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# STRUCTURE, GROWTH AND PERFORMANCE OF INDIAN IT-BPO INDUSTRY

**Sundharan, Sajikumar**

Post Doctoral Fellow, Centre for Development Studies, Thiruvananthapuram, India

*sajisundhar@gmail.com*

**Abstract**

*India's new economy is marked by the shining and dynamic IT-BPO industry. The industry is noted for its contribution to country's export basket, employment generation and Gross National Product. This paper tries to unravel the structure, growth and performance of Indian IT-BPO industry using data from NASSCOM and Government of India. This paper also evaluates the government interventions in the industry and delineates future directions and sustainability of IT-BPO industry in India. The study found that the major part of India's IT-BPO industry is dominated by low end jobs getting outsourced from Developed world. The industry also spread non-standard and atypical forms of work and employment while making a productively docile workforce. In addition, international competition from countries like Vietnam, China, Mauritius, Sri Lanka, Philippines etc. may aggravate the problem of sustainability of outsourced work in India.*

*Keywords: IT-BPO Industry, New Economy, India*

## INTRODUCTION

Information Technology-Business Process Outsourcing (IT-BPO)[1] sector has become one of the most significant growth catalysts for the Indian economy. IT-BPO industry has reportedly influence the lives of Indians through an active direct and indirect contribution to Gross Domestic Product, employment and standard of living. The industry has played a significant role in transforming India's image from a slow moving economy to a land of innovative entrepreneurs and a global player in providing world class technology solutions and business services (NASSCOM, 2012). The industry has claimed to transform India from a rural and agriculture-based economy to a knowledge based economy. India is portrayed as an emerging economy driven by a growing middle class, consumer spending, and technology innovation. Increasing adoption of technology and Telecom by consumers and focused Government initiatives –

[1] NASSCOM recently described IT-BPO sector as IT-BPM (Business Process Management). As the term outsourcing carries a bad label for the sector the industry association might have changed its name. See *NASSCOM Annual Report 2012-2013* for details.

leading to increased Information and Communication Technology (ICT) adoption. Government, both central and many state governments, launched several government programmes to effectively tap the ICT potential in India. With revolutionary changes occurred in Internet and Mobile telecommunication services, Indian service sector expanded considerably. Consequently, India's share in global trade in services has increased manifold owing to the tremendous growth in Information Technology and Information Technology Enables Services. This chapter tries to uncover the evolution, structure, growth and performance of Indian IT-BPO sector.

This paper tries to unravel the structure, growth and performance of Indian IT-BPO industry using published data from National Association of Software and Services Companies (NASSCOM)[2] and Government of India. This paper also evaluates the government interventions in the industry and delineates future directions and sustainability of IT-BPO industry in India. General information regarding the large firms has been collected from their annual reports, codes of conduct, integrity manuals and websites. This study is explorative in nature.

Macro level data on Indian IT-BPO industry is rather limited as Government of India do not have own source of data on IT-BPO industry. NASSCOM, the industry lobby, is the only provider of data pertaining to IT-BPO industry in India. Even the Government of India rely on NASSCOM data regarding IT-BPO Industry for its reports. Given this situation, we have to rely on the data published by NASSCOM to analyse the structure, growth and performance of IT-BPO industry in India. The data compiled and maintained by the NASSCOM are based on the annual returns submitted by its member companies[3]. Unfortunately, we do not have any reliable source of secondary data to cross check and validate the veracity of NASSCOM data. This is the main limitation of the study. This paper is intended to throw light on the present structure, growth and performance of IT-BPO industry in India.

## EVOLUTION OF INDIAN IT-BPO INDUSTRY

Historically, outsourcing and offshoring are a continuation of corporate restructuring started in the 1970s. Today, offshore outsourcing has allowed trade in services to become a significant portion of the volume of international trade and developing countries have emerged as the

[2] National Association of Software and Service Companies (NASSCOM) is the industry association for the IT-BPO sector in established in 1988. Its total membership is 1400. For more details see NASSCOM (2013).

[3] Collapse of *Sathyam Computers* some years ago and the revelations of auditing fraud and misleading data generated by the company may force us to question the veracity of the data supplied by the industry lobby.

exporters of business services to developed countries[4]. Initially, outsourced and offshored service work consisted of low value-added activities, such as back office transactions and call centres, which are customer-care oriented services. Now, it has expanded to include software programming, engineering, design, accounting, legal and medical advice etc. These developments are facilitated by computerization, internet access, low cost and speedy data transfer capability, the standardization and automation of a range of business processes, and the rapid growth of telecommunication sector. If a firm outsources its back office work to offshore destinations, an average of 30%-60% reduction in costs is possible in addition to flexibility in the organization of production and enhancing of best quality services. Beyond the cost incentives, global outsourcing provides several other practical benefits including the ability of multinational companies to efficiently stage uninterrupted operations in 24x7 time line. It also helps to customize products and services to meet local needs and to deploy workers and facilities to succeed in globally dispersed highly competitive markets.

International outsourcing of services from developed to developing countries has emerged as a business model only in the last couple of decades. Being the home of the majority of the global labour force, developing countries emerged as service providers to European and North American firms. These countries have the attractiveness of cost effective labour, non-unionized workforce, favourable labour market conditions and government policies backed by tax incentives. North American and European countries outsource service operations primarily to providers in Asia, in which India is a leading country. India exports electronics, computer, software and services to over two hundred countries across the globe.

