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An Analysis upon Performance of Information Technology Industry: A Research in Indian Context

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Abstract – "Information Technology (IT) is an important emerging sector of the Indian Economy. This paper examines the India's IT industry and also studied the impact of IT on the Indian Economy. The IT sector has served as a fertile ground for the growth of a new entrepreneurial class with innovative corporate practices and has been instrumental in reversing the brain drain, raising India's brand equity and attracting foreign direct investment (FDI) leading to other associated benefits. The Size of this sector has increased at a tremendous rate of 35% per year during the last 10 years. Its contribution to the national gross domestic product is expected to be around 8.5 by the year 2010-11, quite similar to that in the United States today. Special subsidies or export incentives are likely to be inefficient ways of stimulating the growth of the IT sector, or of positive spillovers for the rest of the economy. The same stricture applies, to some extent, to State government policies to encourage the IT sector.

Information technology (IT) is an example of a general purpose technology that has the potential to play an important role in economic growth, as well as other dimensions of economic and social development. This paper reviews several interrelated aspects of the role of information technology in the evolution of India's economy. It considers the unexpected success of India's software export sector and the spillovers of this success into various IT enabled services, attempts to make IT and its benefits available to India's rural masses, e-commerce for the country's growing middle class, the use and impacts of IT in India's manufacturing sector, and various forms of e-governance, including internal systems as well as citizen interfaces.

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INTRODUCTION

Information technology (IT) industry in India has played a key role in putting India on the global map. IT industry in India has been one of the most significant growth contributors for the Indian economy. The industry has played a significant role in transforming India's image from a slow moving bureaucratic economy to a land of innovative entrepreneurs and a global player in providing world class technology solutions and business services. The industry has helped India transform from a rural and agriculture-based economy to a knowledge based economy.

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

Information Technology (IT) industries can be an important source of economic growth and development for developing countries. The Indian software industry, which has been successful at exporting IT services, is the exemplar for developing countries. NASSCOM, the Indian software services industry association, estimates that the Indian IT industry has grown nearly eightfold from 1994 to 2001, with revenues in 2001 of approximately US$13.5 billion and 2.87% share of India's GDP.

There are many explanations for India's recent success in IT: economic liberalization, the country's pool of technically trained workers willing to work for low wages, good English skills of those workers, a mindset that is oriented toward intellectual abstraction, low capital requirements for entry into software services, as well as many others. Many of

these factors help to explain what contributed to the rapid IT expansion in the past half-dozen years.

However, most of the factors are not unique to India. For example, many Central and Eastern European countries have similar pools of technically capable workers, and they liberalized their economies at approximately the same time as India did. Therefore, why has India been so much more successful than other countries, such as Romania or Russia? Do the factors described in the literature adequately explain differences in success rates?

One factor often overlooked in explaining Indian IT firms' advantage in the U.S. marketplace is their ability to leverage U.S. immigration regulations for competitive advantage. Indian IT firms have adopted business practices based on those regulations earlier and at a greater scale than have competitors from other countries. In fact, the business models for many Indian IT firms depend on bringing foreign personnel into the United States on temporary work visas for extended periods. This practice mimicked the U.S.-based companies, which had adopted it in the early 1990s. Many of these U.S.-based companies, such as Syntel, Mastech (now known as IGate), Intelligroup and Complete Business Solutions, were operated by people of Indian origin.

The hypothesis of this paper is that the Indian IT firms' use of immigration regulations is an important explanatory factor in their success. The next section of the article will describe the immigration regulations that are relevant to the IT industry and present macrolevel data of temporary workers by country of origin. This analysis shows that the majority of high-skilled temporary workers in the United Stated come from India, and many work in firms, known as body shops, that supply software personnel to customers. The third section drills down to the firm level and quantifies how much the leading Indian IT firms depend on the regulations for their business. Firm-level financial data are used to estimate the revenue and earnings that temporary workers generate for leading Indian-based IT firms. The fourth section describes how the slowdown in the U.S. IT market might affect the Indian IT firms. The concluding section describes the policy implications and their potential impact on the Indian IT industry.

