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

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ABSTRACT

The rapid increase in the ability and desire of multinational corporations to offshore services or, what are commonly termed “business processes” to developing nations is becoming a significant international development issue. This paper utilizes a case study of India, the largest recipient of offshored services, to explain the dynamics of offshoring from the perspective of the firm and the recipient nation. The explosion of offshoring is placed within a historical context. The technologies enabling offshoring and the corporate environment are discussed. Finally, the organizational forms involved in offshoring are discussed. The conclusion considers 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.

KEYWORDS

India, Services, Offshoring, Outsourcing

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 it serves as the context for an examination of 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 the case can provide insight into what might become an important source of employment in nations such as China and the Philippines, and also, perhaps, Anglophone and Francophone Africa.

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 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 fourth quarter of 2003, 83 percent of the U.S. non-farm employment was in the services, and only 11 percent were

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 that the scope for transferring services offshore is what is most remarkable. One of the earliest significant transfers beginning in the early 1970s 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 be as great as 15 million (Bardhan and Kroll 2003:6). In addition to the call center, medical transcription, claims processing, and data entry types of activities, much more is possible. For example, radiology diagnosis on the second and third 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 and will impact wages in highly skilled occupations as well. The U.S. tax preparation firm H. R. Block is rapidly moving tax preparation to India. 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 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, service 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 t opportunities. One remarkable aspect is the level of innovation and experimentation that existing firms, entrepreneurs, and venture capitalists are undertaking in their quest to capture profits from successful offshoring.

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 relocating services from the point of view of the firm. India is the largest destination for services currently being relocated internationally and in the fourth section we describe the Indian experience, as it has been the most significant beneficiary of the movement of services from developed to

[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.

developing nations. The fifth section describes the characteristics of the different types of firms providing services from in India, such as their industrial structure and impact on the value-chain. 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 global service providers are led by large banks, insurance, consulting, and technology firms, 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 was 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 was intranational. 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. However, these low-cost nonmetropolitan 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 (Posthuma 1987). Later, components of back-office services, such as payroll and order fulfillment, and some front-office services, such as customer care were relocated to English-speaking, developing nations especially India, but also other nations such as the Philippines.

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. In most firms, these activities can account for up to 15-20 percent of total costs and headcount. The completion of most services is the result of an entire chain of bureaucratic activities or what is often termed a "business process". [2] Each of these activities represents costs to a firm. Until recently, such processes were treated as a fixed cost and received little management attention. Basically, nearly any service process that does not require in-person contact may be transferable.

The separation of a process into different activities is illustrated in **Figure One**, which graphically portrays an insurance claim settlement process. The settlement of an insurance claim is a complex chain requiring the completion of a large number of discrete activities. A large insurance firm such as Aetna would employ thousands of persons to undertake these functions. Any of the activities could possibly be offshored, however presently, the vast majority of these activities are conducted in the U.S. Whereas, initially the offshore operation in a country like India might simply key data into a standard form from information on a digitized "image" of the claim. This might be only the beginning of the offshoring movement. For example, it should also be possible to transfer

[2] 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

Footnote continues on the next page.

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. Ultimately, depending upon corporate strategy it might be possible to relocate all of the activities that do not need direct face-to-face human interaction. Obviously, the offshoring and outsourcing process is eased if portions of the value chain, i.e., the different activities can be modularized and highly standardized linkages between them can be developed (Gereffi et al. 2004; Baldwin and Clark 2000).

Enabling Technologies and Environment

The reengineering movement 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. This movement sensitized management to the ability to standardize and/or out-source activities that previously had been done internally.

The underpinning 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 Kearns 1992). Though paper has not been banished, increasingly the information that was encoded on paper is has been digitized.

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complaint it is necessary to understand the complaint, decide on a course of action, 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.

Remarkably, the costs of transmitting bits of information have continued to drop exponentially for the last two decades.[3] Simultaneously, during the Internet Bubble of the 1990s, telecommunications carriers installed enormous amounts of new international fiber optic cable capacity leading a capacity glut that accelerated the price declines.

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 low-wage environments to undertake labor-cost arbitrage.

