

## **CHAPTER-VII**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

## **7.1: Short Summary**

The evolution of the Indian IT market in 1997–2003 especially after globalisation has been remarkable and the IT industry has contributed 7.5 percent to India’s GDP in 2008–09, compared with 1.22 percent in 1997–98. Thus, India’s IT sector has defied predictions that it would never outgrow “body shopping”—simple, low-cost software fixes done at the client’s site. Indian software companies have proven themselves and gone on to win bigger, longer-term, and more demanding contracts that they have fulfilled on time, on cost, and with high quality, thus reinforcing and cementing their dominant position in the world.

The total revenues of the Indian software and services industry in 2003–04 were \$15.9 billion, including domestic revenues of \$3.4 billion. Indian software and services exports registered a growth of 30.5 percent in 2003–04, clocking revenues of \$12.5 billion, and witnessed a roughly 30–32 percent increase in revenues totaling \$16.3 billion in 2004–05. North America, which accounts for more than 55 percent of global IT spending, represented approximately 70 percent of Indian software exports in 2003–04; Europe ranked second at 22.25 percent of total exports. North America remains the dominant market for ITES-BPO services, accounting for more than 80 percent of ITES-BPO business in India.

The world is increasingly becoming one globally integrated market, and highly educated and trained people are key elements of competitiveness. Each year 2–3 million IT professionals from India emigrate due to higher salaries and complementary aspects: research centers, access to finance, and the ease of setting up businesses. Weaknesses in home countries include low salaries and weak complementary aspects: little funding for R&D; under-equipped research centres; difficult access to capital especially to start up new high-tech businesses; access to finance; and an overregulated business environment for starting and running new businesses. The majority of emigrants go to just four host countries: the United States, Germany, Canada, and Australia.

Although this migration has several positive effects on host countries by increasing the stock of high-level personnel and stimulating innovative activity, the negative effects on home countries include loss of highly trained personnel and fiscal costs, because many receive education that is publicly financed. Offsetting effects to home countries include remittances, return of migrants with greater international experience, and potential to use this diaspora to access capital knowledge and markets. Remittances to developing countries have soared from \$17.7 billion in 1980 to \$30.6 billion in 1990 to nearly \$80 billion in 2000 (Kapur and McHale 2003). In India, between 1990 and 2000, remittances from abroad grew six fold from \$2.1 billion to \$12.3 billion. The destination of these remittances shifted significantly from Kerala and Gujarat to Karnataka and Andhra Pradesh, which are becoming centres of IT.

According to the U.S. Census of 2000, the Indian diaspora in the United States is growing rapidly and very wealthy. The Indian-American community now boasts 1.68 million people compared to 0.81 million in 1990—a growth of 106 percent! Their average per capita income is \$60,093 (compared to a U.S. average of \$38,885 in the 2000 census). They have a high level of education: more than 87 percent of Indian-Americans have completed high school and 62 percent have some college education (compared with just more than 20 percent for the U.S. population). They are represented in virtually all professions, including agriculture, biotechnology, business, economics, finance, IT, journalism, management, medicine, and various sciences. In 1997–98, 4,092 Indian professors were teaching in U.S. universities. In the same year, 33,818 students born in India were registered in 2,579 U.S. universities. In 1997 Indian students obtained 3.2 percent of the total number of doctorates granted by U.S. universities. The Diaspora is also very entrepreneurial, and Indians have come to enjoy a dominant position in the U.S. IT industry: approximately 300,000 Indian-Americans work in Silicon Valley, account for more than 15 percent of start-ups in the United States, and have an average annual income of about \$200,000.

## 7.2: Overall Conclusions

To the best of our awareness, this type of study is not common to the existing literatures. As a result, this work is a new attempt to explore the different aspects related to the migration of Indian *IT* professionals whose socio economic importance is bound to increase in the near future.

Our analysis reveals that the main reason influencing migration of Indian *IT* professionals to the other countries is the search of *improved infrastructure*, followed by *better working environment*, and then *salary*. *Political turmoil* in India is another factor which has influenced the migrants to migrate to other countries.