Riding high on the outsourcing wave[3], India is likely to witness software and services exports growth of 25-28% clocking revenues of $36-38 billion in fiscal year 2007. IT- ITES [4](Information Technology enabled services) exports are likely to grow by 27-30% in FY 06-07. posting revenues between S29-31 billion, according to National Association of Software and Service Companies (Nasscom), which stated that exports for FY 05-06 had risen 33% to register revenues worth $23.6 billion as compared with export revenues of $ 17.7 billion in FY04-05.FY 05-06 also saw the overall Indian IT-ITES industry (inchiding domestic market) grow by 31%, revenues of $29.6 billion up from $22.5 billion in 04-05. Over a period of time. India has established itself as a preferred global sourcing base in these segments and they are expected to continue to fuel growth in the future. These segments have been evolving over the years into a sophisticated model of operations. Indian IT and ITES companies have created global delivery models (onsite-near shore-offshore), entered into long temi engagements with customers, expanded their portfolio of services offerings, built scale, extended service propositions beyond cost savings to quality and mnovation. evolved their pricing models and have tried to find sustainable solutions to various issues such as risk management, human capital attraction and retention and cost management. A key demand driver for the Indian IT services and ITES industry lias been the changing global business Landscape which has exerted performance pressures on multinational enterprises. The IT industry and IT-enabled services, which are rapidly growing offer opportunities for FDI as well. India has emerged as an important venue for the services sector mcluding financial accounting, call centers, and business process outsourcing. There is considerable potential for growth in these areas. Biotechnology and Bio informatics, which are on Government's priority list for development, offer scope for FDI.

The industry has crossed S27 billion dollar mark m 2005. Software exports accounted for 20% of Indian export revenues in 2003-04.By 2008 it would account for 7% of India's GDP and would contribute 30% of total Indian export revenues. The IT sector is likely to give employment to 9 million people in India by 2008 and also generate $87 billion in annual revenues & $225 billion in market value by 2008. In addition to the nearly 1.3 million-strong workforce employed directly in the industry, Indian IT-ITES is estimated to have helped create an additional 3 million job opportunities through indirect and induced employment. Indirect employment includes expenditure on vendors including telecom, power, construction, facility management. IT. transportation, catering and other services. Induced employment is driven by consumption expenditure of employees on food, clothing, utilities, recreation, health and other services. Against the level of $9.5 billion achieved in 2002-03, software and IT services exports are expected to grow to $87 billion by 2008. While the software export target is set at $50 billion, the target for export of hardware has been kept at $10 billion by 2008.India's share in the overall global software market is expected to increase from the present 2 per cent to 7 per cent by the terminal year of the Tenth Plan.

The government recognizes the significant economic opportunity that the information technology (IT) explosion represents to India and is committed to the policies.

The Government of India is providing for more liberal policy framework for the IT sector. As stated above

one of the major factors of excellent and consistent growth of Indian software industry can be attributed to continuous liberalization of policies of the Government of India. NASSCOM and the government have worked together in close co-operation over a long tmie for forming and implementing these policies. During 1991, NASSCOM lobbied with the Government and for the first time, secured income tax exemption from profits of software exports. Later. Government, systematically and gradually, reduced import duty on computer software from a high 114 percent to nil. Copyright laws were also amended.

The Ministry of Information Technology is meant to act as a nodal institution for the promotion of the sector, facilitating and coordinating the various initiatives of the central and state governments and the private sector. Priority is given to E-govemance. development of software in Indian Languages. IT for the masses, distance education, e-commerce. cyber security and HRD. Postgraduate education and research in IT is pursued
for promoting R&D in the emerging areas of Bluetooth technology[6], e-commerce, and nano-technology and bioinformatics solutions.

HISTORY

The IT industry has built very valuable brand equity for itself in the global markets. The Indian IT Industry comprises of software industry and information technology enabled services (ITES), which even includes business process outsourcing (BPO) industry. Indian IT Industry is considered as a pioneer in software development and a favorite destination for IT-enabled services. In the year 1974, the origin of IT industry in India can be traced, when the mainframe manufacturer, Burroughs asked its India sales agent, Tata Consultancy Services (TCS) to export programmers for installing system software for a U.S. client.

