

The STPI scheme and Competitiveness of India's IT industry: Historical Analysis and a Future Outlook

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Abstract

This study examines the contribution of the STPI scheme to export oriented growth of the IT industry from a historical perspective; evaluates the changing role of the factors driving export competitiveness of India vis-a-vis its competitors from an international perspective; and discusses the need to strengthen the STP scheme for facing the challenges in global IT markets. While analyzing the competitiveness of the industry, it uses the scores assigned to various factors driving competitiveness of IT industry in A.T.Kearney Reports of 2005 and 2009. Our findings suggest that the rest of the world is inching closer to India. India is greatly benefited by the availability of large pools of experienced and skilled labour. It has however been losing in terms of most other factors, including the much hyped English language proficiency. The study describes how most players in the IT service industry have been formulating national strategies with the objective of promoting the export of IT services. Efforts are being made to reinforce both demand and supply forces through focused strategies, targeting, promotion of skills, and above all, liberal fiscal incentives. The study argues that the government needs to revisit its vision on the STPI scheme. Differentiated support policies are needed to strengthen the STPs. There is a strong need for further reinforcement of STPI's competencies.

I. Introduction

Information technology software and services (IT/ITES) industry has emerged as one of the most dynamic sectors in India's economic boom, with an annual average growth rate of over 26 per cent during the past 8 years, from 2000 to 2008. The industry has grown from a mere US \$ 150 million in 1991-92 to a staggering 64 billion by 2007-08. It accounted for about 5.5 per cent of India's GDP during 2007-08 up from 1 percent in 1999 and is expected to have provided employment to over 2 million IT professionals by March, 2008 (NASSCOM website). The growth of industry is export driven. In 2007-08, the total software and hardware exports increased to \$40.3 bn, which was over 63% of the total revenue generated in the sector. IT-ITES exports made up 44.7 % of India's total service export revenue in 2007-08, up from 4.9 % in 1997.

It is remarkable that a knowledge intensive industry of an emerging economy achieves such phenomenal success in export markets. This miracle growth triggered a stream of studies identifying the factors that have contributed to the success of the industry. Most studies attribute it to the easy availability of skilled and English speaking workforce at a much lower rate, and top quality software product (Schware, 1992; Sen,1995; Heeks 1996; Arora et.al, 2002;Joseph 2006; Kumar and Joseph, 2005; Mathur 2006, Balakrishnan, 2006). A few studies (Heek 1996, Kumar and Joseph 2005, Mathur 2006) recognize that the emergence of a strong Indian IT industry has been facilitated by concerted efforts on the part of the Government, particularly since the 1980s. Surprisingly, the setting up of special development zones, in particular, Software Parks (STPs) which has been one of the most important components of the government policy has received scant attention in the literature. This scheme introduced in 1991 has played an important and dominant role in the emergence and development of Indian software industry. Today STPs have over 9700 units registered with them which account for 97 percent of the total exports in this sector. However, very little is known about the role of the scheme in IT export promotion in the country.

The present study focuses on the contribution of the STPI scheme to export oriented growth of the IT industry; evaluates the changing role of the factors driving export competitiveness of India vis-a-vis its competitors; and discusses the need to strengthen the STP scheme for facing the challenges in global IT markets.

2. The STPI scheme

The “Software Technology Park (STP)” is an export oriented scheme for the development and export of computer software. Software Technology Park is a duty free customs bonded area in which a unit imports free of duty all types of goods, including capital goods required by it and executes a bond with the Assistant Commissioner of Customs binding itself to fulfill export obligations. The Government of India established and registered STPI as an Autonomous Society under the Department of Electronics (Now Ministry of Information Technology) on 5th June 1991 with an objective to implement the STP Scheme. It was assigned the responsibility of

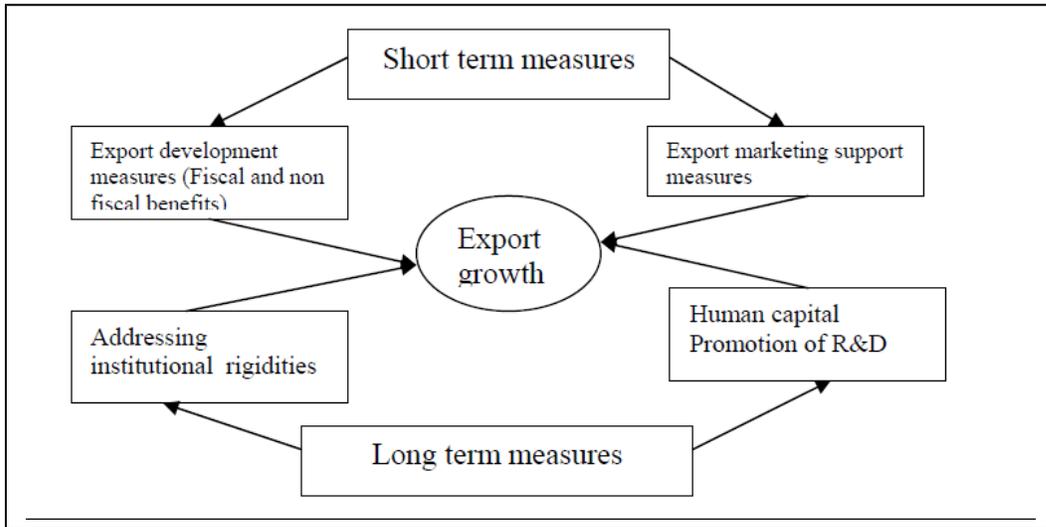
- setting up and managing infrastructural facilities and providing other services, including professional training for STPI units;
- providing them single window clearance mechanism; and
- offering tax incentives.

It has set up 19 STP centres across the country, which are located in: Bangalore, Bhubaneswar, Chennai, Coimbatore, Gandhinagar, Guwahati, Hyderabad, Indore, Jaipur, Kolkata, Manipal, Mohali, Navi Mumbai, Mysore, Noida, Pune, Srinagar, Thiruvananthapuram and Vizag. STPs can be set up (just as SEZs), by the Central Government, State Government, Public or Private Sector Undertakings or any combination thereof. An STP may be an individual unit by itself or it may be an area designated as STP Complex by the Ministry of Information Technology.

2.1 A theoretical model of state intervention in export promotion

The role of STPs can be placed within an underlying theoretical model of growth of the 'high tech' industry in a developing country. In general, the performance of an industry can be related to demand and supply factors. On the demand side, market size is an important driver of growth. Since the domestic market of high tech products is small in a developing country, growth stimulus may come from exploiting export opportunities. Export markets are fiercely competitive and therefore the country needs to build a significant competitive advantage over its rivals on the supply side. Even while the basic conditions for exporting are present within the country, institutional constraints such as the lack of commercial infrastructure, unfavourable business environment, and rigidities in financial markets can create supply side bottlenecks impeding growth of the industry. The active engagement of the state is therefore indispensable in initiating and promoting industrial development in these countries. Figure 1 depicts a model of the government's role in promoting export.

Figure 1 : Role of the government in promoting exports



It shows that the government policies on export promotion have two dimensions: long term and short term. Short term policy measures may be categorized further into two broad groups: (a) export (production) development programmes, and (b) export marketing support programmes. While the former include measures/ programmes which aim at promoting firms' cost competitiveness and their exporting capabilities by offering fiscal and non fiscal incentives, the latter stimulate exports by providing them marketing support through promotional events (trade fairs, exporters' and importers' missions, and market research) and export support services (such as exporter training, technical assistance, capacity building, regulatory compliance, information on trade finance, logistics, customs, packaging, and pricing). Long term policy measures on the other hand involve development of local social capital, entrepreneurial skills, new ideas and research and supportive institutions. Since the long term policy measures involve time and are expensive, state interventions through export promotion measures can speed up the growth process in the short run.

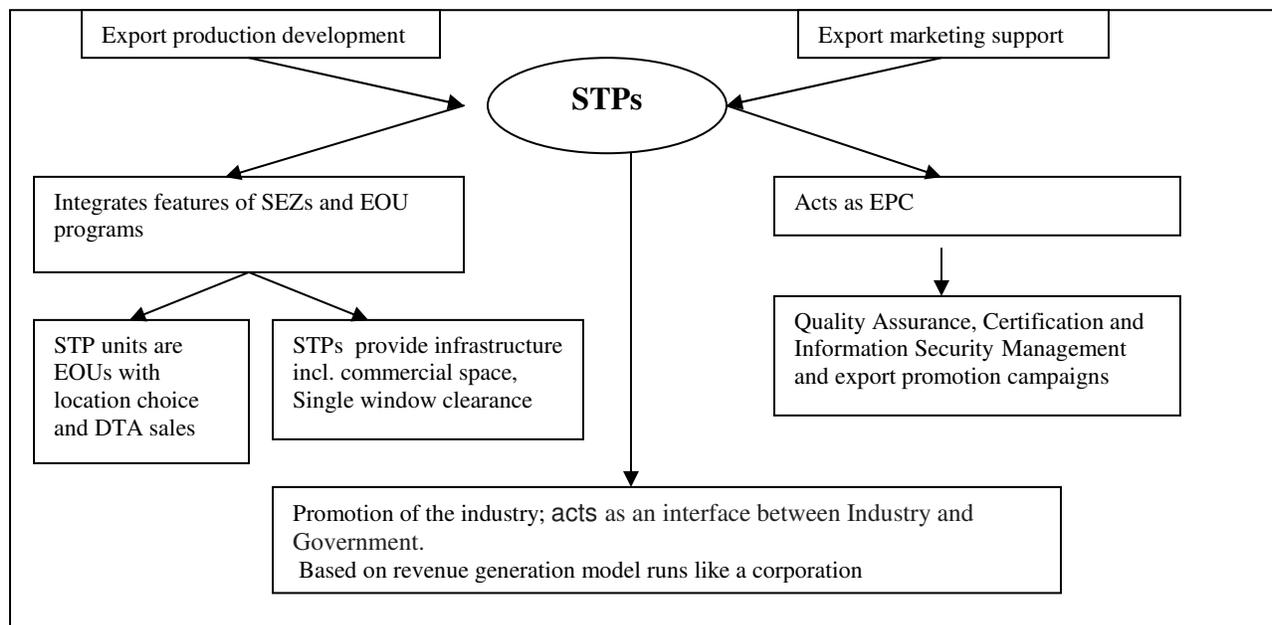
The government of India has been operating several export programmes. The three most significant export production development programmes in India are: Special Economic Zones (SEZs), EOUs, and Technology Parks (STPs). Firms registered under these schemes are offered various fiscal and non fiscal benefits (in varying degrees) including tax concessions, modern and efficient infrastructure, and a single window clearance mechanism, to lower direct and indirect

costs of production. While SEZs and EOU schemes cater to a wide range of sectors, STP focuses only on the IT sector.

