The Next Wave of Globalization?
Exploring the Relocation of Service Provision to India

May 19, 2004

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* The authors thank Frank Mayadas and Gail Pesyna of the Alfred P. Sloan Foundation for supporting our research. They appreciate the comments by the participants of the Manhattan India Investment Roundtable and Harry Rowen on an earlier version. We thank the executives of the forty-six firms that consented to our interviews. The authors also thank, in alphabetical order, the Maharastra Industrial Development Corporation, NASSCOM, and the Science and Technology Parks of India. The authors are solely responsible for the conclusions and opinions expressed in the paper.

In 2003 the cover of Business Week posed the stark question for U.S. white collar workers, "Is Your Job Next?" Motivating this alarming headline is the much larger question of whether the next great wave of globalization will come in services. This is such a profound question, because the general wisdom in developed nations has been that while manufacturing might relocate to the developing world, it would be replaced by service activities, either what Robert Reich (1991) termed "in-person" service or symbolic analysis. This paper does not endeavor to directly tackle this global macroeconomic question, rather this serves as the context within which we examine the political economy of the relocation of service employment to India. The Indian case study is important because it currently has the largest number of offshore service jobs, and its case can provide insight into what might become an important source of employment in other nations such as China and the Philippines.

Today, employment in economies of advanced developed nations is increasingly concentrated in the transformation of digitized representations and not in the manufacture of physical objects. Put differently, an increasing percentage of the working population works at computer screens or on telephones. Even work in "manufacturing" firms is increasingly not on the factory floor, but rather in design, marketing, after-sales service, and monitoring. This strongly suggests that whatever further erosion there is in manufacturing employment, it is unlikely to have as dramatic an effect on the U.S. political economy as would an acceleration in the offshoring of services. Conversely, if manufacturing exports have been a key driver of the growth of the Chinese economy, then it seems likely that nations able to provide services to the U.S. should also capture significant economic benefits.

How significant service offshoring will be for developed country employment patterns is difficult to calculate. However, services now make up the preponderance of all developed

nation's total workforces. For example, according to the U.S. Bureau of Labor Statistics in the 4th quarter of 2003, 83 percent of the U.S. non-farm employment was in the services, and only 11 percent was in manufacturing. During the 1990s more than 97 percent of the jobs added to U.S. payrolls were in services (Goodman and Steadman 2002: 3). Of these, business services and health care accounted for more than half of the total growth. Moreover, business-oriented industries grew from 30 percent of the total service employment in 1988 to 36 percent of the total employment in 2001, while consumer-oriented services fell from 55 to 52 percent (Goodman and Steadman 2002: 8). One recent study estimated that call centers employ as much as 3 percent of the work force of the U.S. and one consulting organization estimated that this will increase to 5 percent in 2010 (CRM Project 2002).

Given the growth of services in developed nations, it is remarkable what the scope for transferring services offshore is what is most remarkable. One of the earliest significant transfers was in software programming (Schware 1987). Software production was easily moveable, because it often never needed be committed to a physical medium. It can be directly done on a computer, and does not demand extremely sophisticated communications capability (Arora and Athreye 2002; D'Costa 2003). Though offshore software production will undoubtedly continue to expand, the disposition of a far larger and more diverse category of activities that come under the general rubric of services is far more interesting. The potential dimensions of this relocation of employment is best captured in the extreme words of an executive at an Indian offshoring facility who stated, "if you do not need to physically see the person doing the work, then it can be moved."

Estimates of the number of service jobs that could be offshored vary dramatically, however a recent study indicates that this could as great as 15 million (Bardhamand Kroll

2003:6). In addition to the obvious call center, medical transcription, claims processing, and data entry types of activities; much more is possible. For example, radiology diagnosis on the 2nd and 3rd shift at Massachusetts General Hospital (and a number of other hospitals) has been outsourced to an Indian firm. In another example, General Electric Capital International Services employs Ph.D. statisticians to do actuarial work. In other words, the types of work that it is possible to discharge offshore are not limited to low-wage unskilled activities. The operative determinants for offshoring are the skills available in the low-cost environment and the necessity of spatial proximity for the function to be discharged.

This paper examines the dimensions and growth trajectory of what in India is termed the "information technology-enabled services (ITES)."[1] Despite the fact that this offshoring is at an early stage, we aim to provide some understanding of the scale and scope of the phenomenon and consider its policy implications. Currently, ITES is treated as an industry, however from a value-chain perspective, it is more plausible to understand this as a spatial reorganization of the location of service activities in a wide variety of value chains. In this sense, the implications of offshoring resemble the general purpose technologies (Bresnahan and Trajtenberg 1995; Helpman (ed.) 1998). As such, today nearly all existing firms, Indian and multinational, are considering their strategies for taking advantage of offshoring, even while new entrants are also seeking to create opportunities. One of the most remarkable aspects is the level of innovation and experimentation that existing firms, entrepreneurs, and venture capitalists are undertaking in their quest to capture the profits that can be had by effective offshoring.[2]

[1] ITES is a catchall term used for the myriad processes that any bureaucratic entity undertakes in servicing its employees, vendors, and customers. These include human resources, accounting, auditing, customer care, telemarketing, tax preparation, claims processing, document management, and a wide variety of other activities.

[2] As in the case of the Internet Boom, we do not assume all of these initiatives and experiments will be successful. In fact, we believe many will fail. However, like the Internet or manufacturing's movement to China, we do believe that offshoring of services could have a dramatic effect on the geography of global economic activity.

We begin this paper by providing a brief overview of the relocation of services in the past. In the second section, we describe the technologies and environment for the relocation of services underway currently. This is followed by the third section that examines the value proposition for relcoating services from the point of view of the firm. India is the largest destination for services currently being relocated internatioinally and in the fourth section the Indian experience as it has been the most signfiicnat beneficiary of the movement of services from developed to developing nations. The fifth section describes the characteristics of the different types of firms providign services from in India. In the discussion and conclusion, we speculate on the implications of the offshoring of services for developed and developing nations and possible policy initiatives for developing nations interested in the possibility of entering the ITES sector.

Services and Their Relocation

Until recently, services globalization meant the provision of services by giant MNC service firms operating in nearly every nation. The range of global service providers is impressive, led by large banks and insurance companies, but also includes law firms, accountants and executive search firms and the like. However, these service firms perform activities for the local market and this remains the classic form of service globalization. In this case, globalization was an outcome of the need to support customers wherever they might be located and there is only a rudimentary division of labor. For example, Goldman Sachs might locate its strategist for Japan in Japan because such a person would need local information, networks, and other resources to function. During this phase service activities were normally not decomposed into separable and relocatable processes nor were segments of a particular service concentrated into a

few localities. This simple form of globalization did not create a value-chain composed of discrete activities that could be parsed and allocated to operations in different countries.

The relocation of services has a long history. The initial relocation of many services was intranational. So, for example, call centers were relocated from high cost cities to lower-cost small towns. The earlier efforts to minimize wage costs for back office business processes saw firms move their back-office operations to smaller Midwestern towns where accents were neutral, education was adequate, labor costs were lower, and, at that time, the labor relatively more reliable. The cost savings were likely in the 20-30 percent range when the low-cost land and labor costs were totaled. However, these rural labor pools were shallow thus limiting the scale of operations.

Beginning in the 1980s, some credit card processing and some call center activity for the U.S. market was relocated to Latin and Central America and the Caribbean. Increasingly, components of back-office services, such as payroll and order fulfillment, and some front-office services, such as customer care are being relocated from the U.S. and other developed countries to English-speaking, developing nations especially India, but also other nations such as the Philippines.[3]

ITES offshoring directly targets staff, particularly the back office and administrative functions. The staff functions within a firm are a polyglot of different activities ranging from marketing, human resources, accounting, facilities management, purchasing, finance, customer relationship management, and a plethora of other activities. **Figure One** indicates the large variety of activities that are amenable to relocation. In most firms, these activities can account for up to 15-20 percent of total costs and headcount. Basically, nearly any service activity that

[3] Here we distinguish between the traditional "offshore" services such as a tourist hotel in the Third World, or the provision of offshore banking etc.

does not require in-person contact may be transferable. In **Figure One** the claims process is decomposed into separate activities that might be offshored. Presently, the vast majority of these activities are conducted in the U.S. A large insurance firm such as Aetna would employ thousands of persons to undertake these functions, many of whom are involved in either routinized activities or those not requiring face-to-face contact.

