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Labour in the New Economy: An Indian Perspective

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This paper is an attempt to understand the key opportunities and challenges to Indian labour in the new economy. India is today a favourite destination for outsourcing of service sector jobs, particularly in the IT sector. There are also encouraging reports about India's growing expertise in high-technology industries. However, the concerns are many. The jobs created in India in the IT sector – estimated to reach 2.4 million in 2008 – are not large enough to make a dent in the problem of unemployment and underemployment that the country faces. It is feared that multinational companies will corner the bulk of the benefits from the new economic changes, including outsourcing, and this will further erode the bargaining strength of labour globally. The rules for international trade, particularly the Trade Related Aspects of Intellectual Property Rights agreement, have produced undesirable outcomes on firms and the poor in developing countries. They have already triggered unprecedented levels of rural distress in many parts of India; they also threaten India's growth prospects in technology-intensive industries.

I. INTRODUCTION

Labour in India presents a picture of great contrasts. According to a recent news report (appeared in September 2005), Indian executives are expected to get a 14 per cent salary hike in the next year, which is going to be the highest in the Asia-Pacific region.¹ Another report, which appeared barely a month earlier, says that over 450,000 slum dwellers in Mumbai, whose homes had been demolished six months ago as part of the city's modernisation drive, still remain homeless.² These slum dwellers, most of them, form part of the vast informal labour market in India.

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The world economy is undergoing tremendous changes. These changes are precipitated, in part, by the rapid advances in technologies, particularly the huge reduction in costs and massive increases in power of computing and communication technologies.³ These changes are brought about also as a consequence of the entry of China and India into the global economy. According to the *Economist*, China, as well as India, Brazil and the former Soviet Union, has “effectively doubled the global labour force”, and this is proving to be the “most profound change for 50, and perhaps even for 100, years” (*Economist*, 2005b, p. 13).

From the 1980s, multinational companies have been shifting their manufacturing operations to cheaper wage locations across East Asia and increasingly to China, which today has virtually become the ‘workshop of the world’. With the faster and efficient communication made possible with information and communication technologies (ICTs), global companies have begun outsourcing service sector jobs too. India, which has a large English speaking workforce, is a highly attractive location for outsourcing of a range of service-sector jobs, from those of call centre operators to research scientists. While much of the developed world is grappling with the problem of an ageing and declining population, India has 500 million people under age 19 and relatively high fertility rates. This, it is argued, could very well be the key to India’s long-term prospects for economic growth, which are possibly brighter than China’s.⁴

No doubt, the new, globalizing economy offers lot of opportunities for the Indian worker. At the same time, the new economy brings with it many new challenges, in addition to the age-old social problems that the country faces. Human Development Report 2005 describes India as a “globalization success story with a mixed record on human development” (UNDP, 2005, pp. 30-31). This paper is an attempt to understand the key opportunities and challenges to Indian labour in the new economy. The next section discusses the nature of some of the recent changes in the relations between labour and capital. Section III deals with the emerging opportunities for Indian labour in the new economy, and section IV with some areas of concern. Section V examines how the new economy affects the poor labouring classes in India, and section VI gives the concluding remarks.

II. LABOUR AND THE NEW ECONOMY

There has been a major shift in the pattern of global employment: from manufacturing to services, or from the production of material goods to production of intangibles. According to estimates by the US Bureau of Labour Statistics, the service sector accounts for almost the entire increase of 20.7 million jobs in the United States between 1992 and 2002.⁵ The emerging service-sector activities in the new economy – some of which are education, advertising, research and development, architecture and accounting – demand high levels of knowledge and skills from workers. Even the traditional manufacturing activities are increasingly becoming service-based, requiring ever more of workers' 'soft' skills. Intangible inputs, which include worker's design proficiency, customer relationships and innovative marketing, account for the major share of value in most products today, for instance, 70 per cent of the value of automobiles and 85 per cent of the value of high-technology goods such as microchips or compact discs (in the late 1990s). This is very different from the situation a few decades back, when the cost of plant, materials and labour accounted for the bulk of all production costs – 80 per cent, for instance, in the case of mainframe manufacturing in the early 1980s (Neef, 1999, p 6). The world, we are told, is moving into a 'knowledge economy'.

Alongside these macro-level changes, the new economy has also brought about changes at the firm level, and these changes have apparently altered the relations between labour and capital. Mass production assembly lines, an abiding feature of industrial capitalism for much of the 20th century, have now given way to flexible manufacturing systems or entrepreneurial firms. While Fordist assembly lines are characterised by rigid production sequences manned by highly disciplined workers, entrepreneurial firms are marked by organizational flexibility and high degree of networking. The organization of Fordist firms is hierarchical, with decision making powers centralized within the top management; on the other hand, in entrepreneurial firms, workers are involved in the decision making process. Fordist firms are focussed on cutting production costs; entrepreneurial firms are focused on innovation in products and processes. Entrepreneurial firms first originated in Japan, and they were attributed to be behind the greater competitiveness of Japanese companies over their US rivals in the 1980s (Best, 1990; Brown and Lauder, 2001). It is argued that the Japanese system, which was adapted to tap the 'collective intelligence' of the organization, was

superior to the organization of United States firms, with “executives on the one side and workers on the other.”⁶

