Chapter - VII
Summary, Conclusions and Suggestions

➢ SUMMARY

➢ CONCLUSIONS

➢ SUGGESTIONS
Chapter - VII
Summary, Conclusions and Suggestions

Information Technology is the most vibrant and the most versatile field which has become part of daily life of every one. Use of IT helped in removing geographical barriers thus shrinking the world into a global hut. At the same time use of IT has increased the sphere of markets resulting into more opportunities for entrepreneurs. On the other hand this has also created an environment of tough competition forcing business entities to strive on improved quality of goods and services. At the bottom line customers/consumers are the main beneficiary. Use of IT provides transparency that has helped in curbing corruption to some extent.

Chapter – I
INTRODUCTION

In pre-civilization period, for centuries man lived without keeping records of any of its activities. But with the formation of social organizations like various tribes, need for number of adjustments occurred. With increasing complexities of life the necessity to remember more details increased. Consequently, man used his fingers to count, which very soon proved to be insufficient with increasing number of transactions and memory constraints. As a result, sticks, strings and rocks were used to solve the problem of counting and recording inventory of livestock and other events. With time, tribes developed into nations, trade and commerce grew. Stones and sticks were not satisfying the needs of early traders. And mankind felt that each invention resulted in a significant production growth and made it possible for mankind to reach a fundamentally new development stage and to improve considerably the quality of life.
**Need for Information: A Historical Look**

Increasing sphere of political, social, academic and commercial activities posed various problems, which constantly kept the mankind busy with different experiments leading to awesome inventions.

Defence technology played a major role in driving IT development through most of the twentieth century. In World War I, commanders sometimes used wireless telegraph to control the movement of forces. Field telephones were developed to facilitate communication in trench warfare. During World War II US Army faced a grave problem of maintaining calculation of ballistics tables, which were needed in enormous quantities to help the artillery fire their weapons at the correct angles. To solve this problem first true electronic computer - the ENIAC (Electronic Numerator, Integrator, Analyzer and Computer) was invented.

With growing trade and commerce business organizations and nations emphasized on information both internal and external. Information became a vital aspect for survival. Collection of data on large-scale and manual manipulation as per the requirements was the most difficult task. The only solution to this problem was sophisticated electronic devices, which could accept huge data, manipulate with invincible speed and highest accuracy, and store it for longer period of time and reproduce whenever required.

Today much of modern life depends on computers and computer networks which are playing vital role in the day-to-day operations. To enhance competitiveness organizations are widely using computer and networks for research and development.

**Present Scenario – Technologies of Information Age**

Present day computers are providing books of millions of libraries on small storage devices, which otherwise requires huge buildings to preserve. Never before have we experienced technologies that are evolving so rapidly (increasing in power by a hundredfold every decade), altering geographical
barriers and the constraints of space and time, and reshaping the way we communicate, learn, and think.

**Meaning of Information Technology**
The fundamental aspect of any information is data, which can be more appropriately called as informational raw material but it is not of much use for organization/managements for decision making. The purpose of data processing is to bring order to them and place them in proper perspective so that meaningful managerial information will be produced. The primary distinction between data and information, therefore, is that while all information consists of data, not all data produce specific and meaningful information which will enable managers to plan, operate, and control their business activities.

Information Technology, or IT, refers to capital equipment that makes extensive use of microelectronics and programmed instructions called Software. IT systems are fast, precise, high storage using small components, etc.

**Significance of IT**
IT has made collection of data easier and provides new ways to access it from remote locations. Such facility on one hand is economical and on the other hand is time saving. The most important aspect is that digital data can be accessed and used by number of persons from various geographical locations at a given point of time. The advancements in IT have helped the Science and Engineering community to great extent. Research and Development (R & D) has become more powerful and less expensive. IT had its impact on nearly all walks of life; like Economy, Politics, Education and Culture, Research and Development, Market Environment etc.

**Indian IT Industry - The Problem**
By the year 1993, spread/use of internet in India was quite slow i.e. 4 networks and traffic of 3, 386 MB. In case of spread/use of internet; India was long way behind not only of the USA which had 7,991 networks that
registered traffic of 1,68,97,635 MB but also behind Singapore which recorded traffic of 35,471 MB on its 21 networks and Hong Kong which managed data flow to the extent of 33,512 MB over its 18 networks.

During 1995, Indian Hardware segment recorded sales of about 3,00,000 PCs while their US counterparts sold 50 million PCs. The revenue of Indian software companies (both domestic and exports) was US$ 800 million, a mere 0.27 percent of the world market of US$ 300 billion in 1995. India’s IT spending in 1995 was US$ 2 billion, a mere 0.36 percent of the world IT spending of US$ 570 billion.

The India’s prowess in the field of IT is undisputed. It has helped India come out of the situation where debt trap was just imminent around early 1990’s. Foreign remittances and exchanges earnings through doing outsourced business have enriched our Forex stock. It has helped in reducing the burden of unemployment and also mitigating the inferiority complex. It has helped in providing a cue to the alternatives in the employment avenues also. It is generally felt that IT has augured well for India and we should ‘feel good’ about it.

**Hypothesis:** My first hypothesis is that India has not been able to completely exploit the opportunity in relation to the capabilities its IT personnel has.

My second hypothesis is that the Indian intellectual capabilities are being used to empower the others more than they are to build up a strong IT base for the country.

**Objectives of the Study**

India's success in the software industry at global level resulted into the Government of India recognizing ‘Software’ as a ‘Thrust’ area in the new millennium. But after a long journey of nearly fifteen years the Indian IT industry failed to generate much demand for their services in the domestic market during the last decade i.e. 1990 to 2000, for number of reasons. The foremost cause was the fear of loss of employment. ‘Bharatiya Mazdoor
Sangh’ had observed ‘Labour Day’ as ‘Anti-Computer Day’ and the entire year as an ‘Anti-Computer Year’. Even bank employees where PCs are ubiquitous now had burnt effigies of computers in protest against computerization. And more importantly the rigidity of Indian government policy in those days also played a vital role in slowing down the growth pace of this blossoming industry. The government failed to encourage the adoption of computerization in government and state-owned enterprises on the other hand offered little incentive to adopt information technology to improve operations and productivity, to the Indian private sector companies. The severe import restrictions on hardware, distorted tariff structure, poor infrastructure, high customs duties, tough competition from multinational corporations (MNCs), and control of foreign currency badly affected the domestic market.

