CHAPTER NO. 2

DEVELOPMENT OF IT INDUSTRY IN INDIA
Every era witnesses the development of some new techniques and technologies. Present era is an era of IT. India is not exception to this. Indian economy is swept by IT industry. Tremendous development has taken place in this industry and if the Indian Government responds favorably by way of its policies, the growth in this sector is going to stay. Indian software programmers are known in the world for their skills and intelligence. No more India is recognized as country of wild animals. The country is now recognized for its software experts and programmers. In 1980s companies from developed nations used to feel that underdeveloped countries like India can not have skilled professionals. In just 25 years the scenario has completely changed.

Around 1990s American companies realized that if Indian designers, programmers and analysts are so competitive that they can develop required software in India instead of in U.S.A. which will enable them to further cut costs by way of saving substantially on account of high salaries and other expenses which they would otherwise be incurring. It will be possible for companies to cut down cost almost by 50 percent. Instead of paying 40 to 45 dollars per hour companies will be able to get the work done only by paying 20 to 25 dollars. In fact many Indian companies were trying to convince the
same to American companies but at that time American companies were apprehensive about quality and control over the project if project is off shored to India. At around the same time, telecommunication in India improved by leaps and bound which enabled Indian companies to link up with companies in USA at any given time via satellites. The apprehension of American companies whether Indian companies would be able to deliver in time did not matter any more. Shortly there after, due to Emails, tele and video conferencing, it was possible for the U.S corporate to have control on the projects without frequent visits by their executives leading to even further monetary savings.

During the same time Jack Wealth of General Electrical took the lead and outsourced the work on massive scale to four companies in India. This was just the beginning of the off shoring. No one would have predicted at that time that it would grow to such massive scale in India. It has since grown to an unbelievable extent in India. Companies like I.B M., Texas Instruments and many others have opened their branches in India and number of companies has started outsourcing their projects to Indian companies. The jobs off shored were not only related to development of new software but also for maintaining of the software earlier developed which is really a tedious job. American programmers were always interested in developing new programs. They were never interested in correcting and maintaining old programs. Obviously this work was outsourced to
Indian. This became very advantageous for Indian companies as this work continues for a longer period and there are less chances of work being transferred to some body else where as in case of new projects ones the project is complete companies had to search for new projects which in return means tremendous marketing efforts and facing uncertainties.

During the same decade of 1990 spectacular growth took place in activities through internet. Every body felt that once they open their own portal exhibiting their products and their prices; there would not be any need for middlemen and they would be able to E market easily. As a result many entrepreneurs got involved in designing portals, preparing web sites, and developing special programmers for buying and selling. Y2K problem added to this scenario and so work of off shoring gathered momentum.

However soon the dot.com bubble burst. The expectation that through internet impossible could be achieved in no time proved wrong. During same period U.S economy started facing depression due to which, Indian IT industry faced a rough period. However intense globalization, realization on part of American companies of advantages of outsourcing and tough competition at the global level forced the foreign companies to outsource. Thus software, BPO and call centre business started expanding tremendously in India.
What is the call centre business?

As competition started becoming tough in USA, companies started evolving innovative strategies to attract and retain customers. To achieve this, customer care service became of prime importance. For example, if one wished to know his or her bank balance or wanted to apply for a loan, the person need not visit the bank as in good old days. One had to simply dial a given number and the customer service agent would answer all the queries.

Due to this development number of banks, insurance companies, mutual fund companies, aviation companies, railways and other various service providers started appointing thousands of agents. Initially these agents use to operate from the head offices of the respective companies. This turned out to be a costly proposition. To overcome this problem, companies started shifting these operations to less costly areas in the country itself. Sensing the opportunity, some Indian companies convinced the American companies that same could be done from India at even fraction of the cost that the US companies were incurring even after shifting their operations to remote areas as queries could be answered by any Indian from anywhere in India. Their American customer would not realize who is answering their queries and from where. This was the central idea behind functioning of the call centre.
**Business Process Outsourcing**

Business process outsourcing is a different type of business in which various processes involved in business in one country are transferred to any other country of choice. For example, work of accounting from banks, or reconciliation of tickets issued by the Air lines, which is routine and tedious but necessary and needs large work force and also the time, could be easily executed from any country where necessary infrastructure and skills are available at cheaper rates. This made sense and many reputed companies like British Airways, HSBC bank took the initiative and started their operations from India. Soon many other banks and other multinationals followed the suit.

Another important field with great potential is that of animation. For achieving special effects in TV serials, or movies or cartoon net work lot of animation work is required to be done. Though this work is done with the help of computer, it is again a time taking and tedious work. This work is also being done from India for other countries. There were reportedly 10,000 such Animators in India in the year 2000 and the figure has reach 50,000 by year 2007.

