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~ Implications of Strengthening the Global Competitiveness of Japanese IT Services Industry ~

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Overview

1. Amid the rising presence of Indian IT services firms in global markets, the establishment of India-based global delivery models[1] among European and US IT services companies is gathering speed. Japan too is witnessing an increase in the number of direct outsourcing contracts with Indian IT services firms, mainly by end users that have expanded their operations overseas, which continues to be the driving force behind changes in the structure of Japan's IT services industry.

2. The source of the competitive advantage of Indian companies is found in (1) the accumulation of technology and know-how by way of an in-house completion type delivery structure, (2) organizational capabilities to carry out projects based on standardized processes, and (3) a global delivery model with Indian offshore centers at its core. These three elements can achieve a high level of service performance in terms of QCD[2] by leveraging time differences and wage disparities. Furthermore, they enhance such strategies as high value-added services, diversification to boost earnings and spread risk, and increasing offshore ratios in order to maintain healthy profit ratios.

3. Indian firms have pursued a QCD competitive edge in order to secure major projects from European and US blue-chip firms and continue to maintain double digit growth in European and US markets through acquisitions of other firms with the purpose of strengthening abilities to provide solutions, technical capabilities and customer bases. Meanwhile, European and US IT services firms are speeding up personnel cutbacks in high cost regions and construction of India-based global delivery models, as well as hurriedly beefing up their competitiveness via takeovers with an eye to reinforcing centers in India. Under these circumstances, it is very likely for M&As to intensify, triggered by (1) smaller Indian firms fighting to survive, and (2) an expansion and upgrading of Indian centers by Japanese, European and US firms that were slow in expanding their operations in the Indian market.

4. As for Japanese end users, there is a growing need for these companies to establish globally standardized information systems at low costs as well as related support systems as they become exposed to competition from rival overseas firms. Meanwhile, Japanese IT services companies lag behind their European, US and Indian competitors in terms of cost competitiveness and the ability to construct overseas support systems and consequently, a drain of customers to rival firms is starting to be seen. Global IT services firms, including those from India, now have their sights set on infiltrating the Japanese market through aggressive approaches such as establishing delivery centers and carrying out company takeovers.

[1] A 'global delivery model' is a business model that combines onsite (customer center), onshore (same region), nearshore (low cost region) and offshore to provide IT services to clients (see page 23).Furthermore, from the perspective of providing services by procuring human resources on a global scale, the execution of a global delivery model is also known as 'global sourcing'.

[2] QCD, an acronym for Quality, Cost and Delivery, is an indicator used to measure product and software development performance.

5. There are three implications associated with strengthening Japan's IT services industry that can be drawn from the above. Firstly, the poly-hierarchical subcontracting structure must be transformed and firms will need to establish more direct type services framework by vertically integrating subcontracting firms and offshoring to their own offshore centers. Secondly, prime contractors must construct a global-based support structure by acquiring overseas firms in the same line of business or forming capital tie-ups with global firms. Thirdly, companies must review competition within their groups both domestically and overseas, as witnessed already by some firms, and strengthen their offshore center-based seamless support services structure.

6. Naturally, IT services firms themselves must do their best to boost their global competitiveness, but in light of the fact that India's rapid growth can be explained by government support measures, one feels that the time has come for the Japanese government to also consider concrete support measures by selecting and focusing on certain areas needing to be strengthened. More specifically, (1) strengthening and nurturing the solutions sector that Japan already has a competitive edge in, (2) supporting the global operations of Japanese IT services firms, and (3) cultivating Japanese SEs good enough for overseas markets, will be important areas of such measures.

Chapter 1 Introduction

1. Indian IT Services Firms Making Great Strides in Overseas Markets

Aggressive innovation by Indian IT services firms

For some time now, India's IT services industry[3] has attracted worldwide attention. In addition to the industry as a whole continuing to achieve high growth, the global IT services market is beginning to be penetrated by the likes of Tata Consultancy Services, Infosys Technologies, Wipro Technologies, Satyam Computer Services, HCL Technologies and Cognizant Technology Solutions[4]. The great strides that these Indian IT services firms have made can be attributed to major advances accomplished after the Y2K problems, in particular, innovation related to processes and business models of outsourcing services. The former refers to the formulation of organizational capabilities to provide services that can fully meet the quality, price and delivery needs of customers by continuing to steadily make processes related to development projects and services more efficient as well as benefiting from the advantages of utilizing regions with lower wages, such as India. The latter is concerned with how these companies have put in place structures to provide outsourcing services by combining offshoring (low cost regions) and onsite operations (residing in the customer's location), which are two fields that Indian IT services providers excel in. This string of innovation has largely affected overseas strategies of competing firms in Europe and the US.

