i. **Labour Laws**

   As the Indian IT product industry will increasingly have to compete with countries like Taiwan, Singapore, Korea and Philippines, the Indian Labour Laws in this limited sector should not be adverse as compared to the
Labour Laws in the competing countries. In view of this, the following modifications in the Labour Law specifically applicable to the IT Products manufacturing sector, has enacted in S-BIT Units/Zones/Habitats with due consideration to the ILO recommendations.

- Women shall be allowed to work in three shifts subject to provisions of all the ILO specified conveniences including transportation from and to the doorsteps of the employee.
- Temporary status will apply for 720 days out of 3 years instead of 240 days out of one year as per the existing labour laws.
- In order to be able to run 3-shift/4-shift operations, labour law should allow up to 12-hour shifts without overtime as long as total number of hours worked per week averages the current norms of 48 hours per week.
- Tele communicating is recognized as a new modality of doing work in an office and labour laws accommodating the same shall be enacted. An option shall be given to employees, where feasible and efficient, to accomplish part of their work through telecommuting in the framework of 'Management by Objectives' (MBO).

j. Investment Policy

- Automatic approval for foreign equity up to 100 percent in the IT sector.
- 100 percent equity participation permitted for NRIs.
- A foreign collaborator who has a previous venture / tie up in India in the IT sector does not require an objection certificate from the erstwhile Indian partner for establishing another venture.
- A number of states have developed their own IT policies to promote the development of the IT sector

k. Indian Copyright Act 1957

'Computer Programme' has been included in 'Literary Works'. As per provision in India Copyright Act 1957 and as amended in 1994-95, any person who knowingly makes use on computer of an infringe copy of computer programme shall be punishable with imprisonment for a term which shall not
be less than 7 days but which may exceed to 3 years and with fine which shall not be less than Rs. 50,000 but which may extend to Rs.2 Lacks.

I. Other Government Schemes

The government in its national Agenda has recognized IT as an important vehicle in the development of the country. Recognizing the special advantages and opportunities in India, many leading IT multinationals have set up operation in India. These include IBM, Novell, Microsoft, Oracle, Sun Microsystems, Dell, Unisys, Apple, Citibank, AT & T, Fujitsu, SAP, Quark, Adobe, Codence, Motorola, Digital, HP, Mantra Online, Citel, Framatone, Alcatel, Siemens, MEC, Ericsson, Bell Serth.

According to a World Bank study, India is the preferred location for software vendors for its quality and cost. India has a strong Unix base, which provides opportunities for the development of products for Internet based applications. Further, India has globally connectivity with international dialling facility from over 13,220 locations. Leased/Switched higher speed data links from major centres through STPs and VSNL for point-to-point communication are also available. Internet connectivity is provided through several networks and there is a number of private Internet Service Providers (ISP). Given the availability of relatively cheap and high quality human resources, India is the second largest English speaking population in the world and its location in the convenient time zone. According to a recent Merrill Lynch Survey, 46 per-cent of US fortune 500 companies have evinced keen interest for outsourcing in India in future.

According to research conducted by International Management Consultancy major Jones Lang La Salle, India has the lowest average wages rates of US $ 33.75 per week in the Call Centre Industry compared to the US $ 400 per week in USA and US $ 470 per week in the Australia. In order to promote the quality movement in India, particularly among the software
vendor community, the government has taken various initiatives. These are as follows:

1. The licensing arrangement entered into by the Ministry of Information Technology with SEI Carnegie Mellen University, US.

2. The availability of special software licenses for software companies that have acquired the equity status of ISO 9000, SEI CMM level 2 and above or equivalent certificate. Eligible companies are being given these licenses by the Directorate General of Foreign Trade (DGFT), Ministry of Commerce. NASSCOM has formed a special group of software companies to interact with the International Software Benchmarking Standard Group (IBSG) for providing greater visibility to the achievements of projects undertaken by Indian companies.

To encourage units in this sector, Government of India has announced many schemes:

(i) Special Economic Zones (SEZs): SEZs are areas where export production can take place free from plethora of rules and regulations governing imports and exports. Units operating in these zones have full flexibility of operations and can import duty free capital goods and raw material. The movement of goods to and from between ports and SEZ are unrestricted. The units in SEZ have to export the entire production. The first two SEZs are being set up at Posittra in Gujarat and Nangunery in Tamil Nadu. At the same time, Santacruz Electronic Export Promotion Zone, Kandla Export Promotion Zone, Vizag Export Promotion Zone and Cochin Export Promotion Zones have been converted to SEZs.

Units in SEZ have also been permitted to issue equity shares to non-residents against import of capital goods subject to the valuation of shares.
being verified by a Committee consisting of the Development Commissioner and the appropriate Customs Officials.\textsuperscript{22}

(ii) \textbf{100 Percent Export Oriented Unit (EOU):} This is similar to SEZ scheme. But in this scheme, there is no need to be physically located at SEZ. All other incentives are same as provided to SEZ units.\textsuperscript{23}

(iii) \textbf{Software Technology Park (STP):} This is a very special scheme under the Ministry of Information Technology. STPs are located at Noida, Navi Mumbai, Pune, Gandhinagar, Hyderabad, Bangalore, Chennai, Bhubaneshwar, Jaipur, Mohali and Thiruvananthapuram. This scheme offers zero import duty on import of all capital goods, special 10 years income tax rebate, availability of infrastructure facilities like high-speed data communication links, etc.

