Chapter- 1
Introduction

1.1 Background of the Study and Importance of Outsourcing in the Present Scenario

Since the New Economic Reforms of 1991 liberalization and globalization have profoundly affected the performance of the Indian economy. In recent times the spectacular progress of the IT sector, rapid growth of outsourcing and the phenomenal expansion of capital flows can be directly attributed to these liberalization policies. The last two decades have witnessed a structural shift of the Indian economy due to the tremendous escalation in the share of the service sector in the gross domestic product. In fact, service has emerged as the dominant sector and the main driver of GDP growth. This is mainly attributable to the spectacular progress of the IT sector. “Business Process Outsourcing” (BPO) (which consists of software, BPO, hardware and R&D segment) has emerged as the spearhead with strong economical and business fundamentals. The boom in the BPO activities has prompted policy planners to view this sector as one of the potential avenues to absorb the growing mass of skilled labour. Information Technology Enabled Service (ITES) companies in India are providing services to domestic as well as offshore clients because of the availability of low cost talented English speaking employees. The growth of outsourcing industry in India is impressive and companies are providing services in low-end as well as in high-end activities.

It has become an increasingly attractive proposition to companies and organizations in industrialized countries to take opportunity of a new practice called offshore outsourcing which entails substantial cost reduction, given the high remuneration of skilled labour in these countries. Growth in Indian information technology (IT) in the world market is primarily dominated by IT software and services, including system integration, IT consulting, application management, custom applications, infrastructure management, software testing and web-development.
According to the definitions of the NASSCOM, total IT industry can be divided into two parts: (i) IT Services & Software and (ii) Hardware.

Again IT Services & Software is further divided into two parts:

(a) ITES-BPO and (b) Engineering Services and R&D, Software Products

IT services typically include IT applications and engineering services, while ITES involve a wide range of services delivered over electronic networks (table 1.1). These are two broad segments, however, and the sophistication of the services in each varies considerably.

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<th>Manufacturing engineering</th>
<th>IT-enabled services</th>
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<td>Upstream product engineering</td>
<td>Horizontal processes</td>
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<td>Application development</td>
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<td>- Other high-end processes</td>
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[Source: Business Processing Association of the Philippines (BPAP), 2007]

Outsourcing of some activities to a distant location has become possible due to the development of information technology (IT). Such cross-border IT-based services, usually termed IT Enabled Services (ITES), are functions that are provided from one location to another over telecommunication or data networks (through wire-line or wireless devices) and are either externally contracted (third party outsourcing) or provided by a remote subsidiary of the same company (captive BPO).
ITES includes services like back office operation, call centre, content development/animation, data processing, engineering and design, geographic information system services, insurance claim processing, legal database, medical transcription, payroll processing, remote maintenance, revenue accounting, support centre and website services. Business process outsourcing (BPO) activities can be defined as the delegation of one or more business processes to an external provider who, in turn, owns, administers, and manages the selected process(es), based upon defined and measurable performance metrics to improve overall business performance (Vani & Rajeev, 2006). These functions are usually non-strategic and non-core in nature though they can be very critical for a business enterprise.

The services sector accounted for 70 per cent of employment and 73 per cent of gross domestic product (GDP) in developed countries and for 35 per cent of employment and 51 per cent of GDP in developing countries (UNCTAD 2008). In India the ITES-BPO sector has been the pace setter of high growth performance in recent times in terms of revenue generation, contribution to GDP and share in exports. The Indian software industry has grown rapidly since the 1980s, with revenues increasing from less than $100 million in 1985-86 to nearly $8.4 billion by 2000-01. The sector grew by 12 per cent in FY 2008-09 to reach USD 71.7 billion in aggregate revenue (including hardware). In FY 2008-09, the revenue of the IT sector was equivalent to 5.8 per cent of GDP compared with 1.2 per cent in FY 1997-98. The Indian IT and ITES Industry recorded a turnover of US $ 60 billion in 2009, with exports accounting for about US $ 47 billion and contributing to over 70 per cent of industry revenues. The industry has grown at a CAGR of close to 30 per cent between 2004 and 2009. The Indian IT and ITES industry employs about 2.2 million persons in 2009 as compared to 0.8 million in 2004. According to the recent statistics, overall revenue of the IT and ITES – BPO industry is estimated to have reached USD 88.1 billion in FY11 and its contribution to GDP is estimated to have risen from 1.2 per cent in FY98 to 6.4 per cent FY11. Their share in exports has also increased from less than 4 per cent to almost 26 per cent during the same period.