The IT-BPO industry in India had humble beginnings with a few Indian entrepreneurs setting up IT services companies and select Multi National Companies (MNCs) such as General Electricals, Texas Instruments and American Express setting up their captive centres in India. Cost arbitrage through abundant talent pool available in India was the key driver for offshoring to India. The perceived success of the first few captives led other MNCs to consider entering India to set up their back office and product development centres. India based third-party players started offering similar services to capitalize on the opportunity. The '*Y2K phenomenon*' and the '*dot com bust*' gave a strong push to outsourcing of technology services to India, especially after Indian companies were able to prove their capability in delivering the desired quality and functionality at a significantly lower cost. Over a period of time, this industry has attracted the attention of investors leading to a large number of Indian entrepreneurs setting up IT-BPO centres. While cost considerations used to be the primary driver earlier,

[4] Offshore outsourcing of service work by developed/Northern capitalist countries created a number of white-collar jobs in developing/Southern countries like Philippines and India.

performance, quality, productivity and increasingly transformation have emerged as key reasons for outsourcing work to India. In recent years, this industry has witnessed the trend of India based companies actively participating in mergers and acquisition deals to gain access to diverse talent pool and to expand their global footprint. While big names such as *Infosys*, *Tata Consultancy Services*, and *Wipro* have made their presence felt across the globe, industry has also witnessed emergence of niche players and new service lines.

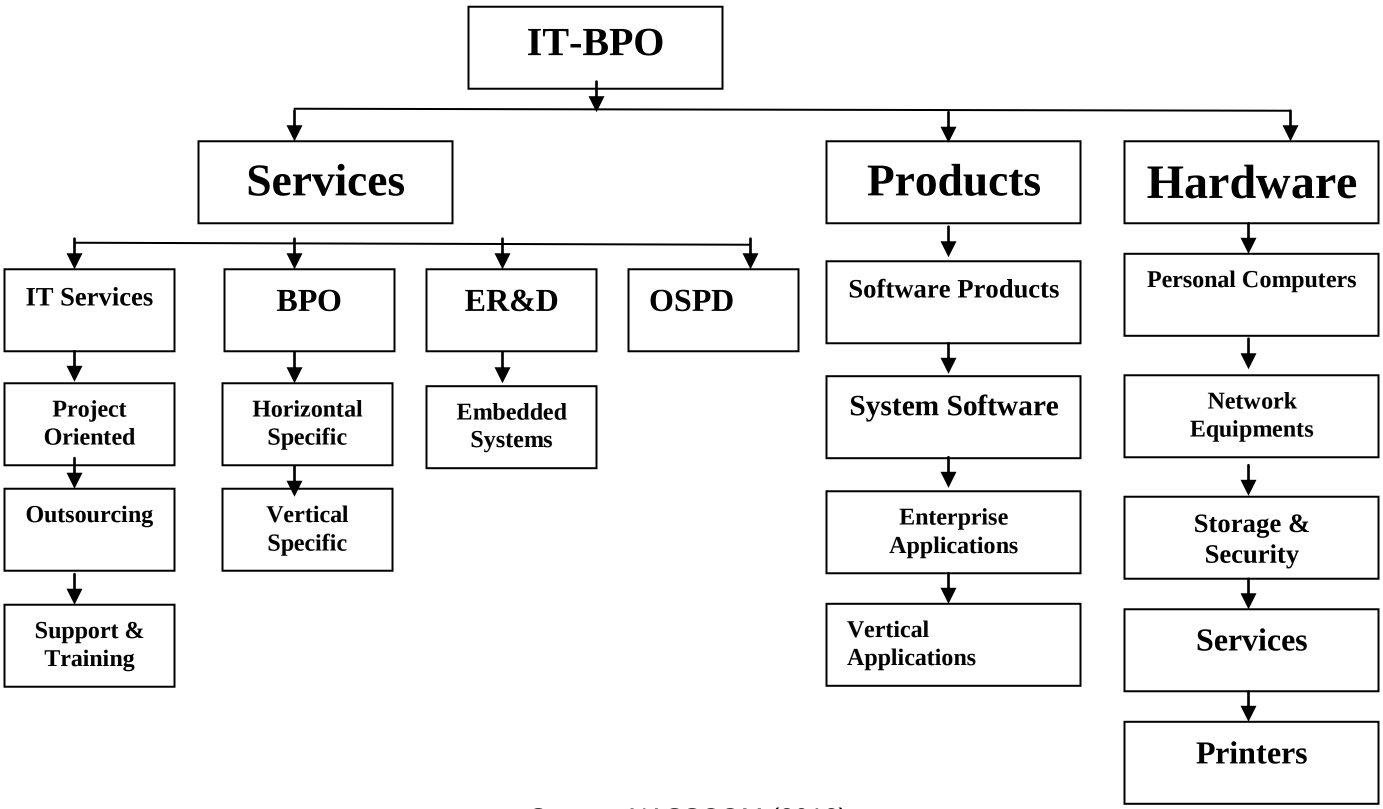
Effectively tapping the demographic advantages of India over American and European countries new class of entrepreneurs set up venture capital initiatives and reaped profits out of outsourcing contracts gained from them (Upadhya, 2005). At the other end, the outsourcing companies could reduce their operational cost considerable and could effectively focus on their core competencies. Companies outsource and offshore their operations to other locations for the following reasons: 1) reduce the cost of operation and gain higher profit margins; 2) shift and reduce corporate liability towards employees and other social costs ; 3) distance the producer of a commodity or service from the consumer, by introducing a middle layer of an outsourced service provider; 4) reduce the collective bargaining strength of labour in industry in the country from which outsourcing takes place; 5) improve the quality of services; 6) access to skilled employees; 7) access non-unionised workforce; and 8) reduce the time of delivery.