The study also throws light on different food habits, different cultures and entertainments of the migrated *IT* professionals. They might have migrated to other countries but their liking towards *Indian food* is much more than *foreign food*. Their greater affinity for '*Hindi movies*' compared to '*English/ Regional Movies*' and greater affinity for *Indian social culture* compared to *present countries social culture* are also evident. However, despite enjoying the better work culture, most of the migrants are nostalgic about their homeland and want to come back to India with a suitable job offer. Most of them have taken their decisions to go abroad by themselves only. High job satisfaction in foreign countries is unable to generate high mental satisfaction within most of the migrants.

From this study it is found that those individuals who have been influenced more by salary to leave India and migrate to other countries are less satisfied with their jobs in the foreign country, which is very interesting. On the other hand those individuals whose migrations have been influenced more by their search of better working environment are more satisfied with their jobs in foreign countries.

The study also analyses the roles played by different decision makers in compelling the migrants to take migration decision. It is observed that most of the *IT* professionals have taken the decision of migration out of their *own selves*. *Previous job environment* and '*Present Employer*' have also influenced the migrants' decision for migration.

Most of the migrants send half of their salary to their families in India. Among the respondents, 76 percent of the IT professionals are aged between 20 years and 30 years. Majority of them are having their Master Degrees in Computer Science. Bulk of these professionals (56 percent) is having 1 to 10 years job experience.

A striking revelation of this research is that, as far as the '*Work Culture*' is concerned, the migrants prefer their present countries (i.e. foreign countries) more than India. This is further reflected in the fact that the job satisfaction of the migrants is much more in foreign countries compared to their job satisfaction before leaving India.

It is also revealed that job satisfactions of the migrants who are working in foreign countries have no relation with their mental satisfaction. This implies that the mental satisfaction of the migrants is determined not by the standard and type of job that they are doing. The migrants working in a foreign country become nostalgic and feel that they are missing cultures, properties and traits of their homeland. This is also proved by the filled up questionnaires where most of the respondents have shown their interest to return back to their homeland. This give rise to the scope for carrying out further research works to find out the major determinants of '*Mental Satisfaction*' of migrated Indian IT professionals.

The launch of economic reforms in India in 1991 opened up new business opportunities for the Indian community in the United States and the other developed countries. They have had an important role to play in high-tech development in India, focused primarily on the software industry. Many IT professionals rely heavily on strengths back home—the huge pool of skilled computer experts and software professionals—to subcontract work to their country of origin, thus creating a “virtuous” cycle for the Indian IT sector and economy. As an example, in the software industry and IT-enabled services, investments of Diaspora members are quite limited (about 3 percent of FDI), but their contribution is mostly in the form of knowledge linkages, that is, with foreign markets, helping Indian firms to absorb technical and managerial knowledge. The initial impetus for outsourcing to India many times comes from employees of Indian origin. The success of the Indian Diaspora has also attracted the attention of major MNCs to India’s potential in the IT sector. India has attracted investment in many R&D centers wholly funded and

established by GE, Cisco, Sun Microsystems, Microsoft, IBM, and Hughes Software. Intel's R&D centers in Delhi, Bangalore, and Mumbai service its global operations. Oracle Corporation has two development centers in Bangalore and Hyderabad. Phoenix Technologies, ABB Group, IBM, America Online, and J. P. Morgan Chase are in the process of setting up new R&D centers, and Lucent Technologies is also making inroads into India.

Software industry is the sunrise industry in India. Though it is only about \$1 billion, which is much smaller than many traditional industries like steel, manufacturing, chemicals, etc., it has caught the imagination of the nation as the possible industry in which India can eventually dominate the world. It is also one of the few high-tech areas in which India has made its presence felt world wide, and this has helped change the perception of India with respect to technological advancement and has brought national pride. This has led to the desire by the nation and the government to support the industry even more.