The increasing acceptance of standardized software platforms, such as IBM and Oracle for databases, Peoplesoft for human resources management, Siebel for customer relations, and SAP for supply-chain management has also facilitated offshoring. This adoption meant that firms and employees had to make fewer asset-specific investments (Coase 1937; Williamson 1975; 1985). 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 workforce compatible with the world market. These global standards heightened the attractiveness of India to multinationals and encouraged Indian service firms to offer ITESs to global customers.

Technology was necessary but not sufficient to convince firms to 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

[3] 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).

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.

The final factor driving the offshoring of services is the pressure to increase profits that has become 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 since 2000, 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 pressure.

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 MNC's foreign subsidiaries are capable of learning and do learn. 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 impressive, do not capture the entire calculation a firm undertakes prior to offshoring an activity. Only in a few instances are the offshored 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.[4]

The infrastructural costs of siting an operation in India are approximately the same as they would be in an U.S. industrial park. According to our interviews, electronics and computer equipment is about 10 percent more expensive than it would be in the U.S., although actual costs may be higher because of greater redundancy provisions. 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. 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.[5]

The wage differences between the U.S. and India are dramatic. For 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 were certified public accountants. In India, a newly graduated junior accountant 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

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

5 From our interviews, transportation costs per employee averaged $50 per month.

call center employees in metro areas is $2,400 a year. Moreover, even the more mundane jobs are considered attractive.

Further savings 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 due to the shallow local labor pools. 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 cannot 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. 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 (see, for example, Adler et al. (eds.) 1993; Florida and Kenney 1991; Kenney and Florida 1993). 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.

The expected savings on the activity being relocated to India is at least 40 percent. This can be seen in **Table One**, which compares the costs of operating a call center in Kansas City and Bangalore. One Fortune 500 firm that consolidated several global fulfillment operations to Bangalore reported overall cost savings as high as 80 percent.[6] These represent significant dollar savings. The NASSCOM-McKinsey report (2002) found that General Electric (GE), one of the pioneers of offshoring 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.

The ability of Indian operations to offer services in as timely or timelier 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 global development teams, 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.

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. However, given the novelty of business service offshoring, even

[6] Personal interview with authors, April 2003

activities that might be considered routine in the developed country can be subject to quality slippages in the offshore destination due to unexpected difficulties such as retaining staff, cultural misunderstandings, or employee dissatisfaction in the home country.

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. 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.

A firm's 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 were 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.

The Indian Connection

India's attractiveness as a site for undertaking ITESs is a combination of preexisting conditions and the result 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 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 Athreye 2002; D'Costa 2003). It was their experience in software that suggested to the MNCs that other service needs might be fulfilled remotely from India.

Nearly all 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 a policy of encouraging exports. Some of the most important of these permitted 100 percent ownership by foreign firms of their Indian subsidiaries, allowed the duty-free import of equipment to be used in exporting industries, and eliminated taxation of exported products and services. These were powerful 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 Indian private providers to begin offering service. They could select their specializations, which ranged 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. Whereas, in 2003, export software programming employed 260,000 persons (Nasscom, 2004: 186), it was only growing at 20 percent per annum (NASSCOM 2003). The most reliable estimates of offshored ITES employment was 245,000 in March 2004, up from 171,500 in March 2003 (Nasscom, 2004: 186) (update needed). According to Nasscom, the ITES sector's revenue for the financial year ending March 2004 was estimated at $3.6 billion compared with $2.375 billion in 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, 1,000,000 persons in 2008. This is roughly in line with the growth rate over the previous five years appears to be achievable.

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 developed and developing nations. On the other hand, if India can offer 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 fast the growth might be, as of March 2004, only approximately 150 U.S. firms (almost all in the Fortune 500) had offshored BP outsourcing work to India, and on average they predicted their employment would increase by 50 percent during the next 12 months.

The initial activities relocated to India have been highly routinized, and resemble the initial phase of software outsourcing. 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 one or all of these directions: (1) Processes linking the organization with

customers or suppliers or supporting production processes that may be amenable to remote fulfillment can be transferred. (2) Upgrading by capturing further segments of the process may be possible. To illustrate, in Figure One activities in boxes enclosed in dotted lines might be relocated. (2) In healthcare, clinical trials, gene testing, and algorithm-development might be offshored. (3) 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 **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 end-result is a diminution of mistakes and fraud leading to greater cost recovery. It was thus, typical, in our experience, for the same process to employ a larger number of employees in India than in the U.S. The low costs made this possible. For example, in medical transcription, the work being done by one person in the U.S. was often replaced by at least two persons, both of who transcribed the same material and compared notes. Sometimes, a third person, a supervisor, "arbitrated" the result. According to a survey by the Sandhill Group (2003), firms target a 1:1 ratio in jobs, but might begin with 2:1 in the initial stages. The cost differential makes such experimentation and back-up possible.