To outsource their work to far away destinations, the firms have to face risks in the service providing countries such as operational barriers, management attitude, socio-political conditions, lack of specific skills, and language barriers. Regulations in labour market, product market and intellectual property rights in service-providing countries can also influence outsourcing. In offshore outsourcing of IT-BPO work, companies open subsidiaries in foreign countries or contract out the work to third party service providers in that foreign country. In both cases of outsourcing, movement of jobs outside the country is inevitable. Outsourcing transforms the employment from standard to nonstandard and degrade work from skilled to de-skilled (Sajikumar,S, 2005).

## STRUCTURE OF INDIAN IT-BPO INDUSTRY

IT-BPO industry in India is heterogeneous in character and has a wide array of service lines and related sectors. IT-BPO sector in India can be broadly classified into three, based on its lines of production and products. They are services, products and hardware sectors. Services comprises four sub sectors based on the nature of services they offer, viz, IT services, Business Process Outsourcing, Electronics Research and Development and Offshore Software Product Development (OSPD). Of which, IT services has three sub sectors, viz, project oriented, outsourcing and support and training services. BPO can be classified into two- namely, horizontal specific and vertical specific, based on their operations and services offered to client companies. Products segment in IT-BPO industry are classified into four, viz, software products, system software, enterprise applications and vertical applications. There are five sub sectors in hardware, viz, personal computers, network equipments, storage and security, services and printers. A flow chart depicting the structure of indian IT- BPO industry is given below (Figure 1).

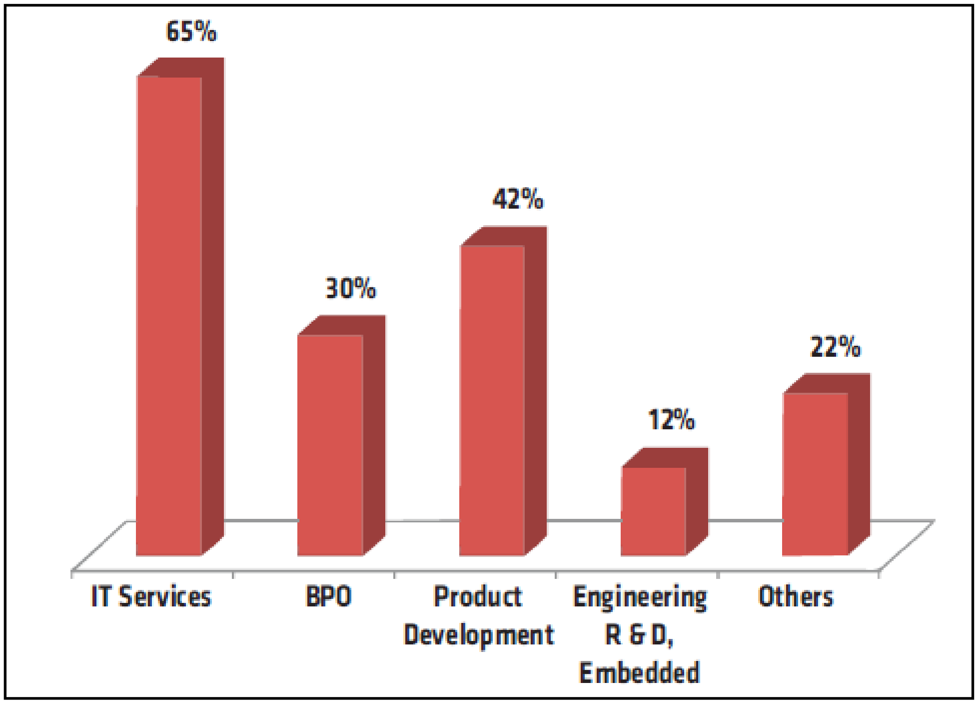
Figure 1: IT-BPO Industry Segmentation




Source: NASSCOM (2012)

NASSCOM reportedly has a high density of membership among IT Software and service providing companies in India. NASSCOM has over 1400 members. But there are a number of firms, though small firms, lie outside the purview of NASSCOM. NASSCOM claims that around 98 per cent of the IT-BPO firms in India are its members. It classifies member companies into five broad categories, viz, IT Services, BPO, Product Development, Engineering, R&D and Embedded and Others. As per the *NASSCOM Annual Report 2013*, 65 per cent of the member companies are engaged in IT services, 30 per cent in BPO, 42 per cent in Product Development, 12 per cent in Engineering, R&D and Embedded and 22 per cent in Others categories. See the Figure 2.