Now BPO companies in India are performing variety of jobs for American companies like filing of patent on behalf of American
companies and judging its potential, doing clinical research, filing tax returns for American citizens, claim processing on behalf of insurance companies, keeping record of patients history and medical treatment for doctors, conducting clinical trials, preparing designs for structures of buildings with the help of computer. Lacks of people are getting absorbed in doing such work. Expert teams in each area are developed, to create Help desks to answer the queries in any area of operation from India. Thus BPO needs the people who are experts in the respective fields. In fact this work is not related to computer field as such but computer is used to do this work, so they need to have only operational knowledge of computers. That is why they are called as information technology enabled services (IT Enabled Services.). In fact, work of a call centre or BPO is totally different from that of software business but since, American companies developed confidence about the abilities of some Indian companies, they insisted that work related to BPO or CALL CENTER should also be done by them and so companies like Wipro and Infosys entered in to this field too.

Indian IT service providers are making inroads into niche areas like HR outsourcing. Big companies have inked deals almost worth $ 350 million. Earlier Indian companies were being awarded sub-contracted work from large HRO players. Now they have developed expertise in areas such as benefits administration and are
invited to bid in almost all large HRO deals. Indian players are able to beat large players like Acenture and IBM due to attractive transaction pricing. HRO deals include a minimum of three HR functions namely payroll, recruitment, and HR information Systems. Most of the HRO deals signed by Indian suppliers are from Europe. With the Indian suppliers jumping on the HRO bandwagon and Europe emerging as a faster growing market for these services than the US, India can reduce its dependence on North America where the economy has slowed down.

Thus India has been immensely benefited due to BPO and this will continue during the years to come. In 1998 -99 IT/ BPO / CALL CCENTRES contribution to national wealth was 1.4 %. This increased to 3 % in 2003-04. It is expected that by 2008 this percentage will go up to 7 % and the total turnover of this industry will reach about 5, 70,000 crore dollars and out of this the share from software industry is expected to be around 370000 crore dollars. Of the total turnover of software sector, 55 percent of the jobs are coming from US and as far as ITES are concerned, 80 percent of the work is done for US. Soon jobs from Europe Japan, Singapore, and Hong Kong, Korea etc. are also expected.

Currently Japan \(^1\) is the next port of call for the Indian IT services industry. Apex IT industry body NASSCOM is currently
working on a study to evaluate the outsourcing opportunities from Japan, the world's second largest economy. Japan's IT spending on engineering design and services are very high. Some Indian players are trying to carve out a fair size of Japanese outsourcing market. Infosys has entered into a pact with Nihon Unisys to combine its global delivery model with the latter's strength in the Japanese market. Similarly, Wipro also has key alliances with some of the leading Japanese corporate. InfoTech enterprises has announced its entry in to Japan with offerings in engineering design services. Patni computers and KPIT Cummins also have substantial presence in the Japanese market.

In the year 2002 around 1.15 lakh people were employed in the software industry. By 2004 the figure reached to approximately 2.0 lacks. In case of IT enabled services this growth is much faster. Around the year 2000, there were hardly 25000 people working in this industry, by the year 2002 the figure reached to 100,000. And in the year 2004 it was 2.45 lacks. It is predicted that by the year 2008 this sector will provide employment to almost 400,000 people. If we look at the profile of the people employed in the industry, 13% are postgraduates, 67% are engineers and 20% are graduates from various other disciplines.

In the years to come not only the programmers but also the project managers in large numbers would be required by this
industry. To develop any system for the various businesses the
domain knowledge would become essential to know the requirements
of users, to interact with them and design the system to the utmost
satisfaction of the customers. The software developed is then tested
against the specifications set by the customers. Software testing by
itself is developing into a new field of business. Thus the jobs of test
managers, test engineers etc are the new opportunities opening up
for the young generation.

Software companies need ISO, CMM or SIX SIGMA
certification. For this every company has a separate team to take
care of quality control at all levels of operations. This certification has
different levels. By 2004, 65 Indian companies had achieved 5th level
of CMM certification. Lately many big established Indian companies
have started giving advice regarding steps to be taken to obtain such
certification and improve the quality of work.

In addition to this in many companies numbers of computers
are connected with each other and a large network is created. Due to
this, security of information has become a major problem. Those who
are having required knowledge of this field, have many
responsibilities like, they take care of data security, viruses, and
making available required information as per requirement of various
teams. For maintaining the net work, net work administrators are
required. Their main responsibilities include the task of configuration
of the net work, up loading of the software and maintaining the net work. Similarly to manage the large data base, data base administrators are required. Data base of insurance companies and banks is very large and is ever changing as new customers join where as some old ones leave. This data base is stored on various disks depending upon the design of the software. Call centers need the supervisors while BPO needs the experts in many areas like Physics, Chemistry, Pharmacy, Accounting, Finance etc.

