

The Evolution and Growth of IT Sector in India

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Abstract: The paper explains the rise and growth of India's IT industry. In general, information technology covers all aspects of managing and processing information. The last decade of 20th century has witnessed information technology to have revolutionary effect on the lives of people. In the last two decades there is 20 times increase in export revenues for the IT industry, employing over two million people. Today the whole IT industry is playing a major role in the growth of Indian economy. The paper shows how to analyse the growth and performance of information technology industry in India. Various aspects of information technology industry like composition, revenue, exports, wealth creation, size and share, localization etc. are studied.

Keywords: India, Information technology, services, Indian economy.

1. INTRODUCTION

The information technology industry has emerged as one of the fastest growing industries in India. In this sector India has built up valuable brand equity over the years. The Indian IT industry is broadly categorized into IT services and software, ITES-BPO. In IT enabled services (ITES), India is emerging as one of the most preferred destinations for business process outsourcing (BPO).

Information technology (IT) industry in India has played a key role in putting India on the global map. IT industry in India has been one of the most significant growth contributors for the Indian economy. 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. This industry has helped India transform from a rural and agriculture-based economy to a knowledge based economy.

Information Technology has made possible information access at rapid speed. It has made tremendous impact on the lives of millions of people who are economically backward and living in rural and remote places. Internet has made revolutionary changes with possibilities of e-government measures like e-health, e-education, e-agriculture, etc. Today, whether it is filing Income Tax returns or applying for passports online or railway e-ticketing, it just needs few clicks of the mouse. India's IT potential is on a steady march towards global competitiveness, improving defence capabilities and meeting up energy and environmental challenges amongst others.

The paper is organized as follows. In Section 2, the Indian IT industry's evolution and sustainability is explained. In Section 3, Influence of key global events on the Indian IT industry discussed. Section 4 provides a concluding discussion on the challenges faced and future prospect of Information Technology industry.

Objectives:

1. To analyse the Indian IT industry.
2. To look into the different scenarios of IT industry and its contribution to the nation.
3. To examine future scope and government initiatives to groom it.
4. To look into global events that impacted the Indian IT industry over the years.

2. SECTION 2. THE RISE AND DEVELOPMENT OF IT INDUSTRY

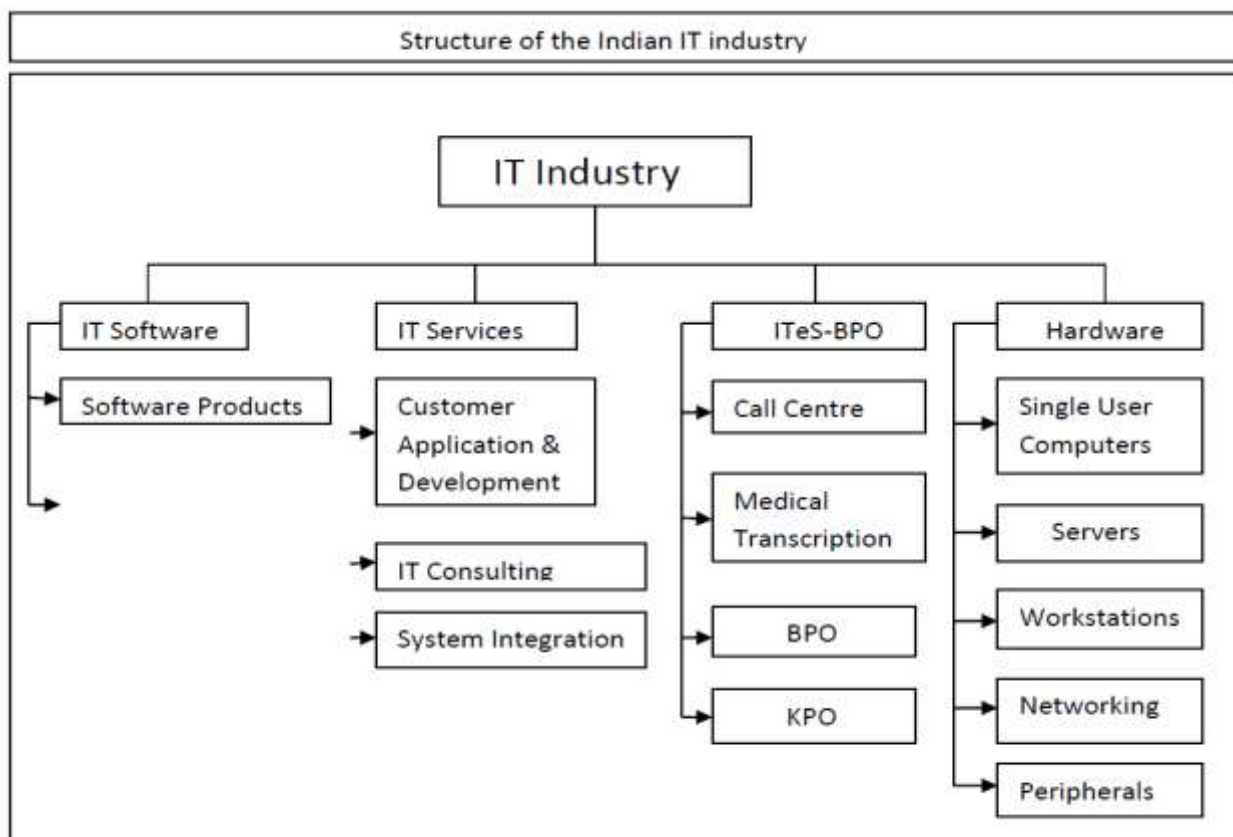
The IT industry in India came into existence in the year 1974. It was the time when mainframe manufacturer Burroughs asked Tata Consultancy Services (TCS) to export programmers for installing system software for a U.S. client. The IT industry was formed in a very unusual market conditions. During this government was more focused towards the agriculture sector rather the service sector. Local markets were absent and government policy toward private enterprise was hostile. The IT industry started its roots from Mumbai based businessmen. They started their operations by sending software programmers to global IT firms located abroad and making money from this.