Figure 2: Percentage of member companies working in each segment




Source: NASSCOM (2013)

Indian IT-BPO industry has a diverse range of players across its service lines. Along with traditional Indian business groups like *Tata Group*, a plethora of new entrepreneurs and foreign companies are present in the industry. A decomposition of IT-BPO industry based on the type ownership across various service lines may shed lights on dynamics in the sector. Indian service providers are the major players in IT Services (73-75 per cent) along with foreign Global In-house Centres (GICs) (10-12 per cent) and Foreign Service providers (10-15 per cent). Indian companies have a share of 45-50 per cent in BPO sector in India. The rest of the business is shared by foreign GICs (21-23 per cent) and Foreign Service providers (15-20 per cent). In the total IT-BPO sector, Indian companies have 63-65 per cent share compared to foreign firms in India. On the contrary, Electronics Research and Development and Software products sector is dominated by foreign firms, while Indian counterparts have a share of 35-40 per cent.

It is evident that Indian companies are more competent and specialists in low end services like BPO involving less capital investment and more labour intensive. At the same time, foreign firms have advantages in R&D, involving higher levels of investment. See Table 1 for details.

Table 1 Share of Indian IT-BPO firms across service lines and type of ownership

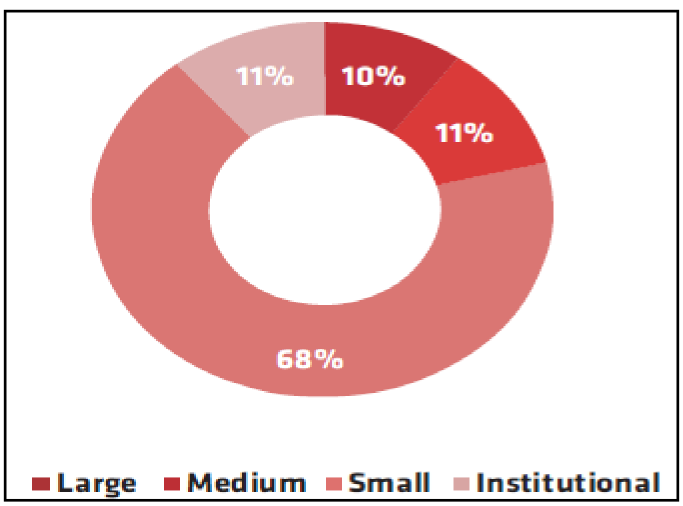
| Service lines: IT Services | Percent |
|---|---|
| Indian Service Providers | 73-75 |
| Foreign GICs | 10 to 12 |
| Foreign Service providers | 10 to 15 |
| Business Process Outsourcing | |
| Indian Service Providers | 45-50 |
| Foreign GICs | 21-23 |
| Foreign Service providers | 15-20 |
| Total IT-BPO | |
| Indian Service Providers | 63-65 |
| Foreign GICs | 20-22 |
| Foreign Service providers | 10 to 15 |
| ER&D and Software products | |
| Indian Service Providers | 35-40 |
| Foreign GICs | 53-55 |
| Foreign Service providers | 5 to 10 |

Source: NASSCOM Strategic Review, 2012

**Size of the IT-BPO companies**

NASSCOM classifies member companies into four categories based on their size and annual turnover. Companies with gross revenue of over Rs.200 Crore as large, those firms with gross revenues between Rs. 50 Crore and Rs. 200 Crore as medium and firms with gross revenues of less than Rs. 50 Crore as small companies. See Figure 3.

Figure 3 Percentage of companies based on their scale of operation and turn over




Source: NASSCOM Annual Report, 2013

**Export performance of Indian IT-BPO**

In the last three decades, Indian IT-BPO industry has established itself in the global arena and emerged as an exporter of IT Software and services to the rest of the world. Production, growth and export of software and IT Enabled Services (ITES) including BPO in India went up significantly during the last decade. Growth in Production of Electronics and computer software /services was tremendous and path breaking both in terms of revenue generation and performance. Indian IT-BPO sector has grown significantly in terms of both export performance and expansion in the domestic market. India became a leading exporter of IT-BPO services right from the last decade itself.

IT Services and BPO are the main contributors in the export basket of IT-BPO sector. In 2008, total IT BPO (domestic + Export) revenue in India was US Dollar 62903 million, in which export amount was 40918 million. In 2012, total IT-BPO export from India has grown to a respectable figure of US Dollar 69102 million. In 2008, total revenue of domestic part of IT-BPO segment was US Dollar 21985 million. Main contributor in the domestic market was hardware and computer components. In 2012, the figure went upto US Dollar 31670 with significant contribution from IT services and Hardware segments. The following table is self explanatory in elucidating revenue generation in Indian IT-BPO.

Table 2 Indian IT BPO (domestic + Export) revenue 2008-2012 (USD Million)

| Year | Exports/ Domestic | IT Services | BPO | Software Products and ER&D | Hardware | Total |
|---|---|---|---|---|---|---|
| 2008 | Exports | 22203 | 9915 | 8300 | 500 | 40918 |
| | Domestic | 7882 | 1576 | 2234 | 10293 | 21985 |
| 2009 | Exports | 25800 | 11699 | 9600 | 395 | 47494 |
| | Domestic | 8226 | 1932 | 2690 | 9006 | 21854 |
| 2010 | Exports | 27290 | 12401 | 9999 | 395 | 50085 |
| | Domestic | 9070 | 2304 | 2960 | 9746 | 24080 |
| 2011 | Exports | 33478 | 14172 | 11385 | 395 | 59430 |
| | Domestic | 11004 | 2791 | 3495 | 11732 | 29022 |
| 2012E | Exports | 39833 | 15895 | 12959 | 415 | 69102 |
| | Domestic | 12171 | 3068 | 3721 | 12710 | 31670 |