According to IT expert Mr. Godbole, at the moment only the people who know English and who have to their credit degrees in engineering would be in a position to get the jobs in this industry, meaning only the people belonging to upper strata will have the opportunities. The benefits are not available to the common people. IT industry up to 2008 would create jobs only for half a percent of India’s population. When India starts using computers for the purpose of educating the people, giving them information about health and hygiene, giving information to farmers regarding arrival of monsoon or new techniques on farming, giving them information about ups and downs in the market, Issue of ration cards and driving licenses, and many other such public utility jobs with the help of computers then and then only it could be said that revolution in IT has reached the common man and this will also lead to opening up of lacks of new jobs for the younger educated generation.
In India process of computerisation had started since 1978. During 1985-90 around 100 districts had been selected for computerization. When Rajeev Gandhi came to power in 1985, the government of India decided to increase the pace of IT use at the district levels. The National Information Centre, a central government organization was chosen to implement a national programme called District Information System of National Informatics Centre to computerize all district offices. Free hardware and software were offered to the states. By 1990 each district computer was connected to a state computer through a local dish antenna and satellite communications network. The state computer in turn was connected to a computer in New Delhi. Commissioning of nearly 500 computer centers and a country wide net work connecting these computers was a major achievement. However the use of computers has been effective in only a limited manner. It is proceeding at a very slow pace. A health care project was initiated in 1994. Even the co-operative movement initiated by National Dairy Development Board was benefitted by IT. Andhra Pradesh is the first state in India to have designed state wide computerization programme covering all levels of the administrative spectrum. The Indian government has declared IT as one of the thrust areas for country's development and has recognized it as an essential service. The states like Andhra Pradesh, Karnataka, Maharashtra, and West Bengal have been
playing significant role in development and use of IT. The Maharashtra government constituted an IT Task Force comprising of the representatives from industry, academia, Chambers of commerce and government departments and agencies. The state’s action plan mainly emphasizes the growth of IT industry in the state.

Richard Heeks in his book on India’s software Industry; State Policy, Liberalization and Industrial Development states that, During 1990s Main stream software industry had deliberately neglected the domestic market in favour of exports. Out of the top 25 producers in 1994-95, 15 earned less than 20% of their software revenue from the domestic market, of which a major part came from trading in imported packages. Only five firms earned more than half their revenue from the domestic market. Roughly one third of India’s software exports earnings came from firms which had no domestic market base for software services and sales. Same picture was corroborated by the data published by NASSCOM in the year 1995-96.In 1980 Software exports grew from under 10% of the total electronic exports to 40% by 1994 -95. Software exports also rose from just 0.05 % of all Indian exports in 1980 to over 1.8 % in 1994 -95. Heeks points out that, Indian software industry’s growth rate, although seemingly high in the Indian context, when seen in the world perspective is negligible and in 1994-95 was less than 0.15% of the total world computer services and software market. If considered in
the context of the net earnings, India probably had a negative balance of trade in domestic market base for software services and sales. Same picture was corroborated by data published by NASSCOM in the year 1995-96. The figures for 1987 suggest that there was a net out flow from India of something over US $100 million in software. This picture reversed during 1990. In fact its large multiplier effect comes about when it is used to improve the performance of the other industrial and service sectors of the economy. It is precisely for this reason that the deliberate neglect of the domestic market should be considered a grave failure on the part of both government and the industry. Software and services export could be categorized into one of the four kinds.

- Sale of software packages.
- Data entry and digitization.
- Customized conversation work.
- Customized application building.

India’s export profile during 1990s was made up of 2.5% of the Sale of software packages and Data entry and digitization where as Customized conversation work and Customized application building
contributed close to 95%. Customized services can be provided by loaning people to work at the customer's sites or by doing the bulk of the implementation work offshore. I.e. from India itself. It is generally conceded by all, including the Indian software industry, that providing services on site forms undesirably large part of our exports. During 1990s Indians were more often used as programmers, rather than as system analysts or designers working to the requirements and design specifications set by foreign software developers. Same was the condition when packages were developed by Indian firms for the export market. Even now it continues to apply to smaller groups and fresh starters.

Another disturbing factor was that the market base of individual exporters was very narrow. Figures collected from top 25 exporters' between 1989-90 to 1994-95 indicate that all but seven of these exporters under took majority of their software exports for a single foreign company. This dependence on single customer was even greater during the formative years of most of the exporting firms.