Units in STPs have been permitted to credit up to 100 per cent of their export receipts in their EEFC accounts as against the existing eligibility of up to 70 per cent.\textsuperscript{24}

\textbf{m. Venture Funding in India}

With Information Technology becoming the new mantra in India, Venture Capital has become more of an institutionalized industry. Financed and managed by successful entrepreneurs and professional, sophisticated investors, this industry are a smooth blend of risk financing and hand holding of entrepreneurs. Apart from financial support, venture capitalists provide networking, management, and marketing support as well. The government aims to make India as one of the top 5 locations for creation of technology ventures in the world and to ensure that the necessary venture capital funds flow in to the country.\textsuperscript{25} India's success story in the area of information technology has amply demonstrated that there is tremendous scope for the growth of knowledge-based industries.\textsuperscript{26} With technology and knowledge
based ideas set to drive the global economy in this millennium, and given the inherent strength by way of its human capital, technical skills, cost competitive workforce, research and entrepreneurship, India can unleash a revolution of wealth creation and rapid economic growth in a sustainable manner. However, for this to happen, there is a need for risk finance and venture capital environment, which can leverage innovation, promote technology and harness knowledge based ideas.  

n. Protecting Intellectual Property Rights (IPRs)

Software is one of the most valuable technologies of the Information age, running everything from PCs to the Internet. Computer software affects every aspect of our lives, but most significantly the way we communicate. With the touch of a button or the click of a mouse, information is transmitted across the globe. With each passing year, software evolves into a faster, more sophisticated, versatile and easy-to-use technology. Computer software allows companies to save time, effort and money. Home software now includes a wide array of programs that enhance the user's productivity and creativity. And computer graphics have turned PCs into a veritable inventive. The industry thrives on original software packages that are paid for and from these not only the soft are publishers stand to benefit but users too. But unfortunately, because most software is highly valuable, and computers make it easy to create an exact copy of a program in seconds, software piracy is widespread. From individual computer users to professionals who deal wholesale in stolen software, piracy exists in homes, schools, businesses and government.

(i). IPR Law in India

In India, the Intellectual Property Rights (IPRs) of computer software is covered under the Copyright Law. Accordingly, the copyright of computer software is protected under the provisions of Indian Copyright Act 1957.
Major changes to Indian Copyright Law were introduced in 1994 and came into effect from 10 May 1995. These changes or amendments made the Indian Copyright law, one of the toughest in the world. The amendments to the Copyright Act introduced in June 1994 were in themselves, a landmark in the India's copyright arena. Because most software is easy to duplicate and the copy is usually as good as original, the Copyright Act was greatly in demand. According to this Act, the infringer can be tried under both civil and criminal law.

According to section 14 of this Act, it is illegal to make or distribute copies of copyrighted software without proper or specific authorization. The only exception is provided by section 52 of the Act, which allows a backup copy purely as a temporary protection against loss, distribution or damage to the original copy. The 1994 amendment to the Copyright Act also prohibits the sale or hiring, or any offer for sale or hire of any copy of the computer program without specific authorization of the Copyright holder. The Anti-Piracy raids facilitated by Nasscom and Business Software Alliance (BSA) over the last few years in metros as well as smaller cities have already had salutary effect. The law enforcing authorities too supported these raids actively.

(ii). Anti-Piracy Activities

Government with the help of Nasscom has launched many initiatives to deter and discourage piracy over the past few years. Some of these include:

- Removal of import duty on software
- Extensive Media campaign against piracy
- Software Management Seminars for EDP managers at metro cities
- Strict implementation of Code of Conduct for member companies of Nasscom
- Awareness and training programs for police officers and law enforcement authorities
• Distribution of brochures and stickers explaining about "Software Piracy and the Law"
• Anti-Piracy Billboards, Hotline for piracy complaints

(iii). **Anti-Piracy Hotline**

It is generally agreed that one of the most important factors in legalizing a market is providing public access to Information. In 1994, NASSCOM along with Business Software Alliance (BSA) had setup the Anti-Piracy (Hotline) - at New Delhi.

This hotline is providing following services-

• It provides the caller all possible information on sources and retail outlets, wherein the caller can purchase legal copy (ies) of particular software
• It provides information on various aspects of Copyright Act in India
• It provides the caller, information on legal use of software
• It receives information on suspected incidents of software piracy. This information is passed on to the affected / concerned member company.

o. **Information Technology Act 2000**

The arrival of the Internet and the World Wide Web made it possible for people to communicate and transact over cyber space. It was a revolutionary step for humanity, but it also created a significant need for the regulation and governance of these activities, a requirement that lead to the creation and implementation of cyber laws across the globe. India became the 12th nation in the world to adopt a cyber law regime during 2000.

The country’s cyber laws are contained in the Information Technology Act 2000. The Act came into effect following the clearance of the Information Technology Bill 2000 in 9th May 2000 by both the houses of the Parliament. The Bill received the assent of the President of India in August 2000 (IT Act 2000). The IT Act 2000 aims to provide the legal infrastructure for e-commerce in India.

(56)
This Act can be summarized as: -

1. Any subscriber may authenticate and electronic record by affixing his digital signature.
2. Legal recognition of electronic records.
4. Use of electronic records and digital signatures in government and its agencies are allowed.
5. Publication of rule, regulation etc. in electronic gazette is legal.
6. Attribution, acknowledgement and dispatch of electronic goods are permitted.
7. Appointing the certifying authority to follow certain procedures. Certifying authority will issue digital signature certificate.
8. Penalty for damage to computer, computer system or computer network will be applicable to a person or group of persons responsible for it.
9. Penalty will be also applicable to any person for failure to furnish information, return.
10. Dealing with offences as –
   a. Tempering with computer source document shall be punishable with imprisonment up to 3 years or with a fine up to Rs. 2 lakhs or both.
   b. Hacking with computer network shall be punishable with imprisonment up to 3 years or with a fine up to Rs. 2 lakhs or both.
   c. Publishing of information, which is observed in electronic form, shall be punishable up to 5-10 years.

