A Comparison of the Industrialization Paths for Asian Services Outsourcing Industries, and Implications for Poverty Alleviation

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Abstract

We examine three software and/or IT-enabled services (ITES) industries – two at their early stages of development, the People’s Republic of China (PRC) and the Philippines, and a third, mature one, India. Being latecomers to offshoring work, the PRC and the Philippines have developed their industrial paths in cooperation with multinational enterprises (MNEs). Chinese firms have worked with and upgraded within MNEs’ value chains within the Chinese market, and the Philippines has relied on MNEs to come in and set up facilities, with domestic firms setting up facilities where lower (knowledge) barriers to entry prevail. We will also draw on the industries’ implications for economic growth and poverty reduction. The industries can contribute to overall economic growth and exports, but due to their smaller sizes, will generally tend to have more observable impacts on the specific cities where the industries are centered. From the limited case data available, the industries impact on overall employment and other economic sectors in varying (lower to greater) degrees relative to other sectors. Since the industries do not help the more impoverished, lesser educated or even the lesser performing of the educated, they cannot be said to be a solution for the less employable or impoverished, let alone the problems of rural poverty.
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1. Introduction

This paper will introduce the different developmental experiences in software and services outsourcing, and will provide a discussion of their implications for economic growth and poverty reduction. The software industry has been considered in many quarters to be the vanguard of a global trend, on one hand, towards the outsourcing of services by developed regions, and on the other hand, the development of new service sectors conducting that outsourcing work within the developing regions (in this paper, we will refer to the software and IT-enabled services (ITES) outsourcing industries as IT services industries).

1.1. The Beginnings of Software Outsourcing

In a way, services outsourcing has been ongoing for decades. The outsourcing of services started domestically in the United States with software, and in particular when information systems were “outsourced” from large enterprises to “providers”. Developing countries like India only came to this work later in the 1980s, and only then, often by augmenting the labor of US-based companies. Eventually, this “onsite” work was transferred offsite (or “offshored”) to India, as information technologies and infrastructure enabled the work to be done at distance, and in lower cost, remote locations.

In addition to India, a number of other countries are also showing promise in being offshoring or outsourcing locations (from this point on, we will refer to outsourcing and offshoring interchangeably). These include, in Asia, the People’s Republic of China (PRC) and the Philippines; to some extent, Vietnam and Sri Lanka; and elsewhere, Brazil and Russia. The two Asian countries that have recently had some successful developments in outsourcing are The PRC and the Philippines, although as we show for the PRC case, the outsourcing is actually more by way of the original US model – outsourcing of work from domestic (PRC) companies (called “clients”) to other locally-based (foreign and domestic) enterprises (called “providers”). Typically, outsourcing locations are developing countries with large low wage and high quality surplus labor pools. Pockets of outsourcing do exist in even higher wage countries such as Malaysia and Singapore.
In section 2, we will examine the Indian, PRC, and Philippines cases. Given India’s seeming dominance in IT, one issue of interest is that of how the other two countries “emerged,” as well as varied from one another. We will examine the factors that caused “emergence” separately from those that affect growth and scaling of the industry. We compare the Philippine and PRC experiences to India where possible in order to draw policy implications. Section 3 will examine the economic and equity implications of these industries, discussing amongst other things, employment, linkages within the economy, and the implications for poverty reduction.

1.2. Major Dimensions of Industry

Table 1 illustrates the nature and relative strengths of all three selected countries’ industries. While India’s industry dwarfs both the PRC’s and the Philippines’, each industry has a place in the country’s development strategy, be it over-weighted (as in the case of the Philippines) or balanced (as in the case of the PRC). In 2006, the PRC’s IT services’ share of total exports is just 3.3%, as compared with India’s 26.3% and the Philippines’ 2.5% (Deutsche Bank Research, 2009). The Philippine business services (which includes IT services) share of GDP rose from 1.5% in 2004 to 2.1% in 2008, while the Indian IT services equivalent went from 1.2% of GDP in 1998 to 5.8% in 2009 or a nearly 500% increase in 11 years (NASSCOM, 2009).

Table 1. Basic Characteristics of the ITES sectors for India, the PRC and the Philippines

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<tr>
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<th>India</th>
<th>PRC</th>
<th>The Philippines</th>
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<tbody>
<tr>
<td>Sectoral focus</td>
<td>Balanced between</td>
<td>Largely software services for MNEs in the PRC, some BPO (to Japan)</td>
<td>Largely call centers, some BPO and software</td>
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<td></td>
<td>software and BPO</td>
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<tr>
<td>Ownership</td>
<td>Domestic firms</td>
<td>Domestic firms</td>
<td>Multinational firms</td>
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<td>Market focus</td>
<td>English-speaking</td>
<td>Japan and Korea</td>
<td>English-speaking</td>
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² The PRC’s export of ICT services’ proportion of GDP was reported to be about 1.2-1.4% of GDP in 2006, but the data for both India and the PRC were reported to be circumspect (OECD 2006).
³ Service outsourcing industry robust in China, boosts employment, Jan 1, 2010, Peoples’ Daily.
Sources: PRC: OECD (2007) (based on Analysys), India: National Association of Software and Services Companies (NASSCOM), Philippines: Congressional Planning and Budgeting Department (based on Business Processing Association of the Philippines (BPAP)).

The table also highlights the three dimensions that characterize an industrial model of development: ownership (of the firms), market focus, and sectoral focus.

Ownership: The first dimension is the ownership of firms. Ownership conveys information about the competitive advantages and strategies of firms. A more important finding of this study is the observation that MNEs play substantial but different roles in different countries’ industries, as will be shown in the cases of the PRC and the Philippines. In the case of the PRC, while the domestic firms are ostensibly trying to develop along the lines of India, the MNE also plays a role in supporting the growth of domestic firms. In the case of the Philippines, the MNEs are the dominant firms creating outsourcing facilities, while domestic firms have tended to be much more limited in number or capability.

Sectoral orientation: The second is the nature of the industry’s client’s sectors: software services, and IT-enabled services, which includes: (a) business process (outsourcing) (which may involve work from an array of other sectors), (b) call centers, and (c) R&D (or engineering) services. India started out primarily in software but has broadened to all manners of outsourcing, while the Philippines started out mainly in call centers, but is gradually broadening to a somewhat more balanced industrial structure containing other ITES sectors and software. As with India, the PRC also started out in software outsourcing and is growing its business process work, but in a more limited way. Invariably, each country has broadened its sectoral composition to include outsourcing in multiple sectors.

Market orientation: The third has to do with the market orientation. India’s and the Philippines’ focus has primarily been on exports. India is gradually encompassing a growing domestic sector, while the Philippines has had to contend with being a late mover. Understanding these differences will help us understand how other countries such as the PRC and the Philippines can still succeed in these sectors.
1.3. Factors Explaining Why and Where Outsourcing Occurs

From a developmental policy perspective as well as from the viewpoint of individual firms, the important issue is that of what factors dictate the formation of an outsourcing industry, and whether these factors and the “outsourcing model” they comprise vary from country to country. There is already a broad literature on MNE-locating behavior containing studies on the software industry. The breadth of possible explanatory factors and conditions include factor-based comparative advantage (called “factor advantages”) such as labor at the national and regional levels, as well as other firm-level sources of competitiveness and capability. The actions of government, foreign and domestic firms, as well as the relations between them, have also helped the growth of these industries.

We can define three main types of factors that influence the outsourcing industry’s pattern of development (including the location of the work and emergence of domestic firms): factor advantages, firm capabilities, and the business environment (including the role of government policy and business opportunities). These respectively (roughly) equate to the key elements behind various software industries’ development as suggested by Arora and Gambardella (2006, p. 288): comparative advantage (or what we term factor advantages), firm competencies, and opportunities.