The Indian IT industry originated under very unfavorable conditions. During olden times local markets were absent and government policy toward private enterprise was hostile. The Indian IT Industry was begun by Bombay-based conglomerates that entered the business by supplying programmers to global IT firms located overseas. During 1970's the Indian economy was state-controlled and remained hostile to the software industry. Even the Import tariffs were high like 135% on hardware and 100% on software. Even the exporters were ineligible for bank finance. In 1984 Rajiv Gandhi became Prime Minister and the Government policy towards IT sector changed. The New Computer Policy (NCP-1984) consisted of a package of reduced import tariffs on hardware and software which reduced to 60%.

Even during this time the recognition of software exports as a "deli censed industry", was done so that banks were eligible for finance and freed from license-permit raj, there was even the permission for foreign firms to set up wholly-owned subsidiaries. All such policies are reasons for the development of a world-class Indian IT industry. Today, IT companies in India such as Tata Consultancy Services (TCS), Wipro, Infosys, HCL are well known in the global market for their IT competency.

Indian IT Industry's development and contribution to the world's information technology sector is of highest reputation. Metro Cities like Bangalore, Mumbai, Delhi, Chennai and Hyderabad have become the favorite destinations for all the big banners like HSBC, Dell, Microsoft, GE, Hewlett Packard, and several Indian multinational firms like Infosys Technologies, Wipro, and Micro land have set up their offices in these cities. As the cities offers good infrastructure, with large floor space and great telecom facilities. This could be reason for the basis of the high growth statistics of India and the changing outlook of the companies towards India. The Indian IT Industry has grown up to US $ 5.7 billion in 1999-2000, with the annual growth rate not sliding below 50 % since 1991.

Information Technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a micro-electronics-based combination of computing and telecommunications. Information Technology (IT) is the industry, which through the use of computers and other supporting, equipment helps in the spread of knowledge. Information Technology for some time was synonyms to computers. But with the rapid and advancement in various information delivery system such as Radio, TV, Telephone, Newspapers, Fax and of course computers and computer Networks, information technology refers to the entire gamut of Media and devices used to transmit and process information for use by various target groups in the society. IT has, therefore been rights termed at information and communication Revolution.

Even a single day without computers leaves us feeling paralytic. Information Technology (IT) has made us completely dependent for even the simplest day to day task. The recent incident of system failure at key Swiss government ministries has brought Geneva to a standstill. This proves how information Technology has drastically transformed the way we carry out day to day activities. It is dynamic and vast and its absence for a day leaves a severe effect on us. Internet being the simplest form of IT has a major role to play in our daily lives. It has become the backbone of every organization as well as house hold.

India's much-vaunted Information Technology (IT) sector is composed of two parts: the software sector, and the IT-enabled sector (ITES). In both cases, work that was earlier done in the developed world, particularly the US, has been 'outsourced', or contracted out, to locations in India. In the case of the ITES, the activities outsourced include call centres, medical transcription, data entry, ticket-reconciliation, claims processing, credit card administration, and such other routine office work as can be performed at remote locations. While this work requires knowledge of English, it does not require superior education or skills.

In IT, India has built up valuable brand equity over the years. In IT enabled services (ITES), India is emerging as one of the most preferred destinations for business process outsourcing (BPO). The importance of IT industry in the Indian economy can be gauged from the fact that its contribution to the national gross domestic product (GDP) has increased by seven fold in a span of just one decade from 0.6% in 1994-95 to 4.3% in 2004-05 . Although industry figures are not directly comparable with GDP as they are based on revenues rather than value added, they provide an indicator of growing importance of the IT sector in the country. Assuming that the Indian economy and IT sector will replicate the past six years performance during the next six years and value added in IT sector is two third of its sales revenue, the contribution of IT sector to national GDP will be around 8.5% during the year 2010-11, quite similar to that in the United States (US) today. The IT sector revenue is expected to increase from Rs. 1276 billion in 2004-05 to Rs. 6435 billion in 2010-11. The Indian IT industry is broadly categorized into IT services and software, ITES-BPO, and Hardware segments. Although IT services and software continues to remain the key contributor to the IT sector's revenues, ITES- BPO is emerging as the fastest growing segment of the sector. Between the year 2000-01 and 2004-05, contribution of ITES-BPO to the IT sector's total revenue increased from 7.4% to 20.2% whereas the corresponding figure for IT services and software fell from 64.5% to 58.5%. Presently, ITES-BPO segment of the industry is almost as big as the hardware segment.