This study aims to examine various problems faced by the Indian IT industry and to analyze the state of Indian IT industry including policy options that will help bridge the gap between the present Indian position and the potential that could be harnessed for India in the various segments like; Hardware, Software, and others, of IT industry.

This study lays emphasis on the establishment, struggle and state of the computer industry in India. The Indian software industry represents a case of export led growth in a country with a large domestic market but without a great exporting tradition. It has accomplished this growth by becoming an important part of the global division of labor in software.

The objectives of the study are first to evaluate the status of the IT base and the capabilities the Indian youth has, besides the business translations of the IT operations in the country. The study contemplates to attain the following objectives in detail:

1. To evaluate the status of the IT industry in the country,
2. To identify the trends in IT industry in the last decade.
3. To identify the profit making companies in the post liberalized era.
4. To study the impact of growth of IT sector on the profitability and liquidity of selected IT companies.

5. To find out the contribution of allied segments of IT to the growth of Indian IT industry.

6. To identify the major segment of IT responsible for growth of Indian IT industry.

7. To study whether government policies were adequate, timely and supportive.

Scope and Limitations
The present study is based on the secondary data published in journals and periodicals in India. The study covers a representative sample of 10 companies to gauge the performance and growth in the last 10 years. The period of study is from the year 1990-91 to 1999-2000.

This study has devoted more attention to software side of the IT sector. The first reason is that the data sources available to the researcher largely focus on the software aspects of IT. The second reason is that while IT hardware provides the platforms on which software and applications build, a very smaller number of hardware platform is required, which allows the use of numerous software and applications. This fact has attracted a large number of companies to switch over to software and other services. In terms of revenues too the size of hardware industry is quite small as compared to the size of software and other services industry. Moreover, a major portion of revenue earned by the software segment came in from exports which have resulted into global recognition to India. IT being the most versatile field witnessed very fast changes in terms of technology trends. Thus, some well known IT companies which once upon a time were market leaders but failed to keep itself abreast of changing trends has vanished. This was the fate of even those IT companies who committed strategic mistakes in an environment of cut-throat competition. Few of the IT companies which are private companies, do not make their records public and these are those who do not entertain
research students despite repeated requests. Due to this reason the researcher could not procure complete financial data of such companies.

**Methodology**

The data required for the present study has been collected from the secondary sources which include the first hand company sources, the journals and periodicals of IT sector like Dataquest, Computers Today, Express Computers, PC Quest etc., in addition to the data published in Economic Times, and other financial journals and periodicals. Data for this study has also been downloaded and analyzed from the Internet.

The selection of the sample companies for this study has been made very carefully. The premise for selection has been the amount of revenue generated by companies since this remains the single most vital factor for reflecting a particular company’s size and span of operations. Dataquest the lead Magazine reporting on IT corporate growth, publishes the list of 20 top performing IT companies in the country. For the purpose of this study I have considered this yard stick of Top 20 companies’ useful for finding out the growth pattern of the industry. However, the list of Top 20 companies which is prepared every year includes even those companies which remained in the list on the count of extent of revenue generated but disappeared from the market for reasons of volatile market competition and therefore, were dropped from the list. Some of them lost their places due to lower generation of revenue year after year. Similarly, there are also new entrants appearing in this list which are positioned in the Top 20 list for earning higher revenue during the period covered for study.

We for the purpose of our study carefully scrutinized all such companies and selected for the purpose of our study only those companies which showed steady presence on the list of Top 20 companies. Consistency was the criteria for our selection of the companies for the study period of 1990-91 to 1999-2000. It can be seen from the following table (refer Chapter III) that a total of
forty nine (49) companies appeared on the Dataquest list over the decennial period, but only 5 showed steady presence.

Chapter – II
HISTORY AND DEVELOPMENT OF IT SECTOR IN INDIA

Emergence of Computer in India
In the year 1955 India purchased First digital computer – HEC-2M developed by A.D. Booth at Birk Bak College, London for ISI. It was not just the first computer for India to be brought in but it was the first in Asia, outside Japan. By the year 1961 India started using computers for commercial purpose.

Pioneering Efforts
India liberated in the year 1947; had a very tough beginning with a number of disturbances but the visionaries of modern India knew the importance of technology in the overall development of the nation. India taking a very quick start stepped up into the field of manufacturing telephone equipments and set up the Indian Telephone Industries Ltd. (ITI Ltd.) as its Public Sector Enterprises (PSEs) in the year 1948. And realizing the potentials of electronics the Bharat Electronics Ltd. (BEL) was started in 1954.

Similarly, after the 1962 war with China, Government of India once again realized that electronics could have a strategic role in national security and overall development. Thus under the Chairmanship of the renowned nuclear scientist Dr. Homi J Bhabha, Atomic Energy Commission (AEC), also known as the Bhabha Committee was set up. Within a very short period of time India was dragged into another war with Pakistan in the year 1965. During this period the U.S. stopped the supply of electronics equipment, this accelerated the research and development programmes under the aegis of the Defence Ministry’s Department of Defence Supplies.

Electronics Corporation of India Ltd. (ECIL)
The Committee in its report in February 1966 suggested the establishment of a National Computer Center and five regional centers. To fulfill the needs of
nuclear projects in the field of instrumentation another PSE, Electronics Corporation of India Ltd. (ECIL), under the aegis of the Atomic Energy Commission was set up in 1967.

**Department of Electronics (DoE)**

In February 1971, the government constituted the Electronics Commission (EC), under the Chairmanship of Professor M.G.K. Menon. The Electronics Commission replaced the Electronics Committee and emerged as the primary policy making body.