**Factor advantages:** This first dimension, the advantage of labor supply conditions, has been clearly identified in studies of investment patterns as well as industrial export competitiveness, including those that relate to software outsourcing investments (Arora et al, 2001; Arora and Gambardella, 2006; Dossani and Kenney, 2003; McKinsey 2003). Together, many of these support the common hypothesis that resources such as labor costs and supply are critical to the choice of location that the work is to be outsourced to. This rationale for foreign investment could be termed ‘resource-seeking’ behavior in the conventional international business vernacular, with many MNEs entering lower wage countries like the PRC, South East Asia, and India. The outsourcing done by foreign MNEs’ shared services facilities accounts for only about 10% of the Indian industry’s total, but are a large contributor to the Philippine IT industry’s growth.4

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4 Statistics from India’s National Association of Software Services Companies (NASSCOM) (http://www.nasscom.com).
Firms’ capabilities: The second set of factors involves the firms’ competencies and strategies. Using this as a lens, industrial development can be understood to be the result of how individual firms develop their capabilities. In India, the accounts of how early firms succeed through the creation of dynamic capabilities are by now a part of the industry’s history (Athreye, 2005). In fact, most studies on outsourcing tend to frame the upgrading process as a simpler form of strategy that relates to how process and knowledge capabilities of firms are advanced, for instance, by using the Software Engineering Institute’s Capability Maturity Model (SEI CMM) as a proxy for capability (see for example, Krishnan et al [2000]).

Business environment: This brings us to the third dimension – the business environment, specifically, the business opportunities presented to firms. It is worth pointing out that India’s early start gave its firms an unparalleled “blue sky” (i.e. virgin and unrestricted) opportunity for developing their capabilities, and therefore, India’s industry as a whole. While outsourcing opportunities continue to grow, India’s advantages are by now, according to some observers, “locked in” by virtue of its firms’ scale and depth of capability. Thus, to the extent that we can determine how other countries (and individual firms within them) may be arising and taking advantage of opportunities, we might be able to illustrate the converse, and to shed light on the theoretical likelihood of more countries’ opportunities.

A second aspect of the business environment that may impact on outsourcing patterns is the government, more known for fostering new heavy industries and the electronics industry. The literature that has a bearing on this factor is what might be termed the literature on political economy. There has historically been a very rich literature on the East Asian electronics sectors (for example Amsden [1989], Hobday [1995]). The government’s role was heavily featured in early studies of India by Heeks (1996) and of India and Brazil by Evans (1995). The conventional wisdom highlighted by studies of the Indian software industry suggests that the government had less of a direct role to play. While the role of the government is still valid for infrastructure and education, it is not perhaps as integral to firm formation for services outsourcing as it was in the electronics sectors of NICs such as Taiwan and Singapore.

A third aspect of the business environment could be at the industry level, in terms of what a lead MNE firm or cluster might provide to other “follower” MNEs to come into a particular country. The account of how Texas Instruments led the way by opening the door to direct MNE software sector investment in India suggests this kind of leadership or demonstration effect (Patibandla
and Peterson, 2002), as firms like General Electric did for the R&D services and business process outsourcing (BPO) sector (Tschang et al, 2003; Dossani and Kenney, 2003). We will not focus as much on clusters or the government in this paper. However, as we step through the cases, it will be useful to examine whether these three sets of factors help to frame the factors that we highlight as being responsible for industrial success in the following sections.

2. Outsourcing in the PRC and the Philippines, and a Comparison with India

This section of the paper focuses on the process by which new industries emerge. We will address the question of how countries besides India succeed in developing outsourcing industries. We find in our two cases, the PRC and the Philippines, this is done through the involvement of MNEs. By focusing on the firm level, our approach provides a more complete explanation of how industrialization occurs than by what is divined by looking at what happens at the national or industry level. Individual firms’ experiences might actually be highly differentiated from one another, and may in fact be experimental in nature at a given point in time (Athreye, 2006). And yet, there is some manner of convergence amongst the firms. Furthermore, identifying ownership patterns illustrates how countries may take different paths to development. In the case of the countries with sectors disadvantaged by limited resources and size, the composition of its industry tends to be more MNE-led (as has been the case in the Philippines). In the case of India, and to some extent the PRC, the focus has been on domestic firms, though MNEs have played a role in India, and have played a formative role in the PRC’s firms’ growth. Thus, these two types of firms can interact to shape different countries’ outsourcing industries in different ways.⁵

2.1. Why Examine the PRC and the Philippines?

While many countries by now possess at least a few firms if not more that perform software or BPO outsourcing, both the PRC and the Philippines are often mentioned as potential contenders with India, and have the human resources, numbers of firms and growth rates to potentially contend with India, at least for certain IT industry sectors. We are interested in examining to what degree each country’s model of service industry development has varied from that of India’s, both in terms of how the industries have developed, and the nature of their ownership and other structures (e.g. the relations between the different types of firms).

⁵ While it will be challenging to integrate the diversity of factors outlined above into a single integrated theory, we can highlight common factors in an effort to create an “eclectic-type” framework not unlike that of Dunning’s (1988) “OLI” (ownership, location, internalization) framework for international business strategy.
The PRC represents a different aspect of industrial development by its domestic industry. By virtue of its huge domestic market and skills base, the PRC offers the greatest case for developing a software industry that has the twin legs – domestic and foreign – proposed earlier by Schware (1992) as a possible balanced strategy. The PRC has strong government technology policy, including software industry development. The PRC is known for its software expertise in terms of individual skills and abundance of manpower, and the PRC domestic market for IT “substitutes” for exports as an opportunity. The PRC has designs on exports as well. The Philippines is developing strengths in both business process outsourcing and call centers. Most of these centers are MNE-owned, and there is seemingly little government intervention. The country ranked fourth out of ten countries on asset advantage in a study by the International Data Corporation and sixth out of 25 countries in a study by AT Kearney.

The PRC’s college workforce is large by almost any measure (with reportedly 100,000 to 200,000 software graduates alone each year) according to reports in 2005. A news report noted that the outsourcing industry recruited 690,000 employees in 2009. The Philippines also has 380,000 university graduates a year, of which 70,000 are IT and engineering-related, and 100,000 are business and commerce-related (Board of Investment documents), and is one of the largest English speaking countries in the world.

In this overall sense, the PRC is unlike most other countries, and the Philippines is similar to many other countries in its possessing of pockets of strength as represented by single firms.

Patterns of Growth in the PRC and the Philippine Outsourcing Industries

The industry emergence story revolves around the factors that drive industry locating behavior and growth. In the case of the PRC, the firms we study are largely domestic firms, so we focus somewhat on the origins of the firms and how they have upgraded themselves technologically by their work with MNEs. In the case of the Philippines, since the MNEs themselves are directly setting up facilities, our focus is on their decision making processes, that is, the location decision (and the factors influencing them).

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Approach
This section of the paper focuses primarily on software services firms in the PRC, and the BPO and other ITES firms in the Philippines. Appendix I shows the broad outlines of our sample of firms from both countries (I have masked the actual names of firms with pseudonyms). In the rest of this paper, I will report a combination of observations based on personal interviews made with companies in all three countries, as well as secondary data. Given our effort to draw a model that is comparative with India, I will begin with a summary of the India case first.

2.2. India
The Indian software industry now commands a large proportion of the world’s attention, and many Fortune 500 companies are clients of Indian software firms. India’s head start, and in particular its firms’ strengths and scale are far ahead of most other countries’ firms in their ability to perform outsourced tasks on everything from software to business process outsourcing (BPO) (including accounting and financial functions) and call center work. India is by now the undisputed leader of both software services and ITES sectors such as call centers and business process outsourcing (BPO). While the growth of software services took place first, it was the BPO and call centers work that broadly cemented India’s place in the newly industrializing world. While the R&D services sector was always ongoing, it has been slower to take off, and has become significant in recent years.

As the primary beneficiary of the global software-related outsourcing trend, India’s software and IT-enabled (ITES) sectors have been growing rapidly. In 2005, the growth rate was 32%, which reflects not only a scaling up of capability, but also a deepening of capability and increased value added. Software and services grew by 27%, reflecting the maturing (i.e., filling out of work opportunities) of the sector, while “ITES-BPO” grew by 49%, reflecting the enormous opportunities in the sector, and the domestic market grew by 25%. Software services exports were US $12 billion, “ITES-BPO” exports was $5.2 billion, and the domestic market was worth $4.8 billion.\(^7\) At the same time, India’s software firms and their processes continue to mature. By the mid 2000s, well over 50 firms attained CMM level 5, the highest level of process certification. The total IT-BPO industry reached $71.7 billion in 2008, and accounted for 5.8% of India’s GDP. Software and services export revenues was about $47 billion of this, and grew at

\(^7\) Statistics from NASSCOM (http://www.nasscom.com). This is measured using NASSCOM’s definition of ITES-BPO, which is narrower than the one used in the Philippine government, since the former’s definition of ITES excludes software services and the latter’s definition of ITES includes it.
about 16-17% over the past year. As noted in Table 1, the direct employment for the industry was nearly 2.23 million employees in 2008.

