

“A Study about Financial Strategies and the Dynamics of the It Industries in India”

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INTRODUCTION

The discernment of an industry is by and large molded by official statistics. On account of the Indian information (IT) industry¹, the statistics are not even official. All statistics on it are produced by National Association of Software and Service Companies (NASSCOM).

This vivacious industry acquaintanceship had 850 members at the finish of 2002 (NASSCOM 2003a:17); it asserted that they represented over 95 for every penny of the industry's revenue. There are plainly numerous firms in the industry that are not members of NASSCOM; a single index, case in point, records over 4000 firms (EFY 2002). In spite of the fact that there is no motivation to need a predisposition in NASSCOM's figures, they are projections from its members' figures. A correlation with IT fare figures as of late discharged by Reserve Bank of India indicates that NASSCOM's figures are inside 10 for every penny of horrible exports. Imports are less than 10 for every penny of exports; NASSCOM does not assess them. The official and NASSCOM figures are tantamount; the contrast between them could be because of leads also lags.

In whatever is left of the paper we will utilize the NASSCOM figures. In any case we may as well at the start call attention to the inadequacies of characterizing the Indian IT industry regarding what happens inside India's fringes. In this manner characterized, the industry incorporates the subsidiaries of multinational companies, which are a necessary some piece of their worldwide operations.

NASSCOM gauges their allotment in the offers of the Indian industry in 2001-02 at 26.6 for every penny. Then again, Indian companies have affiliates and subsidiaries abroad. The records of those IT companies show financial investments to have been 24 for every penny of their terrible possessions in 2001-02; for all intents and purpose those might be abroad. When we think in wording of Indian business visionaries, 21 of the 25 Indian ambitious people

picked by Naroola (2001) accomplished their accomplishment in the US IT industry. Saxenian (1999) discovered 774 high-technology firms in the Silicon Valley with 1998 offers of \$3.6 billion that were headed by persons with Indian names, though Indian firms' IT bargains in 1998-99 were \$3.9 billion, and exports \$2.7 billion. What's more in 1999-2000, when NASSCOM assessed software experts working in India at 284,000 (counting those employed by IT user organizations), in the ballpark of 200,000 were dealing with H-1b visas. The two cover to the degree that Indian companies were utilizing H-1b visas to send experts to the US. In any case a substantial extent of the Indian IT work power was locked in abroad; and rivalry from abroad for labour was one of the crucial components that formed the Indian industry in the blast a long time. Nationality probably won't characterize limits. In this industry, venture, labour and capital are scattered over the world, and each of them associates with the industry placed in India.

With that capability, Figure 1 shows the growth of the industry's bargains dependent upon NASSCOM's figures. The industry's bargains developed at a normal exacerbated growth rate of 43.1 for every penny in the eight years to 2001-023 – in the same period, true GDP developed at 6.2 for every penny a year, stock exports (in US dollars) at 8.9 for every penny, and current record receipts (counting software exports) at 12.1 for every penny. Exports moved the growth of the IT industry; their allotment in revenue developed from 58.9 for every penny to 75.8 for every penny in those eight a long time. They climbed from 1 for every penny to 9.8 for every penny of current record receipts, from 1.5 for every penny to 17.3 for every penny of stock exports, and from 0.2 to 2.2 for every penny of GDP. No other industry has encountered such fast fare headed growth.

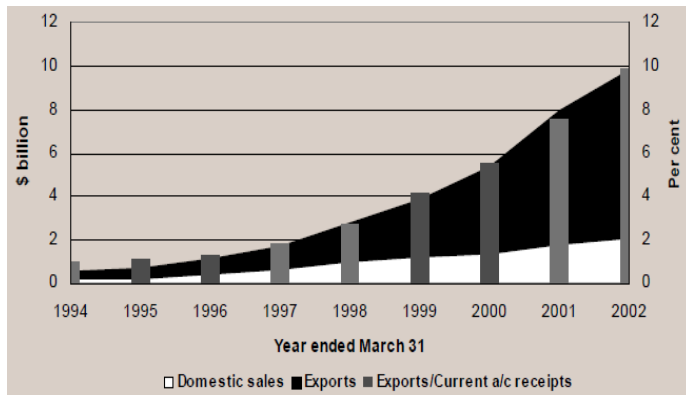


Fig 1. IT exports & domestic sales

This paper, based inter alia on over 60 interviews with Indian IT firms, reviews the growth of the industry and evaluates its prospects. It aims to go beyond the received wisdom about the Indian industry, which includes the following misconceptions amongst others.

