

Review of
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Introduction

India's contribution to the global growth and development of the Information Technology (IT) has been phenomenal and has drawn wide attention. IT has been showing a consistently upward trend since the 1990s. The contribution of the sector to the GDP is in the range of 5 – 7 per cent but has a significantly wide reach across most of the countries in the world. India has been witnessing a rapid increase in the export of software and services. Indian IT exports reach about a 100 countries with the exports to North America alone accounting for about 61 per cent of the total exports (NASSCOM, 2003). A number of destinations in the country have attracted the attention of the major IT industries. The highly talented human resources, good infrastructure facilities, and policy incentives offered by the Union and the State Governments have been major factors in this development. An important step towards the growth of IT sector in India has been the establishment of Software Technology Parks of India (STPI) by the Ministry of Information Technology, Government of India with assistance from partner agencies especially in the private sector.

The breathtaking growth in the IT sector has unfortunately resulted in completely neglecting some crucial issues concerning the society. For instance, an issue of critical importance is the growing digital divide in the society. Another issue is the growing urban - rural divide in the use of IT for development. Some attempts have been made by the Union and State Governments in order to overcome some of these problems. The Union Planning Commission (2002) recognized the need to take up more activities to bridge the digital gap in the society. State Governments have been taking steps to use ICT for development. However, the outcomes of these initiatives have been negligible. Social scientists have not paid much attention to these issues. In order to address this lacuna, a seminar on 'Information Technology and Social Science Research' was organized under the Malcolm Adiseshiah Chair on Policy Studies, Madras Institute of Development Studies in Chennai on 18-09-2004. The objective of the seminar was two-fold: (a) to study the impact of IT on the society and (b) to act as a capacity building programme and provide a platform for young social science scholars working on IT-related topics. There was also a special panel discussion for identification of research needs and data sources. Panelists included leading scholars and members of IT industry and government departments.

At the macro level, a key issue in focus during the seminar was a critical assessment of the growth of the information sector in India which has been attempted with the help of models to evaluate the software industry's capability to achieve the Plan targets. The limitations of social constraints and the effect of state-society relations on software industry have emphasized the need for a detailed debate on the importance of social embeddedness in agglomeration and late industrialization in the country. Apart from the above issues the seminar discussed the recent events in the IT industry.

The concept and the controversies surrounding the Business Process Outsourcing (BPO) sector in the country by way of various opportunity sectors, Government and Public services, manufacturing services, Human resource services, Information services and networks, security services and web hosting were discussed in detail. The

issues of global identification of BPO regions and competent service providers which were needed for BPO motivations were highlighted. Outsourcing service providers were mainly major IT companies and those responsible for success or failures in BPO were recognised. Factors enabling environment were listed. BPO concerns indicated Indian contribution to US economy.

As the Business process outsourcing destination of the World, Indian IT- Enabled Services (ITES) or outsourcing industries face a lot of internal and external challenges. The internal challenges include the shortage of competent managers for middle and senior management, dearth of experienced people - team leaders and senior managers at middle management level, and limited growth potential for an employee. Further, the taxes on outsourcing ITES would do more harm and BPO clients may increase the cost transacting in India. External challenges are the opposition from US politicians and the UK labour unions against shifting the operation by local companies to India. Internal tax implication may send wrong signals to the overseas community and may dampen the spirits of many entrepreneurs. Though the rate of growth was slow in the initial years due to these internal and external factors, there was explosive growth during the past few years. With the long term potential, the Indian software and services would boost the Indian economy.

India was one of the several countries with certain advantages in the IT sector. This gave the country its current lead. In the Indian context franchises account mostly for IT education and training. However, globally, franchise is a system of organisation and in India it has taken the form of IT education and ITES. IT training in India, mostly by private players like APTECH and NIIT, generated 70% of the revenue from various training centres in India and abroad.