p. **National Task Force on Information Technology**

**IT Action Plan (Part – I)**

**Software Development**

The Government of India, recognizing that the impressive growth the country has achieved since the mid-Eighties in Information Technology has resolved to make India a Global IT Superpower and a front-runner in the age of Information Revolution. The Government of India considers IT as an agent of transformation of every facet of human life, which will bring about
knowledge based society in the twenty-first century. As a first step in that direction, the following revisions and additions are made to the existing Policy and Procedures for removing bottlenecks and achieving such a pre-eminent status for India. The National Task Force on Information Technology was set-up by the Prime Minister in May 1998. The task force submitted three reports. The first report containing Information Technology Action Plan I in the form of 108 recommendations and was accepted by government and notified in the Gazette of India dated 25.07.1998. The revisions and additions are aimed at accomplishing the following basic objectives:

i) **Info-Infrastructure Drive**: Accelerate the drive for setting up a World class Info Infrastructure with an extensive spread of Fibre Optic Networks, Satcom Networks and Wireless Networks for seamlessly interconnecting the Local Informatics Infrastructure (LII), National Informatics Infrastructure (NII) and the Global Informatics Infrastructure (GII) to ensure a fast nation-wide onset of the INTERNET, EXTRANETs and INTRANETs.

ii) **Target ITEX - 50**: With a potential 2 trillion dollar Global IT industry by the year 2008, policy ambiance will be created for the Indian IT industry to target for a $50 billion annual export of IT Software and IT Services (including IT-enabled Services) by this year, over a con mensurately large domestic IT market spread all over the country.

iii) **IT for all by 2008**: Accelerate the rate of PC / set-top-box penetration in the country from the 1998 level of one per 500 to one per 50 people along with a universal access to Internet / Extranets/ Intranets by the year 2008, with a flood of IT applications encompassing every walk of economic and social life of the country. The existing over 600,000 Public Telephones / Public Call Offices (PCOs) will be transformed into public tele-info- centers offering a variety of multimedia Information services. Towards the goal of IT for all by 2008, policies are provided for setting the base for a rapid spread of IT
awareness among the citizens, propagation of IT literacy, networked Government, IT-led economic development, rural penetration of IT applications, training citizens in the use of day-to-day IT services like tele-banking, tele-medicine, tele-education, tele-documents transfer, tele-library, tele-info-centers, electronic commerce, Public Call Centres, among others; and training, qualitatively and quantitatively, world class IT professionals.

Following are the some important recommendations:

1. Providing access to Internet through authorized cable T.V shall be permitted to any service provider without additional licensing.

2. For setting up ISP operations by companies, there shall be no license fee for first five years and after five years a nominal license fee of one rupee will be charged.

3. Public Tele Info Centres (PTIC) having multi media capability specially ISDN services, remote data base access, government, community information system, market information, desktop video-conferencing and web access services shall be permitted and encouraged by the government.

4. An IT course module shall be made a compulsory component of all degree courses with in a short period.

5. Government shall encourage the setting up of value-added network services including ATMs, Electronic Kiosks, Smart Cards etc for providing a "one-stop non-stop" services to the public.

**IT Action Plan – II**

*New Policy Paradigm for the Information Technology (IT) Hardware Industry*

The Hardware Industry and the Software Industry are two sides of the same gold coin representing India emerging as a Global IT superpower. The
Perspectives on IT Industry in Globalizing Indian Economy

Government of India approved the 108 recommendations covering IT Software and associated services. The second integral part of this exercise is the matching policy framework for the IT Hardware and associated services. The success of one, whether it is the export of software of $50 billion by the year 2008 or IT penetration drive for realizing IT for all by 2008, depends on the concomitant success of the other which calls for the creation of policy ambiance for the IT hardware industry.

Techno-economists pose the obvious question: Given the same degree of incentives and simplification of procedures bestowed on the software industry, there is a feasible policy regime which can give similar buoyancy to the Indian IT Hardware Industry in spite of the relatively higher capital intensiveness of the industry as a whole, without conflicting with the growth of the Software and IT Services industry. The second integral part of this exercise is the matching policy framework for the IT hardware. Government approved 84 recommendations, known as IT Action Plan-II. The following are some important recommendations—

1. All IT products and their parts imported for manufacturing will be exempted from special additional duty (SAD) with immediate effects.
2. IT product manufacturing zones will be accorded priority status and will be free from power cut and load shedding wherever technically and economical feasible.
3. Export of IT products through courier will be made possible and duty drawback for this will be permitted.
4. Ministry of Finance will notify the IT product sector as a priority sector for investment by FIIs.
5. Government purchase and disposal procedures for IT products shall be simplified in due recognition of the fast change in technology.

q. World Trade Organization (WTO) and General Agreement on Information Technology

The Information Technology Agreement (ITA-I) of the WTO (World Trade Organization) to which India is a signatory, makes it mandatory to make the customs duty zero on select imported electronics components and
products. Accordingly, the Government of India has been reducing customs duties on these items gradually over the last five years and the customs duty applicable on 217 tariff lines will be eliminated from the year 2005.

(i). **Ministerial Declaration at Singapore**

The Ministerial Declaration on Trade in Information Technology Products under Information Technology Agreement (ITA) was concluded at the Singapore Ministerial Conference in December 1996. At that time 29(1) (including the 15 EC member states) countries or separate customs territories signed the declaration. However, it was still unclear at that time whether the provisions of the Declaration would come into effect, as the Declaration stipulated that participants representing approximately 90 percent of world trade would have to notify their acceptance of the ITA by 1 April 1997. The original 29 signatories did not reach this 90 percent trade coverage criteria, as they collectively only accounted for 83 percent of world trade in information technology (IT) products. However, in the ensuing months after the Singapore Ministerial and leading up to 1 April 1997, a number of other countries to expressed an interest in becoming participants in the ITA and notified their acceptance. Thus, the 90 percent criteria had been met and the ITA entered into force with the first staged reduction in tariffs occurring on 1 July 1997.

(ii). **Basic Principles of the ITA**

The ITA is solely a tariff cutting mechanism. While the Declaration provides for the review of non-tariff barriers (NTBs), there are no binding commitments concerning NTBs. There are three basic principles that one must abide by to become an ITA participant:

1) All products listed in the Declaration must be covered,
2) All must be reduced to a zero tariff level, and
3) All other duties and charges (ODCs) must be bound at zero.