*Note: E= Estimated*

Source: NASSCOM Strategic Review 2012

### *IT Services- The leading force*

As detailed above, we had seen that IT services contribute generously to the total revenue of Indian IT-BPO. A decomposition of IT services may help in understanding the specificities of the IT-BPO industry in India. IT services in India can be classified into three sub-categories, viz, project based, outsourcing and support and training. Project based IT services include IT consulting, systems integration, custom application development, network consulting and integration and software testing. Among these sectors, custom application development is the main revenue generator (USD 14842 million in 2012). Export revenue from Indian IT Services during 2008-2012E (USD Million) can be seen in the following table. It is seen from the table that all the segments of IT services have constantly performing better in terms of export revenue. See Table 3.

Table 3 Decomposition of export revenue from Indian IT Services during 2008-2012 (USD Million)

| | 2008 | 2009 | 2010 | 2011 | 2012 E |
|---|---|---|---|---|---|
| Project based | 11610 | 13327 | 13973 | 17086 | 20334 |
| IT Consulting | 650 | 737 | 764 | 950 | 1102 |
| Systems integration | 680 | 778 | 808 | 1006 | 1179 |
| Custom application development | 8500 | 9728 | 10214 | 12441 | 14842 |
| Network consulting and integration | 280 | 320 | 332 | 398 | 463 |
| Software testing | 1500 | 1763 | 1855 | 2291 | 2748 |
| Outsourcing | 8793 | 10428 | 11205 | 13836 | 16545 |
| Application Management | 3100 | 3677 | 3879 | 4725 | 5641 |
| IS Outsourcing | 3293 | 3930 | 4346 | 5476 | 6574 |
| Others (SOA & Web services +E-business/E-Commerce) | 2400 | 2822 | 2980 | 3635 | 4329 |
| Support and Training | 1800 | 2045 | 2112 | 2556 | 2955 |
| Software deploy and support | 1440 | 1633 | 1687 | 2041 | 2360 |
| Hardware deploy and support | 110 | 126 | 130 | 157 | 182 |
| IT Education and training | 250 | 286 | 296 | 358 | 413 |
| Total | 22203 | 25800 | 27290 | 33478 | 39833 |

*Note: E= Estimated*

Source: NASSCOM Strategic Review 2012

### *Business Process Outsourcing- The Emerging Strength*

The largest segment of Indian IT-BPO industry is BPO sector. Literally, India has become a back office of Developed countries, providing a host of support services to the major industries of Europe and North America (Remesh, 2004). BPO sector, both export oriented and domestic have performed well in the last decade (See table 4). Indian BPO sector has seven sub sectors, viz, Customer interaction services, Finance and Accounting, Human Resources Administration, Procurement and logistics, Knowledge services, Other Horizontal services, Vertical specific BPO services. Of the above sectors, customer interaction services (42 per cent), especially voice based, form central to Indian BPO industry. From USD million 4300 in 2008, export revenue from the customer interaction services has grown to USD million 6676 in 2012. The sectors like Finance and Accounting (22 per cent), Knowledge services (18 per ent) and Vertical specific BPO services (14 per cent) have also performed well during the period. The following table and figure (Table 4 and Figure 4) are self explanatory in portraying BPO export revenue from 2008 to 2012.

Table 4 Indian BPO export revenue 2008-2012 (USD million)

| Service lines | 2008 | 2009 | 2010 | 2011 | 2012E |
|---|---|---|---|---|---|
| Customer interaction services | 4300 | 5123 | 5370 | 6014 | 6676 |
| Finance and Accounting | 2122 | 2508 | 2721 | 3152 | 3560 |
| HR Administration | 218 | 255 | 267 | 299 | 332 |
| Procurement and logistics | 61 | 70 | 77 | 89 | 101 |
| Knowledge services | 1711 | 1900 | 2000 | 2411 | 2779 |
| Other Horizontal services | 115 | 149 | 180 | 197 | 214 |
| Vertical specific BPO services | 1388 | 1695 | 1786 | 2010 | 2233 |
| Total | 9915 | 11700 | 12401 | 14172 | 15895 |