The growth of outsourcing in India has been said to be the result of the three factors identified by Arora and Gambardella (2006): the availability of a skilled labor force (as is well known by now), the origin and growth of domestic firms and their capabilities (Athreye, 2006), and the ever growing need for outsourcing, including the problems that clients encountered with the Year 2000 (“Y2K” problem) transition in computing dates. In particular, it has been noted that the story of “the software industry (in several emerging markets)…is far more the story of successful firms than of successful regions” (Arora and Gambardella, 2006 p. 292). Other factors also play role, albeit a smaller if not important one. For instance, members of the “Indian diaspora” helped to create reputational effects with clients as well as by becoming agents within the clients themselves (Kapur and McHale, 2006).

There continue to be debates about the software and services sectors, for instance, whether the rise of call centers is as sustainable as the “technical” work that accompanies software, and there have been social issues with regards to having young people work night shifts in effectively lower skilled jobs, but based on the limited numbers of countries that have large English speaking populations, it appears that a large proportion of the work is largely in India to stay.

2.3. The PRC’s Software and Software Outsourcing Industry

The PRC’s software industry must be considered as the composition of two separate stories: one an earlier one involving domestic firms servicing the domestic market, and the second involving outsourcing firms that specialize in outsourcing provision for the MNEs that are themselves operating in the PRC’s domestic market. As shown in Table 1, the overall PRC software industry, as measured by the market, and the amount that is outsourced or exported, is small by Indian exports. Another report also showed the amount of PRC software exporting activity to be small, with software outsourcing exports of $600 million in 2004. This was forecasted to increase to $4.7 billion by 2009, or a compounded annual growth rate of 51%.8 Software exports as a proportion of total exports are also very small in comparison with India.

8 Statistics are from International Data Corporation (http://www.idc.com).
Nevertheless, the differences in this model from India’s – in particular, its focus on the domestic economy - makes it worthwhile highlighting.

**The General Development of the PRC’s Software Industry**

The PRC’s software industry was in the early 2000s considered by the central government to be so critical to industrial development that it, along with semiconductors, was promoted as one of two new lead sectors (Tschang and Xue, 2005). Many software firms first attempted to work on a product model involving some customized services, or a systems integration model. However, for many companies, both models by now appear to have low margins and prospects for growth. The road for product companies has been generally hard due to a variety of reasons, including a lack of customer IT maturity, fragmented markets, and intense competition on the low end from low cost domestic imitators and at the high end from well funded foreign MNEs with advanced technology (Tschang and Xue, 2005). It was partly because of this that the PRC’s firms started to see outsourcing as a way out. According to an official from the Beijing Software Industry Productivity Center (BSIPC), the margins from outsourcing were in the 30% range for the better PRC firms (which mirrors margins from India), as opposed to less than 10% range for product and systems integration companies. Thus, the outsourcers have ostensibly avoided trying to make products or to undertake systems integration work.

2.3.1. The Emergence of Software and Services (and Emergence Factors)

**A Japanese Stimulus for the Export Sector**

Outsourcing in the form of exports of software services was already well underway in the PRC by 2001, but in the beginning, firms were mainly focused on the Japanese market (which continues to be a strong market) (Niosi and Tschang, 2009). With the rise of government interest in the early 2000s, further efforts were made to improve the capability of the workforce.

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9 There have been some product companies strong enough to compete at the middle end or near the high end of the market, but these typically compete only in the domestic markets, and sometimes have been able to survive in part because of government contracts. In certain types of software such as enterprise software, the best PRC firms tend to service only the small and medium enterprises, while in other software such as personal computer-based software, the best PRC firms can compete with MNEs to some degree. However, other weaknesses in the firms or market can affect firms’ performance (Tschang and Xue, 2005). Piracy is one of the problems that afflict product firms. One well known product company that we interviewed (both in 2001 and 2006) noted recently that their well known product was so heavily pirated that it became a money loser, and it was only the government stepping in to require their software in procurement contracts which helped to save this line of business for them.

10 Another problem facing systems integration was that it generally involved a lower form of work, including installation of hardware and packaged software (made by other companies) and networking. One of the largest systems integrators that we interviewed earlier admitted that their profits were quite low, and in fact, there have also been recent reports of other systems integrators suffering low margins (Tschang and Xue, 2005). According to one interviewee, they may also have difficulty in trying to upgrade themselves along the value chain.
and firms. Beijing, Dalian, Shanghai, Shenyang, and Xian were amongst a number of cities attempting to outsource to the Japanese and US markets. In 2001, one of the regional government’s strategies in Xian and other places was to provide training on the Japanese language, a skill that many Chinese were able to pick up due to compatibilities in the written language scripts. Many firms were seeking to imitate the success of Neusoft, a Shenyang-based firm that had the strongest export performance in 2001 through 2005; achieved almost entirely by servicing the Japanese market. More recently, many software companies have also focused on BPO, in particular, to the Japanese and Korean market.

The Japanese market holds an especial importance for the PRC as an offshoring market. By 2006, the Japanese market accounted for 59% of the PRC’s outsourcing revenue, versus the US market’s 23%. Thus, while the bulk of our cases are with firms which serviced the US MNEs, the size of the Japanese market, and its attraction for PRC firms that want to go directly offshore, make it worthwhile describing the model at least in brief. At least two large firms (Sinocom and Neusoft) have a very significant presence in the Japanese software outsourcing market. Sinocom was originally a conventional systems integrator (along with many large firms that originally comprised the PRC’s software industry), but according to the BSIPC, they chose to cut all their business in the PRC in order to specialized on outsourcing to Japan. It became the largest outsourcing company in Beijing with 90% of its market in Japan. However, under this model, while companies directly do offshore work, they do not approach the end user directly, but instead contract their work through Japanese systems integrators like Fujitsu or Hitachi (where Hitachi is a strategic investor of Neusoft).

**Western MNEs and ‘Domestic Market Outsourcing’ in the PRC**

Since 2001, and especially in recent years, another outsourcing trend has emerged in the PRC. In order to discuss this trend, it is necessary to understand the role of MNEs, particularly Western package software and software services MNEs, and the PRC’s domestic market. This follows from the drive for MNEs to enter the booming PRC market. MNEs have already dominated the software sector in the PRC, including firms such as Microsoft, Oracle, and BEA.

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11 The PRC’s government has been quite strategic in its support of software enterprises (Tschang and Xue, 2005), but much of this followed an R&D investments approach. With the growing success of exports, the government has also focused its efforts on promoting outsourcing. Along with its historical investments in research and education through the universities and Chinese Academy of Sciences research institutes (both of which are sources of spinoff companies), in 2001, the PRC’s national government announced plans to designate 35 universities as centers for software engineering programs. This would provide as many as 17500 more graduates to the labor force.

12 Data from Analysys (http://www.analysys.com)
and software services and systems integration companies like IBM. According to the interviewee at the BSIPC, many of these foreign MNEs suffer from a locational disadvantage (in sourcing labor and accessing clients) when trying to service the PRC market, especially as it becomes fragmented when viewed across cities and sectors. Relationships are vital to conducting business in the PRC (Saxenian, 2003). The difficulty of entering the PRC’s market may be due to many differences in standards, administrative rules and programs across regions and cities. In this environment, MNEs have a need to “localize” products and content. On the other hand, many PRC product and systems integration companies do not have the capability to do higher end services like systems consulting and design, but do have lower level capabilities. Thus, a convenient marriage was waiting between MNEs and selected domestic firms that the former could outsource some of their basic work to.

Emergence of the New PRC Outsourcing Firms
In order to compare the PRC case with the Philippines, we will first examine the factors that caused the emergence of the Chinese software sourcing industry. The origins of the (recently rapidly growing) outsourcing domestic firms (that service the MNEs in the domestic economy) are largely private, and none appear to have been government-owned or to have involved government investments. As noted earlier, a key aspect of the recent PRC outsourcing pattern has been the way in which firms are connecting closely to foreign MNEs operating in the PRC. Most if not all of them also aspire to service the offshore services market, at least to various degrees.