India has succeeded in software because of low wages: Actually, wage costs are a small component of the industry's revenue – 20-25 per cent, less than its profit margin – and there are many countries where programmers' wages are not much higher than India's.

Use of English in India has made it easy for its firms to penetrate Anglophone markets: While it is true that India's software exports are heavily concentrated in Anglophone markets, so is global software consumption. Programming requires the most elementary English, with a very limited vocabulary and simple syntax. India's specialization in finance explains the markets it has served.

India's human capital – especially its stock of engineers – enabled it to make a substantial entry into the software market: Actually, the emigration as well as the software export boom caused a serious labour shortage by the early 1990s, which was alleviated only by a rapid expansion of the educational system.

INDIA'S SOFTWARE SPECIALISATION

The most striking characteristic of the IT industry in the previous 50 years has been the succumb to the expense of information processing, as semiconductors or chips have ended up shabbier, more modest furthermore all the more influential. This has prompted three significant patterns. To begin with, computers have been intended to consume ever-bigger information space and processing errands. Second, they have been miniaturized and commoditized. At long last, chips have been separated from computers, and exemplified in differing supplies to make it more immediate, adaptable and less requesting of

human consideration. There has been a parallel and related pattern in telecommunications: incompletely as an aftereffect of the utilization of processors, telecommunications have ended up shabbier, and they can convey more information speedier to additional remote areas. They have along these lines made incorporation of administration conceivable in companies with different areas.

With these advancements, the room-measured computers of 50 years back have offered approach to three sorts of gear. To start with, there are effective mainframe computers – servers – that can deal with information processing necessities of vast and scattered organizations; they might be associated by switches – facilitating units – to region networks comprising of various workstations. Second, there are mixed bags of little, standalone individual computers (Pcs) intended to serve people or little business settings. At long last, there are chip or chips exemplified in different intelligent machines, going from machine instruments to washing machines.

Specialized software is composed for these three sorts of mechanisms. Mainframe computers commonly utilize intricate software. The servers and switches have software composed into them by their producers; yet the software is adaptable enough for the client to stretch, alter and unite with other software. Since the amount of vast computers is little, the amount of duplicates sold of their programmes is additionally little; so the programmes are costly. Mainframe producers enhance the programmes in progressive generations of computers; yet it is uncommon for holders of old computers to reinstate their software. They for the most part alter it incrementally as their necessities change and networks develop. Accordingly substantial computers make an interest for complex software incorporated with new ones, and also for repair what's more maintenance of and adjustments in installed software.

One distinction is between product software, either written into computers or sold shrink-wrapped or on the internet, and services, which are contracted with and delivered to particular users. This is a spectrum; few products require no service at all, and services often yield reusable or resalable components akin to products. By and large, Indian firms are into services, and not products. Another distinction is between embedded software and computer software. Indian firms are largely in the latter, and have only a small presence in embedded software. A third distinction is between information technology (IT), which encompasses all the types of software described above, and IT-enabled services (ITES), which are commercial activities using IT. India entered IT first, but has made an entry into ITES since 1998.

RESPONSE OF INDIAN FIRMS

From the 1950s, IBM had a virtual monopoly of computers in India. Its 360 series, released in the 1960s, became the workhorse of large organizations; they maintained batteries of programmers to write software for the machines. In 1978, however, George Fernandez, then minister of industries (and today, defense minister), asked IBM to take local shareholders into its subsidiary. It refused, and wound up operations in India; its employees set up Computer Maintenance Corporation, with the primary object of maintaining IBM computers.