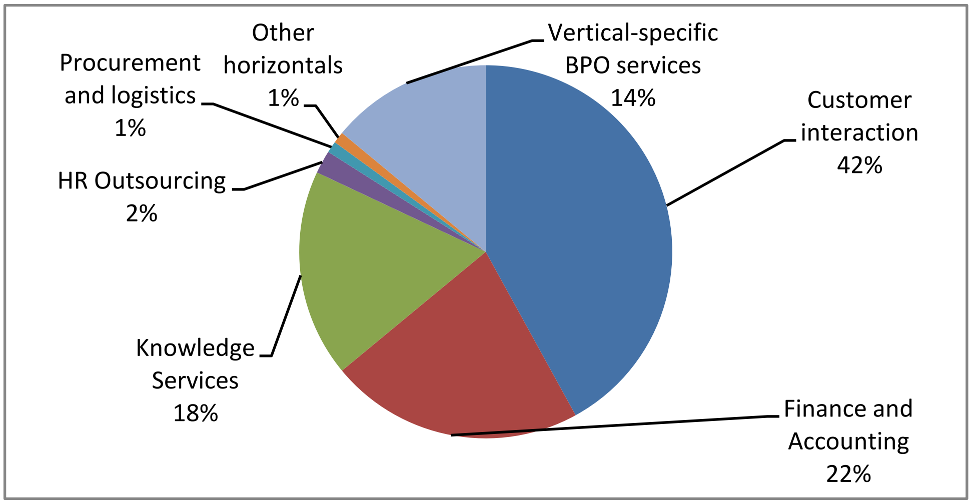
*Note: E= Estimated*

Source: NASSCOM Strategic Review 2012

***Expanding Domestic BPO sectors***

Domestic part of Indian IT-BPO has recorded tremendous growth both in terms of revenue earning and employment generation. Indian domestic BPO segment has three types of operations, viz, project based, outsourcing and support and training. Major part of revenue of domestic BPO industry comes from project based assignments and contracts like IT consulting, system integration, custom application and development. In 2010, domestic BPO sector had revenue earning of US Dollar 2304 Million. In 2012, it went up to a higher figure of US Dollar 3068 Million. The following table (Table 5) can help in understanding the trends and sectoral differences in Indian BPO segments during 2010 to 2012.

Figure 4 BPO Exports by service lines 2012( in percent)




Source: NASSCOM Strategic Review 2012

Table 5 Indian IT-BPO domestic revenues 2010-2012 (USD Million)

| | 2010 | 2011 | 2012* |
|---|---|---|---|
| Project based | 6321 | 7466 | 8008 |
| IT consulting | 1099 | 1385 | 1585 |
| Systems integration | 3805 | 4426 | 4672 |
| Custom application and development | 1416 | 1655 | 1751 |
| Outsourcing | 2051 | 2725 | 3303 |
| Application management | 1586 | 2154 | 2663 |
| IS outsourcing | 465 | 571 | 640 |
| Support and training | 698 | 813 | 859 |
| Total IT Services | 9070 | 11004 | 12171 |
| Domestic BPO | 2304 | 2791 | 3068 |
| Software products | 2960 | 3495 | 3721 |
| TOTAL IT-BPO | 14334 | 17275 | 18960 |

*Note: * figure for 2012 is Estimated*

Source: NASSCOM Strategic Review 2012

***Employment trends in Indian IT-BPO industry***

The Indian IT-BPO industry has proved to be a premier source of mass employment across the country. NASSCOM (2012) reported that there are 2.8 million professionals employed in various service lines of Indian IT-BPO industry. Moreover, there are 8.9 million people employed indirectly. Hence, the total employment goes up to a figure of 11.7 million.

Among the service lines, IT services and software exports remain the largest employment generating segment. In 2008, IT services and software exports employed 877000 professionals in India. The number went up to 1295000 in 2012. BPO exports remain the second largest employment generating sector with a number of 635000 in 2008 and 876000 in 2012. Domestic sector of IT-BPO industry also employs large number of professionals. In 2008, it employed 450000 professionals. The figure increased to 601000 during 2012 (see Table 6). Undoubtedly, the IT-BPO sector in India has emerged as one of the largest employment generating sectors in Indian economy even in the midst of economic uncertainties gripping the world.

Table 6 Knowledge professionals in IT-BPO sector (000 numbers)

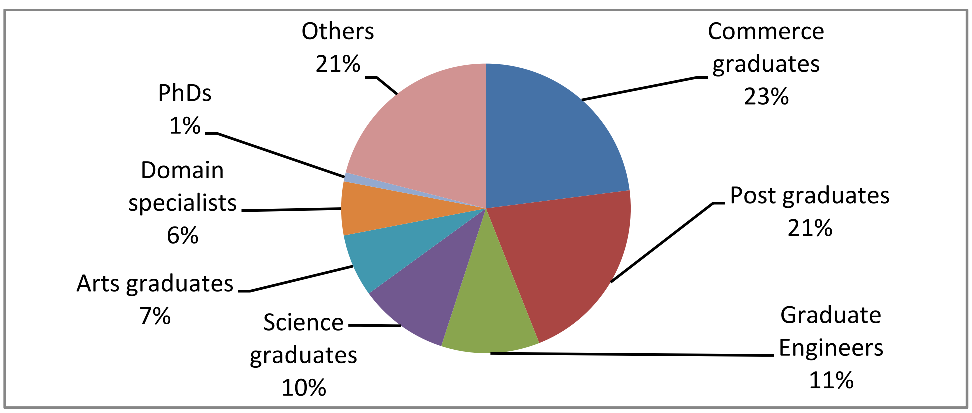
| Service Lines | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|
| IT services and software exports | 877 | 958 | 1003 | 1153 | 1295 |
| BPO exports | 635 | 738 | 770 | 826 | 876 |
| Domestic market | 450 | 500 | 527 | 562 | 601 |
| total | 1962 | 2196 | 2300 | 2540 | 2770 |

*Note : Figure for 2012 is estimated*

Source: NASSCOM Strategic Review-2012

India has the largest unemployed human resource pool with considerably higher levels of educational attainment and employability. IT-BPO industry requires highly qualified professionals to carry out their operations. But professionals in Indian BPO posses higher qualifications compared to their counterparts in developed countries. NASSCOM (2012) reported that around 70 percent of Indian BPO professionals are graduates and post graduates (see Figure 5). This is contrary to their western counterparts where normal school dropouts are seen employed in Call centres and customer care departments.