The IT industry has helped the growth of modern India in many ways. Indian engineers and technicians are sought world over for their competency and diligence and strong fundamentals in their field of work and study. India’s technology boom has also helped her shed her “Hollywood” image of being the land of mystics, snake charmers and beggars and has put her on the world map for being a global information hub.. Each of the above mentioned industries have grown at massive rates, providing jobs and products to Indians. For example HCL Enterprise is electronics, computing an IT company based in India, has become a leading provider of IT service and technological solutions worldwide. In fact, the IT boom of the 90’s and the 2000’s in India was also accompanied with the growth of BPOs in the nation. India has come under fire from certain groups of people worldwide for “stealing their jobs”, but the fact stands that foreign corporations love India for its abundant availability of skilled labour that can master foreign languages and are satisfied at comparatively low salaries. But with most recent graduates these days being absorbed into IT companies and BPOs and then getting their ticket to America and Europe, India is losing a large chunk of its brains which will perhaps be detrimental to the growth of innovative, indigenous technology and inventions in India.

INDIAN ITS INDUSTRY

India was motivated to try to develop self-sufficiency in computers and electronics largely by national security concerns related to border conflicts with China and Pakistan. The government created an Electronics Committee which devised a strategy for achieving self-sufficiency in electronics within ten years by "leapfrogging" ahead to absorb the most advanced products and technologies available. The goal was eventually to achieve indigenization of technology, whereby India would move away from dependence on foreign| technology and produce its own. This approach not only responded to the perceived security risks, but also fit the ideology of self-sufficiency which drove much of India's post-independence political and economic agenda.

The main vehicle chosen to gain access to advanced computer technologies was negotiation with multinationals, primarily IBM. Which dominated the computer market in India (from 1960-1972, IBM accounted for over 70% of all computers installed in India). From 1966 to 1968. The Indian government tried to get IBM to share equity with local capital in its Indian operations. IBM said it would leave India before agreeing to equity' sharing, and the government let the matter drop.

In an attempt to satisfy the government's interest in developing domestic production, both IBM and British-owned ICL began to refurbish used computers in Indian plants and sell or lease them to Indian customers. IBM felt that India should evolve technologically from one level of sophistication to the next. However, a 1966 report by the government’s Electronics Committee stated that such step-by-step technological evolution should be avoided and that India should leap ahead to the latest technologies. But at this point, the government was unable to impose its will on IBM. The government's early attempts to regulate the IT sector actually worsened the degree of technological backwardness as Indian users installed the domestically refurbished machines rather than importing newer models.

The government's inability' to effectively regulate the MNCs was due partly to institutional weaknesses in the agencies assigned the task. In 1966. responsibility for implementing the Electronics Committee Report strategies had been given to the Department of Defense Supplies, with monitoring by

a new agency, die Electronics Committee of India. However, the committee lacked support staff and had no authority to compel action by other agencies. This lack of authority and technical competence left the government unable to negotiate with the MNCs or to regulate the IT sector effectively.

By 1971 the Department of Defense Supplies had a backlog of over 150 license requests for IT projects. After much criticism of die Department by odier agencies and the private sector, the government announced the formation of a Department of Electronics and a new Electronics Commission. The Commission was responsible for policy formulation and oversight and the Department was responsible for day-to-day implementation of policies.

India has emerged as the fastest growing and the fourth largest IT market in Asia Pacific, according to an IDC(International Data Corporation) study. The result has been that – for many years - India has been the developing world's software leader. There are few large firms that control much of the exports of the Indian Software industry. The top five firms account for 32 % of total software exports. The IT industry is concentrated in TN. Karnataka and AP. Almost 90% of the software development and export activity are confined to four metropolitan areas in India namely Mumbai, Bangalore. Chennai and Delhi but slowly and steadily increasing in other cities as well. The Indian software industry lias grown at a compound annual rate of over 50% in the 1990s.the highest for any country during tins period. The revenues have risen from $ 175 billion to S 8.7 billion during the decade. Indian nationals account for 45% of HI visas issued by the USA every year and a large proportion of them go as software engineers. India is home to some 650000 software developers or about 10%b of the world's developer's population. The

Indian software developer population is growing at an annual compound growth rate of 32% which means that in next three years the Indian developers will be the highest in the world. Among the Fortune 500 companies over 250 outsource their software's related work to India.