Like many PRC outsourcing companies, the new breed of private software services firm such as Beyondsoft, Worksoft and ISofStone in Beijing started by doing localization and testing for larger MNEs like Microsoft trying to enter the PRC. These three are now amongst the largest firms serving the US MNEs in the PRC.

One central feature in this model is the learning that the Chinese firms gain from working with MNE clients. This is similar to the experience that Indian firms went through earlier, and indeed,

13 There are also at least three markets – corporate, government and private. However, the governmental market is strongly bound by policy and regulations, and many software and systems contracts in the past supported domestic firms. Furthermore, some PRC corporate customers have, at least in the past, been difficult to sell services to. According to one software firm that we interviewed in 2001, many customers did not have strong IT capability, and could not see the value in IT, let alone understand how to integrate IT into their business functions.

14 In contrast, Tschang and Xue (2005) estimated that as many as a third of the largest systems integrators, and some number of other firms with stronger capabilities (e.g. firms engaged in product development), appear to have government roots.
any outsourcer, be it in hardware or software. Such learning eventually helps the firms to advance up the value chain. Firms also note that MNEs can help them to build their management and technical capability, and can provide training and the transfer of knowledge. Indian firms with a presence in the PRC, like TCS and the educational provider NIIT, also bring management and educational approaches and know-how to the PRC, especially in the way of software process management skills and capability.

2.3.2. Factors Influencing Scaling Up and Upgrading

The rapidly growing PRC firms have had to engage in simultaneously upgrading their capability (to increase their value added proposition) as well as in scaling up by way of expanding their workforces and business coverage. This has occurred through various means. One strategy has been to use acquisitions to increase their capability and value proposition to clients – a strategy that is common to both Indian and PRC firms (Niosi and Tschang, 2009), as well as other countries’ firms. The factors that appear to impinge on this upgrading can be loosely classified into three types: internal organization factors such as management and organization, soft skill factors and geographic skill management factors.

This is worth noting that the emphasis on organizational capability varies somewhat from that seen in the conventional story of East Asian manufacturing. In the latter, the upgrading is primarily technological, whereas in the cases of software and other services, it involves technical as well as organizational capability. Not only do software firms have to develop internal training systems to help transfer knowledge from experienced people to new employees, they also have to develop systems to capture knowledge (knowledge management systems) as well as systems for collaboration and handling globally-distributed work. In contrast to this, the smaller and even medium-sized companies face another problem in that they do not have the scale to compete for larger clients, and as a result, cannot grow.

Soft skills and cultural issues appear to be a factor of concern to a number of firms, especially when dealing with Western clients. Chinese language skills might not be suited to BPO in various languages, and even in software, where technical languages may be shared, there are cultural issues of integrating the work cultures of PRC and American firms. It is notable that even Microsoft had problems in its PRC operation, when it tried to merge its US culture with the Chinese culture, and had to make multiple attempts before affairs started to work out.
The third factor involves growing by managing growth of facilities located in multiple labor markets, in this case, across cities. Many Beijing firms have built secondary outsourcing facilities outside of Beijing to tap into the local labor markets, which often had lower labor rates and turnover.

**Government Policy**

With the exception of incentive schemes to locate and education, government policy has also not been a major factor at the firm level, either in terms of strategy or ability to upgrade/increase value added. The firms may have benefited from local government policies to improve software talent and language capability (e.g. the Japanese language), but the better firms did not benefit from the central government’s policies of targeting selected firms for benefits.

**2.4. The Philippine IT Services Industry**

**The Philippine Outsourcing Industry: The Role of the Government**

The Philippine government, specifically, the Board of Investments (which plays a key role in foreign investments), has focused on promoting five IT-enabled services (ITES) sectors – BPO (including engineering design), software, call centers, animation, and medical transcription. By the mid-2000s, there were already a number of hallmark foreign MNEs in each of the sectors, including: Accenture for software services, Sykes, Convergys and PeopleSupport for call centers, and Texaco and AIG which had shared services facilities for their internal BPO work. By 2008, the ITES sectors had an output of 6.1 billion USD and employed 435,000 people. Most of the ITES sectors have registered healthy if not rapid growth rates, with BPO as a whole growing on average 46% annually since 2006. In particular, call centers have been growing rapidly, with employment at many call centers (including foreign MNEs like Sykes, Convergys and PeopleSupport) growing at 100% or more rates between the early and mid 2000s. The MNE impact is seen across all ITES sectors, but it is in call centers, and to an increasing extent, the BPO sector, that it is most keenly felt. We will examine the BPO sectors in this study.

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15 Estimates by Board of Investments, Business Process Association of the Philippines (BPA/P) and BPO Services Association (BSA/U).
16 The call centers that are set up are usually operated by international MNEs that specialize in the industry, and which have codified procedures for training and operations. The firms tend to focus more on the language skills and customer facing skills of their employees, although some degree of domain knowledge is often involved (especially for technical support). As one interviewee pointed out, the view of Filipino skill advantages tends to be that of language and customer-facing mannerisms, versus the Indian skills at process. However, Indians can be trained to adopt American accents, and Filipinos are also suffering a shortage of skills.
To give an idea of the Philippine “presence” in the ITES sectors, we looked at a list of 35 providers worldwide (these being ones that the Gartner Group had fielded the most enquiries on from 10,000 of their clients). Ten of 13 call centers on the list had operations in the Philippines, while three of 14 BPO providers (some of which had integrated IT and BPO operations) had operations. The lesser number of BPO providers might have something to do with a large number of them being Indian IT firms which tend to be India-facing in their growth paths. This also suggests that the type of work that the Philippines is known for is mainly related to call centers, and possibly, that BPO providers’ operations (besides the Indian IT firms’ operations) are more spread out worldwide.\(^{17}\)

Of the five ITES sectors in the Philippines, most of the significant firms are the foreign MNEs, particularly in the BPO, software and animation outsourcing sectors (with the exception of some local firms that have established call centers and BPO providers, e.g. Ayala, SPI, the Philippines Long Distance Telephone Company (PLDT) (which acquired SPI), and SVI Connect). The foreign MNE’s typical mode of operation is to operate a “shared services” facility that centralizes their (typically) back office work in lower cost countries. For instance, Maersk, the Danish shipping firm, has located some of its shared services operations in Manila, along with its other shared services operations in Costa Rica, Mumbai, and Guangzhou.

\subsection*{2.4.1. Emergence of the BPO Sector: Factors that Influence the Locating Behavior of MNEs}

MNEs have moved BPO-related services to the Philippines spanning a variety of corporate functions including accounting, finance (as well as IT), some of which were unique to the industry the firm was in, but which also involved the specific general corporate functions of finance and accounting. While the Philippines had been observed to have a fairly broad educational system catering to not only the vocational fields but areas such as the liberal arts and business, such an educational spectrum does not appear to be at a disadvantage for meeting the ITES needs of MNEs and the outsourcing providers.

Whereas the Chinese software services industry was largely focused on its own domestic market, the Philippines has had to compete with a variety of countries, not the least of all being

\footnote{\url{http://www.businessweek.com/magazine/content/06_05/b3969412.htm}. Accessed August 7, 2010.}
India, in order to host MNEs seeking to locate shared services BPO facilities. We have classified the factors as follows:

**Cost and skill factors:** A variety of factors appear to influence outsourcing, but while the initial decision to outsource is often made for cost reasons, the actual decision to locate to the Philippines was supported by a range of location-based factors, including, typically, costs, language capability, the availability of skills, and infrastructure. Very often, especially in recent decisions, an internal feasibility study was made. The way in which the factors were related (e.g. by ranking) and the manner in which they were considered to interact varied from firm to firm, but they tend to revolve around a desire to concentrate back office services in a small number of cheaper locations. Similarly, Procter and Gamble’s human resources group in Manila was one of their three worldwide shared service centers (the other two being at Costa Rica and Newcastle). However, in 2004, the unit containing much of the staff that provided employee services support (i.e. human resources services) was sold to IBM (with the other units being sold to other firms).