Whereas initially the Indian operation might simply key into a standard form the information from a digitized "picture" of the claim, it should also be possible to transfer some of the "Investigation and Valuation" activities to the Indian operation. With experience Indian accountants or engineers may be trained to "Determine fraud/exaggeration of claims" or, at the least, flag unusual claims. Here, the Indian employees would make decisions requiring greater judgment and have a greater impact on the firm's bottom line. It is possible that eventually all the activities in this process that do not need direct face-to-face human interaction could be relocated.

Enabling Technologies and Environment

The completion of most services is the result of an entire chain of bureaucratic activities or what is often termed a "business process".[4] This illustrated in **Figure One**, which graphically portrays in the case of an insurance claim. The processing an insurance claim is a complex chain that requires the effective completion of a large number of discrete activities. Each of these activities represent costs to a firm. Until recently, such processes were treated as a

[4] We define a "business process" as a complete service, such as handling a customer complaint, processing a medical claim, or processing a purchase order. Completing a process requires undertaking a set of activities. For example, in handling a customer complaint it is necessary to understand the complaint, decide on a course of action,

fixed cost and received little management attention. The emphasis on reengineering that swept management in the 1990s focused attention on the savings that could be achieved by reorganization. One part of this reengineering was to decompose, examine, and standardize the activities necessary to complete a process (Hammer and Champy 1993; Cole 1994). This was often accompanied by a digitization of, at least, some activities in the entire process. The reengineering permitted more detailed consideration of the most cost-effective way of completing each activity in a process.

The underpinnings of the current ability to offshore services is rooted in technological development in the 1970s. Engineers and corporate visionaries in Silicon Valley and a few other places in the world were designing the "office of the future" within which paper would be banished, replaced by digitized images on a screen (for a discussion, see Burg 2001; Kearns 1992). Today, we know that paper has not been banished, however increasingly the information that was encoded on paper is either digitized or must be digitized. Similarly, telephone calls on a per bit basis are now all digitized for long-distance transmission. Remarkably, the costs of transmitting digitized information to anywhere in the world having adequate telecommunications linkages has been dropping exponentially on a per bit basis. This means that, in cost terms, formerly distant locations such as India have become increasingly proximate, even as many of their other characteristics such as labor costs remain remarkably "distant". This provides the opportunity for organizations capable of spanning the physical distances and capable of mobilizing equivalent (or at least similar) labor power in that environment can undertake labor-cost arbitrage.

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undertake the action, and follow-up to ensure the action solved the complaint. Each of these is an activity that is potentially separable from the others.

Digital technologies were essential for loosening the spatial constraints for where most information provision, processing, and retrieval can occur. Most important has been a dramatic increase in amount of telecommunications bandwidth that has been accompanied by an approximately 50 percent compounded annual decline in the cost of transmission of a data bit during the last decade.[5] Today, it costs little more to have a customer call India on a toll-free number than it does to make the same call in the U.S.[6] These lowered telecom costs made it feasible to undertake communication intensive tasks outside of the U.S. This was further facilitated when, during the Internet Bubble of the 1990s, telecommunications carriers installed enormous amounts of new international fiber optic cable capacity leading a capacity glut that led to dramatic price declines.

For documents, a similar revolution is underway. Whereas, ten years ago scanners were slow and expensive machines, today industrial-strength scanners can digitize documents at the rate of 160 pages per minute. This digitization is not optical character recognition, but rather conversion into an image file. Once the documents are digitized they can be viewed on a computer anywhere in the world that has a high-speed telecommunications connection. This eliminates the necessity of shipping the paper. Simply put, in a digital world any activity not requiring a physical presence can be undertaken almost anywhere that is connected.[7] Hence, the offshoring of business processes is an interesting entry point for re-thinking the spatial fixity of services (Harvey 1982).

[5] The decrease in rates was facilitated by technological change, but also by U.S. government pressures on other countries to decrease their fees for connecting international calls (Cowhey 1998; Melody 2000).
[6] Large call center operations have computer servers that can route the incoming call to anywhere in the world where there is an idle operator. These are often called "cloud" servers, because they operate as though they were hovering in the sky and directing calls.
[7] For a service-dominated economy, the implications of ITES are especially important since every activity in a service business can potentially be modularized and outsourced. This is unlike manufacturing where at least the final assembly of a product has to be done in-house.

The electronic digitization of the objects of service work permits changing its geography of provision. When a service activity is examined as a totality, then it appears to resist relocation, because most services require at least some level of face-to-face interactivity, either among co-workers or with persons outside the organizations, such as vendors and clients. So, in many cases reengineering was also required. Few considered that enabled and even induced by information technology, the provision of services could be parsed into components requiring different levels of skill and interactivity and then certain portions of the process – that might or might not be skill-intensive, but required low levels of face-to-face interactivity - could be relocated offshore. Often this was quite mundane work (Callaghan et al 2001). As Orlikowski (1996) demonstrated in her study of technical help desks, digitization induces workflow to be reorganized in the direction of dividing workflow into tasks that are separable in terms of technical skills and interactivity. This has significant implications for the possibility of offshoring, even in the absence of cost arbitrage opportunities such as are available when work is outsourced to developing nations like India.

The increasing acceptance in corporate information systems facilitated offshoring of standardized software platforms, such as IBM and Oracle databases, Peoplesoft for human resources management, Siebel for customer relations, and SAP for the supply-chain management. This adoption meant that firms and employees had to make fewer asset-specific investments (Williamson; Coase).[8] Employees in developing nations could learn a portable set of portable skills lessening their risk. This encouraged investment in learning and facilitated the creation of a more global workforce. This emergence of global standards provided the tools and

[8] This standardization was partially due the concerns firms had about Y2K that led them to replace their idiosyncratic legacy systems with standardized packages

opportunity whereby multinationals and Indian service firms could consider India as a site for undertaking ITES.

Technology was necessary but not sufficient to convince firms that they should move their service activities to India. The second important force was the conviction that such relocation could be undertaken with minimal disruption. For this a level of comfort concerning appropriate levels of security and assurances on business continuity were necessary. An important factor in overcoming this discomfort was the already successful offshore software operations of the MNCs and the Indian software outsourcing firms that had a track record of satisfying international customers. A second, and equally important, factor was that the business process offshoring pioneers were large multinationals like General Electric and American Express that had established large Indian operations much earlier. These were part of a learning and comfort building process that created the foundations for the current wave of offshoring.[9]

The final factor driving the offshoring of services is the pressure to lower costs endemic to enterprises in the U.S. and Europe. The over-capacity in nearly every industry places intense pricing pressure on nearly all firms. With revenues largely stagnant for the last three years, firms are under intense pressure to cut costs while retaining service levels. Automation was one response, but many "routine" activities are not sufficiently routinized, and thus human intervention is still necessary. This pressure even convinced firms that moving mission-critical, time-sensitive processes offshore was critical for responding to stockholder's pressure to increase projects.

[9] A standard for service provision has yet to be developed or specified by either ISO or other quality-certifying body. Some India-based call centers have been considering obtaining certification from an American trade body, the Customer Operations Performance Center, (www.copc.com). From our interviews, it appeared that market forces were compensating for the absence of certification. Thus, to reassure clients on business continuity concerns, Indian outsourcers often over-engineered their infrastructure and security processes. For example, some firms used internally generated power as the primary source of electricity, keeping another power generator as a primary back-

Offshoring from the Perspective of the Firm

The decision to offshore an activity is a strategic decision. While technology enables certain decisions, it does not determine them. In choosing which processes to undertake offshore, it may be thought that the simplest processes would be offshored first, since the skills for undertaking more complex processes might take a longer time to learn—and, in general, this is the case. However, as Bruce Kogut (2004) has shown an MNCs foreign subsidiaries are capable of and do learn. These panel observations can miss the larger trajectories. Already many of the more mature MNC operations such as those of General Electric and Hewlett Packard have been rapidly absorbing higher value-added activities The Indian operations are experiencing learning—even it is simply catch-up (Kogut and Zander 1992).

The single greatest motivation for considering India or any another developing nations for outsourcing is, quite simply, that Indian labor costs are significantly lower than those in developed nations are. Savings in direct labor costs, though as we show, are impressive, they do not capture the entire calculation a firm undertakes prior to offshoring an activity. Only in very rare instances are the outsourced functions a set of skills that cannot be secured in the developed nation. Though hotly debated, the one vocation for which this generalization may be not true is software programmers where there were labor shortages in the 1990s as demand increased rapidly.[10] However, as this section indicates the determinants for deciding whether to site an activity offshore are not determined entirely by labor costs.