Has the emergence of a knowledge-intensive economy and entrepreneurial firm signal the beginning of greater labour empowerment? As production reaches the highest level of automation, there is little surplus value creation in the production process. The centre of gravity of surplus value creation, then, “shifts away from the production of goods and towards the production of innovation”, towards the creation of “new knowledge for the making of goods” (Morris-Suzuki, 1984, reprinted in Davis *et al*, 1997, p. 18). The changes in firm organization from hierarchical assembly lines to networked entrepreneurial firm, described in the above paragraph, are, in fact, aimed at facilitating innovation (Morris-Suzuki, 1984, reprinted in Davis *et al*, 1997). In other words, the devolution of greater autonomy to workers in an entrepreneurial firm is part of the accumulative strategies of capitalism, and not a step towards a more egalitarian labour-capital relationship.

It is true that knowledge, the critical factor of production in the new economy, resides in the brain of the worker. At the same time, the worker who produces knowledge and new ideas do not actually get to own them. Knowledge has the characteristics of a public good: it is non-rival and non-excludable. However, there are several means through which knowledge can be commodified. The use of intellectual property rights (IPRs), which include copyrights and patents, is the most important one. With commodification through IPRs, knowledge is made artificially scarce and its access is then subject to payment of rent. IPRs allow capitalists to exert control over knowledge workers, in much the same way as ownership of land and physical capital has always been a means to control agricultural and industrial workers.

In most high-technology firms, patents for innovations are owned by the employers themselves, not by the employee or group of employees who actually make the innovation. The very large legal and administrative expenses associated with filing a patent application, in itself, deters an individual inventor from applying for a patent (May, 2002; Jessop, 2000).

III. THE NEW ECONOMY AND EMERGING OPPORTUNITIES FOR INDIAN LABOUR

1. Software and ITES Industries

From the 1990s, India's software industry has been growing at phenomenally fast rates, starting, of course, from a low base. Between 1992-93 and 2000-01, software production in India grew at an average annual rate of approximately 50 per cent – a rate more than three times faster than the growth of the country's whole economy (both the growth rates calculated in Rupees at current prices) (see Thomas, 2005a). The combined revenues from information technology (IT) (which comprises software production and IT services) and information technology enabled services (ITES) industries in India increased from US\$5 billion in 1997-98 to US\$28.2 billion in 2004-05 – a growth of 464 per cent over a seven-year period. As a share of India's Gross Domestic Product (GDP), the combined revenues to the country from IT and ITES industries moved up from 1.2 per cent in 1997-98 to 4.1 per cent in 2004-05 (see Figure 1).

Exports have been a major source of growth for India's software industry from the 1990s onwards. Exports by IT and ITES industries in India increased from US\$6.2 billion in 2000-01 to US\$17.9 billion in 2004-05. By 2008, it is estimated that production in the entire IT sector (comprising IT and ITES industries) in India will expand to US\$87 billion, accounting for 7.7 per cent of the country's estimated GDP in that year. By 2008, exports by India's IT sector is expected to reach US\$50 billion, which will form 35 per cent of India's total exports and 6 per cent of the total global IT exports (Government of India, 2001a, p. 35-6; Government of India, 2001b, pp. 1-7, p. 15) (see Table 1).

India's recent successes in software industry owe largely to its vast pool of English speaking engineers, whose wages are much lower than wages of similarly qualified people in developed countries, and their skill levels quite high. It is said that India and China, together, graduate 500,000 engineers and scientists a year compared to 60,000 only in the United States. (Engardio, 2005).

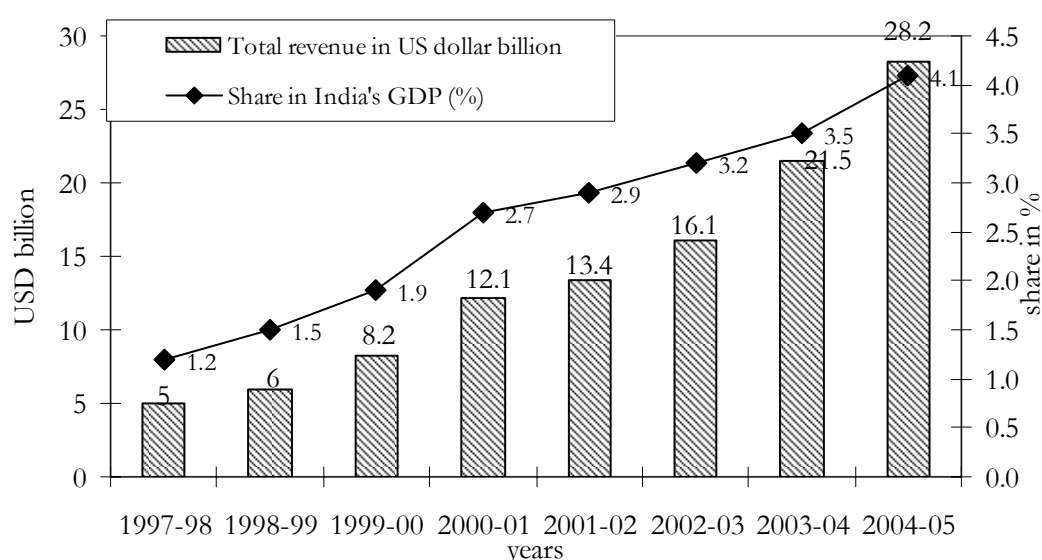
In the initial years of the boom in software production in India, most of the work by Indian IT firms was in the form of 'body shopping', that is, Indian engineers travelling on temporary