One large part of the Philippines’ attractiveness to these MNEs is due to the country’s past investments in higher education and the resulting surplus pool of labor. This was particularly the case for fields of business higher education, which are attractive to BPO firms. However, firms can hire human resources from a variety of fields, including IT and the arts, and to retrain them into lower level work. Having said this, the government’s ability to continue to act is still highly limited by the low resources available to it as well as insufficient manpower.

**The Importance of History:** Looking at the early MNEs which came to locate in the Philippines suggests that one common factor is that of an early familiarity with the country helping to make the decision. An example is the case of an MNE with one of the first shared services facilities in the Philippines. The facility manager compared the Philippines with several other Asian countries on a variety of factors, and in the end, a combination of the English-speaking skills and trained university graduates in the business disciplines mattered the most. However, the MNE itself had a long tenure in the Philippines, which helped make the country familiar and accessible to the MNE. In contrast, a highly competitive country was ruled out because the MNE had had a bad experience with the government’s previous policies.
**Soft Skills:** Another important factor that the Philippines is typically considered to have a strong advantage in is that of the softer skills, that is, the cultural orientation of the human resources. MNE chiefs have pointed out that national culture and the “service mentality” (as reflected in how employees deal with clients) is a positive aspect of the country. Another beneficial aspect of the Philippines’ culture was that its cultural orientation is somewhat close to the US’s. In fact, one software outsourcing head noted that even in software, some clients would like to see the customer orientation addressed first, and only later would focus on other “metrics”. Finally, commonalities in language can help attract MNEs doing BPO and call center work. A number of Filipino call center heads also noted that they need their employees to be more customer-friendly, and the Western attitude that Filipinos possess can be an advantage in attracting work.

It is important to note that the success of the Philippines on these dimensions was due as much to the other candidate locations being less competitive on one or more factors (e.g. costs, hospitality or service culture, or infrastructure) as it was to the Philippines succeeding on these same factors. Furthermore, extenuating circumstances that had to do with a particular factor, or an unquantifiable factor like country risk, would usually determine the location selection outcome.

**Hedging Risk:** Finally, officials from other MNEs interviewed in our study and elsewhere have noted that part of their strategy is to hedge their political and country risks by locating facilities in both India and the Philippines.

**Comparing Factors Dictating Industrial Emergence in the Philippines with the PRC**

What is interesting is the comparison of this set of factors to the ones seen in the PRC case. In the case of the PRC, the industry emerged through the presence of pre-existing MNEs in the PRC’s market (or ones interested to enter) being interested to explore local providers for their own needs. In the case of the Philippines, the MNE is centrally involved in choosing the location from amongst several or more competitors, and as such, is much more concerned with a variety of country level factors, including the MNE’s past experience with the country/potential location, and the pool of skills. The usual issues of knowledge transfer and even acquisition (which are more the issue if the services provider is a local firm, as was the case of the PRC) are less central. This is because MNEs already possess the knowledge and ability to transfer work and organizational capability worldwide – something that they do on a regular basis as part of their business.
2.4.2. Domestic Firms in the BPO and Software Sectors

It is worth pointing out the experience of domestic provider firms in the Philippines, for the contrast that it provides with the MNE providers. An examination of the Philippine software sector and its relative weakness illustrates a contrast with India’s. A combination of the lack of skills, of strong firms, and of India’s head start, makes it difficult for latecomer firms to succeed. There are a number of software firms in the Philippines (even hundreds by one estimate), but most are small, and only a handful are of reasonable size (i.e., above a hundred employees). The lack of large, capable IT firms in the Philippines may be due to a variety of factors, not the least of which might be a problem of financing. According to interviews with the president of one larger software services provider, their ability to grow has been limited due to the lack of financing and their lack of competitiveness with the already strong competition (i.e., Indian firms).

2.5. Comparing the Three Cases

General Discussion

As can be seen from Table 2 below, the two cases illustrate two very different paths of growth from one another, and in the case of the PRC, from India’s path.
Table 2. Summary Comparison of the Two Cases

<table>
<thead>
<tr>
<th>Dimension</th>
<th>The PRC</th>
<th>Philippines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of industry</td>
<td>Domestic firms engaged in software outsourcing</td>
<td>MNE call centers and MNE BPO “shared services” facilities, some local firms’ call centers and BPO providers</td>
</tr>
<tr>
<td>Market Focus</td>
<td>Initially focused on servicing US MNEs in the PRC’s domestic market (and Japanese clients)</td>
<td>Focus on global shared services (some regional markets like N. America or Australia, some are global).</td>
</tr>
<tr>
<td>Origins of industry</td>
<td>Domestic firms started independently and were needed by MNEs to service the domestic market</td>
<td>MNEs initial decision to outsource for cost reasons. MNEs’ location decisions are complex and not straightforward, e.g. some MNEs had prior history which aided decision.</td>
</tr>
<tr>
<td>Firm-level or Industrial growth</td>
<td>Domestic firms essentially learn from MNEs as they grow, and service increasing MNE needs. Aspire to leverage this learning in order to do work for clients on the latter’s foreign markets</td>
<td>MNEs appear to follow one another once a model is “tested”.</td>
</tr>
<tr>
<td>What growth entails</td>
<td>Scaling by creating facilities in other PRC cities to absorb labor Deepening the type of work, scale and scope (increased verticals)</td>
<td>Widening the scope of work (adding to the business functions encompassed, e.g. accounting, finance)</td>
</tr>
<tr>
<td>Role of the government</td>
<td>Government policy did not correctly identify the new outsourcing firms so as to support them</td>
<td>Traditionally weak government may have helped at the margin</td>
</tr>
<tr>
<td>Differences with India</td>
<td>Outsourcing/upgrading path starts with the domestic or Japanese markets</td>
<td>Some MNEs seek to use Philippines as “second source”, others “prefer” it to India for various reasons</td>
</tr>
</tbody>
</table>

The PRC’s firms illustrated how domestic firms can leverage on the needs of US MNEs to service their own (PRC) market, or, in the case of Japanese market-focused firms, to pursue another market that appears more open to firms from countries that share a common linguistic basis. The key issue is learning, since firms appear bent on upgrading themselves technologically, and to increase their scale and complexity of work through their interactions with clients. There also appear to be significant variations in the individual PRC firms’ strategies. Each firm appeared to be developing a specific niche based on the resources available to it and its unique collaborative strategy. This suggests that specialization may provide a greater advantage over time.

The Philippines case illustrates an MNE-led model which is different from the PRC’s but similar to the model of MNEs locating in India. It appears that the kind of work and shared services facilities that MNEs are locating in the Philippines is not that different from the BPO done in India. However, the decision to locate in the Philippines is quite a complex decision and is not always straightforward, involving not only locational factors like labor and infrastructure, but past
“history”. Once the decision to locate in a particular country is made, the ability to implement appears not to be a problem to MNEs as they appear very capable of transferring work wholesale even from dispersed locations to a new central facility. The ability of the BPO facility to grow is limited only by the scale of resources available within the country. While the facilities themselves tend to grow independently of one another, the arrival of even a single firm appears to provide a signaling effect to other competitors. The fact that the Philippines was becoming known as a site for second sourcing, or even primary sourcing in certain “verticals”, was promising for the country.

In our final analysis, it appears that there are multiple types of models or at least circumstances that can be considered in the development of an outsourcing industry. In both cases, the two models leveraged on the needs and objectives of the foreign MNE, so the outsourcing industry does follow some previous models of industrialization. While our study still reinforces the notion that locational or factor advantages are a necessary condition for outsourcing, these are not sufficient by themselves for explaining locating decisions. Complex decision-making involving specific extenuating circumstances (in the case of the Philippines) and specific firm strategies (in the case of the PRC) were also critical for the success or growth of their respective “outsourcing” industries. In any case, both cases provide us with some hope that outsourcing may be a trend to benefit other latecomer countries.

Finally, another aspect that we can shed light on is the role of policy. The role of policy appears more basic, restricted to education and infrastructure, and less to industrial stimulation (unlike what was said to occur during the East Asian Miracle period of growth). In the software and BPO industries, the governments appeared weaker either in terms of initial (resource holding) conditions (in the case of the Philippines) or in terms of their ability to affect outcomes (in the case of the PRC). Strong private sector forces with MNE involvement appear to be the common factors in the emerging models of outsourcing industry development.