The threat of Indian firms hastened the speed of major European and US firms' foray into India

As the presence of Indian IT services firms in European and US markets continued to increase, a sense of crisis grew among major European and US IT services providers, which led them to expand personnel numbers at offices in India and hurriedly take steps to implement the onsite/offshore model (the forte of Indian IT services firms) and a subsequent extended version in the form of a global delivery model. Currently, IBM and EDS have expanded the scale of its operations in India to be second only to its home in the US, while Accenture now employs more staff in India than in the United States. Furthermore, European and US IT services firms late to set up operations in India are also aiming to rapidly expand in India by way of M&As. All companies now regard India as their core offshoring hub for providing European and US customers with a plethora of services ranging from IT to BPO (business process outsourcing). In terms of HR

[3] In this report, IT services shall, in a narrow sense, include engineering services and BPO in addition to IT services (consulting, systems development, integration, operation and maintenance).
[4] Hereinafter, TCS, Infosys, Wipro, Satyam, HCL and Cognizant respectively.

supply in the IT services industry, India is now the world's biggest market and is undoubtedly the most important center for IT services firms worldwide.

The role of India's sophisticated IT center

Leading providers continue to emphasize the importance of the Indian market – Accenture is establishing a framework for 2,000 business consultants, while IBM views India as a base for a number of R&D disciplines ranging from basic research to applied research. India is no longer just a location for software labs – it is now a central base where management strategies are the source of cutting-edge know-how and business.

2. The Environment Confronting Japan's IT Services Industry

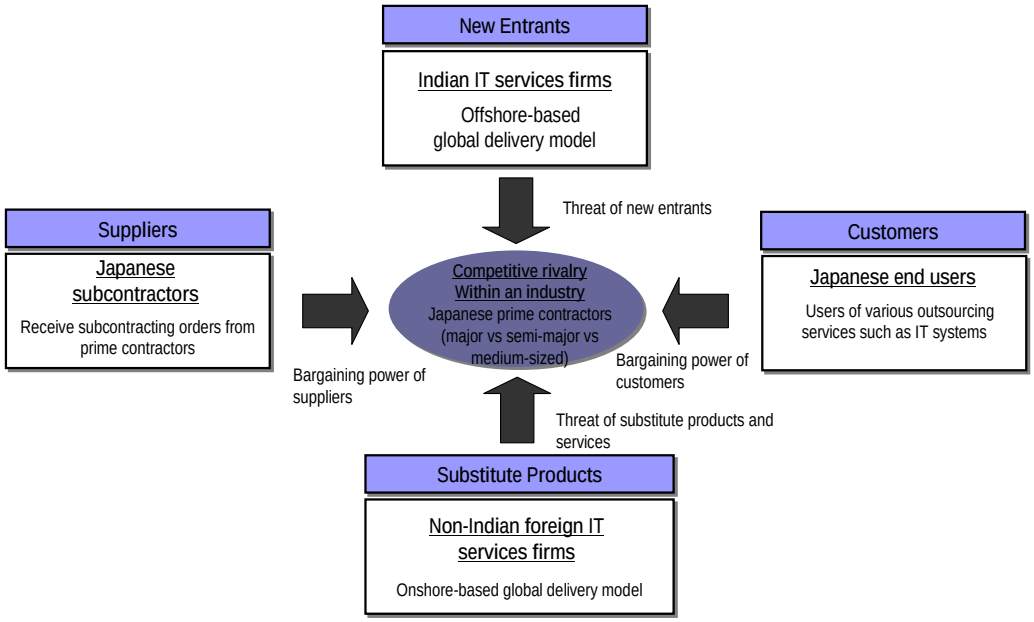
Change in the environment surrounding Japan's IT services industry

The general perception in Japan of Indian IT services firms is that their business models focus on subcontract development and onsite dispatch (dispatch to customer locations), they have low cost, top-class engineers that speak English as an official language, and are utilized for offshoring and outsourcing operations by mainly US and UK IT services firms. Even if it is assumed that the competitiveness of Indian firms is well recognized, most Japanese are of the view that Indian IT services firms present no threat to the Japanese IT services industry due to the existence of market barriers such as language and culture. However, in line with global developments of end users, the environment enveloping Japan's IT services industry continues to undergo a transformation.