**National Informatics Center (NIC)**

The National Computer Center established in 1970 by the Electronics Commission, administered by its IPAG (Information, Planning and Analysis Group), with financial assistance from the UNDP; started functioning in 1977 as National Informatics Center.

**Evolution of Software Industry**

Until mid-1960s, there was virtually no Software development going in India. Software available in the market was bundled with computers sold by multinational companies like IBM. The early Software development efforts focused on producing in-house applications for efficient use of these computers. The industry actually got its start with the establishment of Tata Consultancy Services (TCS) in 1968.

**State of IT Industry during 80s**

Between 1980 and 1984, some measures were taken to toughen control over Hardware imports. To boost domestic production of Hardware customs duties for imported Hardware were raised to 135 percent and export enterprises were recommended to import Hardware. In 1981, the Ministry of Trade established the status of an export-oriented unit. The Rajaraman Committee Report recommendations were quite stringent and advocated tight conditions for import-export.
‘New Computer Policy’ on November 19, 1984, recognized Software development business as an “Industry” making it eligible for an investment allowance and other incentives, reduced import duties for peripherals and import of computers liberalized. In the year 1985, the Rangarajan Committee recommended mechanization of banks.

In 1986 India realizing the importance of IT industry in the nation’s economy started concentrating on its development. Another program named *Policy on Computer Software Export, Software Development and Training* was developed, which offered easy import of Hardware through some procedural changes and regulations on domestic-oriented use of imported Hardware were dropped. It also delicensed the import of Software allowing anyone to import it by paying 60 per cent import duty.

An insurance scheme was introduced in 1987 to cover the clients of Indian Software companies against malpractice, besides, export shipment credit and credit guarantees were made available. The Software industry was wholly exempted from tax on export profits received from Software and services exports.

**National Association of Software and Service Companies (NASSCOM)**

In 1988, almost 100 Software members of MAIT quit to form its own trade body, the National Association of Software and Service Companies (NASSCOM), to promote its interests.

**Policy Reforms After 90s**

The decade of 90s witnessed significant steps in the direction of reform. Capacity constraints were removed from manufacturing companies. Import of know-how was permitted on peripherals at the same time duty was reduced on imports. Import of Software was centralized and source code imported on paper was made duty free. Basic services like, national and international long distance services, cellular telephony were opened to private sector.
Software Technology Parks of India (STPI)

Though the STPI was established in 1986 and the intention of the government to promote Software was made clear in the ‘New Software Policy’ but exports moved with slow pace. One of the most important reasons behind this failure was insufficient infrastructure. The industry lacked high-speed data communication link, the backbone of this industry, with which Software units can connect, communicate and transfer their work to clients all over the world. Other major hindrance was various time-consuming approvals, clearances and certificates needed from the government.

In the year 1990 the concept of STP was given specific shape which reaffirmed its status of an export-processing zone under DoE. The first STP was opened in Pune in 1990 and within a few months two other parks were opened in Bangalore and Bhubaneshwar.

Problems faced by Indian IT industry during early 1990s

In 1990, the IT industry received some good news like exemption of tax on profits from software exports, and reaffirmation of Export Processing Zone (EPZ) to STPs under the DoE. But at the same time devaluation of rupee and stringent import policies like software import duty was raised to 112 percent. Policies of those days made customs clearance more difficult. This altogether was hampering the overall growth of IT industry. The entire nation was going through economic instability.

IT Boom and the Product Market

Information Technology, as a product can be broadly categorized into Hardware and Software but its large spread activities and the volume of revenue these activities/products contribute has categorized the IT market into segments like; Hardware, Software, Peripherals, Training, Maintenance, Networking and Others.

The striking difference between computer software and hardware industry is that, Software is more of a service oriented industry mainly targeting exports whereas hardware is a goods oriented industry, targeting home market.
Finally, India’s comparative advantage in the software industry, generated from its relative abundance of qualified software engineers can only be termed as the beginning of growth of the Indian IT industry. This was just one aspect signaling the growth of this industry which also demanded strong support from the government in terms of framing policies enabling to build infrastructure. Telecommunications, one of the vital components of Information Technology also required special attention from the government. This sector’s need of the time was to build improved communications infrastructure; obviously backed by favourable policies from the government.

Chapter – III
BRIEF REVIEW OF SELECTED IT COMPANIES

A detailed study of national and international issues that bears impact on the Indian IT industry during the period of study i.e. year 1990-91 to 1999-2000, is presented in chronological order. These issues; to a major extent have affected the Indian IT industry either ways.

Indian IT industry during 1990-91 to 1999-2000

1990’s brought in number of major problems on domestic as well as global front. Starting with nationwide aggressive agitations against the Mandal Commission recommendations’ that badly affected the northern market of India resulting into destabilized government and shaky foreign investors. Soon after this the Ayodhya issue was floated that triggered off the fall of Central government; then came in a care-taker government. General Elections to the Parliament were to be held during this time Rajiv Gandhi, Ex-Prime Minister was assassinated. The same year global market was affected due to Gulf war resulting into high oil prices; creating forex crunch that weakened Indian economy even the US – India’s major Software market saw recession. Russian market was made open to other countries that affected Indian Software exports business.

Indian IT industry had its own problems like Hardware segment – contributor of major share in IT industry’s revenues was facing number of domestic
hurdles like strict government norms for license, ban on imports, lack of investments and the ‘Grey Market Demon’. At the same time the Software segment was facing piracy crunch.

Fiscal year **1991-92** was affected due to the cut-down in budget by the government departments in the wake of the forex crunch following the Gulf War. **1992-93** was the third year going through major disturbances like demolition of ‘Babri Masjid’ followed by nationwide riots. Most badly affected was the commercial capital of India – Mumbai, which witnessed riots for longer period of time and series of Bomb blasts that shook the nation.