Information and Communication Technology (ICT) has played a vital role in social development through several projects which have attempted to adopt technologies. Studies and experiences indicated the need to internalize the technological solutions to ensure sustainability. This needs suitable public-private partnership models to be adopted to ensure rapid development and cost effective solutions. An example in this direction was the SARI project. Sustainable Access in Rural India (SARI) Project focused on the effect of e-governance services offered at the Kiosks. The project looked at the role of implementing agencies and how they affect the impact of the project. It was emphasized that computer awareness can cause a great change in women.

This issue of *RDC* consists of six papers presented during the seminar. They cover wide ranging issues from the Growth of IT sector in India, ICTs for development, New Technologies and Property rights, to Women Professionals in IT industry.

The paper on 'Information Sector and Tenth Five Year Plan of India' by Sikhanwita Roy and Debesh Chakraborty attempts to make a critical assessment of information sector in India. It assesses the sources of growth of the information sectors of India between 1989-90 to 1993-94 with the help of input-output technique and then carries out a simulation exercise. It evaluates the software industry's capability to achieve the 10th plan target.

Nalini Rajan's paper on 'New Technology and the Constitution of Theft' focuses on an important issue concerned with the erosion of the notion of ownership in intellectual property involving new digital technologies. The question, however, is whether or not property rights are defensible in the context of information

technology. The moral basis of this argument is that private property protects individual liberty against state power. The conflict between recognising collective ownership and following the private property regime, which focuses on individual rights, has arisen in the context of multicultural theory.

Ranjana Agarwal in her paper on 'Women in the Digital Era: A Case Study of Career Patterns of Women Professionals in Information Technology' focuses on the nature of transformation that has taken place from an industrial economy to a knowledge-based global economy. The paper also discusses the slower career progress for women in the IT sector compared to men. The paper argues for a better deal for women in the IT sector to harness the full potential.

The paper on 'Size, Age and Firm Growth: The Computer Industry in India' by Vinod Mishra analyses the growth trends in the Indian Computer Industry for the period 1991-2002 keeping in view the significance of size and age on the firm's growth and the striking difference between the computer software and hardware industry. It points out that software is service-oriented whereas hardware is goods-oriented. Consequently, law of diminishing returns has impact on the hardware industry but not on the software industry. More diversified hardware firms are suitable to Indian context. Size also affects the growth of firms. The ownership or the brand name have effect on hardware only.

Rachna Ganatra's paper on 'An Evaluation of Electronic Data Interchange (EDI): A Trade Facilitating Measure in India's International Trade' emphasizes that certain requirements have to be met before setting up EDI. The paper also assesses the extent and usage of EDI implemented by the customs Authority of India and its impact on the authorities and the end users. The use of EDI is relatively new to the Indian Trade and can significantly contribute to the development process by improving efficiency and effectiveness.

The paper on 'Diffusion of Information and Communication Technologies (ICTs) in India: A Case for E-Governance' by Aravindan Srinivasan analyses the linkages between the ICT and Development and various e-governance initiatives in the country. It focuses on the 'New Economy' and its existency in the 'Global Economy' and on various e-governance initiatives by the state and its possible implications on the society. The paper contributes significantly to the literature on ICTs in the Indian context.

The seminar, in discussing a wide range of issues concerning IT sector, highlighted the need for social scientists to play a key role in understanding the various dimensions of this sector on society. It is a big challenge to find solutions to the problems affecting the society especially the increasing digital divide within the society. This would require a more pro-active role on the part of planners and policymakers.

G. S. Ganesh Prasad
Guest Editor

Articles

Information Sector and Tenth Five Year Plan of India

Sikhanwita Roy and Debesh Chakraborty*

Abstract

It is widely recognized that rapid changes in information technology are bringing about major structural changes in the economies of the world. India is no exception. Backed by various supportive government policies the Indian IT industry witnessed an impressive growth in the 1990s. The Indian software industry, established itself quite firmly in the global market. Motivated by the growth trends of the Indian IT industry in the recent period and the export potential of the software industry in the future this paper attempts to study first the sources of growth of the information sectors of India during 1989-90 to 1993-94 with the help of input-output technique and then carries out a simulation exercise to evaluate the software industry's capability to achieve the Tenth Plan target.