India’s success in the field of information technology and business process outsourcing over the past decade remains unparalleled. This is mainly due to the fact that India has a
large, vibrant and fast growing economy and has a large number of young people in the employable age, which gives it an edge over the aging economies. India also has a vast pool of trained, English-speaking personnel. It currently produces about 3 million graduates every year, out of which, approximately 500,000 are engineers and IT professionals and another 40,000 have post-graduate degrees & diplomas in business management. India – through its unique value proposition – cost effectiveness, abundant talent and maturing service delivery, has emerged as the cornerstone for this sector, steadily increasing its market share to over 50 per cent of the global sourcing industry. It is estimated that India-based resources account for about 60-70 per cent of the offshore delivery capacities available across the leading multinational IT-BPO players. In India IT-BPO are mostly concentrated in tier-I and tier-II cities like Bangalore, National Capital Region (Noida, Delhi, Gurgaon), Mumbai, Pune, Chennai, Hyderabad and Kolkata.

Although global demand for software, sustained by the PC, networking and internet revolutions of the 1970s, the 1980s and the 1990s respectively, played an important role in facilitating the growth of the Indian industry, it was also available to other countries. Similarly, while India offers a highly skilled, English-speaking workforce whose wages are much lower than that of the US, India is hardly unique in possessing such labor force characteristics. Indeed, global demand and the availability of a high-skill, low wage workforce are necessary, but not sufficient, conditions. In other words, the growth of India’s software industry must be explained in terms of how shifting domestic policy conditions allowed her to take advantage of global demand and her labor force characteristics changed, along with other major software exporters in the field.

In 1986, the success of Texas Instrument (the first MNC to establish a wholly-owned software subsidiary in India), paved the way for other software giants later on. But the system followed at that time was ‘Body-shopping’, whereby Indian software engineers were hired out to companies abroad to work on ‘on-site’ projects. But in the 1990s there was a shift away from “Body-shopping” towards “Offshore models”. Many small and medium size firms appeared in the scene along with large firms during the 1990s,
followed by a series of economic reforms and tariff reduction. Two main developments have marked the period since 2000: the growing size of outsourcing deals secured by the largest domestic software firms and the growing offshore component of revenues. NASSCOM estimated that the share of offshore revenues in software services grew dramatically from 38% in 1999-2000 to 57% in 2002-03.

Until the mid 1990s, Indian software professionals were hired mostly to perform jobs of tedious and repetitive nature which the IT professionals in the US ignored as these jobs yielded low remuneration. But due to the internet boom and the tackling of the Y2K problem, the US companies started sending more backup office IT tasks, mostly to India (e.g. payroll, record-keeping, software development etc.). In the meantime the definition of ‘outsourcing’ has undergone a sea change. In the 1980s, it referred to the purchase of manufactured physical inputs, but later on it came to mean long distance purchase of services. But the demand for outsourcing work in India will continue to grow as long as it is cost effective and high quality service is maintained.

Broadly speaking the Indian BPO industry can be divided into six categories.
1. Captive Units set up by global companies that outsource their back-office operations from India.
2. Indian Third-Party Vendors that execute transactions and processes for international clients.
3. Joint Ventures between international BPO companies and Indian partners.
4. Indian IT Software Companies that have added BPO to their service portfolio.
5. Global BPO Players who set up call centers in India (for example, Convergys).
6. Global Consultancies (such as Accenture) who have been advising their clients on outsourcing and are now leveraging this experience into providing actual BPO service (Economist Intelligence Unit, 2002).

The most prevalent form of BPOs operating in India is that of either Captive Units or the Third-Party Vendors.
India's offshore industries have to overcome four major challenges to continue their heady growth and sustain their share relative to other competing countries:

**First**, demand growth may slow down due to stiff competition from potentially low cost destinations of the world.

**Second**, concerns about service quality and security, in the wake of several well-publicized breaches, are making some companies think twice before moving functions offshore.

**Third**, India also confronts a potential shortage of skilled workers in the next decade or so, particularly in the BPO industry. Currently only about 25 per cent of technical graduates and 10-15 per cent of general college graduates are suitable for employment in the offshore IT and BPO industries respectively. As countries from around the world enter the market and competition for offshoring contracts intensify, India must improve the quality and skills of its workforce. For instance, the country lacks large numbers of workers who are fluent in French, German, Japanese, and Spanish, making China and Eastern Europe more attractive offshoring destinations for Japanese and Western European companies, respectively.