In addition, STPI is also entrusted with the responsibility of providing market support to the industry. As such, it acts as an Export Promotion Council (EPC) for the computer software and hardware sectors. In this regard, it complements the functions of the ‘Electronics and Software Export Promotion Council’.

The establishment of Software Technology Parks (STP) has thus been one of the most notable institutional interventions by the government to promote export oriented growth of the sector. It is a uniquely designed model which serves to promote both export production (industry) development and export marketing. Figure 2 illustrates how the STPI model facilitates export oriented promotion of the IT industry.

Figure 2 : STPs : The Model



STPI: promotion of export production

As part of the export development program, STPs is a unique scheme that integrates the characteristics of both, the SEZ and EOU schemes. It offers fiscal and non fiscal benefits to lower the direct and indirect cost of doing business and encourages investment in the industry. A STPI unit is an EOU that can be located anywhere and can also avail the facility of DTA sale

upto 50% of the exports, just as EOUs. The Scheme provides benefits & exemptions which are also applicable to software development units under the general EOU scheme. These include

- o 100% foreign equity permission;
- o duty free imports, including import of second hand capital goods;
- o exemption of local taxes for domestic purchases;
- o sale in domestic market upto 50% of export; and
- o exemptions from payment of duties on donation of imported computers and computer peripherals after two years of their import.

STP units are allowed to import telematic infrastructure equipments for creating a central facility for the export of software without duty payment. The central facility so developed by STP units for transmission of data / software for export are allowed to be utilised by other STP units and units in DTA for export of software. Under STP scheme, units are allowed to render consultancy services for development of software "on site" abroad. Consultancy fee received by such units in convertible foreign currencies is deemed to be exports for the purposes of fulfillment of export obligation under the Scheme.

The scheme also incorporates features which are consistent with the SEZ scheme. For instance, the STP, just as a SEZ, is governed by a nodal agency, 'Software Technology Parks of India (STPI)' which offers single -point contact services to all member units. Powers of approvals and post approval revisions (such as additional import of Capital Goods, attestation of list of imported CG, change of location, extension of validity of Letter of Permission, disposal of obsolete capital goods) in the projects have been delegated to the Directors of STPs. The projects costing less than or equal to Rs.100 million , not involving any foreign equity participation are approved by the Jurisdictional Director of STP. He also issues Green cards. The Green Card enables units to get priority services from all Government Departments/its agencies. It helps units get priority allotment of telephones, electricity connections etc.

The STPI, just as the SEZ authority, also offers infrastructure facilities including ready to use built up space, centralized computing facility and high speed data communication facilities. **SoftNet** is the data communication network developed and owned by the STPI. To increase the

SoftNET's reliability, land lines are avoided. Instead, satellite earth stations and point to multipoint radio equipments are used. Under softnet, several services are available. For instance, the SoftPOINT connects software exporters in India to their clients abroad. The service is available 24 hours a day, and the charges are fixed irrespective of the time and volume of data transferred by the user. The SoftLINK provides a 24 hour access to the Global Commercial Internet protocol Networks. STPI has developed relationships with 26 International carrier companies worldwide. A very attractive feature of the policy is the provision of *incubation infrastructure*. Under the *incubation scheme*, new units are given ready-to-use built-up space with plug-and-play facilities along with internet connectivity and power backup, enabling them to commence their operations with minimum gestation period and least upfront costs. The space is ideally suited for a team size of 15-20 employees at a highly subsidized rent. Generally, it is located within the premise of STPIs and is cost effective. Several IT majors including WIPRO were benefited by this scheme in the initial years of their development.

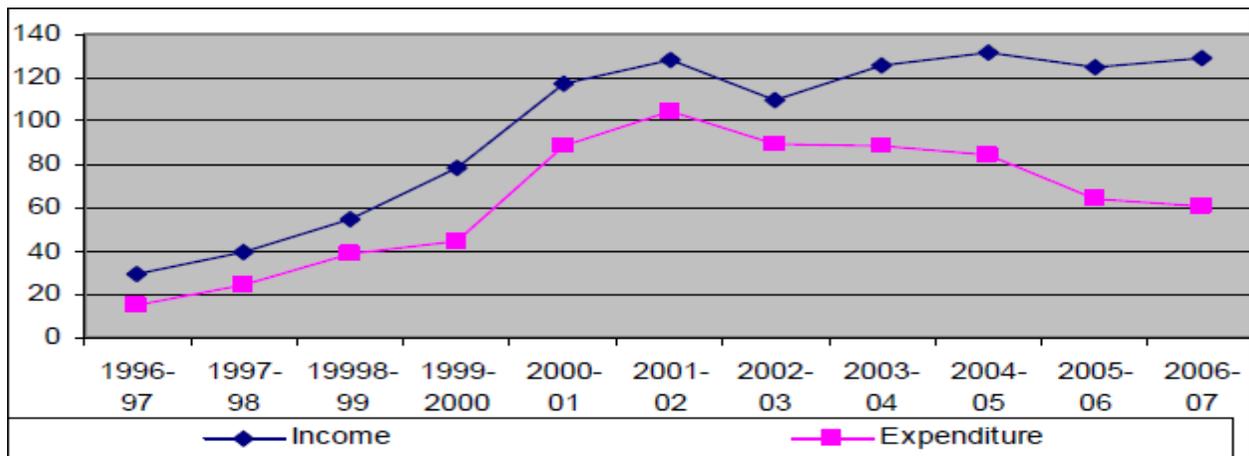
STPs : Export marketing support for the IT industry

The STPI also functions as an export promotion council. To promote software exports, it takes such initiatives as quality assurance, certification and information security management, development support for software (R&D) and export promotion campaign. It organizes and participates in fairs, exhibitions, seminars, and conferences; encourages industry consortia to enable companies to come together, provides advisory and consultancy services; promotes entrepreneurship by regularly organizing Entrepreneur Development Programmes; organizes specialized training in the field of software technology for skill development; and works jointly with venture capitalists to facilitate financial assistance to IT industries. A number of overseas marketing and promotional offices have been opened by the STPI. In June 2000, a STP was set up in Silicon Valley, composed of a Business Support Centre and an India Infotech Centre, with a view to facilitate software export by small and medium firms to the US.

The STPI, just as export promotion councils, have a **Self financing Business Model**. A unit is required to pay 3-years' advance service charges at the time of signing of the legal agreement on the basis of the projections made by it in the application, subject to a minimum of Rs. 50,000/- .

Subsequent charges are payable on annual basis. This model generates income, which is then used not only for the marketing support as in the case of “EPCs” but also for providing infrastructure and business development services. The role of STPI is thus more of an entrepreneurial role of working directly with software companies. Figure 3 presents the income-expenditure statement of the STPI for the past ten years. It shows that this is a self sustainable model of administration and works like an enterprise that sets it apart from the general government administration model (as in SEZs) or the export promotion council model (which focuses only on marketing support).

Figure 3: STPI Financial performance: Rs. Crore



STPI: An industry association

Finally, it also acts as an interface between Industry and Government and works to create and sustain a policy environment conducive to the growth of industry, in particular, of SMEs in India. It catalyses change by working closely with government on policy issues. Thus, STPI is an innovative ‘one stop’ model focused towards promoting the industry by providing the companies with the technical, marketing and administrative support and enabling them to compete in the world markets.

2.2 The STPI scheme: A historical perspective

The software exporting industry emerged in India in 1974 under the highly protected environment to exploit new global market opportunities that emerged due to technological developments in the industry in the late 1960s, more specifically in 1969 when IBM decided to unbundled its mainframe operating system, applications software and hardware by creating open standards (Dossani 2005). Initially, firms developed their own software. As the 1970s progressed, hardware and software became more complex making in-house software development and management more difficult. This led to the outsourcing of system integration and then to the sourcing of system levels and application products by the US firms. In the early 1970s, American firms looked offshore for cheaper ways to develop software products. This created the independent software vendor (ISV) industry. The implantation of a technically sophisticated industry like software into a less developed host country would require entry of transnational corporations. Countries such as Israel and Ireland realizing the potential of the industry and the role of TNCs in its development offered lucrative incentives for global software firms , inducing entry (Giuri et al, 2002).

Indian policy in this period was protectionist and regulatory.” imports of computers were highly regulated and foreign direct investment regime was being tightened. This had inhibited growth in the software industry. In 1972, the government of India introduced a “Software export scheme”. Hardware imports were permitted for the purpose of software development on the condition that the exporters recovered an export commitment equal to the price of computers imported. Tata Consultancy Services (TCS), Bombay, was the first company to export software under these guidelines. TCS, which was set up in 1968, got its first export assignment in 1973-74 after a few local orders. In 1973, FERA closed the door to product software development in India by TNCs. Beginning in the 1970, there was a growing shortage of engineers for the fast expanding computer industry in the US and Europe. Since software development could not come to India, Indian programmers were sent to developed countries. This provided Indian companies an opportunity for body shopping. According to an estimate (Mathur 2006), around 75% of export earnings came from body shopping in the late 1980s.

In that scenario, it was the establishment of SEEPZ that gave a head start to the software export industry. In 1977 the Tatas went into partnership with Burroughs an American hardware company, to establish a unit –Tata Burrough, in SEEPZ to export software and peripherals due to relaxed rules in the SEZ. The Company got involved in manufacturing, marketing and exporting computer systems & peripherals; marketing, installation, maintenance and support of the equipment in India and rendering of computer consultancy and development services for the Indian & overseas market. This helped the growth of the industry in Bombay. Of the top 8 exporters 7 were headquartered in Bombay with a 90% market share.