Globalization of the IT services industry and offshoring are behind this shift

This current change in Japan's IT services industry is due to the five forces framework, which is clearly illustrated by Fig. 1-1 below. Central to the industry are prime contractors – which receive orders directly from end users – and are encompassed by four forces. The original two forces – up until now part of all business relationships – are end users, which buy IT services, and subcontractors (suppliers), which receive orders for services. The remaining two forces may possibly compete with each other. One of those forces refers to new market entrants, in this case, Indian providers, while the other force is comprised of non-Indian foreign IT services firms that have begun to differentiate themselves by offshoring and adopting global delivery models.

[Fig. 1-1] Structure of Japan's IT Services Industry



(Source) Mizuho Corporate Bank, Industry Research Division

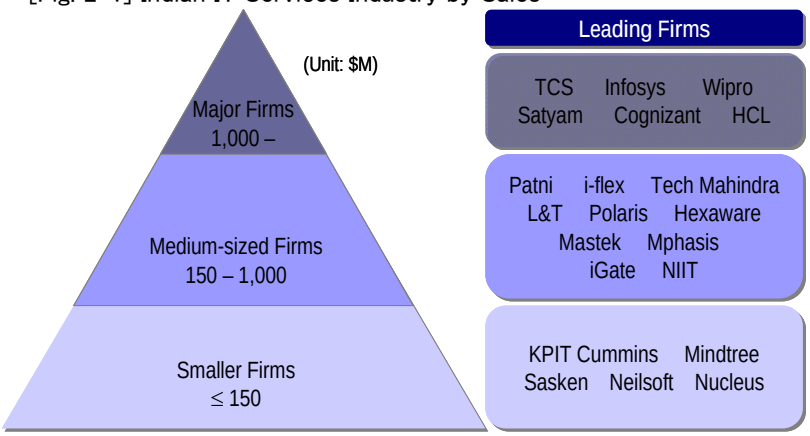
This report analyses the trends of Indian, European and US global firms that stand face to face with prime contractors, from both macro and micro perspectives, to examine the wave of India-based globalization that the world's major IT services firms are currently riding. Finally, amid such a tide of globalization in the IT services industry, this report shall take a look at the implications associated with strengthening the international competitiveness of Japan's IT services industry.

Chapter 2 Overview of India's IT Services Industry

1. Major Firms and Classifications

Fig. 2-1 categorizes India's IT services industry by company sales.

[Fig. 2-1] Indian IT Services Industry by Sales



(Source) Mizuho Corporate Bank, Industry Research Division

Six firms stand at the top of India's IT services industry

Major firms: Six companies can be placed in this category, namely, TCS, Infosys, Wipro, Satyam, HCL and Cognizant. Characteristics include: largest delivery centers in India with more than 50,000 employees in addition to a number of offshore centers in low cost regions; sales and consulting units mainly in Japan, the US and Europe; central focus on finance and manufacturing as the two biggest client bases in terms of the range of client industry segments; continual branching out into other industries. These firms also have a certain amount of presence in BPO operations.

Medium-sized Indian IT services providers putting up a good fight by globalizing

Medium-sized firms include MphasiS, i-flex[5], Tech Mahindra, Patni Computer Systems (hereinafter, Patni), Hexaware Technologies (hereinafter, Hexaware), iGate Global Solutions (hereinafter, iGate GS), NIIT Technologies (hereinafter, NIIT), Polaris Software and Mastek. Characteristics include: large-scale operation centers in India of between 5,000 and 15,000 employees; utilization or current establishment of offshore delivery centers in other countries; current construction of frameworks for sales and consulting services mainly in European and Northern American regions; highly valued customers by concentrating services on specific fields within multiple industry segments. In comparison to large-scale firms, these companies' offshore centers, mainly in Europe and the US, rely heavily on India and focus on few

[5] EDS acquired MphasiS. Oracle bought out i-flex and plans to change its name to Oracle Financial Services.

industry segments.

Endless number of smaller firms that are 'market nichers' (sector specific companies)

Smaller firms: There is an infinite number of companies in this category. Characteristics include: less than 5,000 employees; offshore centers limited only to India; target industries narrowed down and niche strategies adopted with aims to securing competitive advantages in those sectors. For instance, Nucleus provides IT services to the BFSI (banking, financial services and insurance) industry, KPIT Cummins and Neilsoft provide embedded systems and engineering to the manufacturing industry, Sasken concentrates on the telecommunications sector and Sonata deals mainly in the hospitality (travel, hotels, restaurants, etc) field. In this way, these firms carry out their IT services business by focusing on specific industries and technology.

2. Industry History

The history of the IT services industry in India, from its beginnings to the present, can be broadly split into 4 periods[6]. During the period 1965–1984, a number of leading firms were founded and the building blocks of the industry's development was established. 1985 to 1992 saw the onsite model reach its peak then foreign IT firms set up operations in India and the onsite/offshore model took hold between 1992 and 1999. The period between the year 2000 to the present has seen the onsite/offshore model give rise to the development of the global delivery model (Table 2-1).