There are no exceptions to product coverage, however for sensitive items; it is possible to have an extended implementation period. The
commitments undertaken under the ITA in the WTO are on an MFN basis, and therefore benefits accrue to all other WTO Members.

The declaration provides in principles for the staging in of concession in equal rate reduction based on following time frame.

1st - 1 July 1997
2nd - 1 January 1998
3rd - 1 January 1999
4th - Complete elimination of duties no later than 1 January 2000

(iii). Some More Points Related to Information Technology Agreement

- IT Software shall be entitled for zero customs duty and zero excise duty.
- Duty shall be brought down to zero by 1 January 1999
- Out of the 217 items listed in ITA-I, 94 items, which were proposed earlier for zero duty by 1st January 2000, shall now be advanced to 1st January 1999.
- The remaining items earlier proposed for zero duty by the 1st January 2003/2004/2005 shall now be advanced to 1 January 2002.
- Concomitantly, the following schedule will be adopted:
  - Duty on Capital Goods for the manufacture of items, wherever applicable, becomes zero by 1 January 2000.
  - Inputs/raw materials for the manufacture of the items, wherever applicable, becomes zero by 1 January 2001
  - Dual-purpose items will be taken care of, wherever applicable, by allowing duty drawback benefits or by treating the supplies to the IT industry as deemed exports.
  - Zero excise duty is concomitant with zero Customs duty with in-phase reduction. Additionally, other suitable supportive measures shall be taken to encourage Indian hardware industry to become globally competitive in the light of the revised WTO-ITA schedule.
  - The Anti-dumping provisions in WTO agreement, as reflected in the Indian Laws applicable with effect from 1-1-1995 and subsequent amendments, will apply to all IT products except software.
Section-B

3. Evolutions and Revolutions of Information Technology Industry in India

Business services have drastically changed by incorporating IT in its ambit because it cuts both costs, time and thus improve product quality and performance. Another feature of Information Technology is its impermanence; no technology is subject to as profound change within short span of time as IT. No player in this industry can afford to remain stand still.

The Indian IT Industry has proved to be the country’s fastest growing segment in the globally challenging economic environment. The concept of IT became evident in India in the mid 80’s and in two decades it has revolutionized the Indian economy. The shift from material goods to intangible goods is the defining feature of the new global economy. The country’s software export for 2002-03 registered an amount of US$ 9,896 million rising to US$ million 12,579 in the year 2003-04. According to the region-wise analysis conducted by the software Export Promotion Council (ESC), The southern region is ahead of all other regions in the exports of computer software which stood at Rs. 21,307 crore followed by the north region at Rs. 11,048 crore, western region Rs. 8,716 crore and eastern region Rs. 1029 crore in the year ended 2003. The Indian export is mainly in the areas of application development, customization, database management, legacy system and IT enabled services. Majority of the activities are offshore development. According to Nasscom, Indian IT Companies are doing business with 102 countries but 90 per cent of it is with USA, Japan and Europe.

Computers, in fact, began to catch the eye of Indian industry in some forms or the other since the 1960’s. In 1960, Tata Institute of Fundamental
Research (TIFR) developed an automatic calculator, which they named TIFRAC. In the next year, Oil Multinational Standvac-ESSO hired an IBM 1401, the first commercial computer to be installed in India, which prompted IBM to set up office in India.38

The government of India started the process of computerization since 1978. During 1985-90, around 50-100 districts had initiated for computerization. When Mr. Rajiv Gandhi, the then Prime Minister of India, came to power in 1985, the government of India decided to increase the space of IT use at the district level. The National Informatics Center (NIC), a central government organization was chosen to implement a national Programme called District Information System of National Informatics Center (DISNIC) to computerize all district offices.39 Free hardware and software were offered to states by Planning Commission in 1989. By 1990, each district computer was connected to state computer through a local dish antenna and a satellite communication network. The State computer in turn was connected to computer in New Delhi.40 Commissioning nearly 500 computer centers and a countrywide network connecting these computers was a major achievement.41

It is considered that the first round of the IT revolution was the introduction of PC’s, the second round was networking and telecommunication and the third is going to be the convergence of the three existing technologies to computers, telecommunication and television. The concept of information super high way has almost become a reality with introduction of micro processor based products, which ranges from vacuum cleaners and air conditioners to television sets.42

In India 27 per cent of the population lives below poverty line (BPL), 51 per cent forms the middle class and 22 per cent belongs to higher class. The government should at the first instance, air at 510 million strong middle classes on the one hand to provide a very large potential market for IT
products and services. The present situation as regards the accessibility to IT in India is as under:

### Table - 2.1
**Accessibility of Information and Communication Technology in India (2004)**

<table>
<thead>
<tr>
<th>Product</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Computers (PCs)</td>
<td>10 Million</td>
</tr>
<tr>
<td>PC Servers</td>
<td>0.3 Million</td>
</tr>
<tr>
<td>Internet Subscribers</td>
<td>5.3 Million</td>
</tr>
<tr>
<td>Internet Users</td>
<td>26 Million</td>
</tr>
<tr>
<td>Fixed Line Phones</td>
<td>42 Million</td>
</tr>
<tr>
<td>Mobile Phones</td>
<td>42.1 Million</td>
</tr>
</tbody>
</table>

*Source: Cyber Media Research/Data Quest, New Delhi, April 30, 2005, p.6*

In order to provide IT infrastructure and services to the common man, the working group set up by the Ministry of Information Technology in May 2000 viewed three necessary pre-conditions.