Year **1993-94** was quite healthy year for the Indian IT industry with nearly 37 percent growth the gross total revenue went upto Rs. 4757 crore. Similarly, **1994-95**, another impressive year with gross revenue of Rs. 6,840 crore, the IT industry grew by nearly 44 percent. Behind the overall improved performance of the Indian IT industry remains the fact that there was a mass drive for automation from all fields like the government, the corporate sector, the public sector and educational institutions.

Year **1995-96** was once again a year with major events like the busting of ‘Hawala’ racket, the Enron issue and general elections; compounded with tight monetary policies of RBI leading to liquidity crunch. Amongst series of financial scandals and general elections budget was voted-on-account and the budget for fiscal year 1995-96 was presented around July. Government curtailed its expenditure adding just a meager share of 18 percent to the Indian IT industry’s revenue. Fiscal year **1996-97**, once again Indian IT industry emerged as a promising one. Even persistent problems like political uncertainty, tight money situation could not harm the growth of Indian IT industry.

Year **1997-98** was like golden harvest for the Indian IT industry, reaping great crops from seeds sown in yester years it showed a major growth. Year **1998-99** - Changed political scenario –newly elected government at the Center wanted to work differently but was facing numerous in-house problems. This
multi-party government headed by BJP focused on defense and attracted
global attention after nuclear tests. This affected the Foreign Direct
Investment (FDI).

And fiscal Year 1999-2000 witnessed the biggest problem of this decade.
Pakistan occupying strategic points of Indian Territory dragged India into war
– ‘Kargil War’. Plans to formulate the Ministry of Information Technology
and much awaited Information Technology bill forming cyber laws was
shelved off. General Elections to the Parliament were due in September 1999.

**Leading Top 20 IT Companies**
The study covers a period of a decade i.e. from the year 1990-91 to 1999-2000. Starting from this year itself the researcher studied the growth pattern
of revenue of selected top 20 IT companies. The criteria for selecting such
companies for the purpose of said study was highest revenue earned after each
financial year. To calculate the year-on-year growth rate of revenue of
selected companies; year 1990-91, is considered as the base year. During this
process earnings from exports by the companies covered under this study is
also considered separately. While studying the revenue, earnings from exports
and growth pattern of profits earned by selected IT companies, detailed stock
of issues pertaining to individual company’s performance is studied with due
care, so as to arrive at a proper and just conclusion.

The most vital role played by group of Top 20 companies’ in the development
and growth of Indian IT industry can be understood from the fact that the Top
20 company’s average contribution in the total revenue was 55.80 percent
during the decade under study.

**Performance of Selected Sample IT Companies**
The selection of sample companies for this study is basically based on the
amount of revenue generated by companies since this remains the single most
vital factor for reflecting a particular company’s size and span of operations.
Thus the present study considers this yard stick of Top 20 companies’ for
finding out growth pattern of IT industry. However, the list of Top 20
companies which is prepared every year by ‘Dataquest’ includes those companies which remained in the list on the count of extent of revenue generated and some companies disappeared and were dropped out of the list due to lower generation of revenue year after year. Similarly, there are also new entrants appearing in this list which are positioned in the Top 20 list for earning higher revenue during the period covered for study.

While analyzing financial data from the lists of Top 20 companies for the period 1990-91 to 1999-2000 it was found that a total of forty nine (49) companies appeared therein.

Criteria for Selection of Sample Companies

While selecting sample companies this study considered following categories of companies:

1. Companies which continuously appeared in the list of Top 20 companies for the decade under study i.e. year 1990-91 to 1999-2000.
2. Companies which were in the Top 20 list for fairly longer period of time i.e. more than six (6) years but could not continue and were dropped from the Top 20 list for the remaining period of time.
3. Companies which were new entrants and retained their position in the Top 20 list for 6-9 years’ of the decade under study.

Thus, a total of ten companies are selected from total forty nine companies. Individual company’s performance is studied and detailed stock of issues bearing impact on the performance of these companies during the period under study is discussed in this chapter.

The detailed analysis regarding the performance of these companies is studied in the subsequent chapters i.e. Chapter IV and V.
Chapter – IV
GENERAL FINANCIAL TRENDS OF INDIAN IT INDUSTRY

To study financial trends of the Indian IT industry; all segments of the IT industry are reviewed categorically. The IT market is mainly classified into four segments viz. Hardware, Software, Maintenance, and Education/Training. Hardware segment comprises of two sub-segments i.e. the Peripherals and Networking.

Revenue Trends of Main Categories of Indian IT Industry
The analysis of revenue in Chapter III, focuses on total revenue generated by the Indian IT Industry which is compared with the revenue generated by group of Top 20on companies. These companies have been working in nearly all the segments of IT. Whereas; in the present chapter revenue generated by each segment of the Indian IT industry is reviewed categorically which are shown below:

1. The **Hardware segment** comprises of sales of Personal Computers/Desks, Servers, Workstations.

2. The **Peripherals segment** includes impact printers, laser printers, and inkjet printers. Other items like, Monitors, Keyboards, Scanners, Hard Disk Drives, Floppy Drives, CD Drives, CD writers, plotters etc. are also included Peripherals segment.

3. The **Networking segment** includes trading of items like Network Interface Cards, Hubs, Routers, Switches, Modems, Multiplexers, Structured Cabling, etc.

4. The **Software segment** comprises of development of packaged software, customized software, consulting and services.

5. The **Maintenance segment** comprises of the maintenance of computers/servers etc.

6. The **Education/Training segment** represents to computer education and training to personnel from corporate houses and students’ community in general.
This section presents the revenue generation pattern along with analysis of revenue growth trend of all segments of Indian IT industry (shown at Sr.No. 1 to 6). Further, the Hardware segment’s revenue pertaining to the decade under study is compared with revenue generated by the Software segment. This comparative study gives us a clear picture of growth patterns of individual segment.