**Steps by Government to Promote IT Sector**

Government has resolved to make India a global IT software superpower and a front runner in the age of information revolution
Towards this end India has set the objective of Info- infrastructure drive, export of information technology and IT for all by the year 2008. Computers are already meaningfully employed in the fields of railways, air reservations, banking, insurance, billing for telephone and electricity there by reducing the drudgery of work and increasing the productivity and efficiency. IT is also being used in the areas of weather forecasting, radio astronomy, molecular biology, and aerodynamics for achieving faster results, better accuracy and more precision. Other areas where IT can make greater impact are electronic governance, modernization of office environment, crime dictation and telemedicine.

Globally governments have faced challenges utilizing true potential of information technology and the reasons for the short coming could range from faulty structure to blurred vision to poor accountability. While the global level difficulties hold true for India as well, local governments and I.T agencies have their own reasons. The governments do precious little to actually implement I.T at the ground level. Despite two decades of computerization, the lone success that India can claim as a strong I.T enable imitative is the computerized ticketing process of Indian railways. There is always a gap between those who conceived the project and those who are responsible for implementing it. The domain experts have little knowledge of I.T. and I.T professionals have little knowledge of the
domains. This leads to ad-hoc approach. Most government I.T organizations are not only years behind their peers in the private sector in terms of technology but are grossly under employed. They resort to ad hoc out sourcing. While the concept of public private partnership and out sourcing could have been the success story within government as well, the manner in which it is implemented in the government set up has defeated the very purpose of effective e governance. Assigning substandard man power and offering sub standard solutions for Indian government projects is a common practice by even global I.T. vendors. When India is aspiring for double digit growth proactive and dynamic approach should have been essential for this.

The government and state run departments are among the largest customers for I.T vendors and service providers targeting the domestic market. Multinational vendors such as IBM and Hewlett Packard have identified government sector as their key focus area, along with telecom and financial services. From an I.T vendor's perspective, the size and complicity of the projects not only make it lucrative but also offer huge opportunity for learning and ability to take on similar projects in overseas markets. Very recently TCS has bagged the deal to process passport applications. Ministry of external affairs processes close to 80 lack passport applications every year and the number is growing at close to 20 %. This is one of the most
prestigious and lucrative field in the domestic out sourcing market. TCS has won the contract for processing Indian passport applications. This is the first time passport processing has been out sourced. The race was keenly contested by the large public sector under taking as well as I.T and BPO firms. TCS will now handle all processing work related to the issuing of the passport, including police verification and other procedures. Printing will continue to be with the Ministry of External Affairs. The contract will yield around Rs.900 crore in revenues over the six years duration of the contracts for TCS.

ROLE OF NASSCOM

As IT industry started taking roots in India, NASSCOM was set up in 1988 to facilitate business and trade in software and services and to encourage advancement of research in software technology. It is a non profit organization registered under Indian societies Act 1860. Currently NASSCOM is headquarted in New Delhi, with regional offices in Mumbai, Chennai, Hyderabad, Bangalore, Pune and Kolkata. NASSCOM is the premier trade body and is equivalent to chamber of commerce for IT and BPO industry in India. It is a global trade body with more than 1200 members from across the world.
NASSCOM is committed to work proactively to encourage its members to adopt world class management practices, build and uphold highest standards in quality, services, innovation, and remain competitive in today's rapidly changing technology landscape.

NASSCOM'S vision is to maintain India's premier position in the global offshore IT / BPO industry, to grow the market by enabling industry to tap in to emerging opportunity areas and to strengthen the domestic market. By 2010 India's IT/ BPO industry could potentially generate 60 billion dollars in export revenue, accounting for almost 8 percent of GDP, pay for a massive infrastructure development, and sustain around 10 million jobs.

To achieve this NASCOM is constantly raising the bar across processes and quality standards within its member companies and making them partners of choice for customers across the globe. It also enables Indian IT. / BPO industry to evolve in accordance with the rapidly changing technology landscape by adopting, implementing and often creating world class practices.

**AIMS AND OBJECTIVES OF NASSCOM**

NASSCOM aims to drive the overall growth of the global sourcing market and maintain India's leadership position, by taking up the role of strategic advisor to member companies. NASSCOM'S
varied strengths include creating and influencing government and public policy, international trade development, research and market intelligence services, and access to an international network through 17 MOU’S and linkages with 40 industry associations across the globe. This enables NASSCOM to advise members to further their growth.

Other goals include enhancing data security, improving talent supply, and encouraging innovation, strengthen local infrastructure and driving potential excellence. NASSCOM also works with academic and industry advisors to formulate world leading operational excellence standards.