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up and the least reliable source, grid power, as the third option. Similarly, over-provisioning telecommunications bandwidth was also common.

[10] For the argument that there is or, at least, was a shortage, see Bar and Tessler (1997). For the counter-argument, see Matloff (1998).

The infrastructural costs of siting an operation in India are approximately the same as they would be in a U.S. industrial park. According to our interviews, electronics and computer equipment is possibly 10 percent more expensive than it would be in the U.S. Formerly, on-site equipment and service may have been an issue, however during the last decade all major electronics vendors have established customer support operations in India thus maintenance and repair are no longer issues. For the ITESs, telecommunications capacity is critical, but in our interviews no firms expressed any difficulties with connectivity in terms of capacity or quality, though all had redundancy built into their systems. The most difficult remaining infrastructural issues appear to be linked to the utility and transportation infrastructures – India is still an underdeveloped nation. However, corporations have developed private solutions to these difficulties including multiple redundant back-up power and fleets of private buses to ferry employees to work. These do add overhead costs to the operations, but they appear to be manageable.

The primary reason for siting ITESs in India is the low cost of labor, which reproduces itself in the relatively low-cost domestic economy, but is of sufficient quality to be substitutable for far higher cost labor in the developed nations. As an example, in 2003 a junior accountant at a large U.S. firm with less than one year experience would earn between $36,000-42,000 per year (AICPA 2004), and approximately 10 percent more, if they are certified public accountants. In India, a newly graduated junior account would typically earn less than $9,000 a year. The differential for less skilled workers is even greater as the Indian wage rate for entry-level call center employees in metro areas is $2,400 a year. Moreover, even the more mundane jobs are considered attractive.

There are further savings that can be had by taking advantage of the economies of scale derived from concentrating activities in fewer locations. Often, in the developed nations, activities like credit card processing or customer service call centers are scattered in a number of locations, because operations are limited in their ability to expand because of the shallow local labor pools. Thus expansion requires the establishment of new facilities in other regions resulting in an inefficient spatial posture. Relocating to a large city in a developing nation can address the scalability problem because they have large labor pools and complementary services, e.g., Mumbai, Delhi, and Bangalore regions have over 5 million inhabitants, and other cities such as Chennai, Hyderabad, and Kolkota have similarly sized workforces. For example, the call centers in India we visited varied in size, but the median size was 1000 employees. The average size in the U.S. is under 400, and many are between 150 and 300 employees.

The advantages of scale and scope economies, though difficult to measure, appear to be significant. For example, a larger facility requires a smaller reserve to manage peak loads, thereby creating both a manpower and facility savings. Concentration in one location facilitates the pooling of many clients by the outsourcing provider. For example, in the U.S. medical transcription is outsourced to small local firms or even individuals. In contrast, firms operating in India can offer guarantees of quality that the smaller U.S. operations can not offer. The much larger Indian operations can buffer the effects of absenteeism and also capture efficiencies from a greater division of labor.

The reengineering that occurs as part of a transfer process can provide significant savings. The source of these savings is the study and planning necessary to transfer a business process. In the process of study, often aspects of the current methodology for discharging the process are discovered that do not add value. Because, frequently, as Brian Arthur (1994) and

Paul David (1986) have shown, production processes are the result of an evolution that has been shaped by the pre-existing social relationships and context that may have developed for entirely different reasons. Very often, the legacies of earlier work methodologies and workplace social arrangements frame the way the new technology is used.[11] The result is that the current methodology for discharging them is not the most efficient.

During the transfer process, it is easier to reform or abandon inefficient practices than it would be at an existing facility where they have become a "natural" part of the daily routine.[12] These reforms can be implemented without disrupting work patterns as the workers in the new location are met with a fait accompli. Though difficult to quantify, the savings that can be achieved through this transfer process can be significant.

For the firms the returns are substantial. In India, the direct cost per call-center employee is $10,354 (or $5.20 per billable hour, of which $3.10 is the estimated labor cost). This would yield a 33.7% return on the direct cost of each employee seat. Comparably, direct costs in the U.S. are estimated at $55,598 per employee (or $27.80 per billable hour, of which $21.50 is the estimated labor cost). On the basis of the firms we interviewed, we estimate that the median size of a firm is 1000 persons with typical fixed cost investment of $7,500 per seat, the annual return on capital would be 46.6 percent and average gross profit (which is tax exempt under current law) would be about $3.5 million (citation). By any reckoning, these are substantial profits.

[11] There is a significant literature about how technologies co-evolve in their social context to outcomes that are not the most economically efficient. As a result, when they are removed from these social contexts sometimes they are freed from fetters that the social relations within which they are encased. One example of this is the quality control movement that was pioneered in the U.S., but when transferred to both Sweden and Japan actually were even more successful especially in Japan where the movement (Cole 1989). In an earlier exploration of the trans-Atlantic transfer of textile technology, David Jeremy(1981) shows that Americans fundamentally reshaped the British cotton manufacturing technology, and ultimately became far larger and more powerful than their British counterparts.

[12] This is confirmed in studies of the transfer of Japanese production management techniques to the U.S. It was more difficult to transform existing operations than it was to begin with an entirely new workforce in a greenfield facility (see, for example, Adler et al.(eds.) 1993; Florida and Kenney 1991; Kenney and Florida 1993).

The ability of Indian operations to offer services in as timely or more timely fashion than would be available in a developed nation is an important attraction. Undertaking service activities in India permits firms to operate around the clock through activities such as joint development teams, which implies joint or equally skilled operations, or, a division of labor in which Indian workers debug the day's software build in its developed nation's operation. This greater use of the entire day would allow deadlines to be shortened. In the case of medical transcription, a doctor's notes for patients in intensive care can be completed in as short as two hours, because the Indian operations can afford greater slack resources to meet peak loads than their Western counterpart can. This dimension of quality related to slack resources is far more expensive to offer in developed nations where labor is more costly.

Set against these benefits in terms of cost and possibly timeliness, there are significant strategic concerns. These concerns are usually not so pressing in the more highly commoditized and well-understood service activities. For activities that have higher knowledge and creative inputs the firm seeking to transfer an activity is often concerned about whether the service quality will decline. For example, quality might slip if the remote location cannot understand the quality or qualities needed, or even if it understands, cannot match the quality needed. This is most likely for activities that have a large tacit component or where intimate market knowledge is necessary. Activities such as design and marketing are likely to be the most difficult to transfer, and interestingly enough, since they are not usually commoditizable are the very ones that usually create the highest value-added.

MNCs may also be concerned about a loss of competencies in a certain location that would be costly (or even impossible) to reacquire in that location if ever again required. Over dependence on a single developing nation, could, if unique skills atrophy in the home nation lead

to a disruption of access that could have dire consequences. One way MNCs mitigate these concerns is by developing a "blended" strategy whereby the activity is shared between some domestic capacity, "near-shore" capacity in somewhat lower-cost labor nations such as Canada for the U.S. or Eastern Europe for Western Europe, and "offshore" locations such as China, India, and the Philippines. Such strategies minimize risk. Of course, as the firm learns how to operate in the offshore locations, then a greater proportion of the activity may be relocated offshore (for a general discussion of such learning processes, see Kogut and Zander 1992; Kogut 2004). In some cases, offshoring but retaining the process in a subsidiary would be the correct strategy, while in others outsourcing may be more sensible.

The greatest blockage to relocating offshore is the "stickiness" of the activity, itself. The two dimensions of interactivity that affect the location of ITESs the most are: 1) the necessity for those in a service provision value chain to have face-to-face interaction with each other to discharge the service, and 2) the necessity of face-to-face interaction with the customer. The greater the need to physically interact with other persons and the greater the interaction across different services and processes, the higher the cost and risk threshold of offshoring portions of the work. Put differently, if portions of the value chain can be modularized and develop highly standardized linkages, then both offshoring and outsourcing are easier (Gereffi et al. 2004; Baldwin and Clark 2000). Another alternative might be to offshore the entire process, thus retaining interactivity at the new location.

If certain activities in the entire process cannot be offshored, then offshoring only some of them might be feasible. Consider a process within which 70 percent of the work is web or database research, while 30 percent is interacting directly with clients. If it is not possible to separate the process into activities, then it will be impossible to transfer. Often, separability is not

dichotomous but rather a matter of degrees. It may be possible to reengineer a process to make it more separable, and thus partially offshoreable, though this may be at the cost of some level of service quality.