1. **Availability and affordable of access devices.**
2. **Establishment of communication and networking infrastructure including telecommunication network, Internet enabled cable TV network, and**
3. **Development of IT services.**

**Indian IT Industry - An Overview**

The Information Technology Industry is of recent origin emerging on business horizon in the nineties. Its growth took place only after the international treaty in 1994. India has a very big middle class of nearly 510 million and there are high expectation about the growth of IT Industry. Since the country has a huge stock of English knowing population due to its earlier pre-British connection which facilitate, the adoption of software, having been developed in English language much more easily. IT industry earns revenue from software and services, hardware and ITES-BPO. This revenue is earned either in the domestic market or from the export market. But export market of Indian software and services constitutes major portion.
(i). **Share of Indian IT Market in GDP**

The IT Industry has shared 3.82 percent in India’s GDP and earned 21.5 US$ billion in the 2003-04. Table 2.2 shows IT Industry’s share in GDP and revenue earnings from 1997 to 2004. It is evident from the table that IT industry has contributed 1.22 percent share in country’s GDP in 1997-98 and the revenue to the tune of US$5.0 billions, which increased to 3.82 percent of GDP and US$ 21.5 billion revenue earnings by 2003-04. According to Delhi based National Association of Software and Service Companies (NASSCOM), a quasi-government organization, IT has basically 3 main segments, Software, hardware and ITES-BPO. Therefore, in this study, all these three areas have been considered for the purpose of analysis. Exports of Indian IT Software and Services are major revenue earners whereas 64 percent of the total revenue of IT Industry comes from exports market and 36 percent from domestic market for the period under study.

<table>
<thead>
<tr>
<th>Year</th>
<th>Share in GDP</th>
<th>Revenue in US$ Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-98</td>
<td>1.22</td>
<td>5.0</td>
</tr>
<tr>
<td>1998-99</td>
<td>1.45</td>
<td>6.0</td>
</tr>
<tr>
<td>1999-00</td>
<td>1.87</td>
<td>8.2</td>
</tr>
<tr>
<td>2000-01</td>
<td>2.66</td>
<td>12.1</td>
</tr>
<tr>
<td>2001-02</td>
<td>2.87</td>
<td>13.4</td>
</tr>
<tr>
<td>2002-03</td>
<td>3.15</td>
<td>16.1</td>
</tr>
<tr>
<td>2003-04</td>
<td>3.82</td>
<td>21.5</td>
</tr>
</tbody>
</table>

* IT includes Hardware, Software & Services and ITES-BPO from domestic and exports.

Source: Compiled and computed from [www.nasscom.org](http://www.nasscom.org) and [planningcommission.nic.in](http://planningcommission.nic.in) (2005)
(ii). Total Indian IT Market from Domestic and Export

Table 2.3 demonstrates that domestic market was the major contributor in 1998-99. There was the demand for PC's in the country and rising popularity of Internet has given the boost of IT in domestic market. Among domestic market, hardware alone contributed 20 percent out of the total 36 percent. The export demand of Indian software and service are however continuously increasing at International Market crossing the domestic market limit.

<table>
<thead>
<tr>
<th>Table - 2.3</th>
<th>Total Indian IT Market from Domestic and Export (1998-2004)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(In Terms of Percentage)</td>
</tr>
<tr>
<td></td>
<td>1998-99</td>
</tr>
<tr>
<td>Domestic Market</td>
<td></td>
</tr>
<tr>
<td>Hardware</td>
<td>31</td>
</tr>
<tr>
<td>Domestic Services (Software)</td>
<td>18</td>
</tr>
<tr>
<td>Packaged Software</td>
<td>6</td>
</tr>
<tr>
<td>Total (A)</td>
<td>55</td>
</tr>
<tr>
<td>Export Market</td>
<td></td>
</tr>
<tr>
<td>Software and Services</td>
<td>43</td>
</tr>
<tr>
<td>BPO</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
</tr>
<tr>
<td>Total (B)</td>
<td>45</td>
</tr>
<tr>
<td>Grand Total (A+B)</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Compiled from “Data Quest”, New Delhi, 2005 April 30, p.6

(iii). Domestic IT Market by Key Vertical

Table 2.4 presents data regarding the spread of IT in the different verticals of the Indian economy for the period from 1999 to 2004. Table reveals that the Banking and Financial Services verticals account for the largest share
of domestic IT market at 24 percent followed by telecommunication at 17 percent, small office/house at 14 percent and government at 13 percent share. The BFSI verticals are the largest market contributor because of computerization of bank branches, installation of ATM networks and facilities for Internet banking. IT spending in insurance is primarily driven by office automation and customer relationship, management applications for acquiring and managing customers. Telecommunication is next major domestic IT market contributor registering 17 percent share during the referred period. Cutthroat competitions in telecommunication sector have thrown up multifaceted challenges. To sustain in highly competitive market, there is an urgent need to invest in network efficiency and infrastructure by the help of IT software.47

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>34</td>
</tr>
<tr>
<td>Banking and Financial Services</td>
<td>18</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>10</td>
</tr>
<tr>
<td>Small Office/House</td>
<td>08</td>
</tr>
<tr>
<td>Education</td>
<td>03</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Computed from website www.nasscom.org

(iv). Domestic Demand for IT Services and Software

Indian IT vendors are increasingly turning attention to domestic market. The domestic market of software and services has registered US$ 3.9
billion during 2003-04, which has increased from US$ 2.8 billion in 2002-03 at 26.1 percent annual growth rate. However, despite the encouraging trends, the domestic software market size comes down at marginal rate as compared to software and services exports market. It is due to a higher level of piracy, pressure and software prices and lower level of sophistication in IT spending for most Indian companies and organisations.\(^8\) It is discernible from table 2.5 that domestic software market was 1.9 US$ billion in 1999-2000, which has now reached at 3.6 US$ billion in 2003-04. It almost doubled just in a span of five years i.e. from 1999 to 2004. But total Domestic IT market reached at US$ 8.2 billion with the contribution of US$ 3.6 billion from software and services, US$ 4.3 billion from Hardware and US$ 0.3 billion from ITES BPO during 2003-04.