NASSCOM FOUNDATION

NASSCOM endeavors to narrow the digital divide in India and enable all citizens to enjoy benefits of IT, through NASSCOM Foundation (NF). NF is a trust registered under the Indian Trust Act 1882, and has been set up with a vision to leverage Information and Communication Technologies (ICT) for empowering and transforming the lives of the under served. One of the reasons for formation of NF was the commitment of NASSCOM and its member companies to promote social development through the application of ICT. The
objective is to take forward this task in a dedicated and focused manner.

NASSCOM'S seven fold strategy towards achieving these objectives are:

1. Strengthen the brand equity of India as a premier global sourcing destination.
2. Partner with government of India and state governments in formulating IT policies legislations
3. Partner with global stake holders for promoting the industry in the global market
4. Deliver world class research and strategic inputs for the industry.
5. Expand quality and quantity of the talent pool in India.
6. Encourage and facilitate members to uphold world class quality standards and enhance operational efficiency.
7. Aim to uphold intellectual property rights of its members

The membership of NASSCOM has been steadily increasing. In 1988, NASSCOM had 38 members, who together contributed to close to 65 percent of the revenue of the industry. Since then membership of NASSCOM has grown multifold to reach over 1200
members in 2007. These members currently account for over 95 percent of revenue of the industry in India.

NASSCOM acts as an advisor, consultant and as a coordinating body for the IT/ BPO industry in India. and has played a key role in enabling the government to develop industry friendly policies. NASSCOM has been the proponent of free trade, arguing for zero tariff protection laws, deregulation of telecom market, the creation of Software Technology Park and the private sector participation in the education system, the measures which have resulted in significant growth of the industry.

Currently NASSCOM is working with the industry towards the possible extension of the Software Technology Parks of India (STPI) scheme for the IT export sector.

Post announcement of the union budget of India 2008 it has been engaged with various governments overseas, to promote and win partnership. It also plays a role in engaging with global alliances on software quality standards, immigration policies, World Trade Organisation (WTO) and free trade in services and next generation best practices in global sourcing of services.

It also plays an active role in the international software community. NASSCOM is the member of the Asian Oceania Computing Industry Organization. It is also a founder member of the
World Information Technology and Services Alliances This forum comprises of ICT associations from around 70 countries.

NASSCOM provides value added services to its members to grow their business which include:-

- Platform for enabling business networking through various forums and activities.
- Participation in seminars and conferences in India and abroad and meeting with customers and delegations.
- Access to world class research and market intelligence services.
- Opportunity to give back to the society through NASSCOM foundation.
- Contribute in development of global standards and thought participation in areas of data protection and next generation software quality standards.

**ROLE OF STPI**

Along with NASSCOM, STPI (Software Technology Parks of India) also plays important role in development of software industry of India. STPI is the society set up by Government of India’s Department Of Information and Communication Technology in 1991.
with the objective of encouraging, promoting and boosting the software exports from India. To begin with STPI's role began in governments shadow and it was more of an entrepreneurial role, of working directly with software companies and like a corporate. However this does not mean that STPI functions like a typical government department. The role of STPI is more of a service provider for software companies. There in emerged three important factors that has given the necessary impetus to this concept. These are new ness of business model, internal infrastructure facilities and the government interface. All these have brought a positive response from industry especially from small and medium enterprises (SME) sector, which needed this support for their business to grow.

STPI maintains internal engineering resources to provide consulting, training and implementing services. Services provided are network design, system integration, installation, operations and maintenance of application net works and facilities in varied areas ranging from Very Small Aperture Terminals (VSATS) to Asynchronous Transfer Mode (ATM) based net work.

**Objectives of STP**

- To provide comprehensive statutory services as per the foreign trade policy in time bound manner.
• To provide state of art data communication facility as per acceptable global standards.

• To provide single window clearance to software exporters

• To establish and manage infrastructure resources such as data communication facilities, core computer facilities, built up space, and other common amenities.

• To provide single window statutory services such as project approvals, import certification, software valuation and certification of exports for software exporters.

• To promote development and export of software services through technology assessments, market analyses and marketing support.

• To train professionals and to encourage design and development in the field of software technology and software engineering.

**Software Technology Parks Scheme**

STP scheme is a 100 percent export oriented scheme for undertaking software development /IT enabled services, for exports using data communication links or in the form of physical exports.
including export of professional services and development of software.

A STP may be set up by the central, state government, public or private sector undertaking or any combination there of. An STP may be an individual unit by itself or it may be one of such units located in an area designated as STP complex by ministry of Information and Communication Technology.

The unique feature of STP scheme is the provisioning of single point contact service for member units, enabling them to conduct export operations at a pace commensurate with International practices.