The decision on whether to offshore an activity is a complicated process. Implementation of the decision is also difficult especially for firms without experience in the Indian environment. And yet, increasing numbers of firms are deciding that their competitive environment compels them to respond to such moves by their rivals. Whereas, only five years ago offshoring services was not a high priority among most Fortune 500 firms, in 2003 it had become almost a mantra among corporate executives. For example, the Senior Vice President of Microsoft's Windows Division, Brian Valentine, in a presentation to company managers advised them to "pick a project to outsource today" (Nachtigal 2003). The available evidence indicates that, from a financial perspective, relocating service activities to developing nations, especially India, is compelling, and thus likely to continue at a very rapid rate.

The Indian Connection

India's attractiveness as a site for undertaking ITESs is a combination of preexisting condictitions and the results of a variety of policies. The preexisting conditions included a large pool of English speaking, college-educated persons; many of whom were unemployed or under-employed and willing to work for wages that were a fraction of those in demanded in the developing nations. Also, beginning in the mid 1980s, the Indian government began to liberalize its economy, and various states established policies aimed at attracting MNCS. The relocation of ITES to India can be traced to the emergence in the mid 1980s of India as an offshore site for software production by both MNCs and a large number of Indian independents (Arora and

Arthreye 2002 and D'Costa 2003). It was their experience in software that convinced MNCs that other service needs might be fulfilled remotely from India.

Most of the policies that enabled the development of the ITES sector were already being implemented as part of a general deregulation of the Indian economy and policy of encouraging exports. Some of the most important of these were permitting 100 percent ownership by foreign firms of their Indian subsidiaries, allowing the duty-free import of equipment used in exporting industries, and no taxation of all exported products and services. These were applicable to the ITES sector and were significant incentives for both Indian firms and the MNCs.

The most significant policy reform for the ITES sector was the reform and deregulation of the communications infrastructure (Dossani, 2002). Beginning in 1999, India liberalized its public monopoly telecommunications system and permitted a large number of Indian private providers to begin offering service. The private providers could select their specializations, ranging from providing niche services, such as backbone and network management, to full-service integrated voice and data operations. For larger cities, the result has been the creation of a telecommunications network with quality and cost levels approaching that of developed countries. Recently this service is being extended to second-tier cities, i.e., those with a population of in excess of one million persons.

By 2000, the conditions in India were prepared for the take-off of the ITES sector and began to experience very rapid growth.[13] Whereas, in 2003, software programming employed approximately 400,000 persons in 2033, it was only growing at 20 percent per annum (NASSCOM 2003). The most reliable estimates of offshored ITES employment was 171,500 in March 2003, up from 106,000 in March 2002 (Nasscom-McKinsey Report, 2003). According to Nasscom, the ITES sector's revenue for the financial year ending March 2003 was estimated at

$2.375 billion compared with $1.475 billion in the previous year. The revenues per employee was $13,848 in 2002-03, unchanged from the previous year. Assuming a compound annual growth rate of 45 percent, the Nasscom-McKinsey report estimates that the ITES operations will employ, at least, 900,000-1,000,000 persons in 2008. This roughly in line with the growth rate over the previous five years, on the basis of our interviews appears to be.

The expected savings on the activity being relocated to India is at least 40 percent (**See Table Two**) provides an illustration by comparing the costs of operating a call center in Kansas City and Bangalore. Often the savings can be even greater. One Fortune 500 firm that consolidated several fulfillment operations to Bangalore reported that the overall cost savings of 80 percent.[14] These represent significant dollar savings. The NASSCOM-McKinsey report (2002) found that General Electric (GE), one of the pioneers of outsourcing service operations to India, in 2002 had achieved an annual savings of $340 million per year from its Indian operations. Even if these numbers are inflated, the savings are remarkable (and accrue directly to the firm's profitability).

If ITES offshoring to India is restricted to call centers and financial data processing, while the business may grow sufficiently large to overtake software outsourcing, it will not have a dramatic impact on the employment situation in the U.S. and other developed countries. On the other hand, if India expands to discharge the entire spectrum of services, then the impact on both the U.S. and India could be enormous. What if India were to parallel the importance China has achieved as a manufacturing destination? An indication of how significantly India can benefit is that, as of now, only approximately 80 U.S. firms (almost all in the Fortune 500) have

[13] For an early discussion of the role of India in business process offshoring, see Aron and Singh (2002).
[14] Personal interview with authors, April 2003

offshored BP outsourcing work to India, though these on average predicted their employment would double during the next 12 months.

The initial activities relocated to India have been highly routinized, and resemble the initial phase of software outsourcing, where the first phase was coding. More complex processes such as preparation of receivables statements and managing collections have, more recently, proven to be amenable to transfer. The next phase may take several directions: (1) Processes linking the organization with customers or suppliers or supporting production processes that may be amenable to remote fulfillment. For example, one firm reported that, after beginning with answering calls from potential clients for loan services, the Indian operation graduated to pre-qualifying clients prior to handing these off to the loan officers located in the U.S. Another had moved from medical transcription to coding the transcribed work into a billable event. Also, supply chain management and customer care are possible candidates. In healthcare, clinical trials, gene testing, and algorithm-development might be offshored. (2) As ITES outsourcing providers develop expertise through working for several clients, they may be able to move upstream and provide advice on business process reengineering.

In the discussion of **FIGURE One**, the focus was upon the transfer of activities, which is most salient. However, the lower cost of more highly skilled personnel also permits a rethinking of earlier cost-benefit decisions. As discussed above, the cost of a trained accountant in India is so much lower than in the U.S. that it becomes possible to audit a greater number of cases and/or lower the threshold for universal auditing. The result is a diminution of mistakes and fraud leading to greater cost recovery. Such opportunities could transform the Indian claims processing operation into a profit center.

An example from the travel industry is instructive of another possible growth trajectory. One Mumbai-based firm that we visited provides services to the airline industry. Its primary business is to tally the boarding cards issued by its client to travelers and declare the revenue arising therefrom. In the course of fulfilling this service, a client noted a long-suspected problem, that, on average, travel agents were underpaying the airline. However, the percentage of underpayment was believed to be minuscule to collect and had never been tracked by the airline. The Indian firm used boarding card information to tally the dues of the airline and compared this with the amount paid by travel agents, discovering a significant gap of 1 percent, much higher than the airline's expectation. The airline subsequently began collecting this underpayment and the provider expanded the service to other clients as well, and discovered that average underpayment exceeded 1 percent. Thus, it was able to verify and collect upon a long-suspected item because the low labor costs made this feasible. In both of these cases lower costs decreased the break-even point thereby creating a new revenue source. In these cases, India is both receiving transferred jobs and creating new jobs.

For Indian firms and policymakers where India ends up in the value-addition process is critical. Even today, the Indian software industry operates in the low value-added segments, typically in applications development, testing, and maintenance, while the high-end work such as developing the IT strategy, identifying the software needs, designing the system, and integrating the project with other packaged and custom components is discharged by U.S. firms. If the Indian ITES operations are not able to move up the value chain then offshoring may not prove to be so important to the development of the Indian economy.

There are challenges to India's ability to maintain the current growth pace, although these are not likely to have a short-term impact. The first is a shortage of managerial talent.

Particularly significant is locating managers capable of managing the migration of a business process from an overseas firm to the Indian operations. The larger and apparently more successful BPO providers reported that it often took up to a year to make such a transfer for some of the more complex back-office operations, while the simpler ones, such as outbound call centers, could be transferred within a month. Another managerial task is the maintenance of a seamless relationship between the Indian entity receiving the work and the organization in the developed country. It is also necessary to have managers capable of maintaining and raising the productivity of operator-level staff. While some firms, notably multinationals, had achieved productivity rates that match or even exceed those of their developed country counterparts, this has been a problem for independent firms, and is greatly exacerbated by high staff turnover levels. Although the turnover rates may be lower than in developed countries, some Indian firms interviewed reported attrition rates of 7 percent per month, although 3.5 percent per month seemed to be the average rate.

Indian operations, especially the independent firms suffer from a shortage of expertise, especially in the fastest growing vertical sectors, such as, finance, insurance, real estate, health care and logistics.[15] Given that India has only recently liberalized many industries, expertise outside the long-established banking sector is outdated. Unfortunately, horizontal skills are also in short supply. According to the Outsourcing Institute (www.outsourcing.com), horizontal expertise is most needed for payroll, customer care, document management and benefits management. Apart from accounting, India has little experience in these areas.

