



GLOBAL INFORMATION ECONOMY AND SHAPING OF INFORMATION TECHNOLOGY INDUSTRY IN INDIA



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ABSTRACT

Since Information Technology industry has become the driving force for accelerating Indian economy it has become a subject of study most sought after by the academician and scholars both from within and outside the country. New software companies emerged in India while existing IT industry developed and matured to compete with global IT companies as a result of global information economy. Indian IT industry has not only transformed its image from a slow moving bureaucratic economy to a land of innovative entrepreneurs but also from a rural and agriculture-based economy to knowledge based economy. It has put India in a global map. This paper seeks to understand how globalization process has shaped the growth of Indian Information Technology industry and Indian economy.

KEY WORDS: *Information Technology, Indian IT Industry, Globalization, Economy, IT Professional,*

INTRODUCTION

The link between Information Technology industry and process of globalization cannot be done away with easily. With the spread of global economy markets for goods and services are being globalized through trading between firms and network of firms. Indian information technology industry can be seen as a direct outcome of the process of global outsourcing and transnational networks of production. Post-liberalization witnesses India moving towards free-market economy with rising foreign investment. Among the various sectors, Information Technology sector has been at the fore front pushing India's economy forward. As such, ever since Information Technology has become the driving force for accelerating Indian economy it has become a subject of study most sought after by the academician and scholars both from within and outside the country. Not only does Indian IT industry uplift country's economic growth but has also contributed to other section of the society. One such significant contribution is the number of employment opportunity it creates. It is estimated that Indian IT sector employed around 5.5 million both directly and indirectly.

RISE OF INDIAN INFORMATION TECHNOLOGY INDUSTRY

"Information and communication technology is the essential tool for economic development and material well-being in our age; it conditions power, knowledge and creativity; it is, for the time being, unevenly distributed within countries and between countries; and it requires, for the full realization of its developmental value, an inter-related system of flexible organizations and information-oriented institutions" (Castells, 1999. p.4).

According to Castells (2010) 'new economy', which he called global informational economy, has emerged in the last quarter of the twentieth century due to information technology revolution. The process of globalization of economy, emerged as a result of this revolution, has initiated movement of jobs (manufacturing and service) from developed countries to the low-cost location in the third world countries in the form of



outsourcing. One reason for this transaction of jobs to less developed countries, like India, is due to available of cheap man power. Growth of Indian IT industry is a direct outcome of global economy that has emerged due the rapid development of information and communication technology.

Castells (2010) put forth that “during the 1990s the process of internationalization of the production, distribution and management of goods and services rapidly accelerated” (p.116). Similarly it was during this time that Indian IT industry began to grow immensely due to the increase of Foreign Direct Investment (FDI) and growth of numerous multinational corporations. Upadhya, and Vasavi (2006) is of the view that outsourcing of software development project by western companies to Indian service providers, setting up of offshore development project centres by multinationals in India, call centres and other back office operation in the 1990s, accelerate the growth of IT industry in India.

Late 1990s encountered a global software issue with the advent of new millennium; some called it Y2K problem or millennium bug. It was assumed that when the year changed to 2000 these programs would give unexpected results because software developed in 1970s and 1980s use two digit i.e.19 to represent years. As such these programs required identification of the problem and appropriate changes and fixing this bug required intensive labour (Rajaraman, 2012). Indian software industries take full advantage of it by going out in full gear fixing this computer bug. In fixing this and also making good software, many of the Indian software industries become client to foreign companies. As a result “all most all major software companies of the world set up labs in India (e.g. SAP Labs, Peoplesoft, Oracle Corporation, Microsoft, IBM, BEA, Sun Microsystems, CISCO, Nortel, Lucent, Adobe, EDS, Accenture, Synoptics and Applied Materials)” (Subramaniam, 2006, p. 42).

Indian IT industries developed from marginal entity catering to domestic needs in 1970s and 1980s to a global software companies by 2010. Narayana Murthy (2011) rightly put forth that today Indian companies were not any more competing for software services contracts based on low cost but on quality and timely delivery. Another interesting development taking place beside the growth of software companies are the IT enables services (ITeS) and Business Process Outsourcing (BPO). One of the main reasons for the growth of IT industry and increasing Foreign Direct Investment in Indian IT and ITeS industry is due to the availability of cheap and quality man power. A.K. Bahn, (Universal Design System (India)

Private Limited, March, 1970) rightly mentions that, “One way to reduce costs is to have all computer programming and system analysis in countries where technical labour is comparatively cheaper since this is a labour-intensive industry. A programmer in America earning Rs.90,000 per year can be replaced by an Indian programmer working for Rs.9,000 per year” (Sharma,2009, p. 257).