An example from the travel industry is instructive of another possible growth trajectory. One Mumbai-based firm's 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. This arose from the inherent complexity of fare calculation rules, compounded by the fact that airlines offer special fares based on market forces in specific areas, leading to a high probability of incorrect fares being charged by agents. However, the percentage of underpayment was believed to be too minuscule to

collect. The Indian firm used boarding card and ticket information to tally the dues of the airline and compared this with the amount paid by the travel agents. It discovered a significant gap of 2 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 2 percent (Kale 2003). The airline was able collect the underpayment only because the low labor costs made verification feasible. In this case, India both received transferred jobs and created 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 caused by high demand and stress created by the unusual job timings in the call-center industry. An industry group, NFO World, estimates that 1 in 3 Indian call-center workers quits within a year of joining the industry (Bhattacharjee 2003). The labor pool may also be thinner than statistics of overall graduation rates indicate since, of the 1.1 million graduates each year in India, no more than 10% may speak good enough English to work in a call-center (Bhattacharjee 2003), and quality may already be suffering. Although the turnover rates may be lower than in developed countries, some Indian firms we interviewed reported attrition rates of 7 percent per month, although 3.5 percent per month was the average rate. Wage pressures are also in evidence, as our interviews showed that wages were rising at about 10% per annum.

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.[7] 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 processing, and benefits management. For this reason, though we expect growth to continue at a rapid pace, it might also slow as the best-qualified labor is absorbed and turnover continues at too high rates.

The Industrial Structure of the Indian ITES Industry

The number, size, and diversity of organizations offshoring service processes is large. This diversity can be attributed to two different features. First, an enormous diversity of service that can be offshored. Second, a new economic opportunity encourages organizational experimentation and

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

attracts a wide variety of different organizations seeking 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 the ownership of firms in the ITES sector. First, are they Indian-owned and operated or owned and operated by a multinational?[8] 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 2)**. As ITES offshoring to India is only in its earliest stages, it is hazardous to predict which organizational forms will become dominant. It is not clear whether there will be a single ITES industry in India, and whether the captives or independents will be dominant, 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.

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. This contrasts with software outsourcing, where the domestic firms soon became dominant in terms of the numbers of employees and earnings. 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.

[8] We have included firms formed by non-resident Indians in the U.S. and the U.K. in the multinational category. In total as of March 2003, they employed less than 10,000 persons.

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 added 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. By 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 2004. And yet, the rush of MNCs did not begin until 2000, as firms including 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 operation in June 2001. By April 2004 had grown to a total of 3,500 employees in the original Bangalore facility, opened a second facility in Hyderabad, and was completing its own Bangalore campus. 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 (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-adding 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. Some have already developed intellectual property for their employers. For example, GE's India-based engineers filed for 95 patents since 2000 (Kripalani and Engardio 2003). Two large investment banks, J.P.Morgan Chase and Morgan Stanley have hired several dozen junior analysts in Bombay for analyzing U.S. markets. The average salary of $13,226 in 2002 for MBAs graduated by India's prestigious Indian Institutes of Management illustrates the possible cost-savings (Rai 2003). These trends suggest 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.

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." For global headquarters this can be a way of exerting control and improving monitoring. The risk in the centralization of particular process practices at one global center 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 slack resources available for external customers.

In 2004 the subsidiaries were 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. Different consulting reports have estimated the global BP outsourcing market to grow to $544 billion by 2004, $1.2 trillion by 2006, or $140 billion by 2008. 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 firms. Not only do the larger ones provide services internationally, many of them already had cross-border operations prior to the current phase of offshoring to developing nations.

The international outsourcers established their Indian operations in 2001 or later as a response to competition from the MNC subsidiaries and the Indian independents. These MNC outsourcers have long-established customers and enormous domain knowledge making them formidable entrants competitors. 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 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 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. The Sykes Filipino operations employed in excess of 2,000 in mid 2004 (Sykes 2004).