From then till the opening up of the early 1990s, the only mainframes being imported into India were Russian. Western computers could not be imported because of an American embargo on export of high-technology equipment to India, which was considered an ally of the Soviet Union. When Rajiv Gandhi became prime minister and visited the US in 1985, he asked to be allowed to import Cray computers, then the most powerful computers available. After much pleading, a license was issued for one for the Indian meteorological office. It did not arrive. But in the meanwhile, the government's Centre for Development of Advanced Computing (CDAC) connected together a string of less powerful computers to create the first powerful parallel computer in 1991; CDAC continues to sell a 1-teraflop version (CDAC 2003).

In the meanwhile, computers were finding commercial applications in India as in western countries – in materials planning, airline scheduling, CAD/CAM etc. Programmers got training in working out these applications on aging and heterogeneous computers. In this way, a stock of technological capability was built up (Evans 1992). In the 1980s, programmers were employed by three types of organizations. First, there was Computer Maintenance Corporation, which employed software engineers who worked for IBM before it closed shop in India in 1978. Then there were producers or suppliers of computers. The 1970s and 1980s saw the downsizing of computers into mini-computers and PCs, and the number of their producers grew in the US, Europe and Japan. India's import substitution policies reserved the domestic market to whoever could "produce" a product in the country. The definition of production was vague: it could consist of assembly of imported components, with a few being produced within the country or bought from another domestic supplier – who could get his own import licenses. Thus a large number of licensees came up who, for instance, imported the chassis of the PC and put it into a box welded by them.

END OF THE US IT GROWTH

The stock market blast in the US finished in April 2000; with it, the high valuations of US IT firms and the simple accessibility of capital for the industry finished. Growth in US abated down, and benefits of US firms felt obligated. The log jam was certain to influence the growth of the Indian IT industry, since North America represented 62.7 for every penny of India's software exports in 2000-01. However various different things happened at the same time. For one thing, the labour deficiency additionally moved; since the Indian IT industry paid easier wages and lost programmers to the US, the fall popular for them cut down the rate of wearing down. For an alternate, IT fetches felt obligated all over the place; that expanded the interest for Indian software benefits as against additional exorbitant sources, additionally headed customers to search for much shabbier sources. At long last, the downturn influenced distinctive IT benefits distinctively; in-house IT exercises in the US, which ingested the majority of body shopped programmers, declined, and a greater amount of in-house work was sourced out in the structure of ITES and business forms. In any case in India, as programmers got to be shabbier and that's only the tip of the iceberg effectively accessible, in-house exercises expanded at the liability of obtained administrations. The effect of these progressions changed with the measure of firms.

Table 1 : Indian software sales, 1999-00 to 2001-02

	Revenue (\$ million)			Growth (%)	
	1999-00	2000-01	2001-02	2000-01	2001-02
Exports	4000	6200	7780	55.0	25.5
Software	3440	4750	5780	38.1	21.7
ITES	560	900	1425	60.7	58.3
R&D		550	575		4.5
Domestic sales	1370	1807	2070	31.9	14.6
Software	1330	1737	1923	30.6	10.7
ITES	40	70	147	75.0	110.0
Turnover	5370	8007	9850	49.1	23.0
Share (%) of					
Exports	74.5	77.4	79.0		
ITES	11.2	12.1	16.0		

There was no domestic slowdown, and hence no reason to think that demand growth for IT services slowed down. The more likely reason is that with the easing of the market for programmers, large clients could afford larger IT departments in-house. The industry oriented itself even further towards exports after the US downturn.

Some of these IT-enabled services were located in India by foreign ITES providers, and some by large users of ITES. GE Capital was the biggest; it employed 12000 workers (NASSCOM 2003a:71). Banks and financial companies, which had earlier bought Indian IT services or set up IT operations, also set up large ITES centres:

Standard Chartered employed 2500, JP Morgan Chase 3000, and AMEX and HSBC 2000 each. NASSCOM (2003b) put the share of foreign companies in ITES revenues at 45.1 per cent.