During that time Indian economy was state-controlled and the state remained hostile to the software industry through the 1970s. Import tariffs were high (135% on hardware and 100% on software) and software was not considered an "industry", so that exporters were ineligible for bank finance. Government policy towards IT sector changed when Rajiv Gandhi became Prime Minister in 1984. His New Computer Policy (NCP-1984) consisted of a package of reduced import tariffs on hardware and software (reduced to 60%), recognition of software exports as a "delicensed industry", i.e., henceforth eligible for bank finance and freed from license-permit raj, permission for foreign firms to set up wholly-owned, export-dedicated units and a project to set up a chain of software parks that would offer infrastructure at below-market costs. These policies laid the foundation for the development of a world-class IT industry in India.

The industry structure in the IT sector has four major categories. These are -

- IT Software
- IT services
- BPO & IT enabled services
- Hardware

It is noted that the Indian IT industry is growing at robust pace driven by greater acceptability of the outsourcing concept, expansion of service offerings and high quality delivery capabilities. The industry remains one of the highest contributors of employment and foreign exchange to the country. The key drivers of the robust growth include verticals such as Banking and Financial Services companies, Pharma and Legal Services. It is useful to understand the structure of the Indian IT Industry, and the place that the IT software, IT services, ITes &BPO, hardware segment has within it.



- **IT Software:**

Software products are among the most highly exported products from India. The software industry in India originated in the 1970s and grew at a significant pace in the last ten years. Also a number of software product firms have grown over the last decade from a little over 100 in 2000 to nearly 2400 in 2013. The revenue from the software product segment currently stands at 2.2 billion.

- **IT services:**

IT services constitute a major part of the IT industry of India. IT services include client, server and web based services. Opportunities in the IT services sector exist in the areas of consulting services, management services, internet services and application maintenance. The Indian IT services market grew 7.1% to reach \$7.7 billion in 2014 helped by higher demand for cloud infrastructure and cloud-hosted applications and a renewed focus on infrastructure projects.

- **BPO & IT enabled services:**

The services which make extensive use of information and telecommunication technologies are categorized as IT enabled services. The IT enabled services is the most important contributor to the growth of the IT industry of India. In India, Business Process Outsourcing (BPO) is the fastest growing segment of the ITES (Information Technology Enabled Services) industry. Factors such as economy of scale, business risk mitigation, cost advantage, utilization improvement and superior competency have all lead to the growth of the Indian BPO industry. Business process outsourcing in India, which started around the mid-90s, has now grown by leaps and bounds.