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New Technologies and The Constitution of Theft

Nalini Rajan

Abstract

The objective of this article is to rework the ways in which the new technologies erode the notion of private property. While it is true that the new digital technologies envisage a 'public' realm as never before, equally the integrity and purity of the 'private' is emphasised as never before. I discuss the manner in which computer systems, for example, are viewed as pristine, self-contained bodies that must be protected from the invasion of viruses and other such undesirable aliens. As more and more corporations, banks, governments, military and academic personnel start moving into the world of networked computing, more and more viruses line up for the attack and the security of digital systems is increasingly under threat. New protocols of computer language now integrate language pertaining to 'theft' and 'private property'. I try to demonstrate that the theory of property, even in the best of contexts involving land or movable property, is poorly grounded in philosophical or logical terms. With the help of an example of digital audio-sampling, I analyse how and why the new technologies render completely meaningless the notion of private property. I end with a note on the ill-advised and logically untenable move of traditional communities, including those in India, to copyright their cultures.

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Women in the Digital Era: A Case Study of Career Patterns of Women Professionals in Information Technology

Ranjana Agarwal

Abstract

Digital technology has revolutionized the world as never before. The transformation from an industrial to a knowledge-based global economy is rapid. In the knowledge era, 'information technology' (IT) serves as an integrated factor of production. In India too, the contribution of information and communication technology (ICT) is significant in terms of income and earnings, growth and employment generation. The IT workforce has come to occupy an important role in the economy. What is the position of women in the newly-emerging areas of information technology? This paper aims to examine the issue by charting the career patterns of women professionals in IT.

Size, Age and Firm Growth: The Computer Industry in India

Vinod Mishra

Abstract

This paper analyses the growth trends in the Indian computer industry for the period 1991-2002. We focus on the significance of size and age for growth of firms and whether or not the law of diminishing returns to learning holds for a high tech industry like computers. An important difference between the computer software and hardware industries is also taken into account: the software industry is more service-oriented, mainly targeting exports, whereas hardware is a goods-oriented industry, targeting the home market. Hence we analyse them separately. It is found that the law of diminishing returns to learning does not hold for the software industry, but does hold for the hardware industry. Current size also negatively affects firm growth and more diversified hardware firms are more successful in the Indian context.

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An Evaluation of EDI: A Trade Facilitating Measure in India's International Trade

Rachna G Ganatra

Abstract

Electronic Data Interchange (EDI) is the interchange of standard formatted messages between the computer application systems of trading partners and/or administrations with minimal manual intervention. EDI was the first type of electronic commerce that was widely used, even before the word "E-Commerce" came in to being. Certain requirements have to be met before setting up EDI which play an important role in the successful implementation of EDI. The broader objective of this paper is to assess the extent and usage of EDI implemented by the Customs Authority of India, its economic impact on both the parties (the customs authorities as well as the end users) and constraints in its current development process. Finally, some conclusions are drawn and suggestions are given for better implementation.

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Diffusion of Information and Communication Technologies in India: A Case for E-Governance

Aravindan Srinivasan

Abstract

This paper is an introduction to the issues and comments in the literature on ICT and its imperatives in the larger macrocosm. The paper starts with a background on the 'New Economy' and its existence in the global economy. Then it treads through the facets of ICTs that are important for economic growth and the various issues involved, especially the 'digital divide' debate. Further, the Indian case has been discussed in detail and a case for the role of the state has been stressed. In the current trend, e-governance has been suggested as a means to boost the ICT economy of countries. A case for e-governance demystifying its contemporary existence has also been discussed, emphasizing the interesting issues to be explored.

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