HIGHLIGHTS OF THE SCHEME

1. Approvals are given under single window clearance scheme.
2. A company can set up STP unit anywhere in India.
3. 100 percent foreign equity is permitted and approved by jurisdictional Director of STPI.
4. All the imports of hardware and software in the STP units are completely duty free.
5. Import of second hand capital goods is also permitted.
6. Unit shall be positive net foreign exchange earner. Earnings shall be calculated cumulatively in blocks of five years, starting from commencement of production.

7. Use of computer system for commercial training purposes is permissible subject to the condition that no computer terminals are installed outside the STP premises.

8. The sales in domestic tariff area shall be permissible up to 50 percent of the export in value terms.

9. STP units are exempted from payment of corporate income tax up to year 2010.

10. The capital goods purchased from the Domestic Tariff Area are entitled for benefits like exemption of excise duty and reimbursement of central sales tax.

11. Capital invested by foreign entrepreneurs, know how fees, royalty dividend etc can be freely repatriated after payment of income tax if any.

12. Repatriation of foreign currency for payments can be freely done.

**CURRENT POSITION:**

The full income tax holiday allowed to IT companies in STPI comes to an end in year 2009. The government seems keen to
ensure that the industry has other options available. It is looking at including IT companies in the Industrial Parks Schemes (IPS), which offers a ten years tax holiday under section 801 A (4)(III) of the Income Tax Act to new units setup between April 2006 and March 2009.

Besides IT companies already have the option of shifting their incremental business to Special Economic Zones (SEZS) and continue availing a tax holiday. In the case of SEZS, IT companies would enjoy 100% tax holiday for the first 5 years, 50% for the 2 years thereafter and 50% of the ploughed back export profit for the next three years.

Industrial Parks Units would get 10 years tax relief but attract MAT in such a region If STPI is phased out; IT would be treated like any other industry. Tax incentives are needed to provide support to new industry in initial years and cannot last for ever. However, the nature of IT industry calls for a more sympathetic approach.

In the event of STPI scheme not getting extended smaller IT companies would be at a disadvantage vis-à-vis their bigger rivals. The large IT firms have more resources and rapid growth on their side. They typically grow at 30% and therefore can shift even half of their business to a new location in 3 years taking full advantage of SEZS or Industrial Parks Scheme. But smaller IT companies would find it difficult to shift to SEZS or IPS because of resource constraints,
which are magnified by minimum areas norms. Slow down in the U.S. makes the things more tricky for them; there is an added issue of rupee appreciation. So there is a case of extending STPI for small IT companies for few more years.

India is well positioned to become one of the world’s leading innovators. The country is already at the forefront and is home to one third of world’s software engineers and an industry that has created more than one million jobs, since 1999. Indian employees at Microsoft have made important contributions to IT and BPO industry which employs 1.6 million white collared professionals. It is in fact fuelling a larger economic impact and is generating many additional indirect jobs across semi skilled areas such as catering, housekeeping, transport and security. Moreover nearly 75% of the workforce employed by service providers has low educational level.

Every rupee spent by Indian IT / ITES sector translates into a total output of about Rs.2/- in the economy. This means that Indian IT / BPO industry which is speeding towards $60 billion export target by year 2010, would generate a total economic value worth $115 to 120 billion creating direct and indirect employment for 115 million people. These are the findings of the study titled “The rising Tide – output and employment linkages of IT / ITES sector” by NASSCOM AND CRISIL. The study found that maximum employment was
generated through consumption spending by IT professionals followed by operating expenses and capital expenditure.

**Challenges before the IT Industry**

Out-sourcing by highly industrialized countries\(^{19}\) has been the principal factor driving the growth of software exports from India. In 1995 the work worth $40 billion was out sourced by US based organizations. Among developing countries India has so far enjoyed a decided advantage because of availability of quality software professional skills at relatively low cost, coupled with it’s facility in using the English language. However experts in the industry observer that these advantages are unlikely to last once the Chinese begin to catch up with India in their ability to use English.

Mr. Richard Heeks had pointed out that Innovative and strategic applications are unlikely to be out-sourced by developed countries. Recession may slow down growth in out sourcing. Too much global out sourcing may lead to protectionist reactions in developed countries. Now IT industry has started suffering from these consequences.

Though India is a most mature spot for offshore IT services rising costs threaten Indian dominance. Everest Research Institute in it’s report "Global Sourcing Market Vistas 2008 said that the cost
inflation in Indian cities is exceeding 2007 levels and this has increased the risk of labour arbitrage gap closing very rapidly. There has been the constant threat of competition from newer locations such as China, Eastern Europe, and Philippines which are challenging the dominance of India. The government very recently extended the STPI scheme by one more year and this could give some breathing space to the IT industry. At the same time there is an increasing movement towards the tier 3 and 4 cities. One of the companies, GENPACT has already signed an MOU with Meghalaya government to open centers in the state and there have been similar such initiatives taken by other companies. But there is unlikely to be any threat to India as the country has the vast pool of talent as compared to other nations. Amongst the most exciting prospects for the Indian IT industry, indeed, for the country is the expansion of industry into the hinterland. The phase of moving to tier 2 and even tier 3 cities is well established. The industry is now set to move into small towns.