The period witnessed proactive role of the state in facilitating the development and exports of software products and services in India. A series of initiatives and export promotion policy measures that contributed to the growth of the sector are well documented in literature (Dossani 2005, Kumar and Joseph 2005).

These developments notwithstanding, the industry was facing some major problems, especially in exporting the product. One of the most serious challenges was the evaluation of the software to be exported. Computer software was prepared on magnetic tape or any other physical media and was submitted to the custom for valuation. However, it was found difficult to evaluate the software in the absence of specific technical skills. Furthermore, international communication facilities were extremely poor and non accessible due to a tightly protected telecommunication regime. The next and more significant difficulty firms faced was the high cost of the data communication links needed for software development. The telecommunications infrastructure India had at the time was inadequate. Foreign corporations were looking to expand their global production networks to India because the country offered a skilled, English-speaking workforce, but the corporations could not be accommodated at a reasonable cost. India was factored -2 as against +8 factored to Ireland.

To address these issues, in 1990, STPs were established by the Department of Communication & Information Technology through three separate autonomous societies at Pune, Bangalore and Bhubaneswar, which were merged in June 1991 into a single corporate entity and in quick succession STPIs at Noida, Gandhi Nagar, Hyderabad and Thiruvananthapuram were

established. STPs were equipped with dedicated earth station equipment for providing Data Communication links to STP units. They thus improved the International Data Communication facilities exclusively for the Software Export Industry to accelerate the process of growth.

The role of STPI was not limited to providing communication links, it was also to offer a nodal point for single window services to STP units for approvals, export-import evaluation, and certification. Following its recommendations, the government tax exempted profits on IT exports and offered a tax concession on the import of computers under the Export Promotion Capital Goods scheme.

Commissioning of the STPs thus played an important role in the emergence and development of the IT industry in the initial phase. It facilitated a structural shift in the industry away from onsite to offshore facilities and accelerated the growth in software exports.

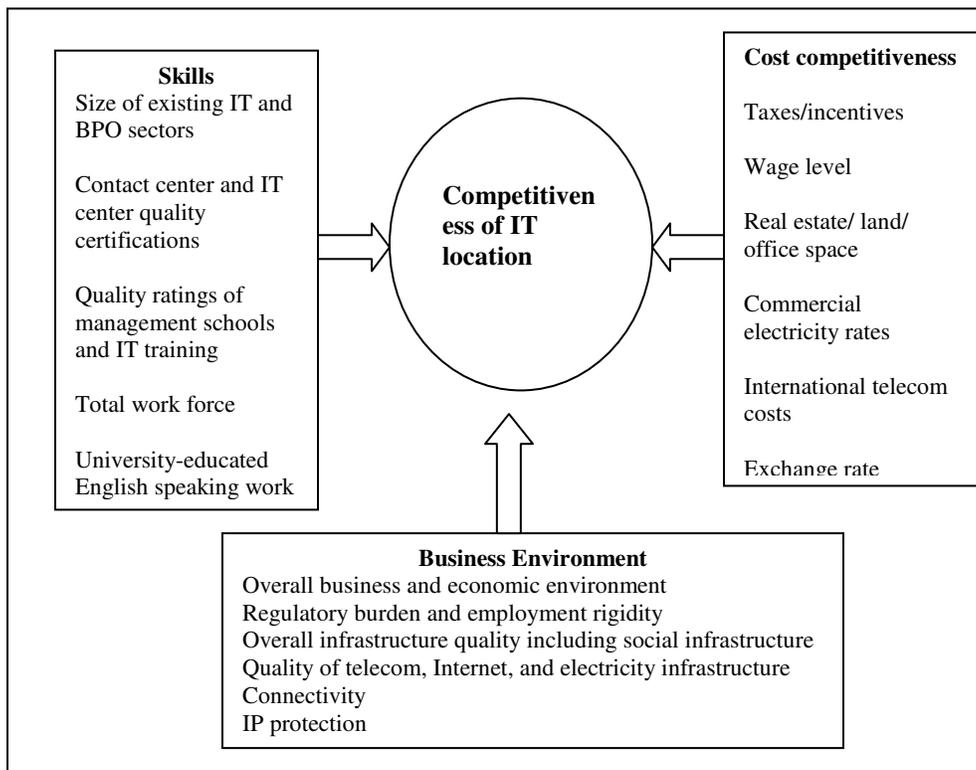
The STP scheme was highly benefited by a 10-year tax holiday for the units announced by the government in April 2000 under a policy aimed at encouraging export oriented growth of the economy. The tax holiday was extended to all export oriented units (EOUs) and units in SEZs, at the same time under Section 10A and 10B of the IT Act. These benefits are set to expire in March 2011 for all the units set up under the STPI (and EOU) schemes. It is generally believed that the role of STPI has become redundant with deregulation and liberalization of the telecom sector. It has also been argued that the only benefit the scheme is offering is tax benefits which should be withdrawn now as the industry has come to maturity. It is therefore important to analyse the competitiveness of the industry from an international perspective.

3. Factors driving export competitiveness: An international perspective

Currently, India is the most preferred destination in the global IT-outsourcing markets. It occupies the top ranking in attractiveness indices of various agencies including A.T. Kearney, Gartner, and Horasis and Going Global Ventures Inc. It is home to six of the world's top eight outsourcing hubs: Bangalore, Chennai, Pune, Mumbai, Delhi-NCR and Hyderabad.

While there are several indices that analyse and rank the top locations of outsourcing, the Global Services Location Index developed by A.T.Kearney, by far, has been the most comprehensive index of location specific attractiveness. For analyzing the factors driving export competitiveness of India, we used this index. Figure 4 presents the ‘Locational Competitiveness Model’ of the ICT sector as adopted by A.T.Kearney in preparing the Global Services Location Indices. It shows that competitiveness of an outsourcing destination is based upon three sets of factors: cost competitiveness, skill development and business environment. These broad factors include, in all, 43 measurements of competitiveness. Each of the 30 selected countries is evaluated against these measurements and scores are assigned to it in each category of factors. A weighted average of these scores represents the overall competitiveness of the industry in a given country

Figure 4 : Locational competitiveness model of the ICT sector



Source: Based on A.T. Kearney (2009)

The 2005 index covered only 28 developing countries. Ten additional countries were added in 2007. These countries retained their position in 2009 as well. These include : Ukraine in Eastern Europe; Sri Lanka and Pakistan in South Asia; Uruguay in Latin America; and Morocco, Senegal

and Mauritius in Africa. Thus a growing number of countries are competing to become viable outsourcing locations.

We used the index scores to gauge India's distinctive competencies or strengths *relative to its competitors*. For the analysis we created two indices to examine:

- revealed comparative advantage (RCA) of rival countries vis-à-vis India, and
- incremental comparative advantage (ICA) of rival countries vis-à-vis India.

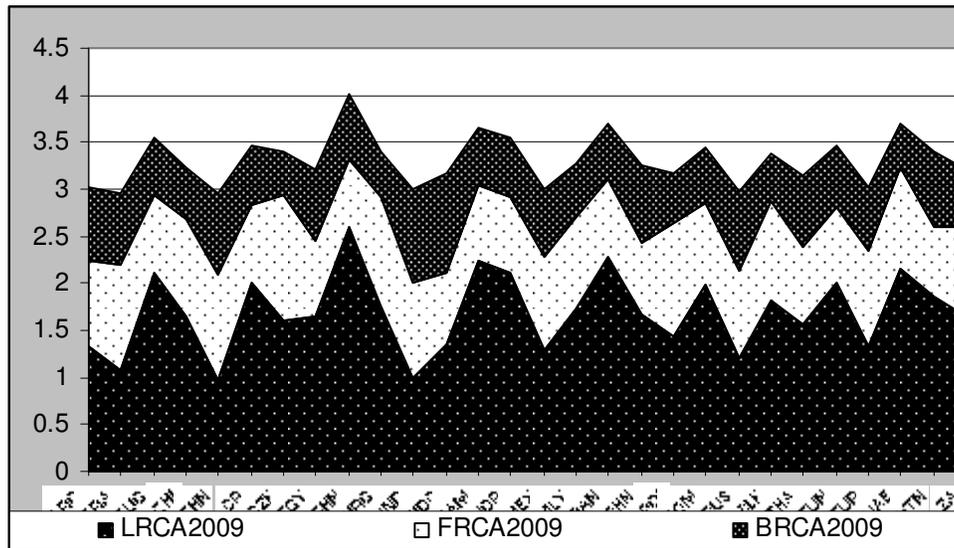
Revealed comparative advantages of India vis-à-vis the rest of the world (RCA): RCA indices for the selected rival countries in three categories of factors, namely, cost competitiveness, skill development and business environment essentially measure normalized scores where normalization is done with respect to India's scores in the same category of factors (Figure 5). Thus:

$$RCA = (S_{iind} / S_{ij}) / (S_{ind} / S_j)$$

Where S_{ij} is the score of the j th country in the i th category and S_{iind} is the score of India in the same category. S_j and S_{ind} are the overall attractiveness scores of the j th country and India, respectively. Thus, three sets of RCA indices are developed for 2009:

- Revealed financial cost advantage (RFCA): These indices reveal comparative advantage of competing countries in relation to India, in terms of cost competitiveness.
- Revealed labour advantage (RLA): They reveal comparative advantage of competing countries vis-à-vis India in terms of the availability of skilled labour.
- Revealed business environment advantage (RBEA): They represent competing countries' advantages in business environment.