visas to the client's site in foreign countries, to do simple software jobs like fixing the 'Y2K' problem. In more recent years, foreign companies have been outsourcing software jobs to Indian IT firms, these jobs being executed in India itself. In 1996-97, on-site services accounted for 90 per cent of the total exports by Indian IT firms. In 2000-01, the share of on-site services in total software exports reduced to 56 per cent, with jobs executed in India constituting the rest 44 per cent (Government of India, 2001b, p. 7).

India's English speaking population numbers 30-50 million, which is almost as large as the population of a medium-sized country. Given the low wages in the country and also given the possibilities for 'teleworking' opened up by ICTs, multinational companies (MNCs) are outsourcing not only software production but also several service sector operations to India. It is estimated that a typical bank in a western country can outsource 17-24 per cent of its cost base, and, thereby, reduce its cost-income ratio by 6-9 per cent and also double its profits (Economist, 2001; Paul, 2002). Business operations outsourced by foreign companies include data entry, data conversion and direct telephonic interaction with customers. Call centres and centres for medical transcription have come up in several Indian cities. It is estimated that India accounts for 44 per cent of the total value of outsourcing worldwide.⁷

Figure 1

**Total Revenue in IT and ITES industries in India:
in US Dollar billion and as Share in India's GDP, 1997-98 to 2004-05**



Notes: The figures for 2004-05 are estimates.

Source: National Association of Software and Service Companies (<www.nasscom.org>)

Table 1

**Production of Information Technology Products and Services in India:
Projections for the year 2008**

	Total production		Exports	
	US\$ Billions	Billion rupees	US\$ Billions	Billion rupees
IT services	38.5	1732.5	23	1035
Software products	19.5	877.5	8	360
IT enabled services	19	855	15	675
E-business	10	450	4	180
Total-IT	87	3915	50	2250
Total- IT as % share of the total for India's economy*	7.7 %		35 %	

Notes: *Total IT production as % share of the country's total GDP, and total IT exports as % share of the country's total exports. All projections for 2008. Total Production = Exports+ Production for the domestic market.

Source: Projections made by National Task Force on IT and Software development, and NASSCOM-McKinsey Study Report, cited in Government of India (2001a), p. 121 and p. 15.

2. Knowledge-intensive Industries and Entrepreneurship

India is becoming a favoured destination for outsourcing of highly skilled, knowledge-intensive activities as well. Global technology companies like IBM, Motorola, Hewlett-Packard, Cisco Systems and Google have set up several research and development (R&D) centres in many Indian cities, prominently in Bangalore, Hyderabad, Gurgaon and Pune. These centres employ the large pool of technical and scientific professionals in India (Engardio, 2005). Investments in R&D centres by foreign firms are in diverse areas, including IT software, IT hardware, automobiles, chemicals, pharmaceuticals, telecommunications, and financial services. For General Electric (GE), its research centre in Bangalore has expanded so much as to equal in importance to its global research headquarters in New York. Indian companies like HCL and Wipro are developing new product designs for global business giants including Boeing, clearly signalling the new business trend of "outsourcing for innovation."⁸ Some estimates suggest that India's annual revenues through outsourcing of R&D work will touch US\$8 billion in three years, up from the present US\$3 billion.⁹

The origins of India's success in high-technology sectors date back to the early 1970s, since when Indian engineers have been migrating to the United States in large numbers to work in high-tech companies there. The graduates from India's technical centres, especially the

Indian Institutes of Technology (IITs) have typically been highly talented, thanks to the large investments made by the country in higher education and also to the filtering the students pass through to enter these institutes. Over the years, India's immigrant engineers evolved into innovators and entrepreneurs, and emerged as the most successful immigrant community in the United States. The highly influential diaspora of Indian technologists have played a key role in bringing high-technology investments to Bangalore, Hyderabad and other Indian cities (Waters, 2005).

A new breed of successful Indian entrepreneurs has arrived on the global stage. It is suggested that with respect to innovative entrepreneurship, India is ahead of China (which is more reliant on cheap labour, huge investment and state support). A *BusinessWeek* analysis of selected Indian and Chinese companies showed that Indian companies achieved higher returns on equity and invested capital in the last five years (Engardio, 2005). Indian pharmaceutical companies such as Ranbaxy, Dr. Reddy's and Nicholas Piramal are reportedly close to commercially launching drugs that are the products of their own innovation (Cookson, 2005). Reports also suggest that many Indian firms are successfully seeking foreign acquisitions.¹⁰

3. Employment in the IT Sector

What impact does the new economy have on job creation in India? According to estimates by India's National Association of Software and Service Companies (NASSCOM), the number of workers in the country's IT sector (comprising software, IT services and ITES industries) crossed the 1 million mark in 2004-05. This represents an increase of approximately 770,000 jobs during the three years from 2001-02 to 2004-05 (see Table 2).