[Table 2-1] History of Indian IT Services Industry

	1965 - 1984	1985 - 1992	1992 - 1999	2000 -
Global IT Services Industry Trends	Mainframe (M/F) era	Migration of M/F to client servers (C/S)	Y2K bug IT bubble CMM	IT bubble collapse CMMI
Indian Government Initiatives	Tighter foreign investment restrictions(1977) *CMC* (1976)	Easing of import restrictions on software development materials	Relaxation of foreign investment restrictions (1991): New Economic Policy Support measures: Reduced tariffs, exemption from corporate taxes	—
Indian IT Services Industry Trends	Onsite model *TCS* (1968) *Patni* (1978) *Wipro* (1980) *Infosys* (1981)	Onsite/offshore model *Satyam* (1987) *i-flex* (1989) *HCL* (1991)	Onsite/offshore model Increase in ODCs *Cognizant* (1994) *iGate* (1993)	Global delivery model Expansion of business spheres of IT services Branching out into BPO operations Full scale entry into European and Japanese markets
India-related Trends of European and US Firms	IBM withdraws M/F operations *IBM India* (1981)	Accenture commences consulting business (1987)	Foreign firms setup business in India EDS and CSC establish offices Captive BPOs of foreign firms setup *HCL Perot Systems* (1996)	Mass hiring of Indian engineers Offices bolstered through M&As

(Source) Mizuho Corporate Bank, Industry Research Division, based on publicly available company material and Athreye (2005)

[6] Suma S. Athreye, "*The Indian Software Industry and its Evolving Service Capability*" (2005).

1967–1984: IBM's exit and the birth of domestic software houses

IBM withdrew from the Indian computer market, which it had an effective monopoly on from the 1950's, due to the introduction of restrictions on foreign investment brought about by the enforcement of the Foreign Exchange Regulation Act (FERA)[7] in 1977. As there was a need to maintain the IBM manufactured mainframe support system, the government took steps to incorporate former IBM employees into a new company known as Computer Maintenance Corp (hereinafter, CMC)[8] in 1976. At the same time, due to an easing of software industry regulations, reduced import tariffs on hardware and software export promotion policies provided the tailwind for a flurry of IT services firms to be founded. TCS was established by the Tata Group in 1968 and Patni was founded in 1978. Both companies developed software for computer equipment in collaboration with foreign owned computer manufacturers. In 1981, seven engineers from Patni established Infosys and computer manufacturer Wipro began to branch out into other IT services operations. As such, the cornerstone began to be laid for the development of India's IT services industry. Nevertheless, because of ill equipped infrastructure in India at that time, such as telecommunications and electricity, and restrictions on imports of development materials, these companies' development operations mainly centered on clients in the US.

1985–1992: The body shop business model and a rush of new companies

As the use of personal computers and computer networks became more widespread from the latter half of the 1980's, there was a sharp increase in demand for maintenance and system development associated with the need to migrate from mainframes to client servers. At that time, because operations of Indian firms were focused on system modification and data transfer services, these companies achieved excellent growth based on the body shop business model where a large number of Indian developers were deployed to client firms in the US to transfer systems and data from mainframes to network computers and also to carry out installation and maintenance of systems. During this period, American companies began to realize the cost advantages of utilizing Indian IT engineers which led to the appearance of many new firms on the back of this increased demand for IT services. Companies that boast diverse backgrounds also entered the IT services business, such as Satyam, a firm established by Ramalinga Raju, a non-resident Indian returning from the United States, HCL Technologies, a company founded by equipment vendor HCL, and L&T Infotech, a firm created by

[7] The FERA required that IBM dilute its equity holdings in India to 60%.
[8] In 2002, CMC was acquired from the government by TCS.

heavy industries conglomerate Larsen & Turbo (L&T) spinning off their information systems division.

1992–1999: Foundation established

Foreign owned firms began to set up operations in India as foreign investment restrictions were relaxed in 1991 and major US IT services providers such as IBM and EDS established offices in India. Additionally, leading European and US firms such as GE, American Express, British Airways and Citibank established captive BPO centers and IT services subsidiaries and commenced offshoring to India their back office tasks like accounting, personnel and general administration as well as systems development and maintenance. Conversely, as more and more Indian companies, mainly leading IT services providers, established bases for operations in the US, Infosys became the first ever Indian firm to be listed[9] on NASDAQ. On top of this, a business model shift began to take place from an onsite dispatch type model to an onsite/offshore model that combines both onsite and Indian offshore operation centers.