Figure 5: Revealed comparative advantage of competing countries vis-a-vis India in IT outsourcing: 2009

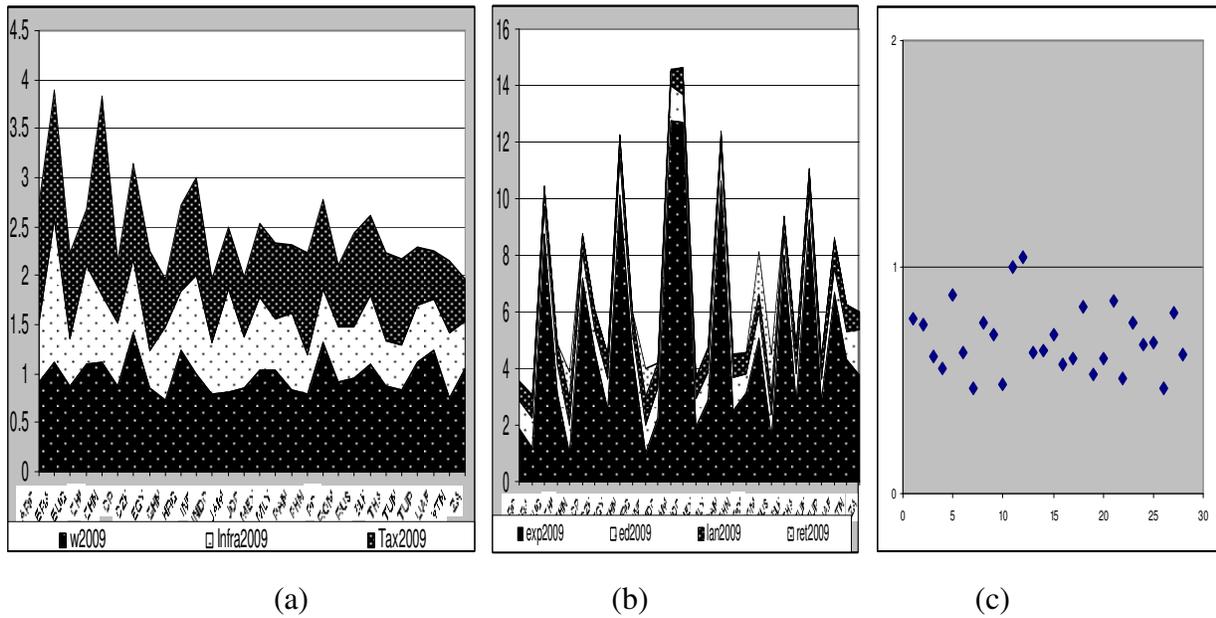


If the index value exceeds 'one', it implies that India has a revealed comparative advantage vis-à-vis the other country in respect of that category of factors. If on the other hand it is less than one, India has revealed comparative disadvantage in that category of factors. Figure 7 depicts the three sets of indices for 30 rival countries in the IT sector. It turns out that while the RBEA indices are less than one for most rival countries, the revealed labour advantage (RLA) indices are greater than one for almost all of them with China being the only exception. On the other hand, Indonesia is the only country that lags behind India in terms of business environment. This could be due to political instability in the country. Singapore and Sri Lanka in Asia, Czech Republic, Hungary, and Poland in Central and Eastern Europe (CEE) region, and Brazil and Chile in Latin America are the only developing countries which are at a comparative disadvantage in terms of cost competitiveness. Our analysis thus reveals that India is most benefited by the revealed comparative advantages in the availability of labour, followed by cost competitiveness and business environment.

Figure 6 (a) shows that relatively lower wage rates drive cost competitiveness of India vis-à-vis its competitors. It is followed by tax rate advantages and infrastructure costs. Large experienced working force leads India's labour advantage (Figure 6b). Education follows it. India's revealed comparative advantage in education remains a major factor only when compared with less

developed countries. Relatively developed countries of CEE and Latin American region have completely outperformed India in education. Interestingly, contrary to the general perception, language is not more the competitive advantage for the country. While American countries still account for 70 percent of the total outsourcing, European countries are catching up fast. This has led to increasing interest in countries where English is not the dominant language. These include locations near Europe including North Africa, Middle East and Central and Eastern Europe. India fares poorly in labour turn over rates. It scored higher than only Malaysia and Thailand. Finally, Figure 6(c) shows that India does not have revealed comparative advantage in business environment. It lags behind all the rival countries with Indonesia being the only exception.

Figure 6: Revealed comparative advantage of competing countries vis-a-vis India in IT outsourcing: 2009

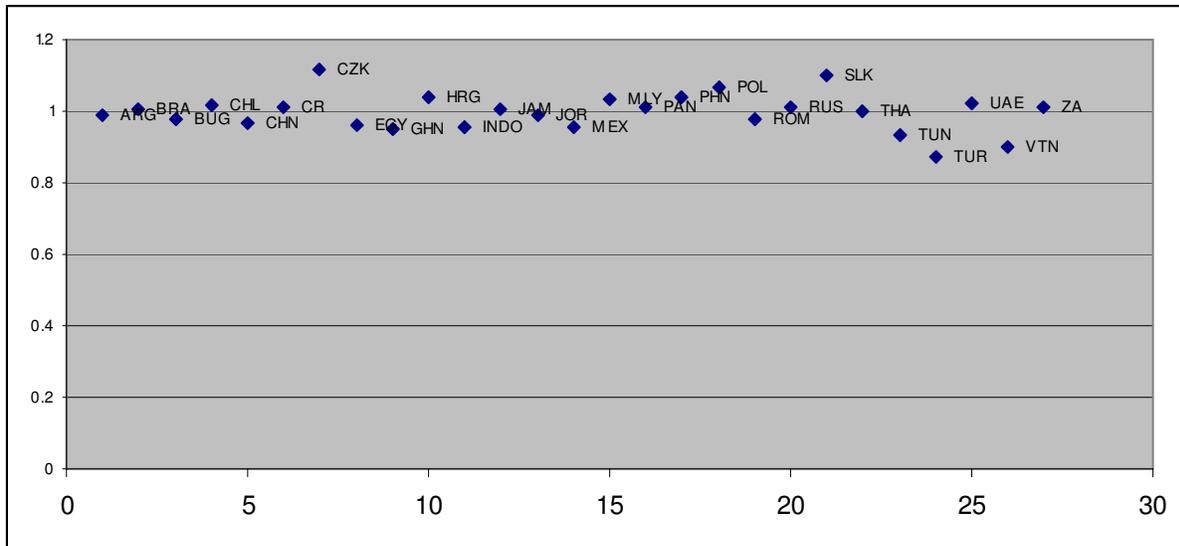


Incremental comparative advantage of India vis-à-vis rival countries (ICA): ICA indices measure change in the scores of each country in each category of factors, normalized by the change in India’s score in the same category of factors. Thus,

$$\text{ICA index} = ((\text{Siind})_{2009} / (\text{Sij})_{2009}) / ((\text{Siind})_{2005} / (\text{Sij})_{2005})$$

S_{ij} is the score of the i th category of factors for the j th country while S_{iind} is the score of India in the i th category of factors. These indices are estimated separately for the overall locational attractiveness and for each of the three categories of factors namely, cost competitiveness, availability of skilled labour and business environment. If the index value for a country for a given category of factors exceeds one, this indicates that India has surged ahead of the rival country in relation to that category of factors and if it is below one then the interpretation is that the rival country has gained competitive advantage over India. Figure 7 depicts ICA indices for 30 major competitors for the overall attractiveness. Points plotted above the straight line represent countries in which ICR exceeds one. These are the countries with respect to which India has improved its scores over time. The picture is mixed. India firmed up its position with respect to 15 countries, most of which were established locations. Sri Lanka was a loser primarily due to political instability in the country. Newly emerging countries however surged ahead of India.

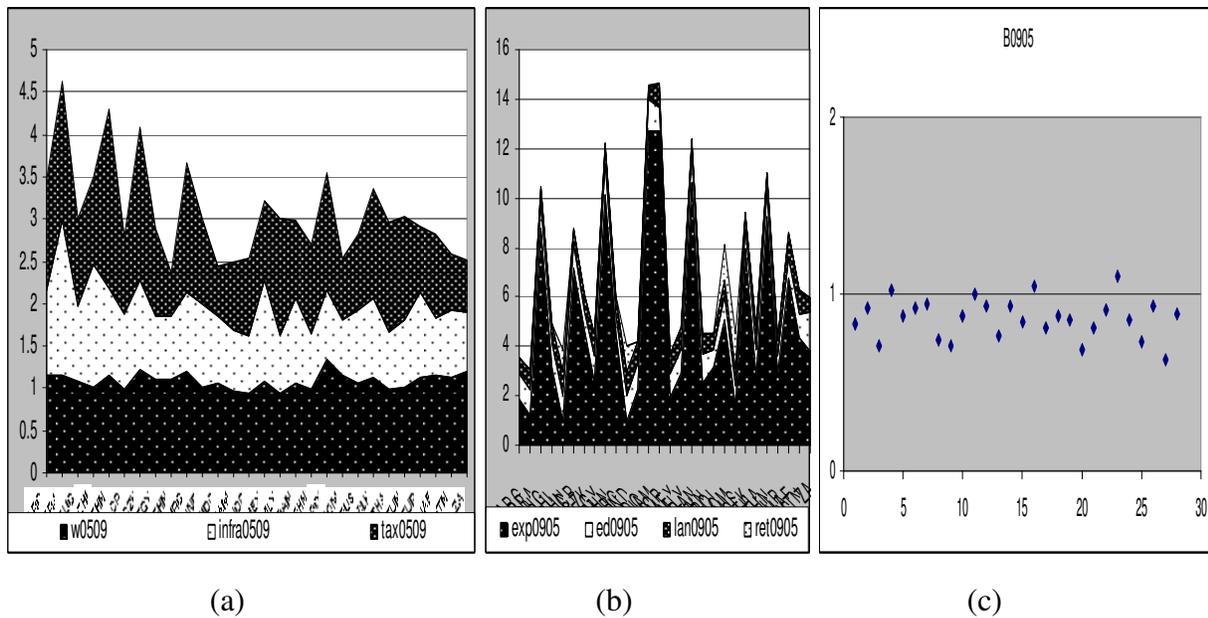
Figure 7: Incremental comparative attractiveness indices of competitiveness for 30 major rivals of India in IT outsourcing



Clearly, the rest of the world is inching closer to India. Though Malaysia, the Philippines, and Singapore slipped during 2005-09 their position remained unchallenged. Southeast Asian countries remain the primary alternates to India.