Between 2001-02 and 2004-05, employment in software and IT services increased by 190 per cent to reach 697,000. During the same period, employment in ITES and other IT-related jobs increased by 770 per cent to reach 348,000. As per estimates by the Ministry of Information Technology (MIT) and by a NASSCOM-McKinsey study, employment opportunities in ITES industries are expected to grow very fast in India in the coming years as well. It is expected that ITES industries alone will employ 1.3 million people in India by 2008. According to MIT estimates, employment in the entire IT sector, including IT software and services and ITES industries, will reach approximately 2.4 million by 2008 (see Table 2).

In India, wage levels in the IT sector are notably higher than wage levels in most other sectors of the economy. As per NASSCOM reports, salaries for software professionals in India increased, on an average, by over 8 per cent in 2004 and in 2003 over their previous years.

Table 2
**Number of Employees in India's Information Technology Sector,
(all figures in million numbers)**

	2001-02	2004-05	Estimates for 2008 by:	
			MIT	NASSCOM-Mc Kinsey
1 Software Products	-	-	0.2	-
2 IT Services	-	-	0.57	-
3 <i>Jobs in IT Software and services (1+2)</i>	<i>0.24</i>	<i>0.70</i>	<i>0.77</i>	<i>1.1</i>
4 E-business	-	-	0.33	-
5 IT Enabled Services	-	-	1.26	-
6 <i>IT related jobs (4+5)</i>	<i>0.04</i>	<i>0.35</i>	<i>1.59</i>	<i>1.1</i>
7 Total jobs in IT, 2008 (3+6)	0.28	1.05	2.36	2.2

Notes: MIT is Ministry of Information Technology, Government of India.

Sources: 10th Plan study team on Human Resources Development, MIT (<<http://www.mit.gov.in/Studyteam.ppt>>); <www.nasscom.org>

IV. THE NEW ECONOMY AND INDIAN LABOUR: HOW REAL ARE THE OPPORTUNITIES?

The ongoing economic changes have, without doubt, increased employment opportunities for certain sections of labourers in India as well as in China and other developing countries. This, however, has not led to any strengthening of the position of labour vis-à-vis capital. If anything, bargaining power of labour in developed and developing countries has only been further eroded.

1. Outsourcing and its Implications for Labour

For workers in developed countries, outsourcing of business operations by MNCs has led to a further loss in their bargaining strength vis-à-vis capital. Outsourcing has increased the global

supply of labour. It has made labour relatively abundant, capital relatively scarce, thereby, rising the relative return to capital (Economist, 2005c). Trade union movement in western countries, especially in the United States and the United Kingdom, has been losing strength since the 1980s. Outsourcing has virtually put the trade union movement in developed countries into further disarray. Several firms in developed countries have announced major job cuts in the last several months.¹¹ The growth of real wages of workers in recent years has been unusually slow in the United States, Europe and Japan. Growth of real wages has lagged behind growth of productivity in recent years in most developed countries. At the same time, profits as a share of GDP have been unusually high in most developed countries – they are the highest for 75 years in the case of United States (Economist, 2005b). MNCs have been cornering the bulk of the benefits of cost reduction through outsourcing.

Job losses due to outsourcing have become a highly sensitive political issue in the United States and Europe, raising strong waves of public protest. Forrester Research predicted in 2002 that 3.3 million service sector jobs in the United States would move to cheaper wage locations by 2015. An argument is made, however, that irrespective of job losses, outsourcing will be more beneficial to the United States than to India (or the country to which jobs are outsourced) in the long run (see Bhagwati *et al*, 2004). To the United States, outsourcing leads to a reduction of production costs, increase in productivity, and, ultimately, cheaper products and services for their citizens. Firms in the United States can devote larger share of their resources for innovation and development, and this process will generate new high-value jobs in the United States (Bhagwati *et al*, 2004). However, what is worrying for workers in the United States and Europe is that the threat from outsourcing is not only limited to low-skilled jobs like call centre operation, but there are increasing signs of job losses even in high-skilled professions like researchers and financial analysts.

The prospects for workers in developing countries, which benefit from outsourcing, are not bright either. Reports suggest that workers in China's export-oriented manufacturing firms survive under extremely poor conditions, only to escape the poverty and harshness of life in the villages from which they migrate in large numbers (Hutton, 2005). There is evidence that inequality has increased in China after economic reforms, particularly after the 1990s.¹² The employees in India's call centres complain of long, monotonous hours of work in the night, and, not infrequently, of abusive conversations from callers. Many of them also suffer from identity crisis as they speak and work with an American name.