Figure 5 Indian IT-BPO talent pool in 2012 (in Per cent)




Source: NASSCOM Strategic Review-2012

India's talent base is expanding rapidly with an annual addition of nearly 4.4 million graduates and postgraduates in 2012. India retains its dominant position as the leading country to churn out 'Ready-to-hire' pool of graduates, 400,000-500,000, in 2011 alone (NASSCOM, 2012). Total stock of engineering graduates in India was 1024380 in India. During 2008, 258800 engineering graduates were added to the talent pool in India. Moreover, a wide array of graduates from various disciplines is available in India for hiring. In 2012, there will be a turnout of 572329 engineering graduates, 240350 engineering diploma holders in addition to graduates and post graduates in Arts, commerce, Science and other subjects (ibid).

Aiming at long term employability of labour force in the new and emerging industries like IT-BPO several initiatives were taken by Industry, NASSCOM and Government through finishing schools, mentorship programmes, setting up industry benchmark (NASSCOM Assessment of Competence) and IT-BPO Sector Skill Council (SSC) initiatives. Indian IT-BPO industry effectively taps the manpower available in India and more efficiently utilise the talent for the better performance of Industry. As per December 2009 around 78.5 percent of capacity of the industry has been used.

There was a slight decline in capacity utilisation during 2010 and 2011 as organisers had stocked up. In addition, a higher level of attrition of employees is hurting IT-BPO industry in deep. NASSCOM estimated that attrition rate was 12 per cent in December 2009 (ibid). The rate of attrition had increased and worsened the overall performance of the industry. With no surprise, many industrialists came open in discussing the higher levels of attrition in the industry. By December 2010, rate of attrition went higher levels to 19 per cent and then declined to 16 per cent in 2011.

Many management experts admit that rates of attrition in reality will be much higher. This is a worrisome situation for the hiring companies. NASSCOM claims that attrition rates are declining due to employee engagement strategies (ibid). IT-BPO firms in India are able to increase revenue per employee. This shows the higher degrees of profitability of the firms and productivity of employees. In 2009, average revenue per employee (of to five companies) was US Dollar 42100. It has increased to US Dollar 44800 in 2011 showing increased realizations in Indian IT-BPO industry.

Table 7 Capacity utilization in Indian IT-BPO (in per cent)

| | |
|---|---|
| Dec-09 | 78.5 |
| Dec-10 | 78.1 |
| Dec-11 | 77.8 |
| **Attrition** (only for IT Services) in Per cent | |
| Dec-09 | 12 |
| Dec-10 | 19 |
| Dec-11 | 16 |
| **Revenue per employee** (US$ 000) (data only for top five IT companies) | |
| 2009 | 42.1 |
| 2010 | 42.5 |
| 2011 | 44.8 |

Source: NASSCOM Strategic Review-2012

***Dissecting Government interventions***

Though international outsourcing of IT and BPO services developed countries to Third World countries had facilitated the nourishing of IT-BPO industry in India. In order to exploit the advantages at global outsourcing governments, both at central and states, India have formulated IT policies and many statutes to facilitate steady growth and performance of IT-BPO industry. Foreign Direct investment (FDI) up to 100 per cent is permitted in Indian IT-BPO sector. IT units can be set up under schemes such as Electronics Hardware Technology Parks (EHTPs), Software Technology Parks (STPs), Export Processing Zones (EPZs) and 100 per cent export oriented units. All the schemes provide tax holidays, duty free imports and many other incentives to IT-BPO industries. Special Economic Zone scheme provides an increased corporate tax holiday of 15 years. Many IT-BPO firms have been benefited from favourable government policies. At the same time, the regulatory environment for business and small scale entrepreneurs remain poor. It takes almost three months to establish a company in India, or four times the number of days in neighbouring Pakistan; and costs 50 per cent Gross National Income per capita, almost four times in the cost in China.

A large number of Multi National Companies opened business tie ups and subsidiaries in India due to the 'investment friendly' atmosphere created by government policies and favourable labour market conditions backed by increasing number of English speaking graduates and comparatively low wage level. Emergence of a new genre of entrepreneurs with high technical know-how (Upadhya 2004) revolutionized the industry by exploring the new horizons of 'networked jobs' using their close ties in Silicon Valley. In addition, information and communication revolution in the country along with the availability of venture capital intensified the pace of development in the sector. All the favourable policies regarding the IT and ITES are the result of India's commitments in the General Agreements on Trade in Services (GATS) under the aegis of World Trade Organisation (WTO). By the opening up of IT-BPO sector, India made possible the spontaneous flow of labour and capital across her borders. In reality, the flow is not equal but becomes more and more complex by the use of information and communication technology in service delivery. Taking advantage of all these developments, India has developed a service industry depended on subcontracted work from the US and European service industries (Sajikumar, 2005).

## FUTURE DIRECTIONS, SUSTAINABILITY AND WAY FORWARD

Strong economic growth, rapid advancement in technology infrastructure, increasingly competitive business firms, enhanced focus by the government and emergence of business models are key drivers for increased technology adoption in India. Market of IT-BPO in India is steadily increasing, with demand coming from consumers and enterprises, government's technology infrastructure initiatives, unified communications and availability of world class telecom infrastructure and services.