The industry has been growing at about 40 percent per year. As the industry is highly labour intensive, its main raw material is the trained and highly skilled manpower. Nasscom estimates that the software industry will need about 20,000 people per year. Compare this to the total output in all engineering disciplines of the top 50 engineering institutes in the country, which is about 12,000 to 15,000! In this context, the brain-drain from engineering institutes like the IITs, primarily to the US, is a source of concern to the software industry. Besides brain drain, these institutes are also being put in the dock for not producing enough engineers to satisfy the needs of the software industry.

Though brain drain from these institutes and stagnant output of engineering colleges definitely contribute to the manpower shortage of the software industry, the software industry itself has contributed to brain drain and the shortage of manpower in no small measure by its short term approach to business.

It is well known that a good portion of the exports of software industry can be attributed to body shopping, in which people are placed on-site overseas for long periods of time and the software company placing them on-site makes a risk-free profit in dollars. This

has reduced over the years, and many companies have started doing more projects off-shore in India. Multinationals, which have started operations in India, have also helped in reducing this, as the very purpose of their opening offices here is to get work done in India. Still, a significant portion of exports, particularly of many smaller companies, can be attributed to body shopping.

Body shopping inevitably leads to brain drain. When people are placed for a long period of time in the US, it is inevitable that most of them will end up staying in the US, given our almost blinding attraction to the west. And it is well known that many of the people stationed abroad for long period of time generally do not return. The software industry knows this quite well, but to meet the short-term targets and to make easy money without really doing any work (other than find the person to place overseas), it still continues to engage in this, thereby hurting its own long-term interests.

The situation is worsened by small software companies, acting largely as placement agencies for sending software professionals abroad for clients (Bangalore, for example, is full of such companies). This active participation of the software industry in the brain drain from the country, and at the same time crying hoarse about the shortage of trained manpower, almost leads one to think that the industry is really seeking the extra output of engineers (at a cost to the tax payer and the government) only to export them outside and make a profit.

Let us try to estimate the contribution of the software industry to brain drain. Software industry currently employs about 70,000 engineers. The turnover in the industry is at least 20 percent, i.e. 20 percent of the employees quit their jobs to take up some other job. As a conservative estimate, 40 percent to 50 percent of these people who quit their jobs, take up jobs overseas, either by leaving the company when posted abroad or through these placement software companies. The quota for India for H-1 visa (the visa that is generally used by software companies when they want to post people in US for a long time) is 20,000. That is, the US consulates in India have put a limit of 20,000 on H-1 visas. It is fair to assume that 30 percent to 40 percent (if not higher) of the people given H-1 visa never return. From this, the estimate of the brain drain volume from the software industry comes to 6000-8000 persons this year - similar to the estimate from the turnover

percentage. Compare this number to the total brain drain from all the IITs this year, which, if we assume that half of the graduates will go abroad for higher studies, will be only about 1000 persons. In other words, the total brain drain from all the IITs will only be about 15 percent of the brain drain from the software industry.

Software industry has been growing at about 40 percent each year. As the output of the software industry is proportional to the engineers it employs, this means that the employment in the software industry in the previous three years was of the level 50,000, 35,000, and 20,000 respectively. Again, considering 10 percent loss to other countries (though in earlier years this figure is likely to be higher as more body shopping was being done earlier than now), we find that in 4 years (including 2009), the software industry has exported about 18,000 software engineers probably comparable to the brain drain from all the IITs in the last two decades. From the software industry point of view, this brain drain is more serious than the brain drain of fresh graduates from the academic institutions, as in the brain drain from the industry; it is people with experience who are lost. And as is well known in the industry, it is the middle level people that are in most short supply.

### **7.3: Recommendations**

What should be done to reduce the brain drain by the software industry? Even though it can be argued that brain drain has also helped India by creating a pool of NRIs who can invest, act as ambassadors, etc., it should be clear that there is a need to reduce the brain drain. The long term solution to the general problem of brain drain is to create an environment (in terms of opportunities, living conditions, wealth creation, etc.), in India that can obviate the need for people to emigrate overseas. However, in the short and medium term some policies and strategies have to be deployed to reduce this. One obvious approach is to reduce the activities that lead to brain drain. That is, minimize the long term stay of software personnel on-site by doing more work off-shore in India. Some companies are already moving in this direction. However, a lot of software companies are not likely to do this, thereby hurting those companies that are willing to take a long term view. Even some of the large software companies are not likely to accept this approach. And organisations like NASSCOM are unlikely to support any such move, as many of its member companies do not agree with it.