India is now the world's favoured market for BPO companies, among other competitors, such as, Australia, China, Philippines and Ireland. The BPO boom in India is credited to cheap labour costs and India's huge talent pool of skilled, English-speaking professionals. The BPO industry provides employment to around 0.7 million people across the country. The yearly revenue amounts to around \$11 billion.

- **Hardware:**

The overall size of Indian ICT hardware market, which comprises printers, servers and computers among others, stood at US\$15.87 billion, showing a growth of 23.98% over the previous year. The biggest driver of this growth has been Phablets, which has registered a humongous growth of 527% over last year to do 50.8 mn sales and is expected to grow by around 65% in the next fiscal years.

Today, Indian IT companies such as Tata Consultancy Services (TCS), Wipro, Infosys, HCL etc are renowned in the global market for their IT prowess. These companies played a bigger role in transforming India into the world's largest sourcing destination for the information technology (IT) industry, accounting for approximately 67 per cent of the US\$ 124-130 billion market. The industry employs about 10 million workforce. More importantly, the industry has led the economic transformation of the country and altered the perception of India in the global economy. India's cost competitiveness in providing IT services, which is approximately 3-4 times cheaper than the US, continues to be the mainstay of its unique selling proposition (USP) in the global sourcing market. However, India is also gaining prominence in terms of intellectual capital with several global IT firms setting up their innovation centres in India.

Top 10 major IT hubs in India:

1) Bangalore

Popularly known as the capital of the Silicon Valley of India is currently leading in Information Technology Industries in India.

2) Chennai

It is the second largest exporter of software next to Bangalore. It has the largest operations for India. Top IT companies like TCS, Infosys, Wipro, Cognizant, Patni, L&T infotech and many other IT companies have major operations in IT corridor, Ambattur and other places in Chennai.

3) Hyderabad

Hyderabad called as Cyberabad, which has good infrastructure and good government support is also a good technology base in India. The Government of AP Has built a separate township for IT Industry called the HITEC City.

4) Pune

Pune is already a well-established IT destination, and has been giving the likes of Bangalore and Hyderabad very tough competition.

The burgeoning IT industry in areas like Kharadi, Hinjewadi, Magarpatta and Tathawade are drawing massive amounts of information technology business into the city.

5) Coimbatore

It is the Manchester of South India. Coimbatore has a well-developed infrastructure for the Information Technology (IT) industry. The city, which is known for its strengths in the manufacturing units, has sector-specific special economic zones for IT and ITES.

6) NCR (National Capital Region)

The National Capital Region of India comprising Delhi, Gurgaon, Faridabad, Noida, Greater Noida and Ghaziabad are having ambitious projects and are trying to do every possible thing for this purpose.

7) Mumbai

Popularly known as the commercial, entertainment, financial capital of India, this is one city that has seen tremendous growth in IT and BPO industry. TCS, Patni, Lnt Infotech, I-Flex WNS and other companies are headquartered here.

8) Kolkata

Kolkata is a major IT hub in eastern India. All major IT companies are present here. The city has tremendous potential for growth in this sector with upcoming areas like Rajarhat.

9) Trivandrum

Trivandrum is the capital of Kerala. GOK provides a good platform for IT development in the city with India's largest IT park Technopark and dedicated Technocity.

10) Jaipur

This rapidly growing industrial hub houses a lot of IT/ITES and BPO giants. Genpact, Connexions IT services, Deutsche Bank and EXL BPO, Infosys, Tech Mahindra, and Wipro are here. There are plans to build the largest IT SEZ in India by Mahindra under the Mahindra World City.

With global companies looking to make their way into the Indian IT sector, there are a tremendous number of Indian IT Companies which have impacted the industry in a big way.