IT AND ITS ROLE IN INDIA'S ECONOMIC DEVELOPMENT

In his foreword to the NASSCOM-McKinsey Report (2002) over a decade ago, India's Minister for Communications and Information Technology called for a joint industry-government effort to "ensure that the Indian IT sector remains a dominant player in the global market and that we emerge as one of the leading countries of the new millennium". The first of these goals pertains specifically to India's information technology (IT) industry,1 which has done quite well in the ensuing decade. The second stated goal is much broader, much deeper, and much harder to achieve, seeming to imply that IT can be the cornerstone of India's development. Does it make sense to pin so much hope on India's IT industry? What contribution can it make to India's overall economic development? Can it help change the country, reduce poverty, and change people's lives for the better? Or will the benefits be restricted to educated elite with access to jobs and power? This paper offers a conceptual overview of the possible roles of IT in development, and the different dimensions in which IT impacts, or might impact India's economy.

IT may have a special role to play in growth and development simply because of empirical characteristics that apply at the current time. In particular, the recent and continuing rapid innovation in IT make it a dynamic sector that is an attractive candidate as a contributor to growth for that reason alone, much as the automobile industry was targeted by the Japanese after World War II. On the other hand, there may be features of IT that make it attractive from a theoretical perspective on economic growth. For example, IT may be one of the sectors in which countries such as India have, or can develop, a comparative advantage. Even if this is so, IT is likely to share this characteristic with several other sectors. A somewhat more special characteristic of IT may be that it is a 'general purpose technology' (GPT, Bresnahan and Trajtenberg, 1995), distinguished by pervasiveness, technological dynamism and innovational complementarities. In this case, IT is one of a special few technologies: other examples of GPTs include steam and electricity (both advances in power delivery systems) and synthetic materials. Finally, IT may be unique in its impact on growth. In this view, IT has a special role in the process of innovation, because it affects the rate at which potential new ideas are converted into additions to the usable stock of knowledge in ways that nothing else can. The formalization of this special role is based on the model of recombinant growth (Weitzman, 1998).

I briefly consider each of these possibilities – comparative advantage, GPTs (and complementarities more generally), and recombinant growth, in turn, as well as other aspects of IT and development, not necessarily linked to formal growth theory, including greater efficiency in governance and in the working of markets.

The static theory of international trade is based on comparative advantage, determined by relative factor endowments and/or technology differences. In the former case, a country will export goods which use more intensively the factors of production in which it has relative abundance. In the case of software, the life cycle of development and use includes analysis and specification of requirements, design, coding, testing, installation, maintenance and support. Many

of these activities, particularly coding and testing, involve relatively routine IT skills that India's workforce has in large absolute numbers (though small relative to the total population). Hence, attributing India's software export boom at least partly to standard comparative advantage seems reasonable.2

Static comparative advantage theory explains patterns of trade, but not growth. For that one can turn to theories of endogenous growth. The ingredients of these models typically include differentiated capital inputs, monopolistic competition, production of new inputs through R&D, and ultimately economy-wide increasing returns that allow sustained growth to occur. Hence these models shift away from the exclusive focus on capital accumulation that characterized the neoclassical growth model (as well as the core of Indian post-independence economic policy). The work of Grossman and Helpman (1991) and Rivera-Batiz and Romer (1991a,b) incorporates international trade and the evolution of comparative advantage into endogenous growth models. In these analyses, the economy is typically divided into manufacturing, R&D and traditional sectors, so the IT sector does not necessarily fit neatly into any single model category. For example, design and development of software have characteristics of R&D, while IT-enabled services are more like manufacturing in their use of established techniques for production. The general message of these models, however, is that externalities associated with monopolistic competition may give policy a role in influencing the evolution of comparative advantage in a direction that increases economic growth.

General models of endogenous growth emphasize the importance of R&D in general (for adding to the stock of knowledge, which in turn raises productivity of physical inputs), rather than IT per se. The concept of GPTs provides a somewhat special role for IT, as an example of a GPT. GPTs have three key characteristics: pervasiveness, technological dynamism and innovational complementarities.3 Helpman and Trajtenberg (1998a, 1998b) model GPT-led growth, in which sustained growth comes from the periodic, exogenous introduction of new GPTs. Mechanisms that would give endogenous growth are ruled out, but otherwise, the framework, consisting of endogenous R&D, monopolistic competition and the introduction of new intermediate inputs as the implementation channels for growth, is similar to endogenous growth models. In these models, any GPT has similar abstract effects.

