



IT Software and Services Exports : An Evaluation of its Competitiveness

Dr. S.C.Das*

© Institute of Management Studies, Noida
Online access at www.publishingindia.com

Abstract

It is very much significant that India's overall export performance has become increasingly dependent on the software sector over the years. From a mere 5% of a \$33 billion total Indian exports in 1996-97, during 2006-07 the IT exports accounts for a hefty 25% of the \$120 billion total exports from India. The rapid growth in invisible receipts resulted in a sharp improvement in our trade balance. The working paper concentrates on different issues of software and services exports i.e., composition, direction, strengths and opportunities of software and services exports. The study also locates the basic advantages of India for software export industry i.e., vast and large skilled pool of human resources, quality and timely delivery, cost arbitrage and ability to take more and complex assignments. A breakup of the IT software exports by destination reveals that North America account for 67.7% of our exports; Europe 21.3 % and Japan 2 %. This implies that North America, Europe, Japan taken together for about 91 percent of our total exports. It was revealed that export baskets of the country mostly consisting software and services, IT enabled services and R/D services. The paper identified new opportunities for Indian software firm i.e., non- traditional service line, offshore delivery model, application outsourcing and custom application development etc. Further, concludes that for achieving progressive software export growth, the industry would need to advance on the value chain, move to Tier II /III cities to control cost etc., and the central /state governments should continue to play a proactive role in providing fiscal incentives, policy and other support for IT human resources and infrastructure development. At the end the author emphasis on the need to tap new service lines, focus on less explored geographies, target high potential verticals and tapping product centric opportunities.

Keywords : Offshore Spending, Delivery Models, Service Lines, ITES, Diversified Service.

1. Introduction

After 23 years, the current account of India's balance of payments recorded a surplus in 2001-02 – 0.3% of GDP. The current account showed a surplus mainly because of invisible exports. India's overall export performance has become increasingly dependent on the software export over the years. Its share in India's total exports has increased in four times during last six years from about 5% in 1997 to 20% in 2001-02 and today (2006-07) it accounts for a hefty 25% of the \$120 billion total exports from India. India's abundant high quality and cost effective services and its vast resource of skilled software human power have made it an attractive location for global software clients. The emergence of knowledge economy i.e., shift in the geographical center from raw material and capital equipment to information and knowledge, especially in education and research centers and man-made brain industries. The knowledge economy depicts the growth in new service industries, among them IT software development which give a new direction to export market. The pervasive influence of Information technology is so strong that there is no sphere of human life in which it is not able to make niche for itself. The paper highlights the composition and direction of IT software and services exports also spells out the strengths and opportunities of exporting software in the global market.

1.1 Rationale, Objectives and Methodology of the Study

In Information technology (IT), India has built up valuable brand equity in the global markets. In IT-enabled services, India has emerged as the most preferred destination for business process outsourcing, a key driver of growth for the software industry and the service sector. India's most prized resource in today's knowledge economy is its readily available technical work force. India has the second largest English speaking scientific professionals in the world, second only to the U.S. Overall, the Indian IT market has grown from US\$ 1.73 billion in 1994-95 to Rs. US\$47 billion in 2006-07, accounting for 5.4 percent of India's GDP. The IT industry has created employment opportunities for over 1,630,00,000 professionals in India in the year 2006-07. The growth in the IT industry was largely driven by exports. The total software and services exports (including ITES-BPO) increased from US\$ 1.8 billion in 1997-98 to US\$ 31.9 billion during 2006-2007. *Highlighting the growth opportunities for IT export and services, the study emphasis on the need to tap new service lines, focus on the less explored geographies, target high potential verticals and tapping product centric opportunities.*

The **primary objective** of the study is to investigate trends and directions of IT software and service exports. The study also highlights composition of key service lines and its share in export. Besides, variety of advantages of software development and an ideal offshore destination's strengths also is discussed. Lastly, opportunities for Indian IT software and service companies and measures to be taken to increase its share in global market are spelled out.