More importantly, employment opportunities that arise from outsourcing are highly transient in nature. In a bid to continuously drive down costs, MNCs shift their operations between countries that offer the lowest production costs. With the expiry of global textile quotas on 1 January 2005, there has been a sharp decline in exports of textiles and garments from several poor countries including Bangladesh, as these countries faced competition in exports from China. This has put large numbers of workers out of work in Bangladesh, where manufacture of textiles and garments is the largest source of employment outside agriculture, and where hourly wages of garment workers are already one of the lowest in the world (Mukherjee, 2005). There is no guarantee that India will continue to enjoy the status of being the favourite destination for outsourcing of service-sector jobs. Countries like the Philippines, Romania, Israel and China are strongly competing with India to secure a part of the global outsourcing market (Ramesh, 2004). It is feared that the recent reports about leakages of confidential client data from some Indian outsourcing firms might reduce India's attractiveness.¹³

2. Labour in Knowledge-Intensive Jobs

There is no doubt that India has to move up the value ladder from call centre operations to technology-intensive industries if it has to remain competitive in the new economy. There are several major hurdles to this, the most important being the international rules for intellectual property protection enshrined in the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement. It is widely believed that the measures provided for intellectual property protection in the TRIPS agreement are, in general, more favourable to MNCs in developed countries than to people and firms in developing nations.¹⁴

India enacted legislations to comply, by 1 January 2005, with the provisions of the TRIPS agreement, to fulfil India's obligations as a member of the World Trade Organization (WTO). This has led to a major change in the Patents Act 1970 in India. According to the 1970 Act, only the processes to manufacture drugs could be patented in India; products (new molecules) were not protected by the Patents Act. This facilitated the growth of generic drug makers in India, who thrived by inventing new processes for manufacturing versions of an already developed drug. With the recent change in India's patent regime, there are fears that the growth of generic drug makers will be slowed down (Narain, 2005). While it is true that some Indian drug companies are investing hugely in R&D, the costs involved in playing the patent game can be prohibitive. For example, it is reported that Dr. Reddy's spent US\$12

million on legal bills related to patent applications, which was equivalent to a quarter of the company's R&D budget (Economist, 2005a).

Companies like Microsoft spend huge sums of money on software patent applications in order to preserve their monopoly and to prevent the growth of open source software developers. This is harmful to the interests of individuals and small firms involved in innovation in the IT sector (Chandrasekhar, 2005).

In India, to meet the challenges from the emerging knowledge economy, it is important that domestic investment in R&D is stepped up. Per-capita R&D expenditure (in all areas of research) in India is lower than per-capita R&D expenditure in countries like China and South Korea. Scientists and engineers working in R&D per million people and patents granted per million people are also comparatively low in India (see Table 3). Expenditure on R&D as a proportion of India's Gross National Product (GNP) had grown from 0.58 per cent in 1980-81 to 0.91 per cent in 1987-88, but declined thereafter to 0.71 per cent in 1995-96; the proportion marginally increased after 1995-96 (see Figure 2). It is true that some of the institutes for higher learning in India can boast of international standards. However, a majority of Indian universities, particularly those in the smaller cities, are lacking in proper infrastructure, which impair their capabilities for research and teaching.¹⁵

Table 3
**Investment and Achievements in the Creation of New Technologies,
India and Selected Countries**

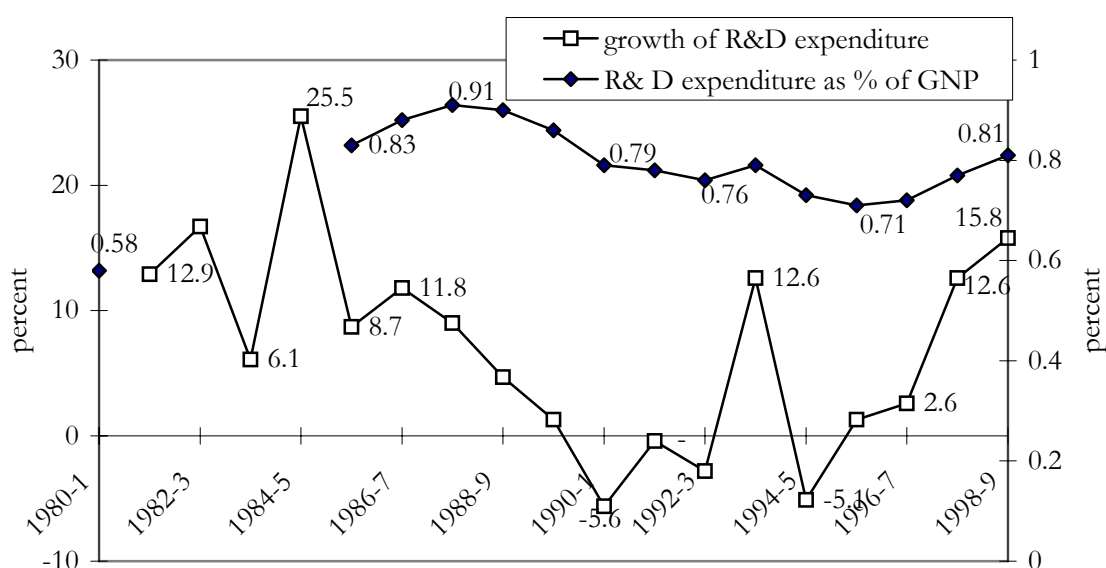
Country	Per-capita R & D expenditure	Researchers in R&D	Patents granted to residents
	1998 US\$	1990-2001 Per million people	2000 per million people
India	2.4	157	0.2*
China	5.3	584	5.0
Brazil	37.2	323	2.0*
South Korea	174.2	2880	490
US	842.5	4099	298