A disaggregated analysis shows that while India has gained in terms of wage advantage, it has been losing in terms in tax and infrastructure cost related advantages (Figure 8a). On the labour front (Figure 8b), size and experience emerge as the major strengths of the country. Unfortunately India is losing in terms of education, language and labour retention. The weakest performance however is recorded in the category of business environment where India has lost with respect of all the countries, Thailand and Chile being the only exception (Figure 8c).

Figure 8: Incremental comparative attractiveness indices of cost competitiveness for 30 major rivals of India in IT outsourcing



In sum, India's competencies are strengthened in terms of the availability of experienced labour at lower wages; it is being outperformed by its rivals in terms of other factors. Aware of the opportunities of tapping into offshore demand, most players in the IT service industry have been formulating national strategies with the objective of promoting the export of IT services. Efforts are being made to reinforce both demand and supply forces through focused strategies, targeting, promotion of skills and above all, liberal fiscal incentives. Table 1 lists some of the important programmes adopted by the selected countries for the promotion of their It sector.

Table 1: Strategies to promote the IT industry in selected countries

	ASEAN plus China
China	<p>China is India's major challenger. China so far, had been mainly focusing on hardware development and manufacturing. But, this trend is changing. The government, clients and suppliers are currently discovering and developing China as next outsourcing heaven. The accumulative sales revenue of China's software industry was totaled at \$84 billion in the first three quarters of 2008, up by 32.8% compared to the same period of 2007. The IT investment scale in china is expected to reach \$6.5 billion. The stimulus package of \$586 billion is expected to benefit the IT industry in a large way as the share of IT software and IT service in government investment plans have increased rapidly, in 2008. China's software industry mainly has two following advantages: Relative adequacy in human resource (although China is still lacks high-end software developers), and low labor cost, only half of that in India. Most Asian-Pacific headquarters across industries are currently relocating to China from places like Singapore, Hong Kong and Australia." China has already started focusing on providing outsourcing services to markets in Asia and the Pacific, especially Japan.</p>
ASEAN	<p>ICT has been declared as a strategic sector for national development in Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam</p> <ul style="list-style-type: none"> • The following policies are already in place. <p>IDA's iN2015 Masterplan (Singapore)</p> <ul style="list-style-type: none"> - Strategic Roadmap 2006-2015 (Philippines) - Strategic ICT Roadmap (Malaysia) - ICT Development Strategy 2010 (Viet Nam) - ICT Blueprint (Indonesia) <p>Several tax breaks are being offered to the IT sector as a strategic sector. At least four ASEAN countries namely Singapore, Malaysia, Thailand and the Philippines rank above India in the IT Industry Competitiveness Indices, 2008. Indonesia and Vietnam follow India closely.</p>
Philippines	<p>The Philippines is expected to be one of Asia's high growth IT markets over the next few years. The BPO boom in the Philippines is currently led by the demand for offshore call centres and back office operations. The Philippines raked in offshore service generating revenues of \$2.1 billion in 2006, placed third behind India and China and slightly ahead of Malaysia. That's up 62% over the \$1.3 billion it gained in 2004. The Philippines' strategically key Business Process Outsourcing (BPO) and call centre industry accounts for around 30% of local IT spending. There is a five year plan for the sector to be worth US\$13bn by 2010. The Cebu and Mindanao regions are emerging as new BPO hubs. The Southern Philippines is also home to around 70% of the country's SMEs, The government has developed an IT Agenda for Education aimed at developing IT skills. It focuses on 5 areas: ICT-Enabled Curriculum, IT-enabled teachers, IT-enabled governance, IT-enabled content and infrastructure. The Adopt-a-School Program of the Department encourages partnership with private sectors in addressing resource problems in education. Alliances have been built in providing ICT</p>

	resources for the delivery of IT-enabled basic education. These resources range from capacity building to infrastructure support both for the teaching-learning process and governance. The private sector is given a one hundred fifty percent (150%) tax deduction to their gross taxable income.
Vietnam	Software sector is currently the fastest growing sector in Vietnam. Although Vietnam has a low level of technology infrastructure and capacity, IT and telecommunications are growing very rapidly. The estimated total industry revenue was \$1.88 billion in 2005 which was higher than the forecast of \$1.7 billion. A forecast of \$5 billion is now made for 2010. It is expected to increase at the rate of 25% per year in the coming years. One of the underpinnings of this growth has been the expansion in telecommunication networks and decline in telecom costs. Another important driving force is a young population of the country (30% of the population is under 14). The government has articulated its
Indonesia	The compound annual growth (CAGR) of at least 11% is expected between 2006 and 2011. Hardware however accounts for around 70% of the sales. With low IT penetration in the country, potential is obvious. The government has adopted four pronged policy of human resource development, infrastructure development, regulation and incentives, on the supply side, and the policy of promoting utilization of ICT in all sectors, enhancing e-accessibility, e-governance and IT spending, on the demand side
Thailand	The first national IT policy was introduced in the year 2000: 'IT 2000'. It consisted of three pillars: National Information Infrastructure, human Resource and Good Governance. In 2002 another IT 2010 was introduced with emphasis on building knowledge-based human capital, - promoting innovation in economic and social systems, and - strengthening information infrastructure and industry. The objective is to increase the share of knowledge-based industries to 50% of GDP. With the government efforts the market for IT has increased to 500,000 million Baht. Lack of political stability however is affecting its performance in outsourcing.
Latin America and Caribbean	
Brazil	Brazil has huge potential due to its large population, the creativity of its engineers, and government programs supporting the IT-outsourcing industry. Brazil's GDP for IT reached US\$ 20.6 billion in 2007, US\$ 9 billion of which is in the service sector and US\$ 5 billion is in exports. Brazil already operates world-class innovation centers. The Brazilian government in May 2008 announced the country's new industrial package named the Productive Development Policy, which includes a series of tax breaks for some economic sectors including the software sector. IT companies will have a significant tax reduction in corporate income tax, payroll tax, and tax exemption in social contribution and R&D expenditures.

Mexico	<p>The US companies outsourcing to Mexico benefit from real geographical proximity, shared time-zone, familiar culture, similar values, education programs and a large pool of highly skilled professionals. The cost of labor, real estate, infrastructure and telecommunications is much lower in Mexico than in Canada and the US. Additional advantages are derived from Mexico being part of the NAFTA. To exploit the opportunities, government has acknowledged that the software sector is a priority sector and established the Program for the Development of the Software Industry (PROSOFT). The ambitious goals of PROSOFT include: 1. To reach a production level of USD \$5 billion of software development and related services. 2. To equal the IT expenditures of the OECD countries (Currently 4.3% of GDP). 3. To become Latin-America's leader in the software development and related services sector. The strategies for achieving these goals include: Development of Mexico's human capital, strengthening of the indigenous software industry (gaining critical mass), improving Mexico's image as a software development site, enhancing Mexican firms' process and quality assurance capabilities; and setting up of technology parks.</p>
Argentina	<p>A software industry promotion law introduced in 2004 gives companies big tax breaks and has helped create high-tech clusters in four Argentine cities. In the last five years, Argentina's software and IT services sector has remarkably improved its performance in terms of production, exports and employment. Amongst the most dynamic sectors in the Argentine economy, the number of software and IT services firms doubled in the last six years. The sector currently has the largest number of firms in the country. IT players including Hewlett-Packard (HPQ), Oracle (ORCL), Cisco (CSCO), IBM (IBM), America Online (TWX), and palm One (PALM) have consolidated their regional back-office and customer-service operations in Argentina.</p>
Chile	<p>Chile's IT industry saw sales of US\$1.65 billion in 2007 with US\$250 million in exports. The industry aims at reaching \$ 1.0 billion in IT off shoring by 2010. In January 2008, the Chilean Government launched a digital strategy program, which sets down guidelines for IT development and economic growth. Its focus was on the development of human resources; regulatory framework; and economic incentives. Among key announcements was the creation of an IT federation that would include the largest associations in the sector, full range of information and investment support services and well developed set of grants on pre-investment studies, support during early project stages, personnel training, fixed assets and long term leases and investments in R&D.</p>
CEE	

	<p>Central and Eastern Europe—led by Russia, Hungary and the Czech Republic. Armenia, Romania and Ukraine are expected to be among the future champions. These countries will become an increasingly important off shoring destination for the E.U. and Nordic countries. According to a survey conducted by ‘Black book of outsourcing’ 2008, UK and Western European clients show a distinct preference for near shoring to Central and Eastern European locations over India and SE Asia nations. The CEE region has enormous potential in the business services sector EU Member in terms of</p> <ol style="list-style-type: none"> 1. strong economic growth, 2. low labour costs , 3. low costs of doing business, 4. extremely low corporate tax (There are regions in Bulgaria subject to 0 % corporate tax due to high unemployment), 5. favourable investment legislation, 6. proximity to Europe, 7. cultural compatibility, and 8. access to EU Structural Funds. <p>The imports of IT-based services from Central and Eastern Europe into the EU-15 rose by an average of 13% per year between 1992 and 2007. Imports from India, by comparison, increased only slightly faster during the same period at 14% per year.</p>
MENA Region	
	<p>Africa, especially South Africa, Ghana and French-speaking Senegal and Morocco are likely to emerge as outsourcing centers serving E.U. countries. As French-speaking countries increased their proportion of work conducted off-shore, they have been keen to find appropriate French-speaking countries. These countries therefore may get benefited by this development</p>

In the past, India’s position was bolstered by lucrative tax benefits to the exporting companies. Many scholars are now questioning the continuation of these benefits. We examined tax incentives across competing countries to place these incentives in the global perspective. (Table 2 for details).