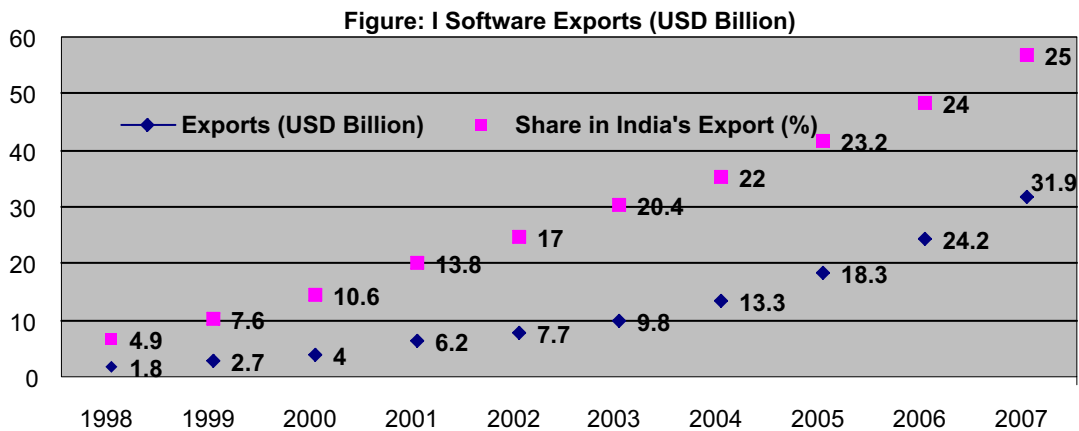
For the purpose of the study *primary as well as secondary data* was used. The primary data has been collected through E-mail of twenty Information Technologies and service exporter companies like as Tata Consultancy Service, Infosys Tech. Ltd, Wipro Technologies and Satyam Computers Service Ltd. etc.

For collecting secondary data the scholar has extensively used different web sites of NASSCOM (National Association of Software and Service Companies), MAIT (Manufacturers Association of Information Technology), Government of India, Ministry of Commerce and Industry, The Economic Times, Federation of Indian Chambers of Commerce and Industry and Tips Software Services Pvt. Ltd. There can be many interpretations and explanations to the data collected. The research provides the explanation as understood by the researchers only. *The study covers for the period of ten years started from financial year 1997-98.*

2. Global IT Market and Trends in Software & Services Exports

The economic downturn that has been sweeping the worldwide markets contributed in large part to the overall reduction in momentum of the Indian software and service sector. Increased outsourcing by US companies to cut costs and improve bottom lines, improved India's prospects in the export market. Some of the major trends in global IT spending recently were as follows:

- I. **Offshore Spending** : Global companies increased their software development outsourcing to low cost offshore centers such as India.
- II. **Strategic Outsourcing** : Leading international companies began opting for long-term strategic outsourcing rather than small, medium-term projects.
- III. **Focus on ROI** : With return on investment issues bagging center stage global companies have been focusing on maintenance and enhancement of existing applications rather than new projects.
- IV. **Vendor Consolidation** : Customers prefer to deal with a smaller number of vendors to simply project management.



Source : Compiled and Computed from Data Provided by NASSCOM and RBI

In response to global IT spending the Indian software and services export witnessed the following trends :

- I. **Share in Global Market** : Indian companies increased their share of global IT spend. The export revenue earned by the sector has grown 300 fold in 15 years from \$100 million in 1991-92 the \$32 billion in 2006-07. India now accounts for about 65% of global market in offshore IT and about 46% in offshore in ITES market.

- II. **Penetration in New Geographies** : While Indian software and service companies began looking at ways to increase penetration in new geographies such as Europe and Asia pacific, the country's share of software exports to Europe actually declined during 2002-03 on account of lowered IT spend by companies in the market.
- III. **Integration** : ICT multinationals operating in the Indian market linked their share within the software exports segment both in the areas of IT services and IT-enabled

services/BPO.

- IV. **Diversification** : Indian companies entered into high value segments such as systems integration, package implementation, IT outsourcing and IT consulting in an effort to scale up.

Figure: 1 provides information about the share of IT software exports in total India's exports. It may be noted that whereas IT exports accounted for 4.9 percent of total exports in 1997-98, during 2001-02, its share increased to 17 percent and shot up to 25 percent in 2006-07. Obviously, IT exports have become very significant for India and if the same trend continues, this item may emerge as the major export earner for the Indian economy.

2.1 Composition of IT Software & Service Exports

Software and service exports continued to remain on top of the IT industry's revenue table. The export driven software sector saw major long-term projects come to Indian ICT leaders and Indian companies bagging a larger and larger share of the global outsourced business. In terms of software service delivery, offshore project revenues grew by a blazing 49% as compared to on-site revenues, growth of which was pegged as 12 percent during 2002-03 (Table: 1). In terms of geographies, Indian ICT companies began tapping regions outside the US market, even though the country remained the largest user of software solutions from India. The revenue contributions by the US market continued to rise on account of the large number of ITES/BPO projects getting outsourced to India.