One can say a little more about how well IT fits the characteristics of GPTs. Pervasiveness seems to be potentially a natural property of IT. In the Indian context, doubts about achieving pervasiveness are centered on issues of cost and access. Paper, however, illustrates the important positive trends that support pervasiveness. Technological dynamism refers to the potential for sustained innovation that come with new GPTs, and is again illustrated by the dramatic fall in costs. The complementarities of GPTs are vertical complementarities, because GPTs spur innovation and lower manufacturing costs in downstream sectors, with positive feedback effects to the GPT itself.4 There are also horizontal complementarities, since the downstream sectors may face a coordination problem in expanding sufficiently to encourage the improvement of the GPT (thus creating positive feedback). Note that international trade with a more advanced country may be one way to overcome some of these externality problems.

The final aspect of IT's specialness explored here is that of efficiency gains and broader economic impacts. Static gains from the use of IT come from more efficient use of scarce resources, allowing higher consumption in the present: they are independent of any impact on growth. Benefits that are measurable as increased market-based economic activity, and hence show up in GNP statistics, are not the only component of development. Development can include improvements in the capabilities of the population, independently of any direct or indirect economic impact. Minimum levels of education, health and nutrition are perhaps the most important examples of such capabilities. The ability to participate in democratic decision-making can also fall into this category. Of course, broad-based improvements in the capabilities of a population can have positive impacts on long-run economic well-being, but this is not a necessary condition for desiring such improvements. The role of IT in effecting improvements along non-economic dimensions must also be considered, though this role may be harder to quantify.

IT AND INDUSTRIAL CAPITAL

The drive towards a world capitalist system is rooted in the competitive struggle for accumulation. But the mode by which the nationally based industrial sector is transformed into transnational corporations is defined by IT. Its' not just a change in the way competition unfolds or where capital is invested, but the way in which information technology has changed industrial technology. This has a direct impact on how globalization is structured, its capabilities and mode of operation. Abby Joseph Cohen, chief strategist at Goldman Sachs notes; "In many ways it's artificial to draw a distinction between the so-called old economy and new economy, because the real magic of the U.S. economy has been the enormous application of technology." Adds Fortune, "The companies of the 500 that get the NET – even if they're smokestack industries – are way ahead of their less Netsavvy rivals."

Auto is perhaps the best example of the marriage of the old and new economies. Cars best represent the industrial economy of the twentieth century. Yet today this old industry is thoroughly linked to the tools and organization of the new economy much in

the manner that feudal farming was transformed by the industrial revolution.

This transformation has taken place in every phase of auto manufacturing. The car industry has used IT to construct a new command and control system that coordinates a global assembly line for production, the flow of parts, accounting and finance. Modeling software is used for design, while production is carried out by robot painters, wielders and assemblers. Other tools like lathes and milling machines are run by numerical control technology. Recently Chrysler built a plant with an operating plan of only five-years, based on the expected life span of the software that manages production. With IT as the source of added value the factory is organized on its lifecycle, not industrial assets such as heavy machinery. Lastly cars are imbedded with microprocessors at virtual every level of function. The Economist reports that, "The typical car today has more computer-processing power than the first lunar landing-craft had in 1969."

CONCLUSION

The main emphasis of this paper has been to stress that IT has some special characteristics, both in theory and practice, which make it a promising engine of broad based growth in India. Special subsidies or export incentives are likely to be inefficient ways of stimulating the growth of the IT sector, or of positive spillovers for the rest of the economy. Similarly, special central government initiatives to increase the availability of IT training and related education are also likely to represent a mistargeting of scarce government resources. The same stricture applies, to some extent, to State government policies to encourage the IT sector.

This paper has provided a review and overview of various facets of IT in India's economy. The most obvious of these is the IT sector itself, including IT enabled services such as business process outsourcing. This sector has proved to be resilient and innovative, continuing to expand and upgrade its offerings. The export orientation of the sector has contributed to its competitive discipline and success, though that success has never been a forgone conclusion.

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