The Software segment’s contribution in terms of revenue to the IT industry at the end of fiscal year 1990-91 was less than half of the revenue that was contributed by the Hardware segment. From this point of time; these two segments had a very close fight to dominate the Indian market. The Hardware segment maintained its supremacy until year 1996-97. Year 1997-98, Hardware segment witnessed a downtrend whereas; the Software segment’s revenue grew by 86 percent resulting into Software segment overtaking the Hardware segment.

This was because the Software segment’s revenue from exports grew by 75 percent. Henceforth, the Software segment dominated Indian IT industry with a huge gap in terms of revenue contribution. Thus, Software exports played a major role in getting India acknowledged as a global leader. The success of Software segment is not simply the outcome of increased exports but also due to the large battery of Software professionals India produced. An added
benefit to these Software professionals was the proficiency they had over English language. India producing a large number of Software professionals every year had various other reasons like its stress on IT education etc.

The functions of Hardware itself were one of the major reasons that allowed Software segment to overtake the market. The fact that a single computer allows to run number of Software plays vital role in this story. But indifferent attitude of the government towards this segment resulting into distorted tariffs and poor infrastructure is equally important. Considering the total population of India the percentage of computer penetration and tele-density is quite low. High cost of finance and tough competition from multinational companies was the other reason behind such laggard growth of the Hardware segment.

The growth pattern of Software segment’s revenue earned from the domestic market and revenue from exports is also compared. This reveals the extent of automation India had during the period under study i.e. 1990-91 to 1999-2000. Similarly, the revenue growth pattern of above mentioned segments’ of IT has been considered individually so as to assess their contribution to the total revenue of the Indian IT industry and also to find out its prospects in view of the changing trends and government support.

Further revenue growth pattern of individual company is compared with the industry’s growth pattern in view of the various problems faced by each of the selected company; so as to assess the impact of such problems and company’s strength.

Chapter - V
ANALYSIS AND INTERPRETATION OF FINANCIAL PERFORMANCE OF SELECTED IT COMPANIES

Ratio Analysis which is widely used tool to ascertain the performance of any company in different areas like Liquidity, Leverage, Activity and Profitability is also applied using data of select IT companies. The table showing Current Ratios of the selected companies for the period under study is given below:
For the sake of arriving at a fair and just conclusion the above data pertaining to Current Ratio is analyzed into two parts of the decade i.e. Part I, beginning from year 1990-91 to 1999-2000 and Part II covers the period beginning from year 1997-98 to 1999-2000.

When the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Current Ratio of NIIT is highest and ICIM is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Current Ratio for Aptech is highest and CMC shows low financial performance.

The table showing Debt-Equity Ratios of the selected companies for the period under study is given below:
<table>
<thead>
<tr>
<th>Year</th>
<th>Company Name</th>
<th>Debt-Equity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aptech</td>
<td>2.87</td>
</tr>
<tr>
<td>90-91</td>
<td>Zenith</td>
<td>3.66</td>
</tr>
<tr>
<td>91-92</td>
<td>NIIT</td>
<td>0.16</td>
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<tr>
<td>92-93</td>
<td>HCL Tech</td>
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<td>93-94</td>
<td>DEIL</td>
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<td>94-95</td>
<td>TVS Elect.</td>
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<td>95-96</td>
<td>Tata Info Tech</td>
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<td>96-97</td>
<td>Wipro</td>
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<td>97-98</td>
<td>ICIM</td>
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<tr>
<td>98-99</td>
<td>CMC</td>
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<tr>
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<tr>
<td>Avg.</td>
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For the sake of arriving at a fair and just conclusion the above data pertaining to Debt-Equity Ratio is analyzed into two parts of the decade i.e. Part I, beginning from year 1990-91 to 1999-2000 and Part II covers the period beginning from year 1997-98 to 1999-2000.

In case of Debt-Equity Ratio when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Debt-Equity Ratio of Tata (Unisys) Infotech is lowest, which represents a satisfactory capital structure of the business and larger margin of safety for its creditors. TVS Electronics, having higher Debt-Equity Ratio is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Debt-Equity Ratio for DEIL is lowest showing good financial performance and Zenith Computers shows low financial performance.
The table showing Fixed Assets Turnover Ratios of the selected companies for the period under study is given below:

**Table**

**Fixed Assets Turnover Ratio**

<table>
<thead>
<tr>
<th>Year</th>
<th>Company Name</th>
<th>Aptech</th>
<th>Zenith</th>
<th>HCL Tech</th>
<th>DEIL</th>
<th>TVS Elect.</th>
<th>Tata Infotech</th>
<th>Wipro</th>
<th>ICIM</th>
<th>CMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-91</td>
<td></td>
<td>7.75</td>
<td>12.01</td>
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<td>8.88</td>
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For the sake of arriving at a fair and just conclusion the above data pertaining to Fixed Assets Turnover Ratio is analyzed into two parts of the decade i.e. Part I, beginning from year 1990-91 to 1999-2000 and Part II covers the period beginning from year 1997-98 to 1999-2000.

In case of Fixed Assets Turnover Ratio when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Fixed Assets Turnover Ratio of HCL Technologies is high which shows efficient utilization of fixed assets in generating sales. ICIM, having low Fixed Assets Turnover Ratio is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that
Fixed Assets Turnover Ratio for Zenith is higher showing good financial performance and Aptech shows low financial performance.

The table showing Return on Capital Employed Ratios of the selected companies for the period under study is given below:

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<td>19.83</td>
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In case of Return on Capital Employed Ratio when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Return on Capital Employed Ratio of NIIT is high which shows that the investments are used productively. ICIM, having low Return on Capital Employed Ratio is showing low financial performance.
In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Return on Capital Employed Ratio for Wipro is higher showing good financial performance and Zenith with the lowest ratio in this group shows low financial performance.

Chapter – VI
GOVERNMENT POLICIES ON IT SECTOR IN INDIA

Growth of Telecommunication and Internet
Our society is now being reshaped by rapid advances in information technologies—computers, telecommunications networks, and other digital systems—that have vastly increased our capacity to know, achieve, and collaborate. These technologies allow us to transmit information quickly and widely, linking distant places and diverse areas of endeavor in productive new ways, and to create communities that just a decade ago was unimaginable.