FINANCES

Past the export and revenue assumes that NASSCOM gathers, little information on the funds of the software industry is accessible. A hefty portion of the firms are branches of combinations or fittings firms, and their software exercises can't be differentiated. A critical extent is limbs of multinational firms, whose funds are covered in puzzle. The grandest firm, Tata Consultancy Services (TCS), is completely claimed by the Tatas and gives out little past its revenue. The main firms about which a few figures are accessible are those joined as Indian companies, which constitute a modest division of the firms and record for not exactly 50% of exports. Around them, the financial records of the grandest, which have skimmed value on New York Stock Exchange or NASDAQ, are models of part and clarity; the rest are variable. On the other hand, the sparse figures accessible yield some enlightening conclusions. Table 2 gives the merged benefit and misfortune record of such firms.

	1997-98	2000-01	1997-98	2000-01
Number of companies	148	255	148	255
	Rs billion		Per cent	
Income	73.4	227.3	100.0	100.0
Expenditure	55.2	155.5	75.2	68.4
Materials and stores	19.1	20.4	25.9	9.0
Wages and salaries	11.5	46.9	15.7	20.7
Gross profit	18.2	71.8	24.8	31.6
Interest and lease rent	3.2	4.2	4.4	1.8
Depreciation	3.4	11.1	4.6	4.9
Provision for income tax	1.4	4.4	1.9	1.9
Net profit	10.2	52.1	13.9	22.9
Dividends	2.1	5.6	2.9	2.5
Retained earnings	8.1	46.5	11.0	20.5

Table 2: Income and expenditure of selected software companies, 1997-98 to 2000-01

Despite the rise in wages, the mean profit margins increased because of a fall in other costs. As exports came to be made increasingly through electronic communications, and the share of body-shopping, with its attendant costs of travel and accommodation, dropped, non-wage costs fell, and profit margins rose. The bulk of the profits were retained; dividends took less than 3 per cent of revenue. The high profits enabled the companies to pay off debts; as a result, their interest costs fell. This too added to net margins.

GOVERNMENT POLICIES

As discussed about in the past segment, both the focal and the state governments noted the growth of the IT industry in the 1990s as a trade earner and an inventor of earnings what's more livelihood, and reacted with strategies to help it. The new BJP government that came to power in 1998, in any case, went further. It chose to offer necessity to the industry, set up a service of information technology, and designated a Task Force to figure out what the industry required and to make it as approach. Despite the fact that the industry utilized the methodology to request numerous uncommon favours, the reports of the IT Task Force (Ministry of Information Technology 1999a-c) give an exceptional picture of the deterrents confronted by the industry (Table 3).

Traditions and import control was the subject of numerous dissensions. Import obligations on machine fittings were significant; in spite of the fact that an exporter could maintain a strategic distance from them, he consequently subjected himself to vexatious policing. He needed to set up a reinforced warehouse; the development of merchandise into and out of the warehouse was liable to point by point standards and could lead to provocation. The industry looked for a closure to the policing and discretion, and recommended that the traditions and import authorizing powers may as well depend on ex-post reviews.

Trading companies were permitted to hold dollar accounts, yet there were numerous confinements on how cash in the records could be used; here excessively, examinations by Reserve Bank of India or the Enforcement Directorate could prompt much stress and misfortune of administration time. The companies needed more excellent opportunity contributing and stripping abroad, in causing costs and utilizing Visas abroad.

The industry had an issue in raising fund: banks obliged a material holding as insurance, and an extensive extent of the IT companies' possessions were insignificant, for example, customizing work in advancement and credit to clients. The administration's financial establishments were readied to store on the premise of altered possessions; however computers and supplies were regularly rented, and when they were not, they were liable to quick outdated nature. Thus the industry needed the loaning standards to be changed, and to be given credit on the support of their turnover.