Table I : Delivery Models of Software Exports (Figures in Rs.-Crore)

Model	1999-2000		2000-2001		2001-2002		2002-2003	
	Amt.	% In Total	Amt.	% In Total	Amt.	% In Total	Amt.	% In Total
Onsite	9,850	57.44	15,900	56.08	16,500	45.21	18,500	38.95
Offshore	5,950	34.69	10,950	38.63	18,500	50.67	27,500	57.89
Products & Unclassified	1,350	07.87	1,500	05.29	1,500	04.12	1,500	03.16
Total	17,150	100	28,350	100	36,500	100	47,500	100

Source : Compiled from Data Provided by NASSCOM

Indian companies made modest headway in segments such as packaged software support and installation, product development and design services and embedded software solutions. The export baskets of the country was mostly consisting software and services, IT enabled services and R/D services. The Table: 2 show the composition of export in India in different year. It is to be noted that the classification of software service lines is tentative. In general, there is no commonality in definitions of service lines by software companies. Software and services was one of the most important items and contributed US \$ 4.95 billion, i.e., about 64 percent of the total export earnings. IT enabled services the second most important item of export which contributed Rs. US \$ 1.49 i.e., about 19 percent of total export earnings in 2001-2002. NASSCOM, estimates indicate that during 2002-03, the IT-enabled services segment grew by a phenomenal 65%. Revenues from this sector rose from around Rs. 71 billion in 2001-02 to approximately Rs. 117 billion in 2002-03. Compared

to other competing ITES nation such as Ireland, the Philippines and China, India drew the bulk of the global ITES/BPO business on account of its unmatched price/performance/quality production. Some of the key ITES service lines includes as Customer care, Web sales/marketing, Database marketing, Accounting, Transaction document management, Tax processing, HR hiring/administration, and Biotech research etc. Export of R/D services had contributed about 16 percent of the total export. The major constituents of R/D services are embedded software and product & development design which contributes 75 and 25 percent respectively.

Some of the key service lines for Indian players continued to be:

- Custom Application Development and Maintenance;
- Applications Outsourcing;
- IT enabled Services; and
- R & D Services.

Table : 2 Composition of Exports (Figures in US \$ Billion)

Composition	1997-98		2001-02		2005-06		2006-07	
	USB \$	% in Total	USB \$	% in Total	USB \$	% in Total	USB \$	% in Total
Software & Services	.98	54.44	4.95	64.70	13.3	54.95	18.0	57.51
R&D Services	.15	8.34	1.21	15.82	4.0	16.53	4.9	15.65
ITES	.67	37.22	1.49	19.48	6.9	28.52	8.4	26.84
Total	1.8	100	7.65	100	24.2	100	31.3	100

Source : Indian Software and Services Exports: <http://www.nasscom.in>

2.2 Direction of Software and Service Exports

Analysis of direction of trade reflects on regional direction of country's foreign trade from where trade is originated. It would be quite important to analyze the direction of India's export of software and services exports and the transformation that has taken place in details. A Relative dependence measures the regions share in Indian exports vis-à-vis the region's share in world IT services spending. A ratio less than 1

indicates a possible under penetration of the market. A breakup of the IT software exports by destination reveals that North America (USA and Canada) account for 67.7 percent of our exports; Europe 21.3 percent and Japan 2 percent. This implies that north America, Europe and Japan taken together for about 91 percent of our IT exports. Other buyers of exports are in Latin America, South and West Asia (Table:3).

Table 3 : Destination of Indian Software & Services Export (2002-03)

Region	IT Services Spending (US \$ Billion)	India's Export (US \$ Million)	India's Market share (%)	Relative Dependence Ratio	Share in India's Exports
North America	171.1	6,685	3.92	1.4	67.7
Western Europe	109.6	2,103	1.92	0.7	21.3
Japan	34.9	193	0.55	0.2	2.0
Latin America & Rest of the world	17.5	583	3.33	1.2	5.9
Asia Pacific	16.0	311	1.94	0.7	3.2
Total	349.1	9,875	2.82	--	100