2000–Present: Value chain expansion and rapid growth

Based on the level of reliability achieved by dealing with straight-forward tasks in the lead up to the year 2000, such as Y2K bug related program rewriting, Indian IT services companies increased their amount of contracted work related to corporate systems maintenance. Following the Y2K issue, a slowdown in the US economy brought about by the bursting of the IT bubble in the American market triggered a bigger need for end users to keep a leash on budgets for IT systems and consequently, even more contracts for IT services were placed with Indian IT firms that could provide such services at cheap rates. Moreover, by seizing opportunities to rectify and update buggy systems for the same Y2K problem related clients, IT services firms were able to increase their direct dealings with end users and establish themselves as prime contractors by securing contracts for a wide spectrum of business spheres from system integration consulting to system construction, operation and maintenance. Although these Indian companies mainly focus on organic growth, they have also started to diversify their business regions, clients and operations through M&As. By expanding their operations to North American, European and Japanese markets and Chinese, Eastern European and Latin American delivery centers, Indian IT services firms have established a global delivery model with India at its core.

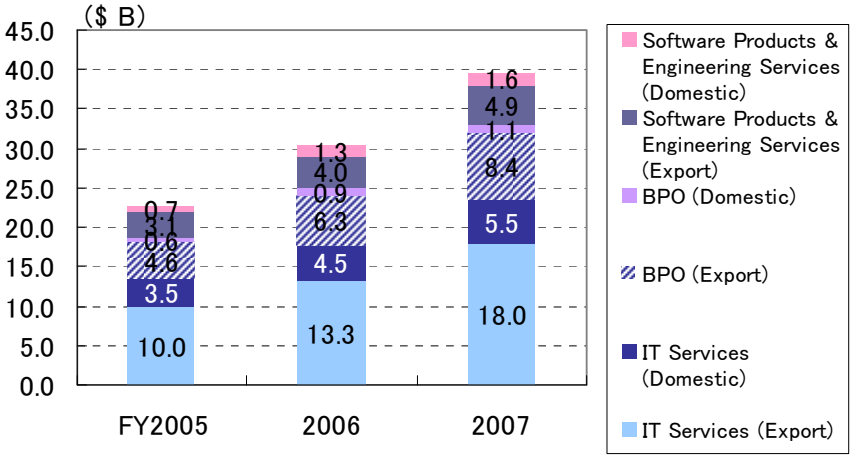
[9] In addition to Infosys, Wipro and Satyam were listed on the NYSE in 2000 and 2001 respectively.

3. Market Overview

Sales from India's IT services industry amount to JPY3 trillion

India's IT services industry as of 2007 is worth US$39.5 billion (approx. JPY4.2 trillion), growing by 30.6% y-o-y in 2006–2007 (Fig. 2-2). Of this, strictly IT services makes up US$23.5 billion (approx. JPY2.5 trillion) or around 60% of all sales, BPO accounts for US$9.5 billion (approx. JPY998.6 billion) or about 24% and software products and engineering services total US$6.5 billion (approx. JPY686.7 billion) or roughly 17%.

[Fig. 2-2] Scale of Sales of IT Services Industry by Business Type



(Source) Mizuho Corporate Bank, Industry Research Division, based on NASSCOM (2008)

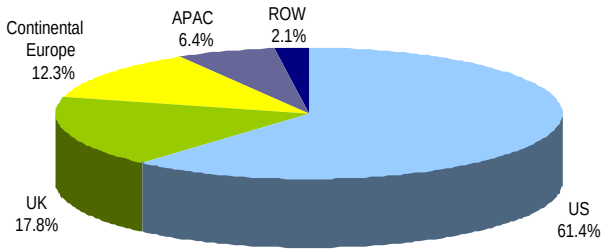
80% of IT services exported

Approximately 80% of total sales from IT services is in exports, of which around 57% is in IT services only. BPO makes up about 27% while approximately 16% comes from software products and engineering. By y-o-y growth rate, a 35% increase in strictly IT services and a 33% rise in BPO were the biggest movers, while software products and engineering recorded a growth rate of 24% (Fig. 2-2).

Around 60% of exports go to the US

Looking at exports by region, the US at 61.4% and the UK at around 17.8% continue to be the major destinations for exports, however, continental Europe and APAC (Asia-Pacific) continue to gradually increase with 12.3% and 6.4% respectively (Fig. 2-3). In particular, one can see that in comparison to 30.2% in the US and 43.4% in the UK, the penetration of Indian offshoring in continental Europe from 2004 to 2007 recorded a growth rate of 55% on a CAGR basis (Table 2-2).