[15] According to the Outsourcing Institute, these are high growth areas in the U.S. (www.outsourcing.com)

The Industrial Structure of the Indian ITES Industry

This section reviews the different organizational forms currently operating ITES facilities in India. The number, size, and diversity of organizations offshoring service processes is great. The diversity of organizations is likely the reflection of two different features. First, the sheer diversity of activities that can be offshored. Second, the inception of a new economic opportunity attracts a wide variety of different organizations seek to exploit the new market space (Schumpeter 1939). As an economic space matures, often many of the organization forms fail, though given the wide variety of activities in numerous different value chains that are included in the ITES field, a wider variety of organizational forms might survive than one would expect in a single industry characterized by clear boundaries (Hannan and Freeman 1989).

There are two important dimensions for categorizing firms in the ITES sector. First, are they Indian-owned and operated or owned and operated by a multinational?[16] Second, are they a captive or a firm that undertakes outsourced work. Because the potential market is so great, and the economics so compelling, there have been a plethora of entrants from a large variety of backgrounds (see **TABLE 3)**. Moreover, as ITES offshoring to India is only in its earliest stages, it is hazardous to predict which organizational forms will become dominant. Moreover, it is not clear whether there will be a single ITES industry in India, and whether the captives or independents will dominate, or even compete. Further, there are niche areas such as medical transcription, geographical information system (GIS) data entry, and document conversion that may remain separate from the industry's mainstream. The following general overview is not exhaustive, but does examine those of the greatest importance.

[16] We have included firms formed by non-resident Indians in the U.S. and the U.K. in the multinational category. Some of these firms, which operate as outsourcers have grown significantly. However, as a category they are not significant. In total as of March 2003, they employed less than 10,000 persons.

Like the earlier movement of software programming to India, the MNC captives led the way in the establishment of the first ITES offshoring operations in India. They are still the largest and, even more important, the most sophisticated operations because of the capabilities that they have developed and utilize. To date, they have retained the most sophisticated work in-house. This contrasts with software outsourcing, where the domestic firms soon became dominant in terms of the numbers of employees and earnings. Though difficult to predict at the moment, it is possible that in ITES, Indian firms industry may not become dominant due to strategies on the part of the MNCs to retain the highest value-added activities internally as this not only to minimizes risks, but also allows them to capture the high returns that come from arbitraging India's lower labor costs.

MNC Captives

The MNC captives are the largest operations in India and undertake the most sophisticated work. The earliest ITES operations were initiated by MNCs that had existing software development facilities in India, and then decided to add ITES to their Indian operations. The first ITES operation in India was established by American Express in 1993. In 1996, British Airways established a back-office operation in India. In 1998, General Electric initiated BP operations in India. In November 2003, General Electric was the largest ITES employer with over 15,000 persons in its operations, and was meant to increase to 20,000 by March of 2004. However, the rush of MNCs did not begin until 2000, as firms including AOL, Citigroup, Hewlett Packard, HSBC, and JP Morgan Chase leveraged their Indian domestic operations to establish ITES subsidiaries.

Roughly contemporaneously, MNCs such as Dell Computers, AOL, and SAP that previously had had no Indian operations began establishing ITES operations. These newcomers also rapidly expanded their operations. For example, Dell launched its Indian call center operations in June 2001, and by April 2003 had grown to a total of 3,000 employees in the original facility and was opening a second facility in another Indian city (Financial Express 2003). AOL's Indian operations experienced similarly dramatic growth. It commenced operations in July 2002 with 200 employees and as of July 2003 had grown to 1,500 persons and expected to grow to 1,900 by the end of 2003 (Ribeiro 2003). The experiences of these leaders have emboldened other firms to follow.

As internal operations, the captives have significant advantages. First and foremost, they have guaranteed markets for their services, i.e., they have the advantages of hierarchy. Decisions on allocating volume are hierarchical and the information driving decisions is excellent. In the case of lower value-added, routinized work the advantages of captives may not be great and risks may be minimal, so the decision to outsource or do the work in-house may be almost solely on price, though even here there may be advantages to conducting these activities in-house to gain experiences for the firm and its employees. In the case of higher value added processes, it may be more prudent to retain them in a captive operation. Not surprisingly, the initial activities transferred were at the low-end of the value addition spectrum. However, this has not proved to be the end state for the more mature operations.

Both the Indian operations and the firm are learning. In a number of cases, over time higher value-added activities have been transferred. For example, General Electric's Indian operation has moved up the value-added chain has added employees doing actuarial support, data modeling, and portfolio risk management. In its health care insurance operations, GE employs

40 medical doctors to evaluate and classify medical claims. Leading firms such as GE and Intel are hiring Ph.D. scientists and engineers for their operations. This suggests that larger MNCs will ultimately prefer to undertake ITES in captive units. However, call center work, which tends to be a self-sufficient process with limited interaction among global employees, could well continue to be outsourced.

Another factor favoring captives is that, while relocating back-office activities to India is complicated technically, the organizational issues can be even more problematic. Consider the unit that is surrendering the process: though it is under intense pressure to cut costs, there is, at a minimum, a perception of increased risk as it becomes dependent upon an Indian counterpart that is not under its direct supervision. This unease is even greater in the case of mission-critical activities. This is mitigated when the Indian operation is a subsidiary.

Operating a captive requires significant managerial talent. For those with long-established Indian operations (typically serving Indian markets) this is more likely to be available internally, whereas the new MNC entrants are likely to experience significant learning costs. One dilemma they face is whether to staff the operation with expatriate executives or to hire Indians. During the initial ramp-up, the new entrants had to send some expatriates despite the enormous expense, because they did not have existing expertise. For these firms, the expense of maintaining expatriates will become an issue, however, at present, the savings appear to be sufficiently large so as to offset the expense.

Some of the more mature MNCs are converting their Indian operations into a global center of excellence. One reason for this is to centralize power, control, and expertise. For example, in many firms business processes are nationally based and developed in different historical eras. As a result, practices may vary for identical functions. Enforcing standard

operating practices in the different national environments can be difficult, because there is a constant tendency to "go native." This drift is endemic in even the best firms, and may be most pronounced in the less intensively "managed" parts of the national unit's operations such as the back offices. The transfer of these processes to a specialist organization dedicated to managing them, not only creates economies of scope and expertise, but also provides an opportunity for standardization, and the removal of the process from the national "drift." While this may be resisted at the national level, for global headquarters this can be a way of exerting control and improving monitoring. There is, of course, risk in the centralization of particular process practices at one global center. The most significant of these is that the global operation will lose touch with the national environment.

The final advantage of a subsidiary is that, in the future, it could become a merchant service provider. This would transform the subsidiary from a cost center into a profit center. According to our interviewees, a few of the largest subsidiaries' operations are considering offering services to external customers. This could become significant in the future when the number of activities being transferred from the parent firm decreases. However, in 2003, the pressure on these subsidiaries to accept more work from inside the firm is so great that there are no stack resources available for external customers. The opportunity to exploit the capabilities being built in India as a profit center may become significant in the future.

In 2003 the subsidiaries are the largest sector of the BP industry in India. There is every reason to expect this will continue for the foreseeable future. The advantages of a subsidiary are considerable in terms of reducing risk and possible knowledge leakage, capturing profits internally, and using internal operations to benchmark outsourcing contracts. Since less than 10

percent of the Global Fortune 1000 firms currently operate in India, it seems likely that more firms will establish operations and those currently operating will expand.

Multinational Outsourcers

Service outsourcing has a long history, and has grown rapidly during the last decade. Estimates of the total size of the BP outsourcing market vary widely. For example, in recent press reports consulting firms have estimated the global market to grow to $140 billion by 2008, $544 billion by 2004, and even $1.2 trillion by 2006. In other words, the lack of consistency is remarkable. The remarkable divergence in estimates is perhaps due to the fact that definitions differ, and because business service outsourcers are a polyglot category that includes data systems outsourcers such as EDS and IBM, payroll and accounting processors such as ADP, call center and customer relationship managers such as Convergys, Sitel, and Sykes, large consultant firms such as Accenture, and many others. Globalization is not new for these outsourcing firms. Not only do the larger ones provide services internationally, many of them already had cross-border operations. Many already had offshore facilities in the Caribbean, Latin America, and, particularly, Canada. However, prior to 2001, none had facilities in India to service the U.S. market.

The international outsourcers established their Indian operations in 2001 or later as a response to competition from the MNC subsidiaries and the Indian independents. However, the MNC outsourcers have long-established customers and enormous domain knowledge, making them formidable entrants into India. These capabilities and existing customers have permitted them to scale-up their Indian operations extremely rapidly. For example, in late 2001 Convergys opened its first Indian operation in New Delhi. By April 2003 this facility had more than 3,000

employees, and Convergys was building a second facility in Bangalore that was slated to grow to 3,000 employees. The growth of their Indian operations is not constrained by a lack of customers.