	Total	Per cent
Laws	14	4.3
Simplification of rules	56	17.3
Central government	26	8.0
Customs	24	7.4
Other	6	1.9
Relaxation of rules	45	13.9
Exchange control	21	6.5
Banks and financial institutions	10	3.1
Other	7	4.3
Favours	50	15.5
Central government subsidies	5	1.5
Increase in financing	12	3.7
Reduction in taxes	20	6.2
Other	13	4.0
Government purchases	29	9.0
Training	28	8.7
Remove government monopolies	7	2.2
Other government support	61	18.9
Other	36	11.1
	323	100.0

Table 3: IT Task Force's Recommendations

The Task Force recommended that the Contract Labour Abolition Act should not apply to the IT industry, and that temporary status should be defined as 720 days in three years instead of 240 days in a year. It also asked that IT firms should be allowed to dismiss 10 per cent of the employees in a year without permission. The Subject Group asked that knowledge-based establishments should be exempted from the liability for the health insurance and provident fund contributions of contract employees. None of these demands was met. However, retrenchment, overtime and night work were common throughout the industry; no doubt labour inspectors were on a retainer while these went on.

Thus India's administrative style, consisting of complicated laws and rules and numerous bureaucrats, affects the IT industry as much as any. That it has grown within this environment suggests that it has found the same ways of dealing with red tape as every industry that preceded it.

BROADER ECONOMIC EFFECTS

The software industry's 2001-02 sales came to 2.2 per cent of GDP. Although thousands of small IT firms dot all cities, the export industry, accounting for 79 per cent of sales, is largely concentrated in half a dozen cities, all of which, apart from Delhi, are in the peninsula. In these cities, the large exporting firms acquired a highly visible presence. They pioneered a new trend in architecture – compact, air-conditioned buildings clad in heat-reflecting glass, soothing colours inside, facilities for eating, sports and recreation and underground car parks. The incomes they locally generated led to the emergence of new shopping malls, restaurants and bars. Signs of poverty – beggars, shanties and manual labour – receded. The southern cities came to look newer and neater than

northern ones.

The industry recruited from engineering colleges, and was faced with labour shortage throughout the 1990s. Its pressure led to considerable changes in tertiary education. They led to rapid expansion of engineering education, to dedicated degrees and diplomas in information technology, and to changes in curricula of engineering and science courses.

They were also involved in the setting up of the Indian Institutes of Information Technology in Bangalore and Hyderabad. HP funded research and helped train research in universities and colleges in and around Bangalore; Motorola took in teachers from engineering colleges during sabbaticals (Patibandla and Petersen 2002). Globsyn Technologies ran its training courses in the engineering colleges of West Bengal; one of the courses it offered was in entrepreneurship for engineers. The alumni of Indian Institutes of Technology raised \$12 million to improve facilities.

CONCLUSION

As we indicated in paper, Indian firms had succeeded by first furnishing labor to extensive US customers, and later by doing custom provisions for them – as such, by assuming any sort of work that they were readied to give. They improved a dependable lists of customers around the biggest firms, yet were unspecialized as far as work. Can this proceed? As per a NASSCOM count, 90 for every penny of America's 1352 biggest enterprises utilized outside administration suppliers; of those, 44 for every penny utilized abroad suppliers in 2001. Assume the extent were to ascent to 67 for every penny. Of their IT plan, 7.8 for every penny headed off to abroad suppliers; assume it were to ascent to 20 for every penny. Also assume a portion of the more modest partnerships began sourcing administrations abroad. On these suppositions, interest for Indian IT administrations could effectively fourfold. As such, there is extensive extension for development in India's significant business sector.

Finally and crucially, the world IT industry has passed through a phase of extreme fragmentation of work, which however is now passing. In the initial stages, the upper end of the industry was a craft business. The software used by big businesses had grown incrementally, and its varied provenance and resulting complexity were such that marginal additions and patches were the best that could be done. Since it belonged to an era when software was not standardized, large users employed software managers; they preferred to buy incremental packages of software services. It was this porous structure of legacy software use that enabled Indian firms to penetrate the

market.

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