From most reports, it appears that PRC software firms will continue to lag behind Indian ones on scale, processes and experience for some time to come. Philippine software firms were doing no better, suggesting that the only way to “catch up” to India in the near term is through the call centers, BPO and the other ITES sectors. Some of this entails less sophisticated work, and may require the involvement of MNEs. In both cases, it appears that the knowledge that MNEs
possess are an important factor, suggesting that collaboration with MNEs, however managed, at the national or firm level, is a more important factor for success, than competition.

3. The Growth and Equity Implications of IT Services Outsourcing

We will now look at the economic implications of the services outsourcing industry. We will focus on India, with some collaborating evidence from the Philippines. This is in part because data collection and studies have been more widely done in India, including some by India's NASSCOM (It should be noted that NASSCOM has a strong advocacy role, so it may have a dual purpose in providing these studies). India's industry also has a relatively longer history, allowing the various economic implications to be better discerned. In effect, despite the presence of a manufacturing sector, India's model has been termed a services-led industrialization path (Singh, 2006). Nevertheless, the trends can be expected to be similar across countries with a significant outsourcing presence.

3.1. The IT Services Industry, Economic Growth and Linkages within the Economy

In the 1990s, the Indian IT services industry was already registering a major impact on the economy, contributing to an average growth of services exports of 15% per year as compared with 9% per year in the 1980s (Gordon and Gupta, 2004). NASSCOM points out that the sector's share of GDP rose from 1.2 percent in 1998 to about 6.1 percent in 2010, and the share of total exports rose from less than 4 percent in 1998 to almost 26 percent in 2010 (NASSCOM 2010). Given the sheer size of its recent year revenues, the economic implications of the IT services industry in India are profound. Even then, at least in the past and even now in certain quarters, the Indian IT services industry has been criticized for being an “island” onto itself, both in terms of job creation and its linkages to the rest of the economy. The industry created 280,000 jobs in 2000, and this increased to 2.23 million in 2008, but this is still considered small in comparison with India's total population. While the PRC’s total employment in outsourcing was reported to be 1.42 million in 2009, the data may be confounded, possibility by including both the outsourcing of “local” work and the offshoring work done by both MNEs and domestic providers. At the same time, this is spread across 8,060 enterprises. This gives a very small average firm size of about 176 employees per firm. Other data on firms' market shares show the same pattern, with the largest shares of the export market - of Neusoft (3.1%), HSoft (2.8%) and Sinocom (2.6%) – also being on the small side.
One study of India’s services sectors suggest that as a whole, they have a higher proportion of both forward and backward linkages of a “greater than average” linkage effect (or stimuli on upstream and downstream production respectively) than either the manufacturing or agriculture sectors (Singh, 2006).18 A study of the Philippines BPO sectors shows a contrasting picture. Input-output tables show that the forward, backward and total-linkage indices rank 138th, 178th and 177th respectively out of 240 sectors, suggesting that the sector is neither a significant buyer of inputs or supplier of outputs within the economy (Magtibay-Ramos et al., 2008). Specifically, they found that the BPO sector is a greater consumer of inputs than outputs, taking in 40 sectors’ inputs (with banking, electricity and telecommunications services as the most important suppliers), while providing services to only three sectors – tour and travel agencies, wholesale and retail trade, and banking. The two studies on the Philippines BPO and Indian IT services sectors should not be contrasted side by side, given that they are based on different measures, and are measuring industries composed of very different sectoral emphases and even stages of growth.

NASSCOM also estimated that the IT services industry had an output multiplier of nearly two by way of its non-wage operating expenses, capital expenditure and consumption spending by its employees, which is on par with most other sectors. In contrast, the simple output multiplier of the Philippines’ BPO sector (using the 2000 I-O tables) was 1.63 (Magtibay-Ramos et al. 2008) (indicating that a dollar’s worth of final demand in the BPO sector would create 1.63 dollars of additional output across the economy). This may be related to the limited number of sectors that the BPO sector affects downstream. Again, the different multipliers say as much about the differences across both countries’ IT services industries as anything; for instance, that a higher percentage of the Philippines’ IT services workforce than India’s is in call centers.

The same Philippines study also showed a compensation coefficient for the BPO sector of 0.31, meaning that 31 percent of the sector’s inputs goes to wages. Coupled with the higher than average compensation of the sector19, this can be expected to translate into a reasonably high impact on the economy by way of disposable income and spending. In fact, it appears obvious

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18 Specifically, using 1998-99 data, Singh (2006) shows for the case of India’s backward linkages, 9 of 13 services activities versus 6 of 22 agricultural activities and 28 of 80 industrial activities had relative backward index values above one (and 8 of the 9 services activities considerably exceeded this), and for India’s forward linkages, 9 of 13 services activities versus 5 of 22 agricultural activities and 5 of 80 industrial activities.

19 In 2005, the average monthly compensation for the BPO sector was US$386 versus the national average of US$165 per month.
that while the Indian software sector is high paying, its 2 million strong workforce is not chiefly responsible for the country’s 50 million strong middle-class, though it has certainly contributed to certain cities’ fortunes.

When placed in this broader perspective, it does not appear that the IT services sector has any less impact by way of linkages, multipliers, or as we show later, employment, than any other sectors, but when this is coupled with its greater and increasing impact on growth and exports than other sectors, this makes the sector a compelling engine growth.

The IT Services Industry’s Linkages with Manufacturing

After “technological catching up” is said and done, information technology has perhaps one of the greatest remaining potentials for unlocking productivity gains, including in manufacturing. That IT can benefit many manufacturing sectors should be no surprise, given that many MNE manufacturers of products, including General Motors, Huawei, Samsung and Sanyo, have software arms in India. Indian manufacturing firms should be able to reap similar benefits, particularly once they develop a strong internationalization focus. Amongst the Indian manufacturing sectors, the automobile components sector recorded 15.6 billion USD of sales in 2007, including 2.8 billion USD of exports. Yet, despite the thriving nature of the sector, a study found that in the adoption of IT, India continued “to lag behind comparator industries in other countries”, especially for the small and medium enterprise sectors (NASSCOM 2007). The study showed that multiple types of productivity gains could be realized from using IT, ranging from the improvement of manufacturing processes to the integrating of firms with their suppliers and customers – foreign and domestic alike. Specific business processes - the most critical ones being order receipt and demand management, production planning and order processing have not been addressed, and basic IT systems such as enterprise resource planning have not been adopted. Among the factors that impeded IT adoption, the most critical were the difficulty of justifying IT investments internally, and the alignment of those investments with business goals. In part, this is also due to the different levels of preparedness of businesses, with small and medium sized businesses being the least prepared for technological advancements. A similar finding was observed with PRC domestic firms at early stages of IT-enabling work such as systems integration (Tschang and Xue, 2006). The key to successful IT usage in domestic firms is the recognition that different firms are at different stages of development, and that as a consequence, they have a mix of IT capabilities. When IT firms do take the trouble to understand and customize for their domestic clients, as with the Indian firm Infosys’ combination
of services together with their banking product *Finnacle* (developed largely for their domestic clients), the results can be quite effective.

At the same time, IT can certainly benefit many organizations in the domestic sectors, including government and education. One of the challenges faced by Indian IT firms trying to link their expertise to domestic needs is the difficulty of reconciling the model most of them have adopted - a high cost, high profit model that focuses on developing advanced systems - with the domestic sector’s need for lower cost, customized systems. This has led to difficulties in recent years, as when the larger export oriented firms tried to service local contracts. One of the problems faced is that the current export model is predicated on a higher cost of delivery and higher value added, while the model that best suits local customers is one of higher customization and lower costs. There will then be a pressure for the firms engaged in both kinds of work to provide a lower capability of workforce or even lower quality of work to domestic clients.

It should be pointed out that not only is the Indian economy yet to realize significant productivity gains from IT services, it has also been limited in its growth potential by certain other industrial and service sectors - electricity and transportation being the foremost amongst constraints (Singh, 2006). It has also been pointed out that the growth in services can be held back by some of the same constraints (Srinivasan, 2005). In the case of India and Philippines, the removal of constraints, such as the lowering of telecommunications costs, has certainly helped to unleash the potential of the IT services sector.