[Fig. 2-3] Exports of Indian IT Services Industry by Region (2007)



[Table 2-2] Growth and Export Amount by Region

($B)

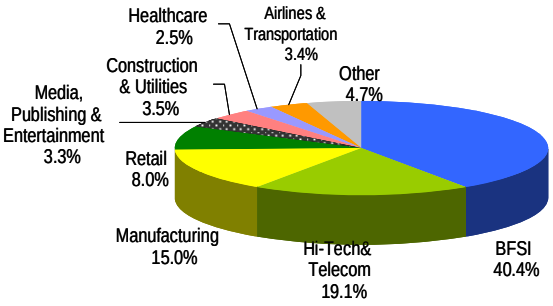
	FY2004	FY2007	CAGR
US	8.7	19.2	30.2%
UK	1.9	5.6	43.4%
Continental Europe	1	3.9	57.4%
APAC	0.8	2	35.7%

(Source) Mizuho Corporate Bank, Industry Research Division, based on NASSCOM (2008)

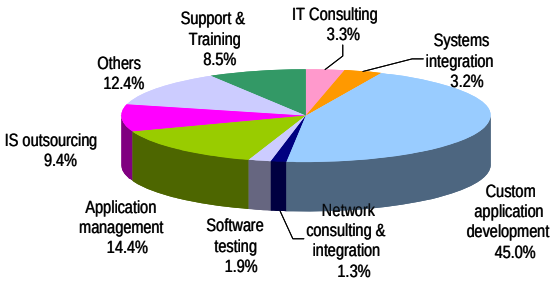
Providing development and maintenance services to mainly the financial, telecommunications and manufacturing sectors

Looking at exports by industry for IT services and BPO combined, BFSI(banking, financial services, insurance), hi-tech/telecommunications and manufacturing account for approximately 40%, 20% and 15% respectively (Fig. 2-4). Furthermore, in breaking down IT services by operation excluding BPO, 60% of operations is in ADM (Application Development & Maintenance), a hitherto major business domain for India which includes custom application development (45%) and application management (14%) (Fig. 2-5). Upstream value chain processes such as various types of consulting and SI also account for around 3% each.

[Fig. 2-4] Exports of IT Services Industry by Industry (2007)



[Fig. 2-5] Exports of IT Services Industry by Business Type (2007)



Note: IT services (broad) in Fig. 2-4 includes BPO, while Fig. 2-5 does not (strictly IT services)

(Source) Mizuho Corporate Bank, Industry Research Division, based on NASSCOM (2008)

BPO operations center on customer services and financial/accounting administration services

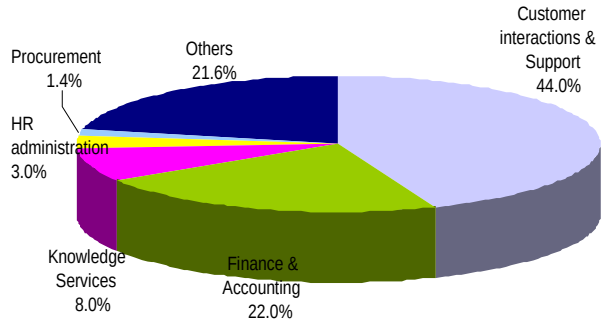
As for BPO, custom interactions & support (CIS) and finance & accounting (F&A) account for the majority with around 40% and 20% respectively (Fig. 2-6). It can be inferred that a large percentage of CIS is made up of inbound services such as customer service and help desks and outbound call center services like telemarketing. F&A also includes

accounting procedures and agency business services to manage account receivable and accounts payable. In recent years, BPO that requires a high level of expertise in the form of knowledge services[10] such as medical transcription, legal outsourcing and financial analysis/valuation, is also thought to be on the increase.

The BPO industry continues to develop and focus on more non-call center services

This is because BPO is also accumulating in regions other than India. For call centers, more and more companies are now focusing on good English pronunciation, aptitude for dealing with customers. For example, more and more companies have established call centers in regions such as the Philippines for the US market and Ireland for the UK market. Furthermore, for non-voice BPO, companies value proximity of systems and cultures.