The coming of personal computers in the early 1980s changes the complex of global IT industry. As a result of this there was an increase demand for software market. On the one hand, Indian companies as well as software engineers began exploring American market while on the other hand American software and multinational companies are outsourcing their business into India due to availability of cheap resource. The combination of these has played a crucial role in the growth of Indian IT industry. It has initiated the growth of new software companies and helped the existing IT industry developed and matured to compete with global companies. Companies such as Infosys, Wipro, and Tata Consultancy Services (TCS) etc. became major IT industry not only in India but globally.

Infosys was founded by N.R. Narayana Murthy (an M.Tech from IIT Kanpur) along with six other on 2nd July 1981 in Pune with a capital of Rs.10,000 (around US\$250). Murthy and his associates prior to forming Infosys were all part of Pani Computer System (PCS). The company shifted its base from Pune to Bangalore in 1983 after signing up its first major customer in the domestic market with Motor Industries Company Limited (MICO) (Ibid. p.267). By the end of the decade the company had around 100 employees working both onsite and offshore project. The company turnover was still very small with 2,45 crore and is ranked No. 10 in the Dataquest Top 20 list. Post 1990 it began to grow at a great pace after it made Initial Public Offering (IPO) in 1993. By 1999 it revenue reached \$100 million thus making it the fourth largest Indian Software exporter. Its revenue increased from \$100 million to \$ 1 billion in 2004 and doubled to \$2 billion in just two years, (Ibid. p.271). As of 2014 its revenue is \$8.24 billion. Infosys has a total of 173,000 employees as of 31 October 2014, of which 34.7% were women. Its workforce consists of employees representing 89 nationalities working from 32 countries. Out of its total workforce, 79% are software professionals, 15% are working in its BPO arm and remaining 5% work for support and sales. Infosys provide services ranging from Information Technology, business consulting and outsourcing.

Another Indian company benefitted by the blooming of IT industry and emerged as an important IT service company globally is WIPRO. Founded by M.H Hasham Premji in 1945 was initially set up as a manufacturer of vegetable and refined oils as 'Western India Vegetable Products Limited' in Amalner, district Jalgaon, Maharashtra, under the trade names of Kisan, Sunflower and Camel. The company underwent a change in structure and functioning, from manufacturing food product to technological domain of personal computer and software, with the coming of Azim Premji who inherited the company at the age of 21 (after the death of his father).

Being one of the most prominent player in IT segment ever since it venture into IT sector here are some of the important milestone in the history of Wipro.

- ◆ Established in 29 December 1945 as Western India Vegetable Products Limited.
- ◆ Ventured in to IT domain in 1981.
- ◆ Established software products and exports subsidiary, Wipro Systems Ltd. in 1983.
- ◆ Pioneers in marketing indigenous Personal Computers in 1985.
- ◆ Entered IT services in the 1990s - was among the pioneers in developing the ODC (Offshore Development Center) concept.
- ◆ Entered the BPO business in 2002.

The company today has 154,297 employees serving clients in 175+ cities across 6 continents. The company posted revenues of \$7.3 billion for the financial year ended March 31, 2014.

From a small unit initially set up to provide punctured card for Tata Iron and Steel Company Limited (TISCO) now Tata Steel, Tata Consultancy Services (founded in 1968) emerged as one of the largest India-based IT services company. TCS was the Indian software company to set up office abroad (in 1970 it set up its overseas office in London) (Sharma, 2009, p. 273). Within few years it got client from within India as well as abroad. For instance in 1971 is secure a project to computerized the telephone directory of Bombay telephone and in early 1970s got its first contract from Burroughs to develop operating system for its new computer series (Ibid. pp.274-275).

Post liberalization TCS began to expand its operation within India as well as in foreign countries. Its revenue for financial year 2013-2014 is US\$ 14.44 billion. As on September 2014, total number of TCS employees is 313,757 as such, among the Indian IT companies TCS has the highest number of employees. Times of India report that in the technology sector TCS has become the world's

third largest employer of people after IBM and Hewlett-Packard. Not only this, TCS has emerged as the top employer of women in IT sector in India with one third of its total workforce

Table no. 1. Top Indian IT companies in terms of revenue 2013-2014.