The ability to transfer customers to their Indian operations while providing backup in the U.S. and other locations allows service level guarantees that firms operating only in India cannot provide. The conundrum for the MNC outsourcers will be how long their customers will support higher cost U.S. facilities – there has been significant downsizing. For example, in February 2003 Sykes (2003) announced the closure of facilities in the U.S. and in Europe eliminating 1,800 excess seats, even while its Indian subsidiary was expected to grow to 1,200 seats by the end of 2003. In the short-run, it may be possible to continue U.S. operations, but unless the facilities can be transitioned to activities that require spatial proximity, their future is in doubt.

The MNC outsourcers have significant advantages derived from their experience, long-term customer relationships, and ability to provide global solutions to their customers. Their Indian and, to a lesser degree, their Philippino operations are necessary to fend of their competitors. However, as U.S. firms their overhead may be higher than that of their Indian competitors. As a result it is a near certainty that they will continue to downsize their higher-cost U.S. operations. Moreover, the increasing use of low-cost locations like India may have a detrimental impact on their income as pricing pressure increases. These firms are likely to experience a major global redistribution of their production facilities that may also require significant management realignment.

MNC Specialists

India is also attracting smaller MNCs that perform labor-intensive specialty services. These services are wide-ranging, but are based on specialized domain expertise. Though many of these are not really BPs, they are included under the broader category of ITES. Examples of this type of work includes medical transcription, map digitization, cartoon animation, document entry and conversion, and other labor-intensive tasks. In general, these businesses are involved in digitizing analog materials or converting information from one format and/or media to another, e.g., taking aerial photographs and entering them into the database for a mapping program. The sheer diversity of these services is remarkable.

Taken individually, these activities have limited employment potential. However in aggregate, their total employment may be quite large. For example, there are approximately 270,000 medical transcriptionists scattered around the U.S. Recently, there has been an effort to consolidate the industry, however there are few economies of scale so this has advanced haltingly. This consolidation might be hastened, if it could be relocated offshore where transcription can be done at much lower costs and with comparable quality. One difficulty is that not only are the transcriptionists decentralized, but so is the market—making sales and marketing difficult. Recently, this may be changing due to consolidation in the U.S. medical system. Thus, there is an opportunity but it is not entirely clear whether medical transcription can be done offshore, despite the possible savings. The ultimate fate of transcription is not as important as how it illustrates both the opportunities and obstacles to relocating these various niche activities.

Another illustration of a labor-intensive service activity that is being relocated to India is map digitization. Firms and governments want digitized maps, because they are easier to update,

maintain, and analyze. However, it is time consuming and thus expensive to convert the information currently on paper maps into computer files. Low-cost Indian labor makes this economically feasible, and given the increasing use of geographical information systems, this will be a significant niche.

Still other possibilities include legal research using Lexis-Nexis, drawing of tables and figures, drawing and/or digitizing blueprints, etc. The variety of niches within which businesses could be built is remarkable given that transcription, paper-based document digitization, database-centric research, and many more activities exist in the pores of so many U.S. organizations and the economy as a whole. One drawback is that many niches may be too small to justify transfer to India. And yet, the cost pressures are encouraging an examination of the feasibility of offshoring.

The MNC specialists are fascinating because of their sheer diversity and the likelihood that their decisions will be largely unnoticed by policy makers due to each niche's relative insignificance. However, their aggregate importance could be great due to the sheer number of niches. If these myriad firms begin transferring activities and processes overseas, in total it could have an important impact.

Indian Specialists

Indian specialty firms are also entering fields such as medical transcription, map digitization, and manuscript preparation. The difficulty the Indian entrants encounter is their relative lack of domain knowledge. For those Indian firms with deep enough domain expertise, it may be possible for the Indian firm to transform the business proposition from offering simple labor cost arbitrage to providing significant value addition. For example, a publishing firm that

initially only prepared drawings for chemistry texts now offers a full range of back-office services, including copy-editing, HTML formatting, and technical support. It has expanded its product list to include academic and professional journals and even time-sensitive publications such as newsletters. The enhanced capability allows not only the addition of greater value, but also provides greater bargaining capacity.

An example of such capability development is the Mumbai firm, Kale Consultants, which specializes in providing services to the airline industry. Originally, Kale offered specialized airline software packages; however in 2000 it extended its offering to include BPs. Coupling its specialized proprietary software tools with BP outsourcing operations meant that it could offer a more comprehensive package. For customers, this created an incentive to use Kale, and in the meantime created a more permanent or "sticky" relationship. Developing domain expertise and becoming a specialist is difficult, and has risks because the firm becomes dependent on a single industry or activity. And yet, it also offers the potential to occupy niches that may not be drawn into the extremely ferocious competition found in the highly commoditized sectors such as call centers, accounting, or claims processing.

Indian Independents

A large number of Indian-owned and operated firms have been established for the sole purpose of offering outsourcing services to foreign firms. Some of these are venture capital-supported and were formed during the Internet Boom with the objective of providing back office services to U.S. Internet firms such as Amazon and Yahoo!. Not surprisingly, the collapse of the dot.com boom forced these firms to rethink their corporate strategies. Since these firms were supplying back office services, such as answering emails and web-related questions, it was not

difficult to switch their service offerings toward the voice sector, i.e. call centers. Other independents have been funded by venture capitalists in an effort to take advantage of the outsourcing boom in India.

Some independents have experienced rapid growth as they have found customers. It was more difficult to ascertain how successful these firms have been in terms of profitability, although many appear to be cash flow positive. There have been a large number of entrants and a wave of consolidation appears to be underway in the industry as the smaller firms are having difficulty marketing their services to customers. Some independents have been forced to include build-operate-transfer provisions in their contract thus limiting future growth prospects for the independent. This trend may become more pronounced if MNCs view their Indian subsidiary as a strategic component of their global operations and transfer core functions to it.

These independents are often dependent upon a few larger customers making them vulnerable to contract termination. An important example of this is EXL Service, which was the largest Indian independent until October 2002. At that time, 80-90 percent of its revenue (Express Computer 2003) and over 800 of its seats were dedicated to the U.S. insurance firm Conseco. However, in December 2002 Conseco filed for bankruptcy and the number of employees dedicated to Conseco dwindled to 175 persons by April 2003 (Verma 2003). Because of this, EXL Service's growth stalled while other firms surged; though by mid-2003, EXL Service had recovered and was once again growing.

The independents face significant strategic difficulties. Because of the ferocious competition and the felt necessity to expand, the independents are under pressure to pursue any business prospects. However, this mitigates against their expressed desire to develop domain expertise that would enable them to charge higher rates. Another difficulty is that the U.S.

market is the largest in the world, but sizing a facility for the U.S. market means that the facility is often idle during the day in India. The independents have been able to secure some business from Europe especially England that allows them to extend facility utilization, however it is still difficult to utilize the entire facility for more than 1.5 shifts. To increase capacity utilization, the independents bid aggressively for activities that do not require real time processing. The MNC captives are at an advantage in this respect, because the parent firm can transfer a portfolio of activities so as to more fully utilize the facility.

The ultimate fate of the independents is difficult to predict and for the smaller ones survival will be precarious. The larger ones should be able to strengthen their marketing in the U.S., thus increasing their market share. The middle-tier independents might be acquired either by Indian firms or multinationals wishing to quickly enter the BP outsourcing field. The strongest Indian independents may be able to create firms that resemble the multinational outsourcers. However, survival and growth may be difficult.

Indian IT Industry Subsidiaries

The Indian information technology (IT) industry has grown remarkably rapidly over the last decade through the provision of outsourced programming and IT services to the global market (Arora and Athreye 2002; D'Costa 2003, Singh 2002). Because of their ability to use lower-cost Indian software talent, they have made significant global market share gains. In IT outsourcing, Indian firms such as HCL, Infosys, Satyam, TCS, and Wipro are now globally competitive. Further, their interaction with the global economy has contributed to the development of executive and managerial talent capable of securing overseas contracts, managing the interface with foreign customers, and migrating activities across national and

corporate boundaries. In the process, these firms have cultivated close connections with foreign customers. This provides an entree and confidence on the part of customers that facilitates convincing foreign customers to trust them with other services.