**Fourth**, urban infrastructure is an equally major challenge. India's offshoring industries are dealing with bottlenecks ranging from power to cafeteria services. Cities are at a breaking point, and further growth will have to come from entirely new business districts outside of Tier I and Tier II cities. A final challenge facing Indian providers is the need to continuously innovate in developing new service lines and improving their operating processes. Traditional service lines and call-centres are under pressure. Since wages and other costs are rising by 10-15 per cent per year, India-based IT and BPO providers will need to keep finding ways to reduce total costs so that they can continue to offer customers 30-40 per cent cost savings.

### 1.2 Objective of the Present Study

In recent times debates and discussions have centered on the issue of long-run sustainability of the outsourcing industry in India. Sustaining this impressive growth may not be possible in the long-run if these companies continue to face hurdles and challenges...
in terms of international competition, salary inflation, health hazards, scarcity of talent, attrition of employees, security concerns, global slowdown, and many other technology related issues. Growing demand for outsourcing in India may also induce firms to employ less competent personnel for short-term profits and this may result in a decline of quality of services offered and may also lead to problems in maintaining secrecy of data-records. In the long run this may prove to be fatal by damaging the reputation and reliability of Indian firms. Moreover, anti-outsourcing policy measures adopted by top outsourcers of business countries may also have serious impact on long-run growth. The present study focuses on both the benefits and concerns in IT offshore outsourcing and discusses the long run sustainability of the comparative advantage that India currently enjoys.

1.3 Literature Survey

The growth and spread of India’s knowledge economy has been discussed in detail in the book by Sengupta and Neogi ‘India’s New Economy- Industry, Efficiency and Growth (2008). The journey of Indian software and services industry has been depicted in an article by Dossani in Basu (2007). Arora (2006) describes the emergence of India as a major exporter of software services in less than a decade and a half and attempts to investigate the causes of its success and its benefits for the Indian economy. An elaborate discussion of the entire service sector revolution in South Asia (with special emphasis on the Indian IT and ITES sector) has been the prime focus of the book edited by Ejaz Ghani (2010). His book addresses various aspects of the service sector-led growth like factors responsible for service revolution, job creation, poverty reduction and role of exports, infrastructure and education in sustaining long-run growth.

In a paper by Takeuchi and Nomura (2008) we find a detailed discussion of the various phases of the development of the software business in India. Three related papers by Athreye (Jan, 2003, October 2003 and Jan, 2005) enlighten us about the historical development of the software and services industry in India. The configuration of the Indian software and services industry has also been depicted in Nagesh Kumar (2001). In a famous work by Bhagwati, Panagariya, Srinivasan (2004) we find the detail of
outsourcing and its welfare impact in the context of trade and no trade situation. It also describes who is going to gain from it using a theoretical model. The gradual evolution of the Indian Business Process Outsourcing (BPO) industry and its various phases of development has been the focus of paper brought out by Price Waterhouse Coopers (2005). The transition from material to services outsourcing is treated in the article by Bardhan and Kroll (2003). A study by Amiti and Wei (2004) aims to establish what are the hypes and what are the facts about the job losses in industrial countries due to the phenomenon of outsourcing and whether this fear is justified or not. Kumar and Joseph (2005) shows how adoption of liberal trade and investment-friendly policy regime in India helped to develop the software and services sector which could further attract investment and facilitate growth. EvaluateServe (2004) provides a detailed overview of the trends in offshoring of IT Services in India. A book by Robinson and Kalakota (2004) articulates why no other business concept is more important to corporate performance in the 21st century than offshore outsourcing. The book provides numerous examples and in-depth case studies that show how leading organizations are achieving significant competitive gains through offshore outsourcing.

The article by Sudan, Ayers and others (2010) provides an in depth description of the global outlook of IT based services and the opportunities of outsourcing in developing countries like India. It exhibits the horizontal and vertical breakup and segment wise decomposition has of the global and Indian IT-ITES sector. This has also been the focal point of the study by PWC (2011). A rigorous market survey by Asia Business Generator project (2008) provides detailed insight about the contribution of the IT-ITES to India’s revenue and exports. The impact of this industry on major macroeconomic variables like share in GDP, revenue, exports and employment growth has been explained with the help of time series data in the study by CII Southern Region (2009). National Skill Development Corporation has come up with a detailed report which focuses on the recent developments of the industry as well as the future skill-gap in the BPO sector.
On the issue of economic sustainability the references mostly concentrate on the salary surveys or reports of various agencies or the NASSCOM. Though A. T. Kearney's Global Location Index (2007 and 2009) and NASSCOM's strategic Review (2010) provides an optimistic picture about the long-run attractiveness of India but the other surveys were quite skeptical on the question of sustaining India's long term competitive advantage. The DQ-IDC India Salary Survey (2004) and Offshore & Nearshore ITO salary Report (2004) provide a detailed description of salary increase of ITES-BPO workers overtime across various experience levels in specific offshore and nearshore locations and the particular characteristics of each country that affect its ability to offer global sourcing services. Offshore and Nearshore ITO and BPO Salary Report (2006) provides a detailed review of the salary comparison among various attractive offshore destinations at various levels of experience. Hewitt 'Global Salary Planning Report (2005, 2006), NASSCOM-Hewitt Total Rewards Survey 2007-08 shows the increase in salary projections overtime across major destinations of the world. The present dissertation extends this idea of long-run economic sustainability by incorporating both the views and attempts to make a comparative analysis of average salary in ITO, voice-BPO and non-voice BPO across various levels of experience in some key offshoring destinations of the world. It also tries to identify the factors contributing to the salary variations of the ITES-BPO workers.