S.No	Company Name
1	Tata Consultancy Services Ltd.
2	Infosys Ltd.
3	Wipro Ltd.
4	HCL Technologies Ltd.
5	Tech Mahindra Ltd.
6	L&T Infotech Ltd.
7	Syntel Ltd.
8	Mphasis Ltd.
9	Genpact India Pvt. Ltd.
10	iGate

Source: NASSCOM.

INFORMATION TECHNOLOGY AND ECONOMY

'In information technology we may have finally found the engine that can drive India's takeoff and transform our country' (Gurcharan Das, 2002, p. xvii).

Over the last two decade India has experienced leapfrog in the development of IT industry in India. Not only has IT industry put India on global map but it also has its share of contribution in the growth of country's economy. This is how Federation of Indian Chambers of Commerce and Industry (FICCI) writes about the contribution of Indian IT industry, "The industry has played a significant role in transforming India's image from a slow moving bureaucratic economy to a land of innovative entrepreneurs and a global player in providing world class technology solutions and business services. The industry has helped India transform from a rural and agriculture-based economy to a knowledge based economy".

Information Technology and Business Processing Management (BPM) are two most important IT sector in India. Indian IT and BPM is the highest impact sector for India. Its relative share in national Gross Domestic Product (GDP) is 9.5% for the FY2015. Not only this the sector is the highest private sector. In a written reply to Rajya Sabha Communication and IT Minister Ravi Shankar Parsad said, quoting industry body NASSCOM data, "the export revenue of the industry is estimated at USD 80.6 billion during 2013-14 fiscal against 75.8 billion in 2012-13 fiscal, registering an increase of 13.1 per cent". According to NASSCOM Indian IT-BPM revenues stands at US\$ 118

billion in FY2014 witnessing an increase in 13 percent compared to last financial year adding another US\$ 10 billion.

Table no. 2. Indian IT-BPM revenues.

Year	USD Billion
FY2009	68
FY2013	109
FY2014	118

Source- NASSOM.

Software or IT service is the main contributor with 64 per cent followed by BPM with 23 per cent, software product 18 per cent and hardware 13 per cent respectively. Majority of the revenues generated are through export. IT services export stands at US\$ 52 billion in FY2014 while it was US\$45.4 billion in FY2013. BPM contribute to nearly one fourth of industry export at US\$20 billion.

Table no. 3. IT-BPM export revenue in FY2014.

Sector	US\$ Billion
IT services	52
BPM	20
ER&D, software products	14
Hardware	0.4

Source- NASSOM.

Not only did it play an important role the economic growth of the country, but Indian IT industry also play a positive role in influencing the lives of its people through an active direct and indirect contribution to the various socio-economic parameters such as employment, standard of living and diversity among others. India's IT-BPM sector employs about 5.5 million people, of which 3.5 million are direct employees. Announcing the findings of an HR survey, NASSCOM said "the Indian IT-BPM industry will increase its net hiring by approximately six per cent over last year". In a written reply to Rajya Sabha Communication and IT Minister Ravi Shankar Parsad said '2.45 lakh IT professionals are working for international markets, while 6,80,000 professionals are employed in the country'.

Growth and development of IT industry in India is credited not only with the emergence software professionals but also expose India to a new type of job and work culture which has impact their personal as well family life. An editorial in Economic and Political Weekly put it this way "IT offers not only well paying jobs that take even lower middle class youth around the world and up the managerial ladder but also scope for entrepreneurship largely unaffected by the inspector raj that bedevils traditional industry". The best example of this can be seen through the life of Narayana Murthy (co-

founder of Infosys). Not only this, 'wooing of Indian software professionals by various countries has given the Indian middle class a new sense of self-esteem'. IT professionals and entrepreneur constitute Gurcharan Das (2002) new middle class (pp.245-253 and 280-290). Fuller and Narasimhan (2007) call IT professional as the new-rich middle class and so do Carol Upadhy (2011) - new-middle class, on the basis of the money they earn, their life style, pattern of consumption and their hunger for success.

CONCLUSION

IT sector has not only put India on global map but has been one of the most significant contributors in the growth of its economy. Global Information economy has not only helped in the development of new IT companies in India but coupling with it a class of entrepreneurs emerged who are basically from middle class. It has transformed Indian economy from slow moving to one of the fastest growing economy in the world. From a rural and agriculture based economy to a knowledge based economy. One should not forget about the amount of jobs directly and indirectly IT sector is generating. In fact one of the most startling features that IT industry in India has brought about is the emergence of software professional. Software professionals today become an ideal profession where the young generation aspires to be one among them.

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