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 Filipino operations provide them with low-cost sites with which to fend of their competitors. It is a near certainty that they will continue to downsize their higher-cost U.S. operations. These firms are undertaking a global redistribution of their production facilities.

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 strictly speaking BPs, they are included under the broader category of ITES. Examples of this type of work include medical transcription, tax preparation, 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 a GIS database. 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. 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 also so is the market making sales and marketing difficult. Recently, this decentralization may be overcome by a consolidation of the U.S. medical system. The ultimate fate of transcription is not as important as how it illustrates that offshoring may

be hastened (or, alternatively, slowed) by other forces such as consolidation, which are not directly related to globalization, but may be able to use it to lower costs.

Transcription and map digitization are only two illustrations of a labor-intensive service activity that is being relocated to India. Other areas 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 Specialist

Indian specialty firms are also entering fields such as medical transcription, tax preparation, 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 their 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 with its customers. 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.

The independents face significant strategic difficulties. Some independents have experienced rapid growth as they have found customers. Unfortunately, often these independents are dependent upon a few larger customers making them vulnerable to contract termination. Because of the ferocious competition and the felt necessity to expand (often at the prodding of their venture financiers), 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. However, these independents might be acquired either by Indian firms or multinationals wishing to quickly enter the BP outsourcing field. For example, in May 2004 IBM purchased one of the largest independents, Daksh. In 2003 the Indian software firm purchased a leading BPO firm, Spectramind. The strongest Indian independents may be able to remain independent and grow sufficiently to rival the multinational outsourcers, but survival as an independent 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. Further, their interaction with the global economy 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. 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. 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 has since made a small acquisition, and had crossed 4,000 employees by March 2004. Finally, Wipro and HCL entered the industry through acquisitions. As mentioned earlier, Wipro acquired Spectramind. HCL acquired the Northern Ireland call center subsidiary of British Telecom, though the preponderance of HCL's outsourcing employment growth has been in India.

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.

The ITES workforce is also quite different from that of the IT sector. In the IT sector the workforce and managers are engineers, while in ITES the workers are from commerce and social science backgrounds. 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 and 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. Today, rapid market growth ensures an appearance of success for many entrants. 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. The ultimate success of the IT firms in the BPO space has not yet been settled.

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.

There are important linkages between the organizational forms, the types of work being done, and whether it is outsourced, offshored, or both. For example, for work in which proprietary knowledge is high, such as research design, in-house work is most likely. Without considering costs,

the work would be done onshore as a first preference followed by in-house offshoring. Onshore outsourcing may be the next most likely choice given the stronger IP regimes in developed nations. A second best choice would be to use a multinational outsourcer. Indian IT firms, given their history of working with overseas clients, would be next preferred, while Indian independents would be the last choice. The nature of the task being considered for movement will likely demand different organizational forms. However, the MNC outsourcer will have an advantage over the Indian firm, unless the Indian firms can become even more globalized.

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, it is likely that 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 and likely multicorporate 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 considering laws forbidding the offshoring of government-related services. Such protectionist responses are likely to increase in the coming 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. 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 by an order of magnitude. However, given the rapidly changing technologies this may even prove to be conservative. What is clear is that the number of service jobs being relocated is increasing rapidly. Limits 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.

A remarkable aspect of service offshoring is the rapidity with which it can occur. Manufacturing's movement offshore was a gradual migration that began in the early 1960s. Though punctuated by dramatic factory closings, there was an opportunity for the U.S. economy to adjust. 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 sensitized Indian businesses to the global market. By providing MNCs a moderately business-friendly environment it encouraged them to seek new opportunities for using the high-quality, English-speaking Indian labor force. Telecommunications deregulation was critical, 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, the proper telecommunications policies are absolutely critical for success (Dossani 2003).

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 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, inexpensive telecommunications is opening a new world of opportunities in the export of 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 are opportunities for indigenous entrepreneurs.

Service offshoring will not be a miracle cure for the lack of employment and economic growth in developing nations. However, it will provide a new opportunity for developing nations with the appropriate manpower to create 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 certain, the possibilities appear to be enormous, and while nations like India may address the entire spectrum of services, there will be opportunities for smaller nations to develop particular niches in terms of skills, temporal availability, and simply as back-up locations.