On the issue of demand-supply gap of skilled manpower the structure of the Indian higher and tertiary education has comprehensively dealt by C.J. Dahlman in Ghani (2010). In “Awakening Giants” Bardhan (2010) we find a comparative analysis of China and India in education and health care facilities. Watson and Wyatt (2007) provide an elaborate exposition of the skilled and talented manpower projection in India as an attractive offshoring destination. They also stressed on the major challenge of continuous increase in the supply of skilled workforce to sustain long-run competitive advantage. A detailed review on the structure of higher and tertiary education in India has been the prime focus of the report of FICCI (2009). A paper by Jelassi and Modwel entitled “The Sustainability of India’s Comparative in its Offshore Outsourcing” presents the benefits and concerns in IT offshore outsourcing and discusses the sustainability of the
comparative advantage that India has as the leading offshoring destination in the world. It argues that the currently low wages of skilled IT staff in India may be eroding over time and companies will be shifting their attention to other value-adding benefits as opposed to looking in offshoring countries for just lower cost provision of IT tasks and services. Agrawal, Goswami and Chatterjee (2011), investigates the challenges of the ITES companies in India in the long run. It opines that sustaining long-run impressive growth is not possible always as the companies are facing continuous challenges in terms of competition, global slowdown, scarcity of talent, attrition of employees, and many other HR and technology related issues. While addressing the issue of exchange rate movement overtime RBI Report on Currency and Finance (2009) provides a detailed overview. The rupee-vis-à-vis yuan exchange rate comparison has been addressed in depth along with the difficulties of the two exchange rate regimes in a paper by Patnaik and Shah (2009). Banga and Kumar (2010) used Data Envelopment Analysis (DEA) for the period 1994-95 to 2007-08 to investigate the total factor productivity growth in Indian IT services firms. Modwel and Jelassi (2010) attempts to evaluate the productivity of six major IT firms by means of a field survey to look at trends of output, capital employed and wage costs per unit labour. Our present study attempts to address the issue of long term productivity growth using DEA analysis and depict the productivity changes using time-series data on some selected IT companies in India. Besides this a paper by Goel and Thakur (2007) emphasizes the issue of causes and impact of alarming rate of attrition in Indian IT sector in recent times and suggested some remedial measures to mitigate high attrition. DSCI-KPMG survey (2010) elaborately explains the state of data security and privacy in the Indian BPO industry.

Regarding the health hazard problem of the ITES-BPO employees, articles from reputed medical journals have been consulted. A rigorous review of the working conditions, psychosocial well-being and health disorders of workers in ITES has been provided in the study by Kesavachandran Rastogi, Das, Khan (2006). Influence of psychosocial workplace factors on Occurrence of musculoskeletal discomfort in computer operators has been the focal point of discussion in a study by Bhandari, Choudhary and others (2007). It describes the magnitude of various health disorders among the computer
operators in various workplaces in India. In another Pioneering work by Monisha Vaid (2009) we observe a detailed survey on the lives of unmarried youth in the BPO sector based on a case study from Gurgaon. A study by Sudhashree, Rohit, Shrinivas (2005) shows the major health hazards of call-centre employees in India. The burn out stress syndrome (BOSS) is commonly observed among young people working in call centers has been the focal point of the study by Geeta (2006). In the present research work the major health disorders, both physical and mental, are classified and with the help of a primary survey (using the questionnaire method) the variation in the magnitude and depth of each health problems associated with age, sex and workplace are analyzed. But none of the earlier studies have addressed the issue of economic and social sustainability simultaneously.