Given the growth in ITES, the Indian IT firms believe that it is a sector in which they can expand. Their strategic question has been how to enter this new industry. The major firms have answered this question differently (see **Table 4**). Infosys and Satyam established subsidiaries, one of which Progeon has grown rapidly and recently divided five-year, $160 million contract from British Telecom with HCL BPO.[17] In contrast, the Satyam subsidiary has experienced only limited growth. TCS, the largest Indian software firm, entered the outsourcing sector through a joint venture, and there is limited information about its growth and success. Finally, Wipro and HCL entered the industry through acquisitions. Wipro acquired a venture-funded Indian independent, Spectramind, which has grown quickly. HCL acquired the Northern Ireland call center subsidiary of British Telecom, though the preponderance of HCL's outsourcing employment growth has been in India.[18]

The Indian IT firms have significant advantages in terms of access to capital, linkages to customers, and experienced managers. However, the ITES outsourcing business is quite different from IT. For example, in terms of marketing, the customer's key decision maker for ITES is not the Chief Information Officer or Chief Technical Officer. These services must be sold directly to the various responsible divisions or departments. Further, the ultimate decision rests with the Chief Financial Officer or Chief Executive Officer. This means different marketing channels must be mastered.

[17] Formerly, HCL eServe
[18] In June 2003 BT announced that it was establishing a captive Indian call center.

One possibly important difficulty for the IT firms is that the ITES workforce is quite different. Whereas, in the IT sector the workforce and managers are engineers; in ITES the workers are from commerce and social science. Since service outsourcing work often requires direct interaction with customers, the salient workforce skills are interpersonal, rather than technical. Moreover, customer interaction can be extremely stressful, putting a premium on workforce management. In addition, many ITES are undertaken in real time so errors and mistakes have an immediate impact. Service Level Agreements are tightly written and monitored in real time so problems are exposed nearly immediately. In contrast, in software bugs can be rectified later.

The ability of Indian IT firms to manage non-technical personnel in extremely price competitive environments will be tested. Though the test of their managerial prowess may not come until later, as the rapid market growth ensures an appearance of success for many entrants. Difficulties may remain hidden until growth slows, though by that time they may have built such close relationships with their customers that exit by the customers may no longer be easy due to its depth and stickiness. There is also the possibility that the technical skills within the IT parent could be used to automate aspects of the BP outsourcing process creating another level of value addition that would improve profitability. This would also enable the IT firm subsidiaries to create advantages beyond routine labor cost arbitrage.

Indian Non-IT Industry Subsidiaries

A host of other established Indian firms, attracted by the "Gold Rush" aspects of the sector, have launched ITES outsourcing subsidiaries. These traditional firms with their roots in the large Indian business groups have invested significant sums. From our site visits, already

some of them appear to be experiencing difficulties in securing customers. However, in contrast to the independents, the parent firms have deep pockets, and can compete for as long as their parents are willing to provide subsidies. They will either find a successful strategy, or they will exit the business because of an unwillingness of the parents to sustain further losses.

This genre of firms is interesting because they usually have no particular advantages. In almost all cases, there are few synergies between the parent's existing business(s) and the services they aim to provide. They nearly always have experienced management, though their experience may be in the relatively protected domestic market. Frequently, they have minimal experience in interacting with foreign clients especially in terms of providing services. The lack of inherent advantages beyond deep pockets means that these firms will have to build capabilities in the same way as the Indian independents. Their only significant advantage will be the relative deep pockets of their parent firms, though, oddly enough, this may inhibit their ability to evolve to market demands. In other words, this would pose the classical transaction cost problem where protection from the vagaries of the market could contribute to an inability on the part of the subsidiaries to learn from the market.

Discussion and Conclusion

The implications of the offshoring of service work are significant for both developed and developing nations. Service jobs, which formerly were rooted relatively close to where they were generated due to the sheer logistics of moving paper documents and formerly high telecommunications costs, have now been made mobile by technological improvements and a new willingness on the part of management to consider offshore service processing. During the next decade, the winds of globalization will sweep through the formerly cosseted ranks of

service workers. As enterprises seek to drive down their costs, a new round of globalization will occur within which a complicated multinational chain for data capture and processing will emerge. The old image of the developed nations concentrating on information services, data processing, and knowledge creation may give way to a world in which knowledge creation will become the critical factor – data and information will simply be commodities processed in Third World factories.

The relocation of services offshore and especially to India has the potential to reorganize the global economy in the same way as the movement of manufacturing to China has been emblematic of a reorganization of the production of goods. For the developed nations already reeling from the continuing loss of manufacturing jobs, the emergence of India as an option for firms aiming to lower the costs of providing services creates significant policy dilemmas concerning their appropriate responses. Already in the U.S. state and local governments are passing laws forbidding the offshoring of government-related services. These protectionist responses are likely to increase during the next four years as political pressure increases. Most interesting, in contrast to the movement of manufacturing jobs overseas where, for the most part, only blue-collar workers were involved; in service offshoring it is white-collar, college-educated workers being displaced. These workers are far more likely to vote and have, in the past, been conservative. This means that conservative politicians that have generally supported "free" trade may be forced to reconsider their positions.

For India and other developing nations, the offshoring of services may provide a large flow of new employment opportunities. In the case of India, current estimates are that employment may increase to as much as one million by 2008, however Bardhan and Kroll (2003) have estimated that as many as 15 million U.S. jobs alone are at risk. Obviously, this

estimate should be approached cautiously, and may be too high be an order of magnitude. However, given the rapidly changing technologies this may over the next decade even prove to be conservative. What is clear is that the number of service jobs being relocated is increasing rapidly, however no one knows whether the pace can be maintained or where the limit might be. The limit may, in fact, be elastic and increasing, so what is impossible to relocate today, may become amenable to relocation tomorrow especially as the ITs are evolving so rapidly.

One of the most remarkable aspects of service offshoring is the rapidity with which it can occur. Manufacturing's movement offshore was a gradual migration that has been underway since at least the early 1960s. Though punctuated by dramatic factory closings, there was ample opportunity for the U.S. economy to adjust.[19] This may not be true in services where the "objects" are pixels and electronic pulses that can be transmitted by photons and radio waves (Cohen et al. 2000; Kenney 1997). A number of the firms we studied in India experienced vertiginous growth as they expanded from start-up to 5,000 employees in less than three years. When such growth rates are experienced by a large number and variety of firms, the cumulative effect can be enormous indeed.

Policy had an important role in India's ability to lead this process. India is the beneficiary of a process of liberalization that began in the 1980s under Rajiv Gandhi, which encouraged foreign investment. This path of liberalization encouraged foreign firms to invest in India especially in the software industry. By not taxing profits from exports the Indian government created a powerful incentive for entrepreneurs to concentrate on exporting, though criticized by some (D'Costa 2003), it made Indian businesses extremely sensitive to the global market. Similarly, by providing MNCs a relatively business-friendly environment it encouraged

them to seek new opportunities for using the relatively high-quality, English-speaking Indian labor force. Telecommunications deregulation was a critical policy, because it ignited competition that resulted in increasing bandwidth, greater quality of service, and lower prices. In effect, for ITES it is telecommunications that provides access to the market, and lower prices improves access. For any nation seeking to follow India's lead and to begin to export services, the proper telecommunications policies are absolutely critical for success (Dossani 2003).

We also examined the types of organizations operating in India to provide services to the developed nations. The role of the MNC captives in creating this industry and driving this industry is remarkable. Moreover, it is the MNCs continue to employ the most highly skilled Indian workers. In other words, they are relocating high value-added activities to India, even though they are not outsourcing the activity. Given the tremendous savings that can be achieved, we expect the MNCs to continue their rapid growth in India – there is no reason for them to outsource these activities and thus share the profits with another firm. Outsourcing will continue to grow also as MNC service outsourcers use India as a production location. Here again, the large MNC outsourcers such as IBM, Accenture, Convergys, Sitel, and many others will increase their Indian operations, in an effort to increase their profitability and to respond to the Indian independents and the subsidiaries of the Indian IT outsourcers such as Infosys, HCL, TCS, and Wipro among others. Given the current growth rate, a large variety of organizational forms will continue to operate in the Indian market.

The ultimate dimensions of the service offshoring phenomenon are difficult to predict. Whereas, for the last two decades manufacturing value chains increasingly extended across borders (Gereffi and Korzenwicz (eds.)1994; Kenney with Florida (eds.) 2004), it appears nearly

[19] We are entirely cognizant of the hardships that were experienced by displaced workers, abandoned communities, and small firms unable to afford overseas operations. We are also aware that some workers, communities, and firms

certain that this will soon be equally true about services. Policy makers in developed nations must begin to prepare for this eventuality by considering what the core advantages of their populations are. Here, we believe that the advantages will come from the sophisticated consumers in developed nations that set the fashion for most of the world's goods and from the creative clusters such as Hollywood (Scott 2002), Silicon Valley (Kenney and Burg 2000), Paris, Boston for mutual funds, Northern Italy for a wide variety of goods, Tokyo for consumer electronics, etc. Increasingly, if routine service activities can be relocated to lower wage nations, the advanced developed nations will have to compete in terms of superior creativity (Florida 2002).