Low cost and high performance telecommunication infrastructure plays a vital role in the development of any nation, especially in the information age it has been a major contributor to the exports of Software.

Internet is the biggest revolution in human history which is changing the lifestyle very rapidly and its impact can be felt in all social and economic activities. The convergence of all forms of communications into digital form is helping to increase speed and reducing storage space. The Internet, a group of worldwide information highways and resources, is enabling the world to truly become an information society.

The Indian Scene
The government had considerable amount of control over the IT sector in India. During the 1970s the government regulated the private sector and the computer industries’ and by 1980s the government developed more interest in this sector and started acting as promoter. During 1983, “More than 90
percent of the peripherals used in India were imported which were subject to an import duty of 75 percent”.

By 1986 the government designed a policy for software sector which showed the government’s increased interest in promoting this sector but this move failed to gain momentum and the figures of exports were not so encouraging.

Even by late 1990s use of PCs was quite limited when internet registered its significance in 1995 PC penetration was just over a million.

**IT Task Force Notification – Government’s Step towards Promotion of IT Industry**

The last policy framed to cater to the needs of Indian IT industry was around 1992, from this point of time the IT industry was not suitably considered by the government in terms of removing bottlenecks that either hampered its growth or failed to provide facilities that would help the IT industry to grow.

On March 25, 1998, the Prime Minister, Mr. Atal Bihari Vajpayee, declared that promotion of IT would be one of his Government's five top priorities. Accordingly, on 22nd May 1998 the constitution of IT Task Force. After completion of the study of the state of Indian IT industry the IT Task Force submitted its recommendations to the PMO as shown below:

**IT Task Force Action Plan I**

Action Plan I covered the Software segment. Covering a wide spectrum 108 recommendations was given in this section.

**IT Task Force Action Plan II**

Action Plan II featured the Hardware Industry which alongwith fiscal and financial policies, focused on procedural simplification.

**IT Task Force Action Plan III**

IT Task Force Action Plan III was basically a future plan regarding strategic policies for the IT industry, IT Research, Design and Development, IT Human Resource Development, Citizen-IT Interface, Content Creation and Content
Industry, Micro Electronics, Mission mode creation of Fibre-optic infrastructure, Financing the IT sector and organizational structure.

**Impact of IT Task Force**

The IT Task Force was declared effective on the 28th May, 1998, and was given a time period of ninety (90) days to submit its recommendations which took nearly more than ten months to complete the task and submitted its final report after April 1999.

At the end of fiscal year 1994-95, the year-on-year growth rate of total revenue of the Indian IT industry was recorded as 43.79 percent which gradually came down to 32.97 percent at the end of fiscal year 1998-99. Thus, the improved year-on-year growth rate (37.97) of total revenue at the end of fiscal year 1999-2000, can surely be attributed to the recommendations made by the National IT Task Force. Similarly, the positive effect of recommendations made by the IT Task Force was also witnessed in the year-on-year growth rate (65.09) of total revenue of the industry at the end of fiscal year 2000-01. The other benefit of these recommendations can be seen as the increase in PC penetration in India. During the year 1999-2000, more than one million PCs were sold in India. This took the PC penetration in India to 4.3 per 1000 person.

In furtherance of this initiative the government constituted ‘Working Group on IT for Masses’ which was supposed to device an operational mechanism.

**Working Group on Information Technology**

In the context of preparation of the Tenth Five Year Plan (2002-07), the Government constituted a ‘Working Group on IT for Masses’ to seek recommendations on the various policy matters to enable to formulate the Tenth Five Year Plan for Communication and Information sector.

The report of the Working Group said that, “No action has been taken to provide for a conducive manufacturing environment for Electronics and IT hardware companies which are at par with the competing nations. The Action
Plan II Report of IT Task Force on IT and Software Development has not been implemented including the much awaited SBIT scheme”.

The objectives of the Working group was to:

i) Spread computer literacy at various levels,

ii) Develop products and services needed by masses,

iii) Expand the network of Computer Information Centres (CIC) throughout the country and also utilize existing base of PCO’s into internet kiosks,

iv) Facilitate industry to go global through e-commerce,

v) Develop tools to enable multilingual usage of computers, and

vi) Provide thrust to e-governance at both centre and state levels.

The Working group on IT covered wide spectrum of this field so that the industry environment is improved.

**State Government’s Initiatives to Develop IT Industry**

Some of the state governments in India also played leading role that proved critical for the growth of IT in the country. Its various projects like implementation of e-governance and automation of its various departments alongwith focus on spreading IT education helped this industry to grow. Among such states; Andhra Pradesh, Karnataka and Tamil Nadu were on the forefront. And states like; Kerala, Punjab, Tripura, Haryana were also participants in this growth story.

**Present Policy and the IT Industry**

The Central and State governments seemed to be quite slow in framing supportive policies for the IT industry. The year-on-year growth rate in terms of revenue; of the Indian IT industry indicates that very less effort has been taken to carefully study the set up of this industry. The last decade’s (i.e. year 1990-91 to 1999-2000) scenario is unchanged during the period 2000-01 to 2005-06 and a major portion of revenue came in from Exports. It is also prominently witnessed that from the year 2002-03 to 2005-06 the contribution
to total revenue is nearing the double of what has been contributed by the domestic market. The domination in terms of revenue generation of Top 20 companies during the period 2000-01 to 2005-06, is the second feature of Indian IT industry’s set-up that nearly remains unchanged as compared to the decade under study. Similarly, during the period 2000-01 to 2005-06 major portion of the total revenue generated by the Indian IT industry was contributed by the Software segment and a significant portion of the total revenue came from the exports. This fact reveals that the Indian IT industry which during the last fifteen years has shown remarkable growth and is ranked amongst world leaders, is export-driven industry. It is a matter of pride but considering the large population of India and its vast market the low proportion of domestic revenue against such high proportion of export revenue calls for introspection of the spread and use of Information Technology within the country vis-a-vis the initiatives taken by the government.