The reverse outsourcing development is too new for Indian companies 20 to go for cost saving as yet, but moving front office processes closer to the client location is fast attracting buyer's interest. Though Major suppliers are responding to the demand for enhanced local delivery customer services, it has not as yet become a common practice.
Handful of offshore players like Infosys, TATA consultancy and Wipro technologies are at the top. The concentration of the revenue in the top three players is increasing every year. The close look at the performance of the top twenty Indian services firms tells a different story. As the revenue is concentrating among these players, the top three accounts for more than 40% of the total IT service export revenue in the year 2006. These top three have constantly performed above industry average. They continue to increase their profitability amid mounting multi national competition increasing staffing cost and attrition and growing deal complexity.

Incapable of differentiating and beating by the scale and volume pricing of the top Indian firms, small and medium size are facing growing challenges. During the same period majority of these companies recorded only 20% revenue. These companies are marginalized and facing either survival challenges or acquisition threats. The Indian offshore industries have become synonymous with a handful of companies that hog most of the lime light. The challenges which the medium and small companies face include:

- They fail to attract the best talent as the top firms dominate the premium recruitment options for hiring the talent such as, on first days of campus recruitment they are unable to compete with top tire firms for talent.
- A small client base that inhibits smaller firms from building up domains skills. The research shows that many companies have no more than five clients in each vertical service line so they are spread too thin and are unable to invest enough in domain specific centers of excellence and solutions.

- A hand to mouth business situation: This blocks future strategy development. Slow growth, reduce operating margins, inability to add new accounts characterises this segment. These firms are unable to invest in developing managerial skill required for larger deals and hiring onshore consulting skills. Their already stretched management bandwidth prevents them from tackling issues in basic business operations like sales and client management.

Smaller Indian firms are further stretched when they fail to meet metrics like, “Headcount added in a quarter” or “New accounts won” inline with the top three. These firms need to either super specialize or merge with other firms. They should focus on clearly defined niche, which will allow them to win business from volume players.
Small IT Firms Growing With Big Fish

When large IT companies grow on to the bigger sized projects, small and medium sized companies find a growth opportunity for themselves. While moving forward, large IT companies are therefore creating an ecosystem for sustenance of SMES in terms of knowledge build up; adding niche capabilities, increasing standards, and building capacity through inter firm competition for higher quality output. This is creating competency build up for the long run that will help SMES to take over non core processes as well as niche specialized functions that are crucial to deliver complex projects and can be shared across organizations. This not only boosts the IT industry as a whole but also helps the value chain from small to large. For many small companies, the environment matters in order to expand the scope of their business and in building credibility of the industry. Working with major IT companies help the small one to learn more, hone their skills and understand product development to the extend that some companies could evolve their own software product development maturity model. Companies in this sector have seen rapid transformation from being involved in low value activities such as application development to high end activities like system integration and packages software implementation.
The study by IIM A'BAD has stressed upon NASSCOM'S role in furthering the SME growth story; the report suggest that intermediary should create opportunities as well as brand the potential of some companies one of these should be rating emerging companies as per their technological capabilities, strategic efforts and knowledge domain. The rating proposition has to go beyond the standard rating. The rating would give a holistic view of the capabilities of the organizations to grow to the next level in terms of stability and evolutionary capabilities as well; The research adds that such a rating system could serve as an effective signaling mechanism to external parties about the capability of small firm to serve a particular function, measured along a set of predetermined parameters. It further states that NASSCOM should create a framework for interaction and knowledge transfer between established players in the tier I and tier ii categories. And the emerging companies. This is crucial since there is already deep knowledge available on aspects like quality, project management, data security etc. which takes along immersion in the industry to build up.

According to NASSCOM, emerging companies like IT/ BPO sector account for almost 80% of the industry in terms of number of players, even though as of now bulk of revenue is generated by larger players, the innovation driven small and medium sized companies, are expected to fuel the next wave of growth of the IT/
BPO industry with an estimated 60% of revenues being generated by emerging companies by 2008. Body of SME forum has been successful in improving networking among SMES and their customers.