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Table 1: 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

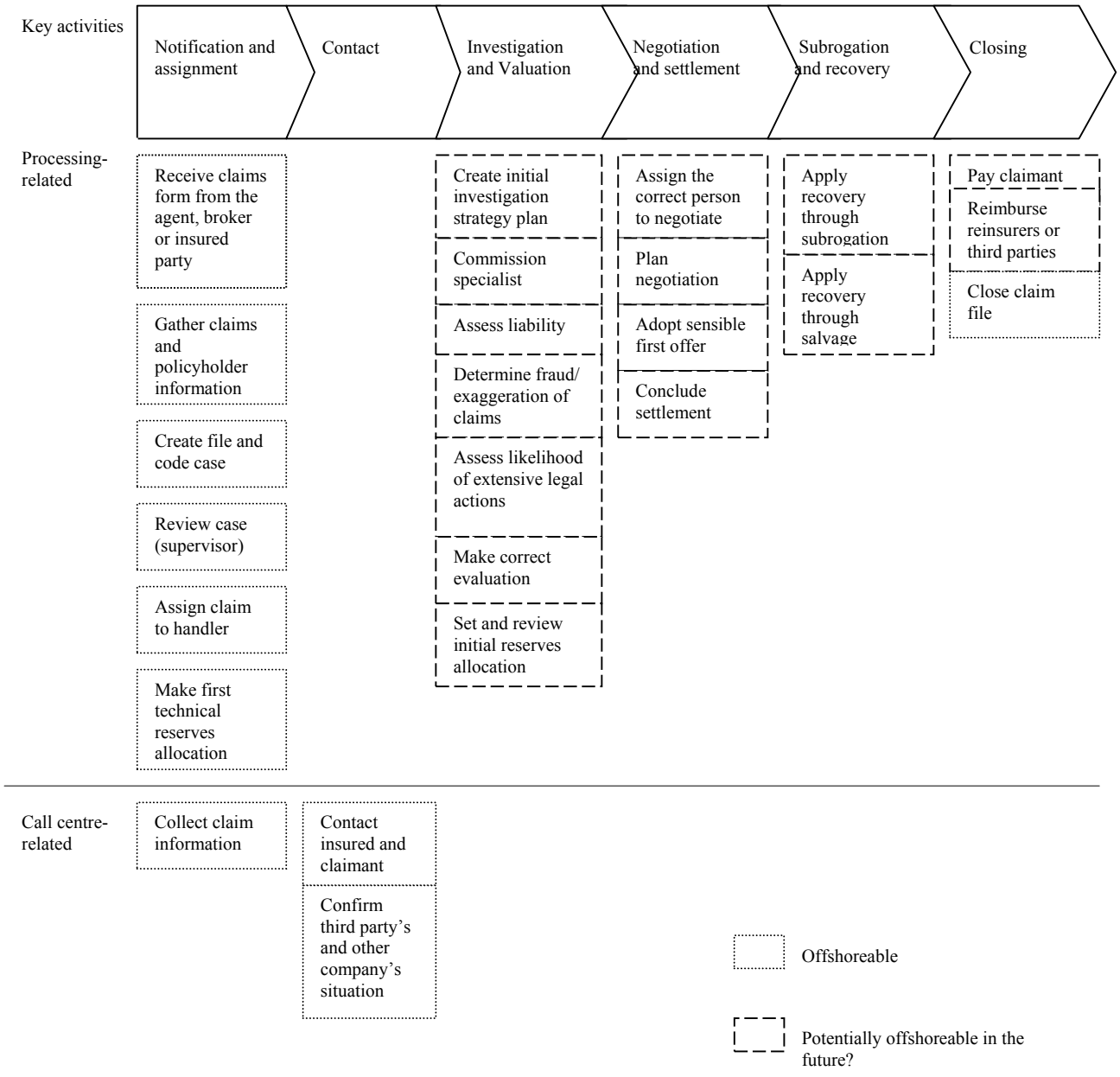
Table 2: Firms Involved in Business Process Activity Offshoring to India

	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,	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

Figure 1: A Typical Claims Processing



Source: Nasscom-McKinsey 2002, modified by authors