Notes: *figures for 1998

Sources: figures cited in UNDP (2001), pp. 48-55; statistics from *Human Development Report 2004* downloadable from <<http://hdr.undp.org/statistics/>>; and statistics from *World Competitiveness Yearbook 2000* cited in <disc.iisc.ernet.in/vigyan/research/asci/wcy_rnd_per_cap.htm>

Figure 2

Public Expenditure on R&D: Annual Growth and as a Proportion of GNP, India, 1980-81 to 1998-99 (in per cent)



Not

es: Annual growth calculated for Central Government research and development (R&D) expenditure at constant 1993-94 prices; national R&D expenditure as a proportion of Gross National Product (GNP) in current prices.

Source: *Research and Development Statistics*, various issues, Ministry of Science and Technology, Government of India cited in <www.indiastat.com>.

V. HOW DOES THE NEW ECONOMY AFFECT THE POOR LABOURING CLASSES IN INDIA?

While the world media is busy celebrating the success of Indian professionals and entrepreneurs in the new economy, vast sections of the country's population are still riddled with age-old problems of poverty, illiteracy and social exclusion. Recent estimates suggest that 72 per cent of India's population of over a billion people live in rural areas, 29 per cent are below the poverty line, and 34.6 per cent are illiterates.¹⁶ Andhra Pradesh, which sends large numbers of software professionals to the United States every year and whose capital city, Hyderabad, is an emerging knowledge centre, also has high incidence of starvation deaths, distress migration of landless agricultural labourers and suicides among handloom textile workers.¹⁷ How does the new economy affect the millions of poor labourers in India's rural and urban areas?

1. The New Economy Jobs and the Problem of Unemployment

As per the Census of India 2001, the number of workers in India is as large as 402.5 million. Of these, 235.1 million, or 58.4 per cent, are employed in agriculture, as cultivators and agricultural labourers. Among those engaged in the non-agricultural sector, a large proportion finds themselves in low value-adding jobs in the unorganized sector, mostly in household industries. While there were 167.4 million ‘non-agricultural’ workers (who are neither cultivators nor agricultural labourers) in India (in 2001), organized sector employment in the country (in 1999-2000) was only 28.1 million (see Table 4).

Seen against this larger picture of employment pattern in India, the 2.4 million jobs that the country’s IT sector is estimated to generate by 2008 is not very substantial. Even the numbers of job seekers on the live registers of employment exchanges in India was 41.3 million in 1999-2000 (see Table 4). Unlike in China, economic changes have not created large job opportunities in the manufacturing sector in India; factory sector workers as a proportion of total workers were only 2.0 per cent in India in 2001 (see Table 4).

The IT sector needs to build strong linkages with primary and secondary sectors of the economy for it to create a serious impact on the problem of unemployment in the country. Otherwise, it will remain an island of high wages, creating very little benefits to the rest of the economy, and even increasing the existing inequalities in the country.

Table 4
**Employment Generation in the IT sector and Number of Workers in
Other Sectors of the Economy, India**

	in million numbers	as % of total
Total jobs in the IT sector (estimates), 2008	2.4	0.6
Factory sector workers, 2001	8.2	2.0
Total organized sector employment, 1999-2000	28.1	7.0
Total number of job seekers in the live registers of employment exchanges, 1999-2000	41.3	10.3
Workers other than cultivators and agricultural labourers, 2001	167.4	41.6
Cultivators and Agricultural labourers, 2001	235.1	58.4
Total Workers, 2001	402.5	100.0

Notes: Workers in the last three rows refer to the sum of ‘main’ and ‘marginal’ workers as defined by the Census of India 2001.

Sources: 10th Plan study team on Human Resources Development, Ministry of Information Technology (<<http://www.mit.gov.in/Studyteam.ppt>>); Reserve Bank of India (2001), Table 10; Annual Survey of Industries; and Census of India 2001.

2. New Technologies and Rural Development: Some Evidence

There is indeed great optimism that information and communication technologies (ICTs) and biotechnology “will lead to healthier lives, greater social freedoms, increased knowledge and more productive livelihoods” on the globe (UNDP, 2001, p. 1). However, a field-study based research conducted by this author in July-August 2004 points to some of the challenges in ICTs-aided development in rural areas (Thomas, 2005b). The study, which included a sample survey of households in selected villages, was conducted in two rural locations – Kuppam in Andhra Pradesh and Malappuram in Kerala. The ongoing i-community project in Kuppam and Akshaya project in Malappuram try to make use of ICTs for enhancing developmental opportunities in agriculture, health and education. Information centres, that is, centres equipped with computers which the local people can access aim to provide farmers with

useful knowledge and information, including, for instance, information about better agricultural practices (Thomas, 2005b).