1.4 Chapter Plan

The dissertation will consist of the following chapters:

Chapter 1: Introduction.
Chapter 2: Development of Indian Software and Services Industry
Chapter 3: India’s BPO sector in Global Perspective.
Chapter 4: The Problem of Sustainability.
Chapter 5: Indian IT Policy
Chapter 6: Summary and Conclusions.
Bibliography

1.5 Outline of the Dissertation

Chapter 1 starts with the background and overview of the outsourcing in the present scenario. It also discusses the basic objective of the present study, chapter plan, outline of the study, literature survey and methodology of the work.

Chapter 2 focuses on the development of software and services industry in the Indian context. It discusses the various phases of the growth of the software industry in India. It
attempts to identify the several factors which led to the success of this industry in India. It discusses the changes in the interpretation and definition of outsourcing overtime and its various forms. Finally, it depicts the growth of various phases of outsourcing in India and the reasons for successful offshoring in India. This chapter concludes with the policy recommendations of the NASSCOM.

Chapter 3 portrays the position of Indian BPO sector in the global perspective. It depicts India’s addressable market for both the vertical and horizontal Information Technology Enabled Services (ITES) functions. It analyzes the revenue growth of Indian ITES-BPO sector, its detailed segment-wise breakup, changes in the revenue composition and revenue per employee overtime. It also shows geographic location-wise and activity-wise split of export revenue composition, changing share in the GDP, foreign exchange earnings and employment trends in this sector. It hints at the employability in the various segments of the Indian IT across various Indian cities. This chapter also provides a comparative assessment of the key offshoring destinations across the world on the basis of some fundamental macroeconomic indicators- e.g. investment climate, cultural environment, infrastructure, operational cost etc. A similar form of comparison has been made across key offshoring destination within India on the basis of Offshore City Competitiveness (OCC) Index. It ends with some policy suggestion for future improvement in this regard.

Chapter 4 addresses the most fundamental issue of long run sustainability. This chapter is divided into two major subsections – (a) Economic Sustainability and (b) Social Sustainability. The former concentrates on economic factors determining competitiveness in terms of purely private costs while the latter incorporates important elements of social costs. On the discussion of social sustainability the present work focuses on the matter of health hazards and ignores the issue of environmental damage. In the section on economic sustainability the study concentrates on the issue of salary inflation, movement of exchange rate and changes in labour productivity in offshore outsourcing in India relative to other nations. In the subsection on salary inflation a detailed comparative analysis has been made regarding the salaries of ITO, voice-based BPO and non-voice
BPO in 20 key offshoring destinations in three different regions of the world. It shows the salary projections and expected salary growth in various locations using the NASSCOM-Hewitt Salary Surveys. The study further identifies the factors responsible for the salary variation in the ITES-BPO segment. But due to non-availability of reliable time series data the comparison had to be made using a common reference year 2005 and this is a limitation of the present analysis. Later on in this chapter the issue of demand-supply gap has been taken up as a major contributor for wage inflation in India. In this context, the study highlights Indian skill structure and the structure of higher and tertiary education in India and its major challenges. Lessons from global leaders can give strategic and responsive direction to the IT outsourcing industry and to buyers of outsourcing services. Apart from these the study also discusses two other fundamental problems- (i) attrition rate in the ITES-BPO industry in India as compared to other selected nations, its reasons and its management measures and (ii) issues relating to data security, privacy and regulations. In the second section of this chapter the study focuses on the health hazards of the ITES-BPO workers. A primary sample survey was conducted with the aid of questionnaires separately on the IT and Non-IT segment to understand the magnitude and depth of the health related disorders. Statistical tools have been used to explore the degree of association of various diseases with workplace, age, sex, hours of work etc.

Chapter 5 presents a historical overview of the policies related with IT- ITES in India and makes policy recommendations to achieve its desired targets in future.

Chapter 6 makes concluding remarks on the various issues discussed in the study and points to its limitations.
1.6 Methodology

The present work is based on secondary data from various sources mainly during the post-liberalization era since this is the period when the IT-BPO sector thrived in India. But due to unavailability of comparable data after 2005 our analysis could not be extended beyond that year. While analyzing the health impact I carried out a primary health survey in certain areas of Kolkata. This has been done either by personal oral investigation or by sending questionnaires by mail. The study design is cross-sectional. The sampling design used is stratified / purposive sampling. The study period was from Jan, 2011 to July 2011. The IT and Non-IT professional workings in different sectors were identified and representative sample was taken to compute the sample size. Based on various studies in the Western countries and taking into account the time constraint, the sample size has been limited to 300. In doing this I have used the Computer Package STATA.