Table 2 : Tax incentives to IT industry in major competitors of India

Country	Std rate	Tax incentives to IT industry
ASEAN+CHINA		
China	Under the new CIT Law, applicable w.e.f. Jan 1, 2008, the standard tax rate is reduced to 25% from 33%.	<p>Standard CIT for IT enterprises: 15% as against the standard rate of 25 percent.</p> <p>Other tax benefits for :</p> <p>Software enterprises Tax holiday: Two years, followed by three years of 50% reduction of CIT Starting from the 1st profit-making year. Software production enterprises</p> <p>Integrated Circuits production enterprises: Tax holiday: 2-5 years of tax holiday followed by 3-5 years of 50% reduction in CIT depending on the product specification.</p>
Malaysia	CIT : 28% Dividend : 0%, capital gains : 0%	<p>Income holiday : 5 years; unlimited loss carry forward and tax depreciation</p> <p>Double deduction incentives for approved training, industrial adjustment allowance upto 100% of capital expenditure; dividend exemption, accelerated depreciation</p> <p>Duty free imports of raw materials and spare parts for re-export, import duty and sales tax exemption on machinery and equipments not produced locally, sales tax and excise exemption on locally purchased machinery and equipments.</p>
Philippines	CIT: 35% Dividend 10%, Capital gains : 10.5%	<p>Tax holiday: 6 years; upto three years' loss carry forward</p> <p>50% deduction of incremental labour expenses if the prescribed ratio of capital assets to annual labour is met.</p>
Indonesia	CIT : 10-15-30%; dividend 15%; capital gains 35%.	<p>Tax holiday: 3-8 years. Additional holiday year if the company employs more than 2000 workers; at least 20% share holding by cooperatives and at least \$200 million investment realization. 10 years 5 year loss carry forward.</p> <p>Investment tax allowance 6 years 30% reduction in taxable income. Accelerated depreciation and amortization, 10% income tax on dividend payment to non residents, 50% reduction in land and building tax in certain sectors, Tax payers who invest capital in certain sectors and or in certain regions may be granted tax incentives in the form of : a.Up to 30 % (thirty percent) investment allowances. Accelerated depreciation and amortization; c.extended loss carried forward but shall not exceed 10(ten) year; and d. ten percent tax on dividends referred to in</p>

		Article 26 , unless the tax rate under the relevant treaty is lower. Max 5% import duty on capital goods imports for two years from the date of commencement of commercial production.
Thailand	CIT : 20-30% dividend tax 10% and capital gains 0%.	5 year loss carry forward exemptions from corporate income taxes for three to eight years; and, deductions from net income of infrastructure costs. Exemption of withholding tax exemptions/reductions of import duties on imported machinery; reductions of import duties on imported raw materials and components;
Vietnam	CIT : 28%; capital gains/dividend tax : 0%	Tax holiday : 5 years, for companies employing at least 25 persons effective from the commencement of business, Concessionary income tax rate of 15% for fifteen years thereafter and for large company employing at least 100: upto 20 years.
LATIN AMERICA		
Brazil	CIT : 15% Surcharge 10% on annual taxable income in excess of US\$120,000 Social cont. 9% of PBT	<ul style="list-style-type: none"> • Federal Incentives: <ul style="list-style-type: none"> ○ 10% reduction on labor charges ○ 3.1% reduction on contributions to the “S System” ○ Income tax reduction for education and innovation in R&D • Local Incentives: <ul style="list-style-type: none"> ○ Facilities and infrastructure ○ Local tax incentives
Chile	Chilean corporation : 17%. Non domiciled and nonresident shareholders and partners are subject to a 35% withholding of Additional tax on distributions or remittances	Well developed set of grants at various stages: pre-investment studies The grant will cover up to 50% of the cost of studies support during early project stages : This grant will cover up to US\$ 30,000 of company start-up studies Real estate leases: This grant subsidises the lease of real estate from a third party for a period of at least five years in relation to an investment project. The top value this benefit will cover is 40% of the lease for the first five years, with a maximum of US\$ 1.000.000 per company Fixed assets and long term lease: This grant subsidises development of tangible fixed assets including the purchase and urbanization of land, construction of industrial property and technological equipment. The grant cannot exceed 40% of the

		investment or USD 70,000.
Mexico	CIT : 28% Dividend: 0; if corporate tax paid.	A Single / Flat Rate Business Tax IT firms established in Mexico can receive cash grants of up to 50% of the total cost of their project and tax credit of up to 30% of the total R&D expense.
Argentina	CIT: 35%. Tax on minimum notional income : The rate is 1% on the value of fixed and current assets	The Software Promotion Law (Law N° 25.922) set up FONSOFT, a public program intended to finance research, training and exports. At the same time, awards intended for professionals and institutions that make contributions to the country's IT industry were established. Recently, the SMEs authority (SEPyME) started a program that is intended to support the sector with subsidies and credit advantages. In a short period of time ProsperAr plans to financially support investment in this strategic sector through a venture.
CEE		
Czech Rep.	Since 1 January 2008. - reduction of corporate income tax rate (from 24% in 2007 to: 2008 - 21%; 2009 - 20%; from 2010 - 19%)	Subsidy programme : upto 60% of 2 years' wages; upto 45% of training costs 3-5 years depending on jobs created. For minimum support the project should invest Eur 357000 and 20-100 jobs
Bulgaria	corporate income is subject to tax at a flat rate of 10%	There are regions in Bulgaria subject to 0 % corporate tax due to high unemployment.
Slovakia	Amended on 1 January 2004 rate of corporate income tax in Slovakia is 19%.	<ul style="list-style-type: none"> • The State aid intensity in Slovakia can achieve up to 50% of the eligible investment costs. • Five forms of investment incentives (tax relief, financial grant, job creation grant, training grant, discounted price for land)
Poland	Since 1 January 2007 : The CIT rate : of 19% Other taxes : 0%	No additional benefit.
HUNGARY	CIT : 16%; solidarity tax: 4% Local tax: upto 2%	<ul style="list-style-type: none"> • The Government's Information Society Strategy was approved in 2003; • The National Development Plan II 2007-2013 earmarks 3% (approx. EUR 790 million) of EU funds for the development of the info-communication sector; • A 10% (15% for SMEs) tax allowance is offered on the

		labour costs of software developers.
MENA REGION		
Jordan	CIT: 15%/25%/35% Dividend : 0%	Lower tax rate for IT firms
Tunisia	CIT : 20%/35% Minimum tax: 0.5% on total turnover	Tax holiday: 10 years Concessional rate at 50% for 10 years.
UAE	CIT : 0-55 % depending upon the turnover	Tax holiday : 5 years
EGYPT	Since 2005, CIT : 20% for all types of business activities except for oil exploration companies, which are taxed at 40.55%	There are no specific tax incentives in Egypt. Under the new income tax law, the tax incentives granted to investment companies have been abolished
SOUTH AFRICA	CIT : 28%, dividend 10%, capital gains 14%	Small business corporations are taxed at 0% on the first R43,000 of taxable income earned, 10% on the amount above R43,000, but not exceeding R300,000, and 28% on the amount exceeding R300,000. SMEs: an establishment grant payable over 3 years on qualifying assets and expenditure, such as owned or leased land, buildings, machinery, equipment, commercial vehicles and capital cost of research and development; Skill development grant Special allowances for Strategic Industrial Projects where the costs of new qualifying industrial assets will exceed R50 million. The allowance may be either 100% (preferred status) or 50% (non preferred status) depending on the status granted to the project by the Minister, but is limited to either R600 million for preferred status projects and R300 million for non-preferred status projects
ASIA		
SRI LANKA	CIT: 35% dividend tax :15%	A lower rate of 15% applies to profits from exports, fisheries, tourism, and construction. The 15% rate applicable to the

		<p>construction industry is restricted to resident companies</p> <p>rate applicable to venture capital companies is 20%.</p> <p>New or existing companies that export nontraditional goods are entitled to be taxed on the profits from these exports or services at a concessionary rate of 15% for a period of 20 years ending on March 31, 2014 and 2015, respectively. Dividends paid by such companies out of profits earned from the exports of nontraditional goods, which are taxed at 15%, are in turn liable to tax of 10%</p>
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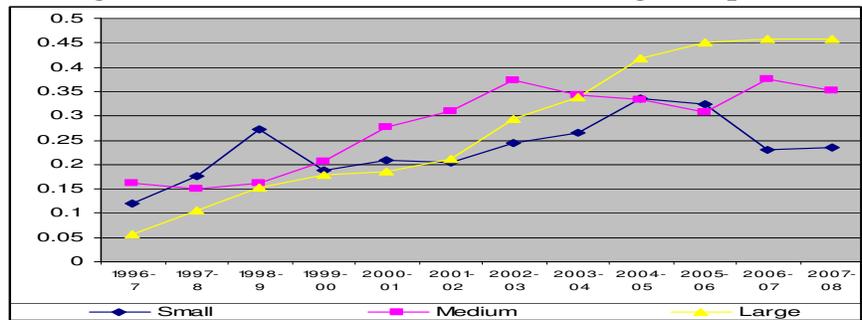
Sources: Selected countries' official documents

Our findings are as under.

- Almost all the countries have introduced reforms in their tax regimes in recent years and corporate taxes are lowered significantly.
- ASEAN countries and China have been offering huge tax incentives to IT firms under their priority/high tech sector programmes.
- Latin American countries have been offering Cash incentives.
- CEE countries have simplified their tax structure and reduced the rates drastically. They are therefore not adhering to tax incentives. However some of these countries have been offering such benefits on location basis or cash basis.
- MENA countries have lowered the rates recently and have fixed lower rates for IT firms and special packages are doled out to exporting firms.
- Sri Lanka has two tax regimes : one for the companies in traditional sector and the other for high sectors. Tax rates for high tech industries are substantially lower than that of traditional sectors. In addition, generous tax incentives are offered to exporting firms.