The impact of information centres was found to be greatly different in Kuppam and Malappuram. Among the surveyed households in Malappuram in Kerala, where literacy rate was 96.4 per cent, the Akshaya project led to widespread use of computers, even by women and also by the socially backward class of scheduled tribes. Among the surveyed households in Kuppam in Andhra Pradesh, where literacy rate was 63.3 per cent, the i-community project produced far less impressive results with respect to the use of computers. In Malappuram, all the surveyed households owned some homestead land, and many of them were engaged in the cultivation of commercial crops, particularly rubber. There was great demand for information about agricultural prices and also about higher education from the surveyed households in Malappuram. In Kuppam, 22 per cent of the surveyed households did not own land, and inadequate irrigational facilities and the virtual absence of institutional credit were constraints to agricultural growth among the many land-owning households. Information about better agricultural practices was of no relevance to most of these households in Kuppam; information about jobs or higher education was not relevant either, given the low levels of educational achievements (Thomas, 2005b).

A major conclusion of the study is that ICTs can play a potent role in rural development, but only if the basic obstacles to rural prosperity are removed through radical changes – through land reforms, revitalisation of rural credit, and greater state intervention in rural infrastructure and primary education (Thomas, 2005b).

3. Globalization and the Poor

There is a growing realisation today that the rules of global trade are tipped against the world's poor. With India changing its patent regime to comply with the TRIPS agreement, the hardest hit will be poor patients in India and many third world countries who have relied on cheap drugs from India's generic drug makers. Indian drug makers, Cipla and Ranbaxy, could reduce the annual price of antiretroviral treatment for HIV patients from US\$15,000 per patient a decade ago to US\$140 today (Narain, 2005; McNeil Jr, 2005). It is doubtful whether generic drug makers in India can continue to supply cheap drugs under the changed patent regime. Research by pharmaceutical MNCs is excessively focussed on diseases that

are more prevalent in developed countries (Lanjouw, 1997). While Indian pharmaceutical companies are increasing their R&D spending and going global, it is possible that they too turn their attention to the more lucrative market of rich patients.

The misuse of the provisions in the TRIPS agreement has resulted in several cases of 'biopiracy'. Biopiracy refers to the appropriation, through patenting, of genetic resources that are the preserve of traditional communities. Often cited in this regard is the case of a United States based company, W. R. Grace, which, in 1992, acquired a patent on the method of extracting the active ingredient in *neem*. Many traditional communities in India have long been well versed in the use of *neem* as medicine and pesticide. However, with the award of the patent, the United States company was allowed to commercially exploit *neem*, while the traditional holders of knowledge about *neem* received little benefits.¹⁸

It is believed that developing countries agreed to comply with the provisions of the TRIPS agreement only on the hope that developed countries would open up their markets for imports from developing countries. This has not happened. In fact, developed countries are becoming increasingly protectionist. Most recently, European Union and the United States have re-imposed quotas on textile imports by China, only a few months after removing all textile quotas on 1 January 2005.¹⁹ High-income countries charge heavy tariffs on imports from developing countries, which are, on average, three to four times higher than the tariffs charged on imports from other high-income countries (UNDP, 2005, p. 127). With their accession to the WTO, producer prices of agricultural commodities have been falling in much of the third world countries, causing immense hardship to agricultural workers in these countries; at the same time, agriculture in developed countries receives heavy subsidy protection. Recently, European Union (EU) has announced major cuts in the prices it pays for sugar produced in Guyana and 17 other poor countries. For Guyana, the estimated loss due to fall in sugar prices consequent to the EU decision is US\$40m a year. Ironically, this loss is more than enough to swamp the US\$8m–\$9m that this country would gain from the debt relief initiative, offered by the Group of Eight leading industrial nations (Lapper, 2005).

In India, too, agricultural prices have fallen. The fall in agricultural prices in India, which is largely a result of India's complying with the WTO provisions, has led to unprecedented levels of rural distress. It is reported that, since 1998, over 9000 farmers have committed suicide in various regions in India, including Andhra Pradesh, Karnataka, Vidarbha and

Kerala. These farmer suicides have been an unfortunate consequence of the fall in agricultural prices and increase in rural indebtedness (Patnaik, 2005). The response by domestic policies to the rural crisis has been grossly inadequate. With the onset of economic reforms in the 1990s, there has been a slow down in public investment in India in agriculture and rural infrastructure (Patnaik, 2005). There has also been a decline in the volume of rural credit disbursed by banking institutions over this period of time (Ramachandran and Swaminathan, 2002). Although stocks of food grains are lying rotten in the country's godowns, the government has been unwilling to disburse funds for 'food for work' programmes, a measure that could have alleviated the rural distress (Patnaik, 2005). The National Rural Employment Guarantee Bill 2005, which was recently passed by the Lok Sabha, is a much needed first step in solving the problems of the Indian countryside.

VI. CONCLUDING OBSERVATIONS

The new, globalizing economy offers great opportunities for Indian labour. Exports of software services from India surged from the 1990s. There are encouraging reports about growing Indian expertise and entrepreneurship in technology-intensive industries, pharmaceuticals, for example. MNCs have been outsourcing large volumes of their service-sector operations to India in recent years. Jobs outsourced to India include not only clerical activities like data entry and call centre operation but also highly skilled work in research and development. For the MNCs, the relatively low wages of English speaking professionals in India is a major attraction. The combined revenues from IT and ITES industries in India reached US\$28.2 billion in 2004-05. This is expected to further increase to US\$87 billion by 2008, which will then represent 7.7 per cent of India's GDP.