For policy makers in the developing world, there is a new world of opportunities in the services being opened by inexpensive telecommunications. Deregulation is important for lower the cost and improving telecommunications services. However, education, one of the least expensive forms of investment, is critical for attracting IT intensive services. The opportunities are substantial for Francophone Africa servicing France, Eastern Europe and even Turkey serving the Germany-speaking nations, China serving Japan (because of the similarities in the written languages), and even Estonia providing for Finland. Though we concentrated on India in this paper, the Philippines is already providing services to the U.S. especially in terms of call centers, video animation, and as a back-up for India. In all of these nations, there is substantial potential for indigenous entrepreneurs, and there is also the possibility of attracting MNCs.

Service offshoring will not be is a miracle cure for the lack of employment and economic growth in developing nations. However, it does provides an opportunity for developing nations with the appropriate manpower to create a new economic activities and construct a new niche for themselves in the world economy. Even though the size of the opportunity is not yet entirely

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were unable to adjust.

visible, the possibilities appear to be enormous, and while nations like India may address the entire spectrum of services, it might also be possible for smaller nations to develop particular niches.

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Table 1 Sample Firm Size

A	B	C	D=B/C	E=B/A	F
No. of firms	Employment in sampled firms	Total industry employment	Sample % of industry employment	Average employees/firm	Median employees/firm
42	69,729	171,500	40.7	1660	1000

Source: Authors' compilation

Table 2: A Cost Comparison between a Call Center Operated in Mumbai, India and Kansas City, 2002

	Amortized Equipment Cost ($/hour)	Other costs ($/hour)	Labor ($/hour)	Profit (20 percent mark-up in U.S., 100 percent in India)	Cost to Client ($/hour)
Kansas City	0.25	0.14	10.00	$2.08	12.47
Mumbai	0.35	0.21	1.50	2.06	4.12

Source: Authors' estimates

Table 3: Firms Involved in Business Process Activity Offshoring to India

	Typical	MNC/NRI/Indian	Outsourced (Y/N)	Current Size
MNC captives (India experience)	Amex, Citi, GE, HP, HSBC, JP Morgan	MNC	N	VS/M/L
MNC captives (No experience)	AOL, Axa, Dell, Fidelity	MNC	N	VS/M
MNC outsourcers	Convergys, Sitel, Sykes, Teleperformance	MNC	Y	VS/S/M
MNC specialists: GIS, medical transcription, publishing	eBookers, Kampsax, TeleAtlas	MNC	Y	VS/S
NRI-promoted: General outsourcing, medical transcription, publishing	eFunds, Genisys, Heartland, Max Healthscribe, Techbooks	NRI	Y	VS/S
Indian independents	247 Customer, Epicenter, Daksh, EXL, First Ring, iSeva, Infowavz, Msource, Tracmail, Transworks, Vcustomer, WNS	Indian	Y	VS/S/M
Indian specialists: GIS, medical transcription, publishing, travel	ADS, BDCS, Kale, Thomson	Indian	Y	VS/S
Indian subsidiaries (IT industry)	Progeon, Wipro Spectramind, HCL BPO, TCS Intellenet	Indian	Y	S/M/L
Indian subsidiaries (non-IT industry)	ICICI Onesource, Ienergizer, Jindal Transworld, Zenta	Indian	Y	VS/S/M

Legend: Large (L) = >5000
Medium (M) = 2000-5000
Small (S) = 750-2000
Very small (VS) = <750

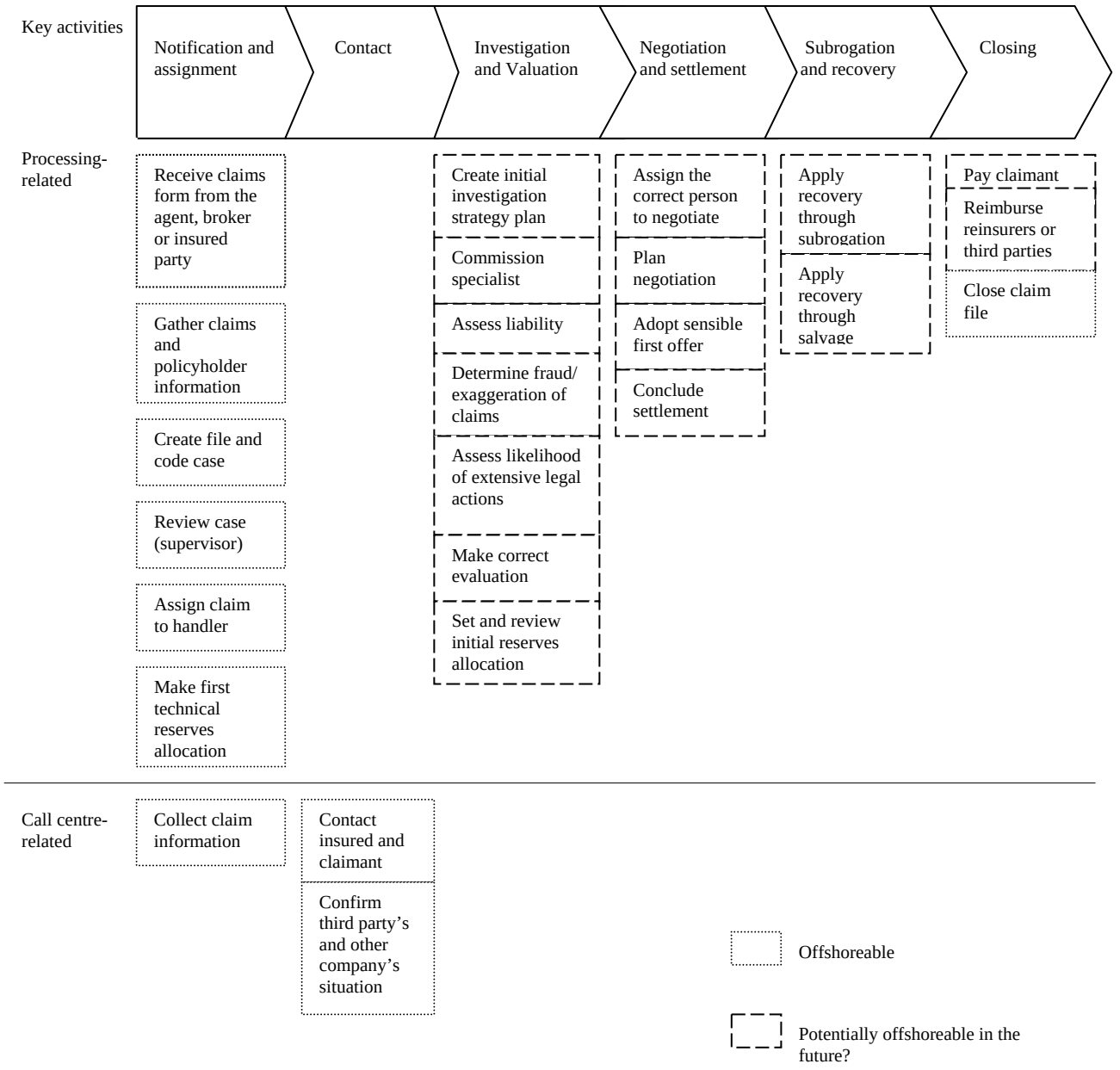
Source: Authors' compilation

Table 4: Indian IT Firms' Strategies for Entering the BP Outsourcing Industry

Firm	Strategy	BP Outsourcing Employees (April 2003)	Locations (April 2003) 1st is HQ
TCS	Joint venture with HFDC: Intelenet	900	Mumbai
Infosys	Established a subsidiary, Progeon	600	Bangalore
Wipro	Acqd. Spectramind in 2002 for approx. $93 million	3,200	Delhi Mumbai
HCL eServe	Acqd. British Telecom BP outsourcing subsidiary, now an HCL subsidiary	2,500	Delhi Belfast, NI Chennai
Satyam	Established a subsidiary, Serwiz	N/a	Hyderabad

Source: Authors' Compilation

Figure 1: A Typical Claims Processing



Source: Nasscom-McKinsey 2002, modified by authors