In India on the other hand, the effective tax rate for them to be 33.99 percent. In addition a new Chapter XII-B consisting of section 115J was inserted in the Income Tax Act by the Finance Act, 1987 (Act) to impose minimum tax in cases of companies. In 2005, FBT was introduced. According to the MOF the marginal corporate rate turns out to be 45 percent. The latest version of the “doing Business Report”, released in 2008 shows that India is one of the most heavily taxed countries in terms of corporate taxation. Among 121 countries, its rank is 110 with the overall rate of tax being over 70 percent. Figure 9 shows India’s position via-s-vis all those

Figure 10: Wage-sales ratio for small, medium and large companies : 1996-2008



While India is still the clear market leader. India's competitive advantage has however been changing rapidly. Overall, there are rising costs, political risks, and poor social and economic infrastructure. It appears that outsourcing to India will be affected adversely dramatically within the next few years as other countries mature and prepare to enter the global economy. India is facing serious challenge from all the regions : ASEAN+China, Latin America, CEE and MENA. This calls for major government intervention to reinforce India's position in the IT sector. We argue that the government need to strengthen the STP policy and use it strategically to promote the competitiveness of the IT sector.

4 Relevance of the STPI Model in the current scenario

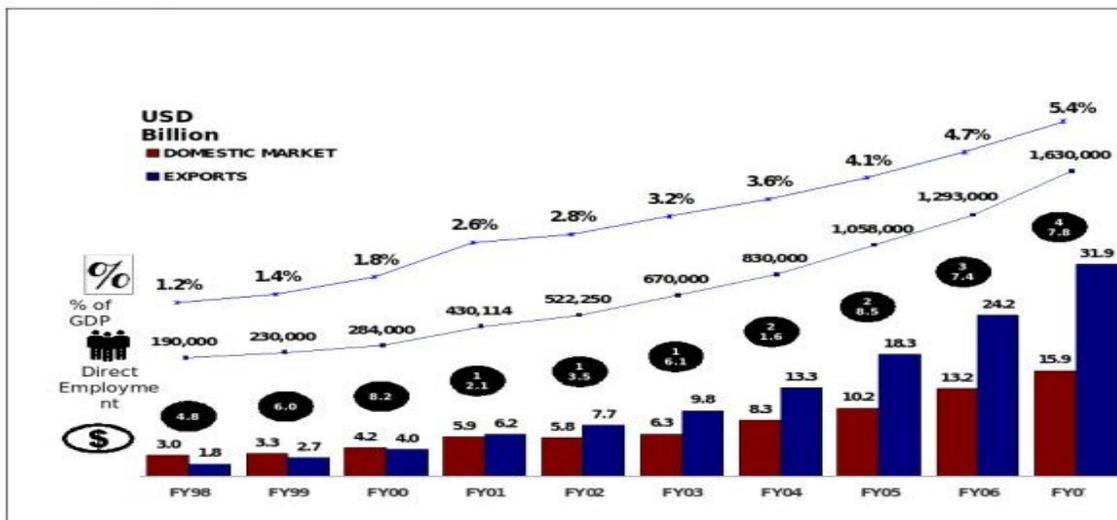
One of the objectives of Software Technology Parks of India in the initial phases was to provide effective data communication facilities to the Software Exporters. In persuasion of this objective the STPI established its own gateways at its nodal centres located in different parts of the country and maintained internal engineering resources to provide consulting, training and implementation services. The availability of high speed data communication links and built-up space provided in the Software Technology Parks (STPs) had been one important facilitating factor in the growth of the export driven IT in initial phases.

In the late 1990s, significant policy initiatives were introduced by the government in the direction of privatization in telecommunication. These telecommunication policy reforms opened new opportunities for domestic firms. In 2005, The ITA facilitated availability of bandwidth at low rates due to competition among a number of bandwidth providers, cheap optical fibre

connectivity against the satellite connectivity and duty-free imports. In this scenario, the role of STPI in providing these services has become relatively less important.

Many believe that the STPs have lost their relevance. Their role is merely to offer tax incentives. But this perception is based on a limited understanding of the programme. Units in STPs are benefited by the single window approval mechanism, availability of commercial infrastructure at competitive rates, incubation facilities and other infrastructure. The STPs also offer a transparent policy environment and a package of concessions. They thus help not only in enhancing cost competitiveness by lowering costs of production but also ensure conducive business environment. Figure 11 shows growth trends of the industry. Total revenue generated by the industry reached USD 64.1 billion in 2007-08, contributing nearly 5.5 percent of the GDP. Growth impetus has come primarily from exports. In 1997-98, total revenue from software was US\$ 4.8 billion of which US\$ 1.5 billion (31 percent) came from export. By 2007, the situation was reversed. The total software and hardware exports had increased to \$31.4 bn, which is almost 67% of the total revenue generated in the sector. In 2007-08, export revenue was \$ 40.4 billion and accounted for 63 percent of revenue. The domestic market has also grown to 23 billion in 2007-08 up from 3 billion in 1997-98. The industry has set a target of US \$ 60 billion in export revenues and US \$ 73 – 75 billion in overall software and services revenues to be achieved by 2010.

Figure 11 : Indian IT-ITES Industry performance over the last ten yrs



The STPI has been a critical component of the government policy in shaping the export oriented growth of the industry scheme. This is reflected in the growth of units registered with STPI. The number of registered units increased from 164 in 1992 to 364 in 1995, more than 100% growth in three years. It again doubled during the next three years. The year 2000 marked a structural break in the industry. The number of STP units jumped from 1196 in 1999 to 5582 in 2000, in just one year. The Y2k problem yielded a bonanza for Indian industry in 1999 and the industry seized the opportunity. According to the US government estimates, more than 260 of Fortune 1000 companies outsourced their mission critical software development to India in the year 2000. By Jan 2000, the problem had been solved but the number of firms continued to grow even after that. By 2005-06, 7688 units were registered with the STPI and over 6000 were functional. The number of registered units further increased to 9718 in 2007-08 (Table 3).

Table 3 : Growth of STP units (no.)

As on 31 March	Registered	Functional	Functional as % of regd	Exporting	Exporting as % of functional	EOUs
1992	164					
1993	229					
1994	269					
1995	364					
1996	521					
1997	667					
1998	844					
1999	1196	814	68.1			
2000	5582	3049	54.6			
2001	6652	3901	58.6	2895	74.2	
2002	7202	4279	59.4	3429	80.1	
2003	7756	4644	59.9	3544	76.3	
2004	5699	5587	98.0	3910	70.0	
2005	6657	5806	87.2	4379	75.4	
2006	7688	6383	83.0	5116	80.2	
2007	8873	7543		6321	83.8	
2008	9718					

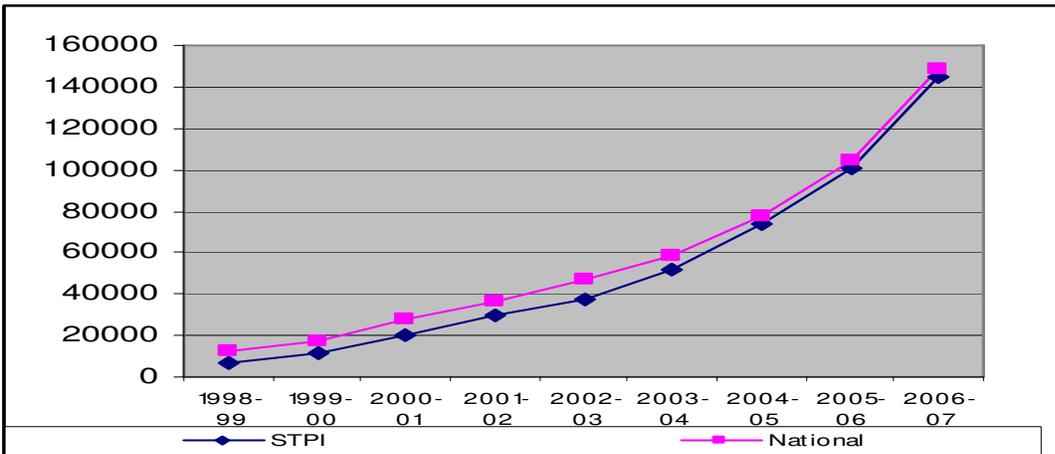
- Note: blank space implies 'not available'.

Source: STPI

In contrast, only 125 IT units (both hardware and software) were functional under the EOU scheme in the year 2000. The number increased slowly to 258 by 2007. Despite the fact that the fiscal and non fiscal benefits offered across the two schemes are similar and that STPs are essentially treated as EOUs, IT companies have preferred the STPI scheme. This is because STPI offers in addition to EOU benefits, several other benefits which makes it a ‘one-stop’ window for the industry.

STPI exports accounted for a growing share of India’s total software exports. Against a share of 8% per cent in 1992-93, exports of STPI units reached 70% per cent of India’s total software exports in 2000-01. By 2005-06, more than 90% of the national IT export was being routed through the STPI. Figure 12 shows that national exports are explained largely by the STP exports. In 2007-08 total exports of STPs are reported to be over Rs. 180 billion up from mere 20 billion in 2000-01. This amounts to 9 fold increase in 7 years.

Figure 12: Export performance : STPs vs National



The following table (Table 4) provides data on software exports from STPs and EOUs. It shows that IT firms distinctly prefer STPs over EOUs notwithstanding the fact that both the schemes share common features. This is because STPs offer the benefits of SEZs, EPCs and industry association as well along with EOUs.

Table 4: Export performance of STPs and EOUs (1998-99 to 2006-07)

Year	STPs	EOUs	Ratio of EOUs to STPs (%)
1998-99	6300	562.7	8.93
1999-00	11607	596.6	5.14
2001-02	29523	1682.0	5.70
2002-03	37176	1553.7	4.18
2005-06	100965.5	2026.7	2.01
2006-07	144214.	4499.8	3.12

Source: STPI and EPC for SEZ and EOUs

The US and the UK remain the largest export markets (accounting for about 61 per cent and 18 per cent respectively, in FY2007), but the industry footprint is steadily expanding in other countries as well. Though there is no study to assess the impact of marketing efforts of STPs (or any other Export promotion Council) in India, a part of the success of geographical diversification of exports may be credited to STPIs in addition to NASSCOM. STPI has set up 48 centres across 8 directorates.