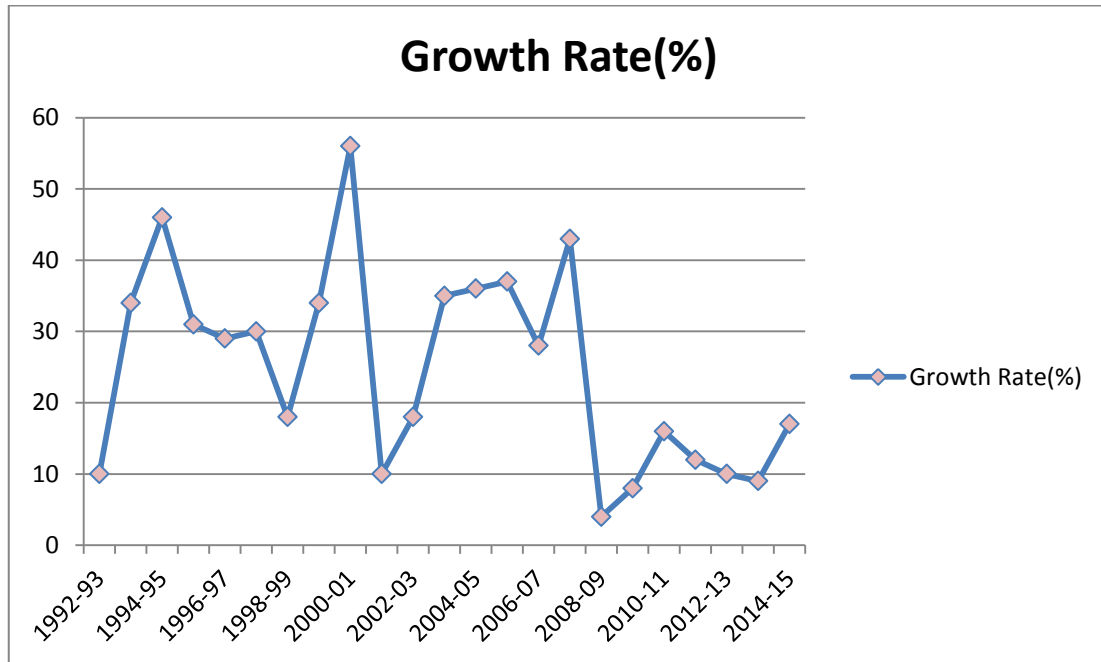
Top companies in the Indian IT industry	
Segment	Company Name
IT - Software	TCS, Infosys, Wipro, HCL Technologies, Tech Mahindra
ITeS - BPO	Eclerx Services, iSmart Global ,3i Infotech
IT - Hardware	HCL Infosystem, Zenith Computers, Smartlink Networking
IT - Education	Aptech, NIIT, Educomp Solution

Top 10 emerging IT Companies:

- 1) Knowlarity
- 2) Foradian
- 3) Iken
- 4) Techcello
- 5) Vizury
- 6) mCarbon

- 7) B2R
 - 8) Rolocule Games
 - 9) Reverie Language Technologies
 - 10) KNOLSKAPE
- Source:NASSCOM

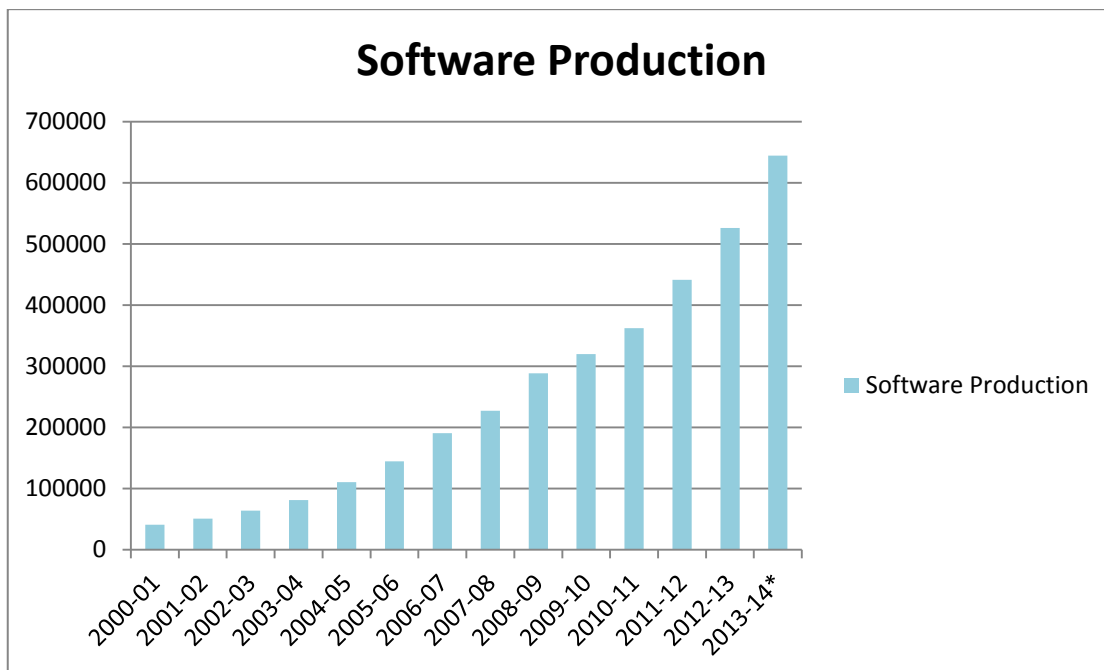
IT Industry Growth Rate:



Source : Richard Heeks, CDI, Univ. Manchester

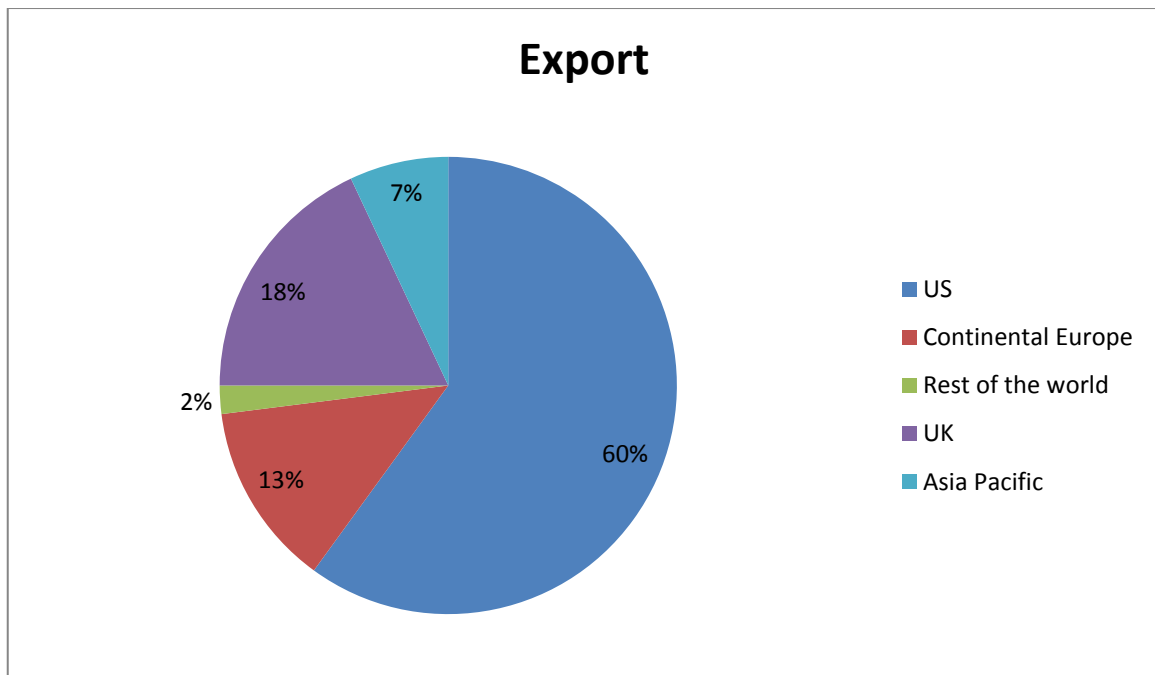
Note: There was negative 8% growth during 2009-10

Total IT Production Over the Years:



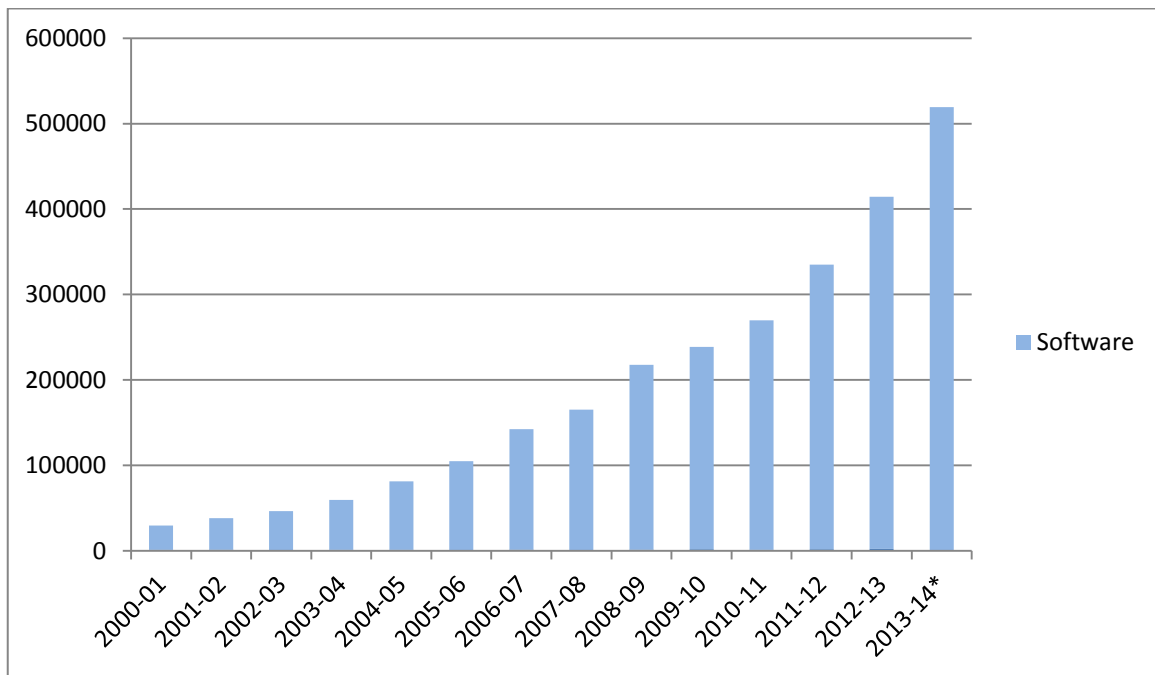
Source: Annual Report:(2013-14),Ministry of Communications & I T (Export in ₹ Crore) *Estimated Figure

Geography-wise split of India's IT Exports:



Source: NASSCOM

Rise In IT Software Exports:



Source: Annual Report:(2013-14),Ministry of Communications & I T (Export in ₹ Crore) *Estimated Figure

Some of the major factors which played a vital role in India's emergence as key global IT player are:

Government Initiatives:

After the economic reforms of 1991-92, major fiscal incentives provided by the Government of India and the State Governments, like, liberalization of external trade, elimination of duties on imports of information technology products, relaxation of controls on both inward and outward investments and foreign exchange, setting up of Export Oriented Units (EOU), Software Technology Parks (STP), and Special Economic Zones (SEZ), has enabled India to flourish and acquire a dominant position in world's IT scenario.

In order to alleviate and to promote Indian IT industry, the Government of India had set up a National Task Force on IT and Software Development to examine the feasibility of strengthening the industry. Venture capital has been the main source of finance for software industry around the world. In line with the international practices, norms for the operations of venture capital funds have also been liberalized to boost the industry.

The Government of India is also actively providing fiscal incentives and liberalizing norms for FDI and raising capital abroad.

Research & Development:

To support Research & development in the country and promoting Start ups focussed on technology and innovation, a weighted deduction of 150% of expenditure incurred on in-house R&D is introduced under the Income Tax Act. In addition to the existing scheme for funding various R&D projects have been funded through new scheme like Support International Patent Protection in Electronics & IT (SIP-EIT), Multiplier Grants Scheme (MGS).

The government has initiated the setting up of an Open Technology Center through NIC aimed at giving effective direction to the country on Open Technology in the areas of Open Source Solutions, (OSS), Open Standard, Open Processes, Open Hardware specifications and Open Course-ware. This initiative will act as a National Knowledge facility providing synergy to the overall components of Open Technology globally.