To face the current challenges, for the time being, IT industries are currently sticking to the domestic market. They are throwing more resources into their domestic software a project as they find the demand outside is weakening. They are bringing some of their bright engineers from on site locations to the domestic markets. If the Indian IT companies do not look at the domestic market immediately, then the companies like IBM and Accenture will dominate the market. It is likely that they will loose the key accounts to them, so there is an increase in number of employees working on the domestic projects. According to experts, this strategy would work better for the top IT firms in India, wanting to gain ground with their global peers, like IBM and Accenture, who have been strengthening their revenue over the years. The situation of business is any way bad; as clients want lesser resources onsite. So the employees are being brought back to work on the same client or in domestic project. They do not layoff Indian employees on site but only the employees who are hired locally.

As a result, utilisation rates in these companies are likely to improve. TCS which has more business sourced domestically
compared to its peers has a higher utilisation rate, because according to some players, they deploy additional resources in domestic projects. Indian IT companies previously desisted from domestic business because of lower margins, but this will change as their biggest technology markets, US and Europe, are in the phase of recession and might bring down their IT spending. The margins are better in domestic market now because companies have a better idea about how to price their projects for this market. They also can use the processes and solutions that they used for their clients globally for the domestic clients.

**Intellectual Property**

Until about six years ago patenting was not thought to be very important but now innovation is the key area. The separate forum for Intellectual Property (I.P) was thus created at Karnataka’s annual I.T events. It is estimated that over 5000 patents have been filed from Indian I.T. majors. Of these, according to the Director STPI Bangalore, 3000 to 3500 have come from Bangalore. There is a whole bunch of young companies at STPI whose work has seen a huge upswing in the I.P creation, especially in the software and semiconductor area. The Indian I.T. majors and small product startups based in the city have become very active on the patent issue. Wipro
technologies innovative initiative provides a climate for continuous innovation. The company has an advisory board to make sure that the company is constantly working on new areas of opportunity and given strategic direction for improvisation. The company also has an innovation council, a functional body that nurtures and incubates new ideas within Wipro technologies. Corporate will have to closely look at I.P related issues and protect patents as assets. I.P is a key intangible asset for any company as it will improve the valuation.

**Mergers and Amalgamations**

Indian firms are now using cross border mergers and amalgamations to enhance their global service delivery capability, recognizing the advantage it offers in better managing evolving customer requirement. Domestic I.T and BPO companies were involved in as many as 94 deals, largely cross border in 2007, involving investment of over $2 billion. The momentum is expected to gain strength in 2008 with consolidation expected in the domestic arena and Europe likely to emerge as key destination for out bound deal. NASSCOM says in its strategic review in 2008 among the key deals in 2007 were Wipro' $598.4 million acquisition of US based infra structure management firm info crossing – the largest by the Indian technology firm. Other deals include Apollo health street
acquisition of Zavata in the US; Subex Azure's million by out of Canada based Syndesis etc. The year 2008 is more likely to see Indian companies to scoop up mid side acquisitions. Though the number of deals will go up in 2008 reactants would be their towards bigger deal considering both $ and cost issues. Indian companies are more likely to look at the midsize companies. Depreciating dollar has put more pressure on the Indian company to diversify to other location. Moreover, in design and infrastructure management services Europe offers more options.

The first two months of 2008 saw ten US bound acquisitions, majority of which were in the I.T. sector. The recession in the US market has open an opportunity for the Indian firms as valuation of US firms are dropping and merger and amalgamation activity among the US firm are negligible. Indian companies are banking on the funds that they have raised through routes such as external commercial borrowing and foreign convertible commercial borrowing. IT/ITES leads the pack; capturing an over 51% share of the total US bound transaction by volume.

Year 2008 promises to bring in new growth opportunities. According to senior analyst in the next five years, areas like infrastructure management and product development will become big besides revenue cycle management in health care sector, knowledge process out sourcing, financial package, testing and game
development are showing signs of opening up towards outsourcing. However entry into service sector may not be an easy as barriers are very high. This could also prove to be an ideal opportunity for small and medium tier I.T companies to venture into it as it is a green field area.

But the year 2008 will also see introspection by I.T companies on their business models. The current linear business model of Indian I.T. companies of adding more number of people in line with growing business may prove to be untenable in the future. Some of the large Indian I.T companies need to walk away from contracts which are of lower value and concentrate on delivering certain higher level of services. Indian companies now will have to look beyond just providing service to becoming more of a partner to the client

**Hardware Scenario**

In the area of hardware, India has not progressed much. To achieve this, huge capital infusion in to infrastructure and industry is necessary. China and Taiwan are leading players in this important sector and are far ahead as far as Indian scene is concerned. When worth of India’s hardware export was negligible, China’s hardware exports had already reached 1000 crores. Considering this India also should enter in to this field at the earliest as our engineers are going
abroad and doing the prestigious jobs of designing and development for the foreign companies. The least that we can do is to undertake the work of software designing and embedded software related to hardware. Some Indian companies have already taken initiative in this area.