Table 5 : Destination of India's IT exports (% share)

Market	FY04	FY05	FY06	FY07
Americas	69.40	68.30	67.18	61.40
Europe	22.60	23.10	25.13	30.10 <i>(UK and Continental Europe)</i>
Rest of the World	8.00	8.60	7.69	8.50 <i>(APAC + ROW)</i>

Source : NASSCOM

STPI as promoter of SMEs

The promotion of SMEs is one of the most critically important tasks of STPI. SMEs are a key part of the industry and make up a vast majority of STP units. They are a major source of entrepreneurial skills. STPs stimulate SME investment by providing them with infrastructure facilities including communication network which are beyond the reach of individual firms. STPI offers incubation facilities which enable SMEs to test the commercial viability of some of their ideas and in certain cases to avail themselves of transit facilities. More than 5,00,000 sq.ft

of space is available with STPs across the country for the incubation facility. Recently, a SME Enablement Center' has been set up at NOIDA in partnership with SCO group. The center will enable and encourage the SMEs to develop applications on SCO Linux/Unix platforms, which are the fastest growing operating systems in the world. Realising the increasing need for Indian companies to develop Intellectual Property, the STPI plans to provide an IPR cell within the technology parks to encourage small-medium sized companies (SMEs). This would cover 50 per cent of the costs incurred by SMEs in filing patents. It would provide provisions for getting ideas patented in a year's time. It is also contemplating to provide workshops that would be conducted to spread awareness on IPR related issues. STPI has also facilitated the promotion of long tail industrial structure by promoting SMEs. Table 4 shows that the industry is dominated by a few large firms but there are a large number of small and medium firms. The total number of firms registered with STPs is, it may be recalled, over 9700. However, the NASSCOM data shows that more than one third of the revenue generated by the industry is accounted for by the top 12 companies (Table 6). These are Infosys, Wipro, Tata consultancy, Satyam, Mphasis, Patni, Cognizant, Polaris, Tech Mahindra, Hexaware, Mindtree and HCL. Our estimations based on the PROWESS database and presented in the same table indicate that 70 odd companies dominate the industry. Of the 400 odd firms, 76 firms accounted for 95 percent of the total income during 2007-08 while 55 firms contributed over 96 percent of the total exports. The rest were small or medium sized firms.

Table 6: Contribution of large companies to the IT sector :

	Row	Database	2005-06	2006-07	2007-08
Share of the largest 12 companies in the industry's revenue	1	NASSCOM	34.17	37.54	35.66
Total revenue of companies with revenue > Rs.1 bn in revenue (no. of companies)	2	PROWESS	47234.53 (64)	60515.5 (61)	83391.1 (76)
Total Revenue (No. of companies)	3	PROWESS	51667.98 (536)	65370.34 (492)	88017.52 (413)
Share of 2 to 3			91.4	92.6	94.7
Share of companies with exports > Rs.1 bn in exports	4	PROWESS	37858.14 (45)	46846.73 (48)	64711.16 (55)
Total exports (No. of companies)	5	PROWESS	40774.32 (536)	49440.77 (492)	67228.75 (413)
Share of 4 to 5			92.8	94.7	96.2

The SMEs however serve as the seedbeds of entrepreneurial talent, create competitive business environment, and impart dynamism to the industry's growth. Technology, outsourcing and access to third-party services are making it easier and cheaper to create niche for highly customized services. This means the producers of niche products can cost effectively create viable niche businesses. But promoting these businesses requires supportive investment climate. STPs provide these SMEs access to comprehensive and focused support for enhancing the managerial and technological capabilities, tapping business opportunities, and becoming competitive in the local and international markets. These firms gradually grow organically to become large firms imparting market dynamism. It may be observed in Table 4 that the number of large firms has been growing every year.

The STPI and geographical diversification of the industry

Finally, the focus of the STPI is on the development of Tier-2 / Tier-3 cities as potential centres of excellence. With rising costs in Tier I cities, moving to Tier II and Tier III cities has become essential to maintain competitiveness of the industry. While commenting on India's competitiveness in outsourcing, the Location Global Service Report (A.T. Kearney 2007) states: 'India's continued competitiveness could in part be attributed to expansion of business away from expensive and overburdened Tier I cities to Tier II and III cities, with their higher quality of life and lower costs'.

Tier II and Tier III cities are non-metro cities endowed with sufficient human resources required to grow and sustain ICT development in India. They enjoy cost advantage in terms of lower costs of real estate, wages and transport. However, they lack conducive business environment and necessary infrastructure which may increase the indirect cost of doing business and offset the cost related advantages. STPs enhance the attractiveness of these locations in terms of financial costs by offering tax benefits and reducing the cost of commercial space. On the non financial side, STPs play an important role in enhancing the attractiveness of these cities by creating there high speed data connectivity and by promoting linkages with educational institutions to ensure the availability of skilled labour supply. STPI has already set up 52 STPI Centres across the

country to promote the IT sector in cities which have the potential but do not have the necessary infrastructure.

Furthermore, while large firms dominate in well developed centres, SMEs play an important role in relatively less developed regions. Table 5 presents the status and contribution by SMEs to STP exports in four centres: Bangalore, Gandhinagar, Chennai and Trivendrum. We have information on the status of 1244 firms across these STP centres. Of them, 535 (43%) have the status of SMEs. However there has been substantial variability in the proportion of SMEs across these centres. While the proportion of SMEs in Bangalore STP centre is 39 percent, in Gandhinagar it is 83 percent. In Chennai and Trivendrum it is 60 and 66 percent, respectively. In terms of contribution to exports, SMEs in Gandhinagar accounted for 38 percent of total exports in 2007-08 while in Bangalore it was mere 4.7 percent. Bangalore is the world renowned oldest hub of IT activity in India and is home of several large MNEs and domestic firms. Other centres are relatively younger and therefore SMEs play a more important role in generating export incomes in these centres.

STPI has been also playing a proactive role in facilitating the geographic expansion of the industry within the country. Table 8 shows that despite the continuing concentration of IT activity in Karnataka, (in particular in Bangalore), there is tendency to disperse away to other states also. For instance, Andhra Pradesh, Tamilnadu and Maharashtra together contributed 37 percent of total exports in 2000-01; their share increased to over 50 percent by 2007-08. In addition, several new locations of IT exports emerged including in Chandigarh, Chattisgarh, Uttanchal, Himachal Pradesh, and Jammu and Kashmir during this period. One may also note that there has been a manifold increase in exports (in absolute terms) from Haryana, Delhi, West Bengal, Orissa, Kerala, Gujrat and Rajasthan, over the period since 2000.

Table 8 : State-wise distribution of IT exports : 2000-1 and 2007-08 (Rs. Lakhs)

Name of the State	2000-01	2007-08	2000-01	2007-08
Karnataka	7475	55000.00	37.27994	30.5292
Tamilnadu	2954	28295.00	14.73243	15.7059
Maharashtra	2570	35374.00	12.81732	19.6353
Andhra Pradesh	2017	26122.00	10.05935	14.4997
Haryana	1450	10960.00	7.23156	6.0836
Uttar Pradesh	1660	10695.21	8.278889	5.9367
Delhi	1100	5264.00	5.486011	2.9219
West Bengal	250	4500.00	1.246821	2.4978
Orissa	200	844.00	0.997456	0.4685
Punjab	50	227.56	0.249364	0.1263
Chandigarh		455.11		0.2526
Kerala	141	1201.00	0.703207	0.6666
Madhya Pradesh	50	185.22	0.249364	0.1028
Gujarat	102	681.00	0.508703	0.3780
Rajasthan	30	275.30	0.149618	0.1528
Chattisgarh		0.22		0.0001
Pondicherry	2	64.00	0.009975	0.0355
Himachal Pradesh		1.10		0.0006
Uttrakhand		9.31		0.0052
Jammu Kashmir		1.28		0.0007
Total	20051.0	180155.31		

Source : STPI

5. Conclusion

The IT industry is critical to India's growth both as a major industrial sector in its own right and as a driver of productivity, and improved service demand and service quality in virtually all other economic sectors. The competitive challenges however are becoming sharper in the face of the emergence of new competing forces, catching up by existing rivals, decline in cost competitiveness, and global turndown. The above analysis indicates that although India ranks top amongst outsourcing destinations, the gap is narrowing as IT environments in rival countries are becoming more competitive. There is thus no room for complacency. The changing footprints and declining competitiveness are likely to affect the growth of the industry adversely. The key to maintaining and enhancing long term competitiveness lies in skill development through

promotion of education, infrastructure development and improving regulatory environment. Some of these issues can be addressed by strengthening the STPI scheme. The government needs to act now to ensure that it provides the STPI provides right environment for this sector to flourish and to play its full role in driving diversification and upgradation of the industry.

Differentiated support policies are needed to strengthen the STPs. The role of STPI may now be broad based It may take up the responsibility of promoting the supply of seed and venture capital, initiate small innovation support programmes for business, improve the quality of support, and strive to establish coordination between policy agencies, notably the Department of Technology. There is thus strong need for further reinforcement of STPI's competencies rather than kill it.

The STPI scheme has played an important role in facilitating regional dispersion of IT activity. It identified the potential of less developed regions, and set up centres to promote them as IT locations by cultivating IT culture. However, the success of STPI has been quite uneven across regions. While the performance of leading centres such as, Bangalore, Kolkata, Chennai, Hyderabad, Noida, Pune and Mumbai has been good, other STPI centres lagged behind. That means that the STPIs need to evaluate . One of the major benefits of the STPI is tax breaks offered under Section 10A and 10B of the IT Act. With the sunset clause applicable on STP units in 2011, it is feared that STPI might lose its attractiveness further. It is believed that the end of tax exemptions may deal a crippling blow to this scheme which has made a significant contribution to the growth of IT industry thus far and which needs to be strengthened at this crucial juncture when the IT industry is facing serious global challenge.

Most firms do not find incubation facilities or marketing efforts by STPs as important inputs in their businesses. It is now important to convert them into major R&D centres. That means that the STPI needs to redraw its strategies and gear itself up for meeting challenges of the liberalized world. Efforts should be made to strengthen these aspects of the STPI. This is the time to take them to the next level and transform them into "high tech parks" along the lines of such parks in Taiwan and Korea. These parks will make a significant contribution to moving up the value chains, and improving business environment.

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