<table>
<thead>
<tr>
<th>Year</th>
<th>US$ billion</th>
<th>Growth %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>1.9</td>
<td>-</td>
</tr>
<tr>
<td>2000-01</td>
<td>2.5</td>
<td>32.6</td>
</tr>
<tr>
<td>2001-02</td>
<td>2.5</td>
<td>00</td>
</tr>
<tr>
<td>2002-03</td>
<td>2.8</td>
<td>13.0</td>
</tr>
<tr>
<td>2003-04</td>
<td>3.6</td>
<td>26.1</td>
</tr>
</tbody>
</table>

Source: Compiled and computed by the Research Scholar from Nasscom’s Resource Center (2004) through nasscom.org

b. Indian Software Segment of IT Industry

Indian Software industry has been a source of dynamism and technological innovation. It has provided demonstration effects for other Indian Industries in terms of export - orientation and strategic alliances. It has been building up India’s image abroad in terms of entrepreneurial and technological capabilities measured by the age of many industries. The
software industry in India is still in its infancy, yet, its growth and
development have caught the attention of the world market. Most of the
largest software companies of the world such as IBM, Microsoft, Novell,
Oracle, AT & T, CISCO and Motorola etc. have set up their development
centers in India. Close to 275 Indian software companies have acquired
international quality certificate ISO 9000 and 80 companies are under pipeline
to acquire this quality maturity certificate. As far as the SEI CMM (Software
Engineering Institute Capability Maturity Model) Level 5 certificate is
concerned, Indian Software Industry has emerged as the real champion with
66 Indian Companies bagging the SEI CMM level 5 certification. Only 150
companies from all over the world have received this certificate and by this 44
percent of total comes under the Indian shaded companies. According to a
Nasscom survey there are more than 3000 companies in India engaged in the
business of software exports of these top ten software companies such as
accounted almost 40 percent share of software exports in 2003-04 in terms of
revenue and share in total exports.

(i). Top Ten Indian Software Exporters

Table 2.6 takes into account the top 10 software exporters as per
Nasscom ranking in 2003-04. According to the statistics available in this table,
the Tata Consultancy Services (TCS) is the company which generated
maximum revenue i.e. to the tune of US$ 1198.90 million followed by Infosys
US$ 1026.0 million, Wipro US$ 854.10 million and Satyam Computers US$ 538.60 million during 2003-04. TCS accounts 9.82 percent share of total
software exports followed by Infosys 8.40 percent, Wipro 7.00 percent and
Satyam Computer at 4.41 percent respectively. Infosys has increased its share
by 1.93 percent compared to 6.47 percent in 2000-01.

The Indian companies have managed to develop and design a number
of software products in the last few years in the field of banking, finance,
insurance, accounting and education. Products like ‘Finacle’ and ‘Payaway’ of Infosys have been adopted by a large number of overseas banks across the world for banking, insurance and health. TCS has designed software ‘Mastercraft’ and has fared well in Europe and US. ‘Teleprodigy’ and ‘Websecure’ software produced by Wipro for billing system for ISPs and Internet security have grabbed the international market. Polaris software has developed ‘Polaris Point’ especially for retail banking and it has been received well in France and European countries.

Table - 2.6
Top Ten Indian Software Exporters
(2000-2004)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Tata Consultancy Services (TCS)</td>
<td>623.97</td>
<td>10.03</td>
<td>1198.90</td>
<td>9.82</td>
</tr>
<tr>
<td>02.</td>
<td>Infosys Technologies Limited</td>
<td>402.81</td>
<td>6.47</td>
<td>1026.00</td>
<td>8.40</td>
</tr>
<tr>
<td>03.</td>
<td>Wipro Technologies</td>
<td>381.82</td>
<td>6.14</td>
<td>854.10</td>
<td>7.00</td>
</tr>
<tr>
<td>04.</td>
<td>Satyam Computer Services Ltd.</td>
<td>269.83</td>
<td>4.34</td>
<td>538.60</td>
<td>4.41</td>
</tr>
<tr>
<td>05.</td>
<td>HCL Technologies Limited</td>
<td>244.98</td>
<td>3.94</td>
<td>412.90</td>
<td>3.38</td>
</tr>
<tr>
<td>06.</td>
<td>Patni Computers System Ltd.</td>
<td>112.09</td>
<td>1.80</td>
<td>266.40</td>
<td>2.18</td>
</tr>
<tr>
<td>07.</td>
<td>I-Flex Solutions Ltd.</td>
<td>63.86</td>
<td>1.02</td>
<td>168.40</td>
<td>1.38</td>
</tr>
<tr>
<td>08.</td>
<td>Mahindra British Telecom Ltd.</td>
<td>97.82</td>
<td>1.57</td>
<td>158.40</td>
<td>1.29</td>
</tr>
<tr>
<td>09.</td>
<td>Polaris Software</td>
<td>-</td>
<td>-</td>
<td>126.10</td>
<td>1.03</td>
</tr>
<tr>
<td>10.</td>
<td>HCL Perot Systems Ltd.</td>
<td>95.49</td>
<td>1.53</td>
<td>118.60</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Source: Worked out from the data available on nasscom.org (2004)

(ii). Destination of Software Exports

The exports of the Indian software have witnessed exponential growth as compared to some of the world’s most sophisticated countries. According to Nasscom study of 2003-04, India exported software to more than 102 countries worldwide and out of this, 59.0 percent is alone exported to North
Perspectives on IT Industry in Globalizing Indian Economy

America (USA and Canada), 22 percent to Europe, 16.5 percent to Asia pacific and rest of the world and 2.5 percent to the Japan. The share of North America decreased from 67.7 percent in 2002-03 to 59.0 percent in 2003-04. Whereas the share of Asia Pacific and ROW has increased by 7.5 percent as compared to 2002-03. North America has been India's biggest favourite export destination for the last decade.