Source : Indian Software & Services Exports: <http://www.nasscom.org>

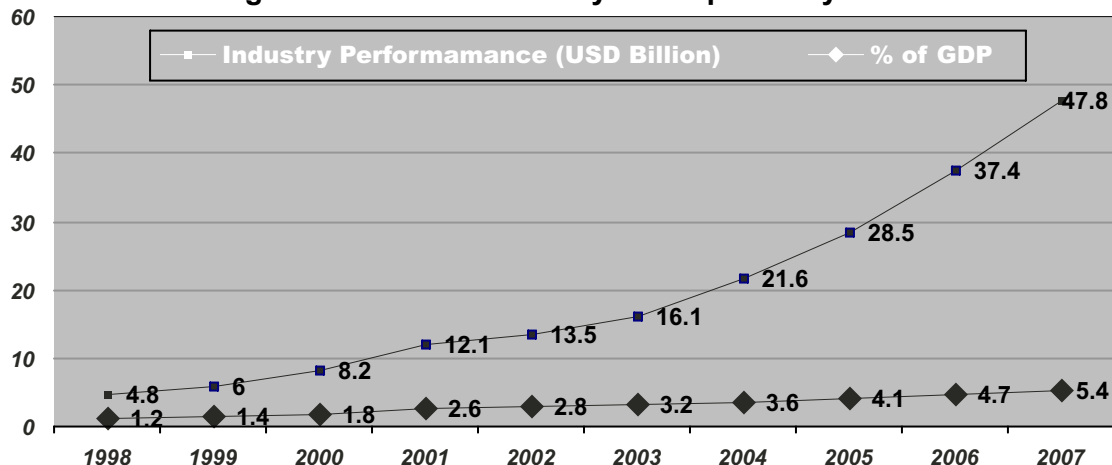
2.3 Strengths of Indian IT Industry

The Indian IT sector has proved to be the country's fastest growing segment and has grown from US \$ 1.73 billion in 1994-95 to US \$ 47 billion in 2006-07. In terms of share of GDP, the IT industry figure has risen from 0.59 percent in 1994-95 to 5.4 percent in 2006-07 (Figure: 2). IT industry earns revenue from software, hardware, peripherals, training and maintenance and network. The revenues are earned either in the domestic market or in the export market. The annual average growth rate for the period 1997-98 to 2006-07 works out to be 35 percent, which indicates a highly promising trend of growth of IT industry. The software & service industry, a major component of India's IT sector, showed significant momentum, higher than that of other industries in the country. India continued to be a compelling investment destination, as leading companies either set up shop here or beefed up their existing infrastructure. Outsourcing of IT requirements by

leading global companies to Indian majors also picked up pace during 2006-07, in line with worldwide trends.

Leading global business intelligence and consultancy firms such as Giga, Forrester Research and McKinsey & Co. have cited various reasons for the increase of offshore outsourcing by MNCs to India. India's quality and cost benefit edge is one of the major draws for these organizations. Forrester Research (2003) indicates, a large number of companies will engage offshore providers and their budgets too will grow rapidly. There will be an increase from 12% of technology budgets to 28% in 2003. According to the study India's edge over other competing nations in the It outsourcing business is based on the country's decade old experience in this area, fluency in the English language, supportive government policy infrastructure, and high quality offerings.

Figure:2 Overall IT Industry's Competency



Source : The Economic Times: <http://www.economicstimes.com>

Today, MNCs are rushing into India to stake a claim to the IT outsourcing market. While a large number of companies are outsourcing their software development to Indian companies, others are establishing a presence in India and participating activity in the software export game. India can be an ideal offshore destination due to a variety of advantages it has over other countries. Thus, export performance of Indian IT sector especially in the area of software and services export are determined by various determinants i.e., performance of Indian software exporting firms, government policy, and Knowledge professionals etc.