Indian IT-BPO industry, in the midst of uncertainties in the global business environment, is set to reach USD 100 billion (NASSCOM, 2012). Within the global sourcing industry, India was able to increase its market share from 51 per cent in 2009, to 58 per cent in 2011. India's continued competitiveness and the effectiveness of India-based providers delivering transformational benefits played a significant role in achieving the success. The industry continues to be a net employment generator. As a proportion of national GDP, the sector revenues have grown from 1.2 per cent in 1998 to an estimated 7.5 per cent in 2012. The industry's share of total Indian exports (merchandise plus services) increased from less than 4 per cent in 1998 to about 25 per cent in 2012 (ibid)[5].

Domestic IT-BPO and IT services are the fastest growing segments in the IT- BPO sector[6]. Domestic BPO segment is expected to grow faster driven by demand from voice-based (incl. local language) services and increasing adoption by both traditional and emerging verticals, including the government. The domestic software products segment is being driven by

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5 While the global macroeconomic scenario remained uncertain, the industry exhibited resilience and adaptability in continually reinventing itself to retain its appeal to clients. Embracing emerging technologies, increased customer-centricity, deepening focus on new markets, adopting new business models are some successful growth strategies followed by the industry.

6 NASSCOM (2012) reported this as the result driven by increasing adoption from all customer segments – government, enterprise, consumers and SMBs.

the need to replace legacy systems and technology advancements around cloud, mobility, etc. (ibid). Domestic Hardware market is expected to perform better driven by rapid uptake in notebooks/netbooks/tablet computers, mobility devices, improved connectivity tools, etc. Domestic customer base comprising the government, large, micro, small & medium enterprises and household consumers, represent unique set of requirements[7]. Emerging technologies like cloud computing, mobility, social media and big data/analytics are unleashing new opportunities for the industry. In the last few years, BPO firms move from efficiency to effectiveness – focusing on re-engineering themselves in order to deliver transformational impact to customers – follow a 'Verticalised' approach by developing in-depth capabilities across verticals; increase onshore footprint and implement non-linear growth initiatives[8]. Knowledge services segment growing in significance has pioneered outsourcing in areas such as data analytics, data management and legal services.

Quality related aspects of IT-BPO services in India deserves a special mention. An increasing number of IT-BPO companies continue to adopt global standards such as ISO 9001 (for Quality Management) and ISO 27000 (for Information Security). NASSCOM claims that India based centres account for the largest number of quality certifications achieved by any single country. Over the last three years, there has been an 18 percent increase in the number of IT-BPO companies acquiring quality certifications; 30 percent increase in performance certifications; 20 percent increase in security certifications. Most companies who have acquired quality certifications have invested in acquiring level 4 and 5 certifications exhibiting greater sophistication.

IT-BPO companies in India give special attention to security of information that they handle with, especially sensitive data of customers of their clients. According to the *DSCI-KPMG security survey*[9], data security is a hygiene factor for the sector. Companies follow standardised processes certified by globally established standards such as ISO 27001. At the same time, a majority of organisations are being vigilant about evolving security issues and vulnerabilities and constantly reviewing the environment to assess its security posture. Today, companies are providing architectural treatment to security solutions, using enterprise portals to manage security, adopting techniques such as threat modelling, threat tree, etc. and focusing

7 Suppliers are realigning themselves to suit India specific needs and innovating new ways to target customers.

8 A 'Verticalised' approach has been a key marketing strategy – developing indepth capabilities across the entire value chain in specific verticals. BPO firms are also increasing their onshore and nearshore footprint to enable customer entry into local markets; firms have also been actively implementing non-linear growth initiatives that ensure higher realisations for service providers, while controlling costs, facilitating faster time-to-market and improving satisfaction at the clients' end.

9 The DSCI-KPMG security survey provides insights into the data security and privacy environment of the Indian IT-BPO industry.

on innovation in security initiatives. Organisations have also adopted solutions related to encryption and started to develop fraud management and forensic capabilities internally. In the wake of data protection regulations, more than 50 percent of the organisations have deployed or are planning to deploy hard disk encryption, e-mail encryption, techniques to prevent data loss, security incident and event monitoring, mobile data protection and legal and compliance management. Indian organisations are additionally adopting various information security practices to make delivery centres secure. More than 80 percent of Indian IT-BPO organisations are mindful of the risks related to providing unrestricted access to information assets. Over 75 percent of the organisations have adopted policies for securing administration of databases[10].

Still a major part of India’s IT-BPO industry is dominated by low end jobs getting outsourced from Developed world. A significant portion of educated Indian youth is employed in contract and project based jobs at comparatively high wages. Indian IT-BPO industry is reportedly spreading non standard and atypical forms of work and employment while making a productively docile workforce (Ramesh, 2004; Sajikumar, 2005; Sajikumar, 2013). Internal labour markets are highly competitive and the industry is expanding to the second tier cities like Pune, Kochi, Chandigarh etc in search of cheaper labour. As a result of unhealthy competition in the employment market due to high educated unemployment may reduce the wage level drastically. In addition, international competition from countries like Vietnam, China, Mauritius, Sri Lanka, Philippines etc. may aggravate the problem of sustainability of work in India.

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10 Additionally, organisations have set up measures to secure critical applications against vulnerabilities. Organisations are also looking at automating security processes and implementing leading edge technologies such as virtualisation security and data loss prevention to reduce the risk associated with data leakage.