### Table 2.7
Destination of Indian Software Export (1999-2004)
(In Terms of Percentage)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>North America (USA and Canada)</td>
<td>62.0</td>
<td>62.0</td>
<td>67.7</td>
<td>59.0</td>
</tr>
<tr>
<td>Europe</td>
<td>23.5</td>
<td>24.0</td>
<td>21.3</td>
<td>22.0</td>
</tr>
<tr>
<td>Asia Pacific and Rest of World</td>
<td>11</td>
<td>10</td>
<td>09</td>
<td>16.5</td>
</tr>
<tr>
<td>Japan</td>
<td>3.5</td>
<td>4.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>


(iii). Structure of Software Exports

An analysis of Indian software exports shows significant shift towards offshore services. In the real sense, share of offshore service has gone up to 62 per cent as against onsite service at 38 percent during 2003-04. Onsite services registered 56.08 percent share as compared to 38.62 percent share of offshore services during 2000-01 (Table 2.8). In the initial years, the reason for major share of onsite services was client who often showed lack of trust for Indian firm’s credibility and perceived a higher degree of risk in sending work out offshore. In order to reduce the risk, they preferred to retain most of the
control over production by having the work carried onsite. But now this myth has been over, because Indian Software industry has fixed a position at international export market. Changes in the government ideology have encouraged Indian firms to undertake business activities at low risks.

**Table 2.8**
**Indian Software Exports By Delivery Models**
**(1994-95 to 2003-04)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Onsite Service</td>
<td>61.0</td>
<td>58.18</td>
<td>57.43</td>
<td>56.08</td>
<td>45.20</td>
<td>38.94</td>
</tr>
<tr>
<td>Offshore Services</td>
<td>29.5</td>
<td>33.92</td>
<td>32.94</td>
<td>38.62</td>
<td>50.68</td>
<td>57.89</td>
</tr>
<tr>
<td>Product &amp; Packages/ Unclassified</td>
<td>9.5</td>
<td>7.90</td>
<td>9.63</td>
<td>5.30</td>
<td>4.12</td>
<td>3.17</td>
</tr>
</tbody>
</table>

*Source: Compiled and computed from web portal of Nasscom and Cyber Media, New Delhi*

(iv). **Exports by Key Vertical**

Table 2.9 furnishes data with regard to financial services sector, Information Technology spending by banking, insurance companies, and the securities. It is evident from the table that these firms accounted for the largest share of Indian Software and services exports, which is around 40 percent followed by manufacturing telecom equipment and services provider with around 13 percent, manufacturing at 12 percent and retail and healthcare sector at 5 percent each for the period under review. Health care, Telecommunication, Retail and the government are emerging verticals of Indian software and services exports. The share of Banking and Financial services is increasing continuously from 35 per cent in 2001-02 to 40 percent in 2003-04. Installation of ATMs network, system selected to Credit/Debit cards
and facilities for Internet banking adopted almost by all the banks in India are the main reason attributed to overall increase in the export by key verticals.

Table 2.9
Indian IT Services and Software Including ITES-BPO Exports by Key Vertical (2001-02 to 2003-04)

<table>
<thead>
<tr>
<th>Key Vertical</th>
<th>2001-02</th>
<th>2002-03</th>
<th>2003-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecom Services Equipment</td>
<td>15</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Retail</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Health care</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Banking and Financial Services</td>
<td>35</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>Government</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Transportation</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Utilities</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>26</td>
<td>21</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Compiled from Nasscom's Resource Center (2004)

c. Indian Hardware Segment of IT Industry

The hardware segment is an important constituent of the Indian IT Industry. Table 2.10 provides the statistical information regarding Indian hardware segment from 1999 to 2004. The revenue earnings from hardware have risen from US$ 2.4 billion in 1999-2000 to US$ 4.8 billion in 2003-04. But its share in total Indian IT revenue has decreased from 28.6 percent in 1999-2000 to 22.4 percent in 2003-04. To improve the performance, the government in association with Manufacturers Association of the Information Technology (MAIT) has worked out strategy to develop India into a major manufacturing base and put at par with Taiwan, China and Hong Kong. The MAIT is playing the anchor role in the development of Hardware segment of Indian
Information Technology Industry. Table further shows the growth and share in IT Industry of hardware segment from 1999 to 2004. The contribution of hardware in total revenue earnings of Indian IT Industry is decreasing. But revenue is increasing with a marginal growth rate. This sector of Indian IT industry is facing considerable amount of pressure due to insufficient infrastructure facilities and zero import duty under WTO- IT agreement.

### Table - 2.10
#### Hardware Segment of Indian IT Industry
(1999-2004)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue in US $ billion</th>
<th>Growth (%)</th>
<th>Share in IT Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>2.4</td>
<td>-</td>
<td>28.6</td>
</tr>
<tr>
<td>2000-01</td>
<td>3.4</td>
<td>29.41</td>
<td>28.0</td>
</tr>
<tr>
<td>2001-02</td>
<td>3.2</td>
<td>-6.25</td>
<td>23.5</td>
</tr>
<tr>
<td>2002-03</td>
<td>3.8</td>
<td>15.78</td>
<td>22.2</td>
</tr>
<tr>
<td>2003-04</td>
<td>4.8</td>
<td>20.83</td>
<td>22.4</td>
</tr>
</tbody>
</table>

*Source: Compiled from dqindia.com (Cyber Media) and Nasscom*

d. **Indian ITES – BPO Segment of IT Industry**

The globalization of trade in commodities and manufactured goods has accompanied globalization of services. The IT enabled services refers to front office work as well as back office work. After the IT services opportunity, IT enabled services opportunity has emerged as the single biggest and there has been a spate of activity in this area in the past 5-6 years. The success of the IT services industry in India coupled with conductive supply side factors such as availability of manpower and cost arbitrage has led to the blossoming of the ITES – BPO industry. Business process outsourcing (BPO) is of ITES latest derivative on Indian business
BPO has its genesis in the amalgam of Total Quality Management (TQM) and Business Process Re-engineering (BPRe). According to Nasscom-Mckinsey Report, India offers advantages in the sphere of BPO business by saving 40 percent to 60 percent of total cost, quality improvement of 3.8 percent and productivity improvement by 20-50 percent. Over the last few years, the world wide ITES and business process outsourcing industry has undergone rapid transformation. Continuing pressure on cost bases at a time of growing competitiveness is driving companies to look at offshore outsourcing as a strategic alternative access to global talent, economies of scale, process engineering, profit margin and improvements in quality are some of the gains that companies have realized. The Indian ITES - BPO industry is a key driver of the overall India IT software and services sector during 2003-04, recording revenue of US$ 3.9 billion in this period.