### 3.2. Effects on Employment

The evidence suggests that the IT services sector’s output multiplier on employment is positive. NASSCOM estimates indirect job creation in India to be at about 6.5 million in 2007 on the basis of the 1.6 million IT industry jobs or a four to one ratio. This includes direct service providers such as food catering, transport, and the like. The sector has contributed somewhat to India’s rising middle class, at least in the cities with the strongest IT clusters. The problematic issue is that of whether services are contributing as much to employment as they are to GDP. Singh

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20 Interestingly, the firm that was most effective at building large scale systems in India in the past was the former CMC, which amongst other things, built the Indian Railways ticketing automation system. CMC attempted to get into the higher value export model too late, and ended up being acquired by one of the major software firms.

21 Based on a conversation with Raja Mitra, independent consultant to the World Bank (4 August, 2010).
(2006) reviews the evidence for employment, which shows that in India, “while the share of services in employment increased from 20% in 1970-71 to 23.5% in 1999-2000, this was much less than the growth of the services sector’s share of GDP, which was from 32.1% in 1970-71 to 48.5% in 2000-01. Gordon and Gupta (2004) note that, while services rose from 42 percent to 48 percent of GDP during the 1990s, the employment share of services actually declined by about one percentage point during the decade.” This point suggests that while the services sectors do provide a higher labor productivity, they generally do not have the concomitant benefits of high employment effects that labor intensive sectors can serve for developing economies’ needs (this generally being the case with IT as it is with other higher skilled services sectors).

On the other hand, in the case of the Philippines at least, it certainly seems that IT services such as BPO and call centers have provided a valid alternative for reducing unemployment and addressing the underemployment of the higher skilled populace. In the Philippines, the BPO sector’s share of GDP increased from 0.075% in 2000 to 2.4% in 2005 (Magtibay-Ramos et al, 2008). Employment more or less grew linearly from 99,300 in 2004 to 235,600 in 2006 to 435,000 in 2008 (Congressional Planning and Budget Department, 2008). An early forecast by the Business Processing Association Philippines (BPAP) showed that if employment in the sector reached one million workers in 2010, it would account for 27% of all new jobs generated.

In 2006, call centers employed 68% of the BPO sector’s total employment, showing that job creation was highly skewed within the various IT services sectors (Congressional Planning and Budget Department, 2008), but this was expected to correct itself over time as jobs in non-call center BPO activities increased at a faster pace than call center jobs (ILO, 2009).

**Education, Employability and Equity**

While there is some evidence that services such as IT services can be a compelling source of growth and exports, the evidence for employability is more mixed. There is also significant indication that at least in the 1990s and just after, only a relatively small proportion of Indian higher education graduates – namely those with technical skills and English language ability - were able to take advantage of the opportunities in the then burgeoning industry (Singh, 2006). At the same time, the Indian IT industry has faced a shortfall in labor supply for its demand. While some of this is reconciled by the fact that higher education has a limited number of graduates, with ten percent of Indian youth achieving a college education, a bigger issue in this is the employability of graduates. The industry currently only finds one of four graduates
employable. In the mid 2000s, at the early stages of growth, Philippine call center heads were only choosing the top ten percent of college graduates for their positions. The Philippines' percentage likely went up over time as firms became less selective (and as supply failed to keep pace with demand), with a possible consequential deterioration in the quality of the employee and his or her work. Another possible result of this is that the bias towards this “better” educated part of the populace will enhance the disparity between those with stronger or better fitted educational backgrounds and those without it. Only a “rising tide” (i.e. broader economic growth) at the same time will help to ameliorate this diverging trend.

3.3. Implications for Regional Economic Disparity

Historically, the Indian IT industry has been concentrated in a handful of urban locations – a fact shared with all other industries. An argument could also be made for inequity in geographic terms. The trend has been to open new locations, and 72 percent of respondents to a recent NASSCOM survey reported having opened up offshoring centers in the so-called Tier 2 and 3 cities (NASSOM-Deloitte, 2008). As firms start to expand to the so-called “second tier” cities in search of labor and space to grow, the next hubs will take shape. It appeared that the industry started burgeoning first in Bangalore, then moved into the closely-following Tier 1 cities like Noida, Pune, Hyderabad and Chennai. However, judging from the entry dates of firms, between ‘before 1980’ and 2001, the seven main centers reached their peak of firm entry during the same period - in the 1992-1999 time frame (Athreye, 2005).

While poverty is not directly affected by industrialization in the IT services, equity is. One major regional issue related to equity is that of the disparity amongst regions. As pointed out earlier, firms tend to locate into clusters, further advantaging the same clusters in the process of doing so. Certainly, early clusters mattered in the Indian pattern of development. By 2008, seven Indian cities accounted for 95 percent of IT services exports (NASSCOM, 2009). Recently, an interesting case study was presented by NASSCOM on one of the poorest regions of India – Orissa (NASSCOM and Deloitte, 2008). As reported by the Software Technology Parks of India (STPI) authorities, the growth rate of units of units (or facilities of enterprises that reported exporting) in the state capital of Bhubaneswar rose from 17 in 1999-2000 to 54 in 2005-2006 and 69 in 2006-2007. As a result, Bhubaneswar demand for IT manpower was 117,000 in 2007, with a supply of 54,303, with 77 percent of the demand being for bachelors (including bachelors' equivalents) and master’s degrees suited to IT. The companies locating into the region included
some of the major Indian IT firms like Infosys, Satyam, TCS and Wipro, as well as foreign MNEs like IBM and Aricent. All of this contributed to software exports from the state of 183 million USD in 2006-2007, a 60 percent rise over 2005-2006. The growth rate of exports from the state rose to 60 percent in 2007, versus the national average of 28 percent, reflecting the new and healthy rise of the state’s, and in particular, its capital’s, IT services industry base. It should be noted that while the pattern is very encouraging, it also mirrors the tendency for industrialization in early periods to increase faster or even to increase at increasing rates, relative to later periods, as seen with industrial growth at the country level in India, the PRC and elsewhere.

The Philippine and PRC cases share similar stories with India. In the Philippines, Manila developed first, and by the mid-2000s, Cebu was already considered as a preferred second site for companies to rapidly expand their call centers. In 2008, together with the government, the BPAP listed 10 “next wave” cities out of 30 that could be developed into hubs. Similarly, in the PRC, the first six export “bases” for IT services were Beijing, Shanghai, Tianjin, Dalian, Shenzhen and Xian. In this regard, the PRC and Philippine governments are also attempting to broaden the opportunities to other regions, albeit with the addition of strategic growth policies.

The Ancillary Benefits of Firms on Infrastructure and Services

The IT companies in India and elsewhere tend to collaborate with the city and regional authorities to improve their educational base and public and private infrastructure. For instance, for the longest time, Bangalore traffic suffered from poor road infrastructure and was limited by the city’s older airport. IT industry officials worked with city officials to improve both of these, though it can be argued that road infrastructure has still not caught up with demands. On the education front, since Bangalore did not have a campus of the major engineering university system – the Indian Institute of Technology, the IT industry got behind a privately-led effort (with some state support) to sponsor a new breed of program – the Indian Institute of Information Technology- Bangalore (or IIIT-B) (a similar effort took place in Hyderabad). While IIIT-B’s enrollment and faculty size is modest, it IIIT-B plays a role more significant than its size to the ecosystem in terms of providing support, signaling and cooperative research with foreign MNEs and local firms alike. A similar bridging effect was effected by another IIIT in Hyderabad.

Investment in private infrastructure tends not to be a problem that IT firms and states have to deal with, as foreign investors do also take up the slack. For instance, the government-linked corporations (GLCs) of Singapore have invested in and operate software parks in Bangalore,
Chennai and elsewhere, and in the PRC, many software parks have been created across the country by private investors, including a few by the IT firms themselves. In addition, the same developmental phenomenon that has happened in Bangalore and other early clusters is also happening in Orissa. While there were few developers before the IT industry’s boom, nationally operating builders came in to build private infrastructure like IT parks and housing projects. Satyam contributed to the setting up of street lighting and the development of roads.

For the most part, IT firms and software parks tend to be isolated and self-contained entities. A more likely prospect for broader economic impacts to be felt would be in multipliers on the variety of other services, namely, retail, entertainment, education and medical care.