[Fig. 2-6] Sales by BPO Business Fields (2007)



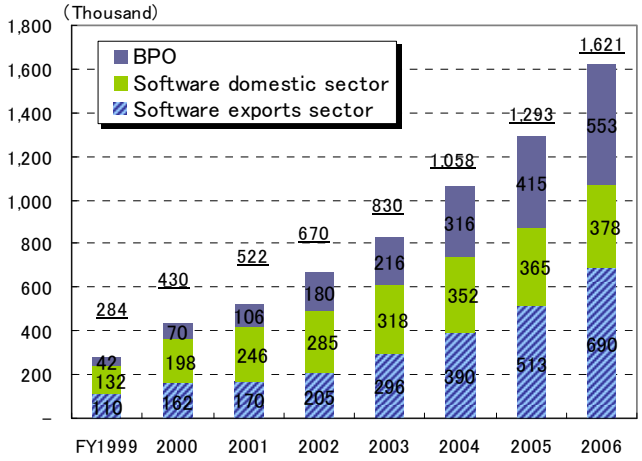
(Source) Mizuho Corporate Bank, Industry Research Division, based on NASSCOM (2008)

World's largest labor market churns out outstanding human resources

India is the world's largest supplier of IT services related personnel, growing from 280,000 people in 1999 to 1.6 million in 2006 (Fig. 2-7). Around 40% is engaged in IT services for export, roughly 20% in the domestic sector and about 30% in BPO. Maintaining this workforce are 347 tertiary education institutions and 16,885 colleges, which turn out between 400 to 500 thousand technically able graduates each year. In particular, IT services firms fiercely compete to secure talented manpower from technology oriented institutes like IIT, IISc and IIIT and business schools such as IIM[11].

[10] BPO that requires specialist knowledge is generally classified as KPO (Knowledge Process Outsourcing).
[11] IIT: Indian Institute of Technology, IISc: Indian Institute of Science, IIIT: Indian Institute of Information Technology, IIM: Indian Institute of Management.

[Fig. 2-7] Employee Numbers by Operation



(Source) Mizuho Corporate Bank, Industry Research Division, based on NASSCOM (2008)

Competition generates differences in salaries

Every year, thousands to tens of thousands of programmers are hired by major IT services firms through a very strict process[12]. After recruitment, employees undergo intensive training to acquire software and business skills and also participate in appropriate training after being placed within the company. Employees can also be promoted from programmer to SE, team leader and project manager. Although it is difficult to ascertain an accurate figure because of big differences between firms and also within companies, the average one month wage for a new graduate in India's IT services industry would be between US$100 and US$1,000, while a project manager after eight years in a company would earn between US$2,000 and US$3,200. Wages significantly differ for management level depending on promotions (Table 2-3).

Gradually becoming more difficult to secure talented personnel

Wages continue to rapidly rise on average by approximately 15% every year. Such wage rises are due to major Indian firms hiring large numbers of personnel as well as an increase in high offers for large pools of talented human resources associated with the appearance of more US firms in India since the year 2000. In response, to secure the services of and retain talented personnel, more Indian companies are also offering the same or higher salary packages to their employees as US and European owned firms, and consequently, the salaries paid to secure top class staff have been the driving force behind the industry wide increase in wages.

[12] In the case of Infosys in 2006, 1,302,400 applicants were narrowed down through document screening, written tests and interviews. Ultimately, 36,700 applicants were in receipt of a notification of employment – only one applicant for every 35 being accepted.

[Table 2-3] IT Service Industry Wage Levels

($)

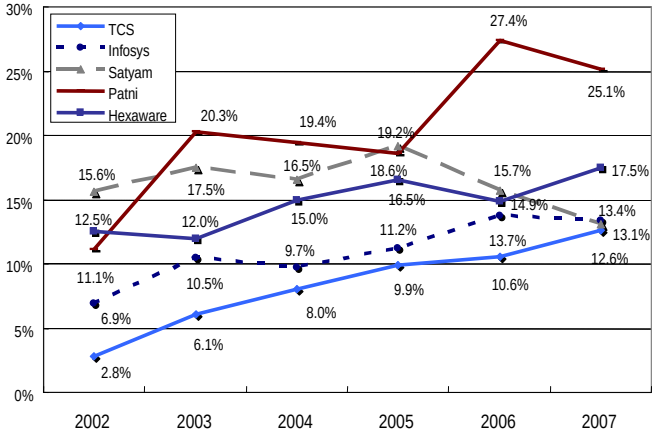
	Monthly Wage Level
Entry-level	500 （100－1,000）
Second Year	800－1,300
Sixth Year	1,200－2,500
Eighth Year (PM)	2,000－3,200
Tenth Year	3,000－5,000
GM	7,000－8,000

(Source) Mizuho Corporate Bank, Industry Research Division, based on local data

High level turnover rates

As the competition to acquire human resources intensifies, the turnover rates of engineers also remains high (Fig. 2-8). In particular, even turnover rates at TCS and Infosys – the two most popular companies in terms of recruitment – had already risen from single figures in 2002 to above 10% by the end of 2006. Although these figures are mainly due to talented personnel that in the past switched from medium-sized firms to bigger companies, it is also thought that a gradual increase in company employees leaving Indian firms to take up employment with European and US global corporations has had some bearing on rises in turnover rates.