The number of jobs in India's IT and ITES industries has crossed 1 million this year, and, as per optimistic estimates, will reach 2.4 million in 2008. This must be seen against the number of job seekers registered in the country's employment exchanges and the total number of workers in India, which had crossed 40 million and 400 million respectively in 2000. It is clear that the new economy must create job opportunities for the vast numbers of unemployed and underemployed in India's rural and urban areas; otherwise, it will only be widening the existing inequalities in the country.

The challenges, however, are many. What is most striking is the poor state of school education in India, which stands in contrast to the successes achieved by quite a few institutes of higher learning in the country. India has still not attained the goal of providing universal primary education. In 2000, the average years of schooling (for persons aged 15 years and above) in India was 5.1 years; the corresponding figures were 6.4 years in China and 10.8 years in South Korea (UNDP, 2001, Table A2.1). In India, educational achievements are particularly low in rural areas, among females, among members of socially disadvantaged castes, and in the States of Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh. Public policy in India should urgently realize that the benefits from investment in primary education are ever so great in this emerging era of knowledge-based growth, and the costs of under-investment are ever so high.

Of course, India has a vast army of highly skilled labourers; in 2000-1, 8.8 million students had enrolled in the country for university degrees.²⁰ However, this, in itself, is not enough to translate into a leadership role for the country in the new economy. Globally, the major beneficiaries of the new economic changes, particularly outsourcing, are not labourers in developing or developed countries, but MNCs, whose profits are soaring as never before. International rules for trade and intellectual property protection have had a poor track record with respect to upholding the interests of people and firms in developing countries. These rules have indeed triggered a livelihood crisis among the poor in India; they can also dampen India's progress in high-technology industries.

In sum, the new economy promises expanding opportunities for educated sections of Indian labour. However, converting these early signals of progress into widespread and participatory development in the country requires, first, strong interventionist policies by the Indian government, most importantly in education and social development. Secondly, initiatives are required at the global level, in partnership with other developing countries, to combat the unfair rules of international trade.

Notes

¹ "Indian executives in line for big pay hikes", *The Straits Times*, 7 September, 2005.

² See Bunsha (2005).

³ Between 1970 and the end of 1990s, the cost per Mhz of computing power has fallen from US\$760 to 17 cents, cost of a megabyte of storage has fallen from US\$5257 to 17 cents, and the cost of

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- transmitting a trillion bits of information has fallen from US\$150,000 to 12 cents. All these figures have been quoted from Chandrasekhar and Ghosh (2001).
- ⁴ See Engardio (2005).
- ⁵ See <www.bls.gov/news.release/pdf/ecopro.pdf>
- ⁶ In the words of Matsushita, founder of Matsushita Electric Industrial Company, cited in Best (1990), p. 1. See Brown and Lauder (2001), pp. 254-75 for a discussion on 'collective intelligence.'
- ⁷ Data obtained from <www.nasscom.org>
- ⁸ See the cover story in *Business Week*, 21 March, 2005.
- ⁹ See Engardio and Einhorn (2005) and <www.nasscom.org>
- ¹⁰ See 'First the China wave: Now, the Indian wave of takeovers', *International Herald Tribune*, reported in the *Straits Times*, 2 September, 2005.
- ¹¹ For instance, in July 2005, Hewlett Packard announced that it would reduce 10 per cent of its workforce, resulting in 14,500 job losses. See <<http://yahoo.pcworld.com/yahoo/article/0,aid,121865,00.asp>>
- ¹² See, for example, Tao Yang (1999, p.306) who points out that since the inception of economic reform in 1978, China has experienced the "largest increase in income inequality of all countries for which comparable data are available."
- ¹³ 'Concerns Over Data Security', *The Hindu*, 13 August, 2005.
- ¹⁴ See, for example, Drahos and Braithwaite (2002), pp. 187-197.
- ¹⁵ A Committee set up by the Union Ministry of Human Resource Development has allocated Rs.400 crores a year till 2007 for infrastructure development in Indian Universities. See 'Centres of Excellence in Research', *The Hindu*, 1 September, 2005.
- ¹⁶ Poverty data for the year 1993-94, measured by head-count ratio, from Drèze and Sen (2002), Table A.3. Data on literacy rates and rural-urban population from Census of India, 2001 (www.censusindia.net).
- ¹⁷ Software professionals from Andhra Pradesh accounted for 23 per cent of all Indian software professionals working in the United States in 1998, according to Ramachandraiah (2003). Large numbers of small farmers and landless agricultural workers in several parts of the Telangana region of Andhra Pradesh migrate to Mumbai and major towns in Maharashtra in search of jobs (see Sainath, 2003). Krishnakumar (2001) writes on the distressful living conditions of weavers in Andhra Pradesh.
- ¹⁸ The neem patent was later revoked in the face of strong protests from civil society organizations in India. See 'Interview: Vandana Shiva on IPR and Biodiversity' in (<http://www.voicesforall.org/ipr/voices_ipr_interview.htm>)
- ¹⁹ See Francois and Spinanger (2005)
- ²⁰ See www.indiastat.com

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