3.4. IT and Broader-based Development

Finally, it would be remiss to examine the effects of services without considering how the broader IT revolution, consisting of IT infrastructure and applications of IT, might actually have affected productivity and the economy more broadly in the most rural of areas. The evidence has to be looked at on a project-by-project level, and instances of best practices should be closely examined. Early studies pointed out the various models by which informatization could help the rural economy (e.g. Quibria et al [2002]), and indeed, certain models such as the Grameenphone - based on microenterprise and the supply of basic functions, such as communications to rural areas - seemed to work, while others such as the telecenters approach to internet-enabling populations and businesses had seemed less viable as far as providing a business-enabling function and value proposition. Some such as the Internet kiosk programs TARAhaat and Drishtee - faced constraints, including finance and infrastructure, as well as broader questions on sustainability and scaling up (Kaushik and Singh, 2004). Other technology schemes that "customized" the technology and its applications, such as the various low cost lap top or hand held computer projects or proposals, often did not provide sufficient business impact to the poorer populace to allow the latter to justify self-funding these purchases. For instance, Encore’s Simputer computer, an early effort to create a simple hand held computer with limited functions, did not sell well. These products were effectively “technology solutions”, and in fact, many attempts to reach the rural areas start with technology but end with the failure of the

technology to compete or be diffused. While some of the causes might be factors influencing adoption, e.g. products ill-fitted to users’ actual needs, another possibility is the factor at the economic level identified by Quibria et al (2003), which is that IT usage is correlated with income. In short, incomes may have to rise first before IT usage can take place in the economy. Addressed to the “technological fit” is the interesting recent development of a host of technology entrepreneurs trying to supply not simply products, but IT services and solutions to rural areas. These cater to needs identified across a spectrum of areas, from applications like telemedicine and transport scheduling, to the needs of mobile phones for local languages and other customization in their interfaces. We can only presume that there is learning taking place across all of these, and that the learning is both on all sides, and involves not only the technology and its application, but also the business model.

Other efforts have sought to enable rural employment schemes, such as then Chief Minister of Andhra Pradesh Chandrababu Naidu’s schemes, at the beginning of India’s software industrialization, starting with IT-enabling the rural areas. In many accounts, the city with the second most successful IT industry after Bangalore’s was the Andhra Pradesh’s state capital – Hyderabad. The general thinking at the time was that some of the IT offshoring work could be done in rural areas, but this almost certainly failed, as the “diversity of Andhra Pradesh, with nearly two thirds of the population of the state depending on agriculture for its existence, excludes the possibility of diverse poor and rural social groups with different levels of skills, access, and education being able to benefit equally from these…sectors” (Dabla, 2004). Furthermore, the state’s focus on foreign investments (e.g. the attraction of Microsoft to the capital Hyderabad), and the ‘corporate in the city as flagship’ model, and a host of other reasons, might also dictate against the work moving to rural areas. First and foremost of the underlying reasons might be the set-up cost for firms and the firms’ ability to govern their operations. Generally, large firms need to create centers of some critical mass, which in turn needs infrastructure of some critical mass. Further, given the need for quality assurance, and increasing security concerns, these work dictate against the ‘work going anywhere anytime’ model.

More recently, local IT entrepreneurs have turned to see what they can do to supply rural areas with technologies specifically customized to their needs. Dr. Sridhar Mittar, a former Chief Technology Officer of Wipro and CEO of an incubator, started such a program: NextWealth Entrepreneurs, a social entrepreneurship program that tries to enable entrepreneurs and create
jobs in the rural economy. The company plans to open 40 centers in three years to employ 10,000 graduates near their (rurally located) homes. In order to do this, it still has to select on the availability of graduates from established engineering colleges, as well as infrastructure.

4. Conclusions

We have sought to accomplish two objectives in this paper. The first is to highlight the differences and similarities between three countries’ services developmental models – India, the PRC and the Philippines. The contrast of the countries highlights subtle and important differences, particularly with regards to latecomer countries. The PRC case shows that it is conceivable to have a latecomer sector in software, an area where India has built a commanding lead in both technical and process capability at the firm level. However, PRC firms did this in cooperation with foreign MNEs to service the PRC’s domestic market, and separately by working in Japan, a culturally similar market. The Philippines case shows that a latecomer can flourish by bringing in MNEs as providers – following a pure labor arbitrage story, and with similarities in language. Domestic firms have a chance to get into the industry in at least one way: by emphasizing lower skilled (i.e., less “intellectual”) work.

Our second objective was to illustrate the broader implications of the IT services (outsourcing or offshoring) industry. As can be seen from combining the case level and higher level evidence for India, the sector’s contribution to the overall GDP and exports can be considerable over time. The multiplier effects on output and employment are not unlike those of other sectors. In a large, rapidly economy like India’s, the industry’s effects of the industry on employment may be lower than its effects on growth. However, due to the high value added and higher wages on average, the effects on the economy will be greater on a per person basis. In addition, while the benefits of direct employment will tend to go to the highly educated, and often times the best of them, the industry can still benefit the creation of a vibrant middle class, at least in selected cities. Through natural evolution and policy assistance, these benefits can also be brought to other secondary cities. Finally, the usage of IT to improve the more advanced parts of the economy such as manufacturing, as well as the rural parts of economies, still has a long way to go. The IT sector has the potential (and indeed, may be necessary) for cultivating productivity increases in domestic sectors such as manufacturing, and at least for technologically sophisticated firms.
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Appendix I

Research Approach
Given the key elements of factor advantage, opportunities and firm competencies, and given that the both countries' labor forces appear to have an advantage over other countries, our starting point was to examine whether and how firms in these countries manage to strategize, or what MNE-locating behaviors are involved, with regards to opportunities, in developing strong outsourcing industries. Furthermore, given that the particular nature of the markets and business environments in each of the countries appear to have shaped their industries, we also developed a view of macro level factors. We will rely to some extent on the secondary data and literature for providing this macro perspective.

Our approach to studying competencies at the firm level was a longitudinal study based on multiple field visits to different firms in each of the two countries – China and the Philippines. In addition, we drew comparisons with India based on earlier field work in India. To understand the specific differences that enabled each industry’s growth, we examined each country’s industry as the composition of its firms’ origins and their growth path. Our approach involved the systematic collection of data using a set of semi-structured and open ended questions about: the origins of firms (particularly some of the earliest and most successful firms by the time of the interview); nature of the markets; barriers to firms; interactions with the market and clients; and upgrading path for the firm (i.e. the knowledge and capabilities acquired as the mature). Information on basic factors such as skills, policy, and in the case of the Philippines, infrastructure and language capabilities, were also sought.

Table 2 illustrates the dates of our visits and the interviews conducted. Each interview lasted between one and two hours in length. The interviews in China were made with either a head of the company (usually the CEO) or a key person on the management (e.g. a head of marketing or business development). Interviews in the Philippines were almost all with the heads of the facilities. All of the interviews were transcribed on the spot, and all of the key BPO interviews were taped for later review and possible additions to the transcriptions. (Note that we have changed the names of all the firms that we have interviewed to names that are partly descriptive of the industries they are in.)
Table 2. Interview Samples for China Software and Philippines BPO Cases.

<table>
<thead>
<tr>
<th>Country</th>
<th>Interview dates (approximate)</th>
<th>No. and type of firms interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>Early 2001</td>
<td>29 domestic software firms (6 on outsourcing – mostly smaller firms, all different from ones approached on succeeding visits)</td>
</tr>
<tr>
<td></td>
<td>Nov 2004</td>
<td>(2 domestic outsourcing firms - B-soft and United Innovation – subsumed into third interview sample)</td>
</tr>
<tr>
<td></td>
<td>May 2006</td>
<td>3 domestic outsourcing firms (B-soft, W-soft, I-soft) **</td>
</tr>
<tr>
<td>Philippines</td>
<td>June 2004</td>
<td>12 firms (5 domestic and 7 MNE – mainly call centers and animation firms, as well as 2 software firms and 1 MNE BPO facility)</td>
</tr>
<tr>
<td></td>
<td>July 2005</td>
<td>5 firms (all MNE BPO shared services facilities different from first set of firms)</td>
</tr>
</tbody>
</table>

* included here only for comparison purposes (first visits predated the other two cases).
** additional interview material from a government interviewer was also made available to us on several Chinese firms outsourcing to Japan.

Note: the interview list does not include representatives of governments and software bodies (e.g. associations), which were all approached in each country.