CONCLUSIONS

Chapter I – Introduction

The observations made in Chapter One reveals that, IT has made collection of data easier and provide new ways to access it from remote locations. Such facility on one hand is economical and on the other hand is time saving. The most important aspect is that digital data can be accessed and used by number of persons from various geographical locations at a given point of time. The advancements in IT have helped the Science and Engineering community to a great extent. Research and Development (R & D) has become more powerful and less expensive. IT has its impact on nearly all walks of life; like:

Chapter II – History and Development of IT Sector in India

It is observed in this Chapter that:

1. During early 90s devaluation of rupee and stringent import policies like Software import duty was raised to 112 percent, customs clearance was quite difficult. This was hampering the overall growth of IT industry.

2. The age of Indian IT industry was quite less in comparison to other industries that have a very long standing. Despite this fact the Indian IT industry came into limelight not only at domestic level but globally also only because of its speedy growth and development in the last decade.

3. India is now identified as the major powerhouse for Software development and has gained respectable position globally.

Chapter III – Brief Review of Selected IT Companies

Following observations are made in this chapter:

1. Information Technology being the most versatile field witnessed a huge amount of changes in technological trends.

2. The global market and the Indian IT industry too have witnessed many changes like, expansion of markets leading to competition that increased day by day. The total revenue generated by this industry at the end of fiscal year 1990-91, was Rs. 2,213.60 crores which at the end of fiscal year 1999-2000, recorded a hefty figure of Rs. 33,052 crores.

3. Increased competition also resulted into closure of few of the old and established companies.

4. New companies or companies which were on low profile earlier, earned recognition as leading companies on the basis of good amount of revenue generated by them during 90s.
5. In such a scenario the list of Top 20 companies earning high revenue at the end of the decade under study is quite different from the list of the Top 20 companies at the beginning of the decade. Few of the well established companies which were and are market leaders are exception in this case.

**Chapter IV – General Financial Trends of Indian IT Industry**

In case of findings related to revenue trends of IT industry in general; following points are revealed:

1. During the period under study i.e. 1990-91 to 1999-2000, the Software segment trailed behind the Hardware segment until year 1996-97.
2. Year 1997-98, Hardware segment witnessed downtrend whereas; the Software segment’s revenue grew by 86 percent resulting into Software segment overtaking the Hardware segment.
3. The Software segment’s revenue from exports grew by 75 percent during the year 1997-98 and the increase in revenue from exports is showing increasing trend.
4. In case of Software segment’s growth the above fact clearly reveals that the contribution of revenue from domestic market in comparison to exports was quite low. Further it also reveals that use and implementation of IT in India was low. And this fact on the first instance straight away affected the growth of Hardware segment. At the same time the growth of allied segments like the Peripherals, Networking and Maintenance which is completely dependant on the Hardware segment was also affected.
5. The functions of Hardware itself were one of the major reasons that allowed Software segment to overtake the market. The fact that a single computer allows to run multiple Software plays a vital role in suppressing the growth of Hardware segment but,
6. Indifferent attitude of the government towards Hardware segment resulted into distorted tariffs and poor infrastructure also hampered the growth of Hardware segment.
7. Considering the total population of India the percentage of computer penetration and tele-density was quite low.

8. High cost of finance and tough competition from multinational companies was also one of the reasons for such laggard growth of Hardware segment. This affected severely the growth of Hardware segment alongwith its allied segments.

9. High returns from Software development were one of the major attractions for IT companies. Evidently most of the companies who were mainly dealing into Hardware either went for diversification or completely switched over to Software development.

Similarly, the revenue growth pattern of various segments of IT i.e. Peripherals, Networking and Maintenance has been reviewed individually so as to assess their contribution to the total revenue of the Indian IT industry in order to find out its prospects in view of the changing trends and government support. It is observed in this connection that:

i) The extent of automation in government sector had been low during the period under study i.e. 1990-91 to 1999-2000. This affected the growth of revenue from the domestic market.

ii) The growth pattern of other segments of IT i.e. Peripherals, Networking and Maintenance are dependant on the growth of Hardware segment. Thus, the slow growth of Hardware segment is responsible for the slow growth of these segments.

Chapter - V
Analysis and Interpretation of Financial Performance of Selected IT Companies

Following detailed observations pertaining to financial performance of selected IT companies are derived after application of Ratio Analysis techniques:
i) With regards to Current Ratio, when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Current Ratio of NIIT is highest and ICIM is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Current Ratio for Aptech is highest and CMC shows low financial performance.

ii) In case of Debt-Equity Ratio when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Debt-Equity Ratio of Tata (Unisys) Infotech is lowest, which represents a satisfactory capital structure of the business and larger margin of safety for its creditors. TVS Electronics, having higher Debt-Equity Ratio is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Debt-Equity Ratio for DEIL is lowest showing good financial performance and Zenith Computers shows low financial performance.

iii) In case of Fixed Assets Turnover Ratio when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years
which is useful for the purpose of analysis. Thus, it is found that Fixed Assets Turnover Ratio of HCL Technologies is high which shows efficient utilization of fixed assets in generating sales. ICIM, having low Fixed Assets Turnover Ratio is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Fixed Assets Turnover Ratio for Zenith is higher showing good financial performance and Aptech shows low financial performance.

iv) In case of Return on Capital Employed Ratio when the data is arranged in two parts five companies namely; NIIT, HCL Technologies, TVS Electronics, Tata (Unisys) Infotech and ICIM are grouped together since data pertaining to these companies are available for a period of 8-10 years which is useful for the purpose of analysis. Thus, it is found that Return on Capital Employed Ratio of NIIT is high which shows that the investments are used productively. ICIM, having low Return on Capital Employed Ratio is showing low financial performance.