As the industry itself is not likely to take steps to reduce this brain drain, one strategy to reduce this brain drain is to have proper policies imposed by the country in the larger interests of the nation and the software industry which restrict the brain drain. When the US wanted to put restrictions on H-1 visa, many policy makers and industry watchers believed that this would in the long run, benefit the software industry in India. However, the software industry lobbied hard against it. Perhaps, the Government of India, in the interest of the country, should lobby with the US to bring in tighter restrictions for long-term visas but more liberal policies for short-term visas so that body shopping is reduced and the bona-fide software service business being conducted from India is encouraged. The software industry itself should take active measures to reduce this brain drain and organizations like NASSCOM should regularly collect and publish data on the volume of brain drain from the software industry, just like it publishes the data about total volume of business and exports. And definitely the software organisations and the government should get together to identify and ban those software companies that are only placement agencies, and work out proper disincentives for exports that arise by people export. If some such measures are not taken, building a case for increased manpower production will not be perceived as serious, and the manpower shortage of the software industry will get more acute.

Some critical factors are always very crucial in brain drain. The creams of our society leave our country not only for money. They migrate to the other countries for different other factors. From this study it is clear that globalisation has a great impact on migration of IT professionals. Actually the rate of migration of IT professionals has increased drastically after globalisation. The causes of migration of IT professionals are also very interesting.

This situation has, in fact, reduced the transaction costs of moving across locations, thus giving rise the phenomenon of brain drain especially from the Indian continent.

Engineering education in India has been spreading through the state funded or privately funded institutions. The economy has been severely affected due to expenditure on such a purpose. The migration has also broadened the gap between the rich and poor countries of the world.

On the basis of our analysis and discussions we may make the following recommendations.

- i. The opportunities inside the country should be widened, lucrative and meaningful so that young talents aspiring for going abroad will be interested to serve their motherland.
- ii. Young talents should be given orientation in such a manner that they become country oriented people instead of individual oriented people.
- iii. Brain drain cannot be stopped completely, rather, it can be curtailed. This will help reducing unemployment problem and side by side raising foreign currency reserves as well as raising saving and investment basket of the country.
- iv. According to Amartya Sen (2005), a part of the Indian community, trained by the best institutes in India like that of IITs, IIMs, IISs, has been able to derive the opportunities offered in a very different culture and society. Professor Sen also remarks that “even within India, the size and speed of expansion of technology products (including software) have been quite extraordinary (Sen, 2005). The trained human resources can also make remarkable contribution to our economy and society if they get more support as well as have more freedom to boom within India.
- v. To become globally competitive effectively the development of human resources and capabilities in terms of educational expansion and of well-equipped training facilities and the development of infrastructural facilities should be undertaken in a much more comprehensive manner. This will help our country to make healthy and effective economic relations with the global players. This particular condition indeed calls for appropriate domestic policies by our government.

Under the situation of global meltdown India is on the cusp of a reverse brain drain. This is because of the fact that India has been able to withstand the global meltdown and due to this our great minds (engineers, managers, doctors etc) are flocking back to India. It is a great sign of the world's confidence in India and its recognition of Indian potentiality.

If our country is seriously thinking about how to resist the brain drain in IT sector then our Government must take some steps on some infrastructural and psychological issues of the IT professionals. Government of India may advice NASSCOM and the other IT companies on these factors like *infrastructural improvement, better working environment, better salary, less political interference in the industry, better opportunity of utilising skill, quality of work life, achievement schemes of the professionals, recognition of their work, research environment, social security etc.* According to former President of India APJ Abdul Kalam the process of reverse brain drain will start only when India becomes a developed nation in the future.