3. SECTION 3. INFLUENCE OF KEY GLOBAL EVENTS ON THE IT INDUSTRY:

1) Globalization has had a profound impact in shaping the Indian Information Technology industry. Over the years, verticals like manufacturing, telecom, insurance, banking, finance and lately the retail, have been the growth drivers for this sector. But it is very fast getting clear that the future growth of IT and IT enabled services will be fuelled by the verticals of climate change, mobile applications, healthcare, energy efficiency and sustainable energy.

The near future of Indian IT industry sees a significant rise in share of technology spend as more and more service providers both Indian and global target new segments and provide low cost, flexible solutions to customers.

2) The sub-prime crisis was one of the biggest flaws in the American financial system in the history that brought huge implications around the world. Even the people who were not remotely connected with this crisis were also severely affected. Because of this crisis all the sources of credit got dried up and Americans were forced to cut down on their expenditures. Thus the demand for import fell heavily and which took a huge loss of revenue for countries like India. And hence the Indian IT industry felt the pinch. Software development for many US firms take place in India but as the economic growth of US was slowed down, they demanded less IT products, which severely affected the overall growth of IT industry during year 2007-2010. Because of this economic slowdown many IT firms in India were forced to cut jobs leading to unemployment during this period.

Challenges:

1) Cyber security and quality management are few key areas of concern in today's information age. Terrorism related to cyber is popularly known as 'cyber terrorism'. Given the increasing dependency of the Indian economic and financial institutions on IT, a cyber attack against them might lead to an irreparable collapse of our economic structures. Cyber terrorism is not only limited to paralyzing computer infrastructures but it has gone far beyond that. It is also the use of computers, Internet and information gateways to support the traditional forms of terrorism like suicide bombings. Internet and email can be used for organizing a terrorist attack also. Most common usage of Internet is by designing and uploading websites on which false propaganda can be pasted. To overcome such concerns in today's global IT scenario, an increasing number of IT-BPO companies in India have gradually started to emphasize on quality to adopt global standards such as ISO 9001 (for Quality Management) and ISO 27000 (for Information Security).

2) High attrition rates in the IT-BPO segment is a major concern for companies. With attrition rates ranging between 25-40 per cent, attrition is a big challenge. It has been observed that an average Indian call centre employee works with a company for 11 months, whereas an average UK call centre employee stays in a company for three years. Apart from a loss of skill set, the cost of recruitment and training represent an additional expenditure for Indian IT-BPO firms.

3) Many Indian companies have preferred to do IT in-house. The government, which can be a big IT spender, is considered a difficult customer to work with. This has limited the growth of the domestic market. New challenges have emerged in the form of rising inflation, a falling growth rate, delays in much needed reforms and the attendant waning of

investor confidence. So there is an urgent need for IT innovation in systems, processes, outsourcing, infrastructure risk management, customer support and security.

4. FUTURE SCOPE

Technology can transform India's ability to provide basic services.

- 1) Healthcare- 50% of Indian do not have access to primary healthcare. Technology can provide it at half the cost.
- 2) Financial Services- 80% of Indian households are unbanked. Technology can enable access for 200 million families.
- 3) Education- India faces a 3 fold shortage in teachers. Technology can address this through remote solutions e.g virtual classrooms, recorded lectures by senior faculty, modular multimedia content.
- 4) Public Services- India suffers from a leakage of 40-50% in public food distribution. Technology can ensure transparency. (Source Dr. Anupam Khanna, OECD Paris)

5. CONCLUSION

India aspires to transform itself into a truly developed and empowered nation by 2020. However, to achieve this growth, the IT industry has to continue to re-invent itself and strive for that extra mile, through new business models, global delivery, partnerships and transformation. A collaborative effort from all stakeholders will be needed to ensure future growth of India's IT-ITeS industry. The government came up with new initiative to enhance the growth of this industry. India needs to respond to the new challenges and put in dedicated efforts toward providing more and more of end-to-end solutions to the clients to keep the momentum going. This nation welcomes investors to invest in Information Technology sector. Transparency in different policies and procedures by the government over the years has enabled investor to invest in this industry. And hence this industry set to rise in the coming years.

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