In the second part companies included are Aptech, Zenith, DEIL, Wipro and CMC and the data available pertaining to these companies are from the year 1997-98 to 1999-2000 i.e. for 3 years. It is observed through this data that Return on Capital Employed Ratio for Wipro is higher showing good financial performance and Zenith with the lowest ratio in this group; shows low financial performance.

Thus, regarding Current Ratio (Table 1); NIIT Ltd. (3.55) shows a better performance and Fujitsu ICIM (1.48) shows low financial performance in the first group of companies.
In the second group; while studying Current Ratio it is observed that Aptech Ltd. (6.4) performed well and the financial performance of CMC Ltd. (1.16) is low.

With regards to Debt-Equity Ratio (Table 2); in the first group of companies Tata (Unisys) Infotech Ltd.’s (0.13) financial position is good. Whereas, the financial position of TVS Electronics Ltd. (1.37) is unsatisfactory.

Similarly, in the second group of companies Debt-Equity Ratio of DEIL (0.03) shows a good financial condition while in comparison to DEIL the financial position of Zenith Computers (0.93) is not upto the mark.

In case of Fixed Assets Ratio (Table 3); HCL Technologies (11.34) financial strength is good. And the financial condition of Fujitsu ICIM (2.92) is substantially low.

In the second group of companies Zenith Computers (11.73) shows a good financial state of affairs. Whereas, Aptech (3.6) shows a low ratio in this regards.

The study with regards to Return-on-Capital Employed Ratio (Table 4) reveals that the financial performance of NIIT Ltd. (28.45) is quite satisfactory. And Fujitsu ICIM (5.75) shows a low performance.

In the second group of companies Wipro (30.76) shows a very high financial position and comparatively Zenith Computers (12.30) shows a low performance.

Thus, it can be stated that there is greater scope for Software Research & Development. And greater emphasis should be given on Hardware segment; this is possible only if IT industry develops its financial structure on wider scale. Greater investments would enhance prospects for emerging IT industry as a leader at national and global level.
Chapter – VI  
Government Policies on IT Sector in India

This chapter reveals various initiatives taken by the Central Government and the State Governments to promote IT industry.

In this context the government has constituted National Task Force on Information Technology which in its Action Plan I have given 108 recommendations for the Software segment in the year 1998. In the same year Action Plan II of the National Task Force gives 81 recommendations for the Hardware segment. Action Plan III of the National Task Force released in the same year was a future plan regarding strategic policies covering wide spectrum of the IT industry. Thus, these are the vital steps in the policy formulation of IT sector in India.

The study pertaining to the present scenario of IT industry covering a period from year 2000-01 to 2005-06, regarding Hardware segment it is observed that the state of the Indian IT industry is similar to the last decade i.e. 1990-91 to 1999-2000, where the growth of Hardware segment was not satisfactory. The major portion of total revenue is contributed by Top 20 companies’ alone and the Software segment is the major contributor in the total revenue of Indian IT industry. Major portion of revenue of Software segment comes in from exports.

SUGGESTIONS

During the decade under study i.e. from year 1990-91 to 1999-2000 it is observed that the growth of IT industry was satisfactory but quite imbalanced. The Indian IT industry has proved to be an export driven industry with major share of revenue flowing in from exports. The growth of domestic market in terms of revenue; of all sectors of IT industry i.e. the Hardware, Peripherals, Networking, Maintenance, Education/Training, is quite less as compared to Software exports alone. The Software segment was developing was ‘Leaps and Bounds’ at the same time the Hardware segment was lagging behind.
The global market is very large and rapidly growing and India – proven its expertise in Software development have bright future. For complete growth of IT industry such a situation demands for concentration on those segments of IT which are lagging behind. Most of the states in India are far away from the use of IT and this fact itself offers a good opportunity for the Hardware segment to grow. Since the growth of other segments like the Peripherals, Networking and Maintenance is completely dependant on the growth and development of Hardware segment it demands for increased PC penetration and tele-density. This will also boost the Software segment’s domestic market.

To explore the potentials of IT industry and to strike a balance in its growth pattern, it is recommended that:

1. The success of Software segment is not simply the outcome of increased exports but also of the large battery of Software professionals India produced. Therefore, greater stress should be given on Training/Education segment in respect of Software development. This will offer greater opportunities of employment in view of the growing trend of Business Process Outsourcing/Back Office Operations (BPO).

2. The government should encourage entrepreneurs to set up Hardware manufacturing units by providing subsidized loans at lower interest rates.

3. Large scale Data Digitization should be undertaken both in public and private sector.

4. The government should lay more emphasis on research and training/education and to develop the Hardware industry and should provide sufficient funds for the same. The rich network of educational institutes like the IITs and institutes under the jurisdiction of the All India Council for Technical Education (AICTE) which at the moment are more interested in the Software aspect. The funds so provided by
the government to these institutes be exclusively used for research on Hardware segment.

5. A national plan be formulated for complete e-governance.

6. The potential of Hardware segment to a certain extent remains untapped hence concerted efforts be taken to develop this segment as this would offer more opportunities of employment.

7. On the part of the government it is quite essential to thoroughly review the recommendations made in Action Plan I, II & III of the National IT Task Force so as to find out the extent of achievement of its objectives.

8. The government must make sure that low price laptops especially for the students’ community and the teaching fraternity are made available. For this purpose the entrepreneurs should be encouraged by giving incentives like low cost uninterrupted power supply, assistance in procuring low cost raw material. This would also enable to reduce the price of Voice Data Cards that will bring internet into a common man’s reach resulting into increased use of internet.

9. The government should assist private companies to reduce the rate of subscription to internet connections from the point of view of the users. This will increase the number of users; creating more demand.

10. The railways, postal department, land records, revenue, education, banks, civil aviation, home department, etc. which serves to all categories of citizens irrespective of their work/economical status. These departments are not completely automated and are still in the process of automation. This provides great opportunity for the IT industry to grow that will open up more opportunities of employment resulting in creation of more assets for the nation.