3. Government Policies

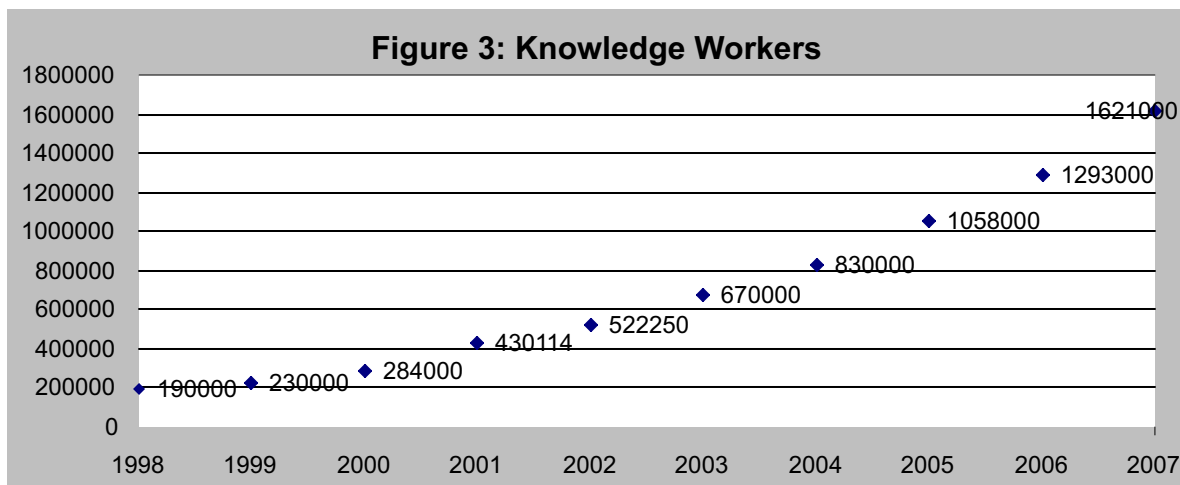
Government's conducive initiatives to ICT sector obviously one of the major strengths. The Indian government recognizes that IT will influence economic development extensively in the future. IT is a part of government's national agenda and all policies are driven to achieve maximum benefit to the industry. The LPG initiatives taken by the Indian government are aimed at supporting growth and integration with the global economy. The reforms have reduced licensing requirements and made foreign technology accessible. The ministry of Information and communication technology is playing an active role in developing the infrastructure that supports the development of information technology. The IT Bill passed in 2000 provides a legal framework for the

recognition electronic contracts, prevention of computer crimes, electronic filling of documents etc.

One of the major government initiation i.e. recognizing the importance of venture capital funding, the ministry of Information Technology has set up a National venture fund for the software and IT industry with a corpus of Rs. 100 crore in association with the Small Industries Development Bank of India and IDBI. The aim of the fund is to provide venture capital to start up software professionals and IT units in the small-scale sector. Above all, the role of NASSCOM can't be denied, along with the government NASSCOM has taken many steps towards efficient implementation of the different government policies.

3.1 Knowledge Professionals

Indian players have created a strong value proposition in the IT software and service arena. India enjoys advantages of people sophistication in terms of a very large pool of a very English speaking scientific people, varied and extensive skill sets in terms of technology, and offering services at globally competitive costs. India also boasts vendor sophistication – with more than 200 companies being quality accredited and serving the needs of over 255 Fortune 500 companies. Today, the world looks towards the Indian IT software and service industry for its good quality and high price performance.



India's abundant high quality and cost effective services and its vast resource of skilled software human power have made it an attractive location for global software clients. There has been a healthy growth in the number of India's IT professionals over the last decade. The growth of this sector has led to tremendous pay-offs in terms of high quality employment generation, wealth creation, transforming the image of India to one of the engines of the world economy and India emerging as a high tech manufacturing, R&D and knowledge hub. From a base of 6,800 knowledge workers in 1985-86, the number increased to 1,621,000 software and service professionals by the end of 2006-07 (Figure: 3). It is worked out that out of these 1,621,000 knowledge workers, almost 6,90,000 are working in the IT software and service industry; nearly 5,53,000 are working in the IT enabled services and over 3,78,000 in user organizations.

3.2 Opportunities Ahead

Keeping in view, the strengths in terms of knowledge workers and export efficiencies of Indian software firms, one can guess a fresh opportunities is sweeping the Indian software industry and key players are gearing up to tap into this emerging potential. New opportunities for the Indian software firm can be segmented into the following parts:

I. **Diversified Service**: Non-traditional service lines such as packaged software installation and support, Information System, Research and Development outsourcing, etc are now been off shored to India. Companies such as, Patni, Wipro, Satyam, among others are getting into some of these hitherto unexpected segments.

II. **Delivery Model**: Owing to a successfully offshore delivery model, a major off shoring opportunity is likely to open up for Indian software and service vendors. Currently around 40 companies have off shored spend more than US\$ 20

million to India; the figures are expected to rise significantly.

III. **Cost Advantage:** Large global systems integration majors such as IBM global services are expanding their presence in India to take advantage of the country's cost and manpower strengths.