Indian ITES - BPO Activities by Service Lines

The service lines that have shown significant growth within the Indian ITES - BPO industry include the following.

(i). **Customer Care** - It includes technical support and monitoring, handling customer queries a product and services and accounts and services support. It is discouraging to note that it is no high growth segment for the Indian ITES - BPO industry. (ii). **Finance** - The Finance services market has shown rapid growth creating significant opportunities for Indian ITES - BPO players. While traditional ITES - BPO offerings for this segment include billing, accounting transactions, general accounting, tax consulting and compliance, risk management, financial reporting and analysis, a number of Indian service providers have also moved into the highest - end of the value chain with services such as equity research and insurance claim processing. (iii). **HR Services** - This segment covers benefits administration, education and training, recruiting and staffing, payroll services, hiring administration and
records management. Lack of domain expertise among vendors is stated to have impeded the growth of this market, despite the large global opportunities. (iv). **Payment Services** - Payment services include credit/Debit card services, Cheque processing, EDI, Customer interaction, Customer Care, database marketing, customer analysis, web sales and internet marketing. (v). **Administration** - The administration segment, one of the largest and fastest growing areas within the HES - BPO domain. Services provided to this market include billing shareholder services, tax processing, claim processing, asset management, document management, transcription and translation. (vi). **Content Development** - Content Development services include engineering and design services, digitization, animation, network management, biotech research. It is a very significant revenue contributor to the overall ITES - BPO industry.

Table 2.11 presents the information regarding revenues and employees strength in ITES-BPO market by key service lines for the period 2001-02 to 2003-04. The table further analyses that the customer care service is the major contributor in terms of revenue and employment generations to ITES - BPO segment of Indian IT industry. The customer care has registered US $ 1200 million and it is almost 30 percent to total revenue earnings of the industry. Customer Care is followed by Finance, US$ 835 million, Content Development, US$ 550 million, Administration, US$ 540 million respectively in 2003-04. Customer care has generated more employment opportunities, as 96,000 employees are associated with this segment in 2003-04 followed by Content Development 51,000 employees and finance 41000 employees. The ITES - BPO segment has overall earned US$ 3630 million and 253,500 employees are working under this segment during 2003-04.
Table - 2.11
Statement Showing ITES - BPO Market By Key Service Lines
(2001-02 to 2003-04)
(Revenue in terms of US$ million)

<table>
<thead>
<tr>
<th>Service Line</th>
<th>2001-02</th>
<th>2002-03</th>
<th>2003-04</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employees</td>
<td>Revenue</td>
<td>Employees</td>
</tr>
<tr>
<td>Customer Care</td>
<td>30,000</td>
<td>400</td>
<td>66,400</td>
</tr>
<tr>
<td>Payment Services</td>
<td>7000</td>
<td>110</td>
<td>12000</td>
</tr>
<tr>
<td>Finance</td>
<td>1.5000</td>
<td>300</td>
<td>25,500</td>
</tr>
<tr>
<td>Administration</td>
<td>14000</td>
<td>185</td>
<td>26,000</td>
</tr>
<tr>
<td>Human Resource</td>
<td>1500</td>
<td>30</td>
<td>2,100</td>
</tr>
<tr>
<td>Content Development</td>
<td>39,000</td>
<td>450</td>
<td>48000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>106,500</strong></td>
<td><strong>1,475</strong></td>
<td><strong>180,000</strong></td>
</tr>
</tbody>
</table>

*Source: Compiled from Nasscom’s web portal (2005)*

3. **Conclusion**

From the foregoing discussion, it is deduced that from the mid 80's, onwards the government of India is specifically focusing its plans, policies and programmes for the development and promotion of IT industry in the country. The government has announced IT as a thrust area and providing more liberal policy framework for the industry. During 1991, the government announced income tax exemption from profits of software exports and later, reduced import duty on computer software from a high of 114 percent to nil. Intellectual Property Rights of computer software is covered under Indian Copyright Act, which is one of the toughest in the world. India became the 12th nation in the world to adopt a cyber law regime during 2000 by drafting Information Technology Act 2000. Indian Information Technology Industry is a boon of liberalization for globalization. India has showed remarkable progress in the sphere of IT industry. Indian IT industry is fast shaping the destiny of global economy. IT industry has contributed 3.82 percent share in
India’s GDP and its size reached at US$ 21.5 billion during 2003-04. This industry has proved to be a hallmark at global market. The export market is major contributor to Indian IT industry with 64 percent earnings of total market. With regard to destination of India’s software exports, North America with USA and Canada have claimed major chunk of share to the tune of 59.0 percent of total exports in 2003-04. Share of hardware in IT industry has decreased from 28.6 percent in 1999-2000 to 22.4 percent in 2003-04 due to insufficient infrastructure facilities and zero import duty under WTO-IT agreement. This segment is also receiving high degree of threats from Singapore, Taiwan, China and Hong Kong. ITES - BPO is sun rising segment in IT industry registering US$ 3.9 billion revenue earnings in 2003-04. ITES-BPO services of India are able to deliver superior quality human resources because of large pool of english speaking people and low cost advantages. Geographical location is another advantage for India. This segment is also confronted with threats from Ireland, Malaysia and China. India has hence to formulate some concrete strategies to stay as a “Preferred Global Hub”.

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