[Fig. 2-8] Turnover Rates for Indian IT Services Firms



(Source) Mizuho Corporate Bank, Industry Research Division, based on publicly available company material

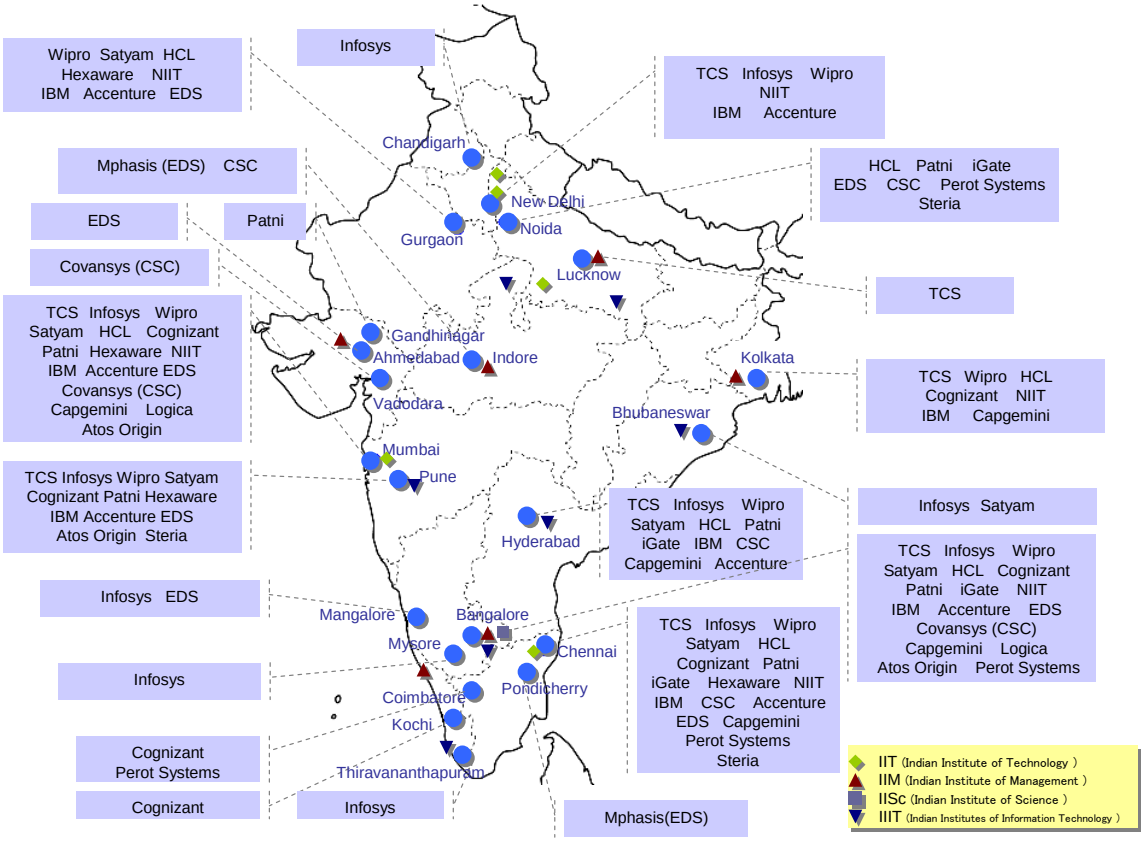
Indian IT services firms strengthening measures to acquire human resources

In order to avoid an outflow of superior human resources as wages increase, Indian firms are now implementing the following measures. (1) Pay top-class engineers higher salaries and hold back salary increases for other engineers. (2) Newly establish development centers in Indian suburbs where manpower can be easily obtained and prices are cheaper. (3) Set up offshore centers outside of India.

Industry concentrated around major cities and elite institutions

At present, the development centers of the major firms in India are concentrated in three areas – Bangalore, Mumbai and Chennai – where there are a number of elite institutions such as IIT (Fig. 2-9). On the back of competition to secure personnel and skyrocketing wages, companies like TCS are also beginning to ramp up their recruitment in regions labeled tier 2 and tier 3. Furthermore, because leading universities are scattered all over the country in newly emerging regions, there is a strong possibility that more firms will make moves to establish delivery centers in outlying areas throughout India.

[Fig. 2-9] Concentration of IT Services Industry in India



(Source) Mizuho Corporate Bank, Industry Research Division, based on publicly available company material