IV. **Traditional Service Lines :** There is significant opportunity for Indian software companies in existing service lines such as application outsourcing and custom application development, where the country has a 15% market share.

4. Conclusion

During 2000-01 the Indian economy is beginning to experience the slowdown of the US economy, especially in the IT sector. Since the customers of Indian software in the US are contracting their operations due to slowdown in the American economy, the Indian software industry shall have to search other markets in the world. Indian software industry has to prove for a bigger market share of its exports in the European Union. Other possibility is to expand its exports to Australia and Southeast Asia countries. The software export sector currently accounts for over 25% of country's export and about 4% of the country's GNP. The sector is providing direct employment to about 1.3 million IT and ITES professionals. Every direct job in the sector leads to generation of three times indirect and induced employment. Exports from software SMEs (turnover upto \$25 million) have grown substantially over the last few years. *However rupee appreciation, shortage of qualified IT human resources, gaps in employability skills, rapidly rising wage costs, high HR attrition are the few prominent challenges for the software export industry. Increasing competition from China, Philippines, East European countries and expiry of 10A/10B income tax concession after March 11, 2009 are the main concern of software service exporting.*

Finally, it may be concluded that there is a wide scope of opportunities and of course very selective challenges likely to be faced. The basic advantages of India – vast and large skilled pool of human resources, quality and timely delivery, cost arbitrage and ability to take on more and more complex assignments are still valid. India can continue to command its leadership, successfully overcome increasing competition and generate millions of jobs for its youth. The software export industry could grow at a CAGR of 24%-25% over the next few years, provide a significant employment opportunities and can lead in software services. *For this, the industry would need to advance on the value chain and central/state governments should continue to play a proactive role in providing fiscal incentives, policy and other support for IT human resources and infrastructure development.*

Lastly, Indian education system, quality manpower, favourable government initiatives surely will make a

conducive place in invisible exports. India has some current account surplus now mainly because of invisible exports. The Indian software and services industry is one of the very few sectors worldwide to have witnessed double-digit growth. There is a good opportunity for Indian companies to replicate their successes in US and UK in other countries in continental Europe, Japan, Canada etc. Further, to keep the strengthening rupee from taking too much a bite, many more Indian IT companies need to consider hedging.

5. References

1. Apte, Uday, and Mason, Richard, 1995, "Global Disintegration of Information-Intensive Services", *Management Science*, Vol.41, No.7, July, 1250-1263
2. Arora, Arunachalam, Ashnudi and Farnandes, *The Indian Software Industry*
3. Cane, Alan, 1992. *Information Technology and Competitive Advantage: Lessons from the Developed Countries*. *World Development* Vol. 20 No. 12, pp. 1721-1732.
4. Correa, Carlos M., 1993. *Legal Protection and Innovation in the Software Industry*. *World Competition* Vol. 17 No. 1, pp. 47-72.
5. Dhar P.K: *Indian Economy-Its Growing Dimensions*: Kalyani Publishers, New Delhi.
6. *Federation of Indian Chambers of Commerce and Industry*: (URL:<http://www.ficci.com>)
7. *Government of India, Ministry of Commerce & Industry*(URL: <http://commin.nic.in>)
8. Heeks, R., 1996, *India's Software Industry: State Policy, Liberalization and Industrial Development*, Sage Publications.
9. *Indian IT Industry: NASSCOM Analysis*, (URL: <http://www.nasscom.in>)
10. *India's Software Edge*, *The Economic Times*, New Delhi, 25th December 2003.
11. *Indian ITES-BPO Industry: NASSCOM Analysis: 2006-07*
12. *Indian Software and Services Exports*: (URL: <http://www.nasscom.org>)
13. *Key Highlights of the NASSCOM-IDC Study on the Domestic Services (IT-ITES) Market Opportunity: 2006-07*
14. *National Association of Software and Service Companies (NASSCOM)-2003: Indian IT Software and Service Directory*.
15. *National Association of Software and Service Companies (NASSCOM), Annual Report: 2006-07*.
16. *NASSCOM –McKinsey Report 2002*
17. *Rupee and the IT Sector*, *The Economic Times*, 29th September, 2007
18. *Software Industry in India*, NASSCOM: 2003-04
19. *The Economic Times, Foreign Trade*: (URL:<http://www.economictimes.com>)
20. *The software Services Pvt. Ltd.* (URL: <http://www.tipsexim.com>)