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GLOBALIZATION AND GLOBAL SOURCING OF IS FUNCTION

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ABSTRACT

Marshall McLuhan's vision (documented in 1964) of global village is a reality now (El Sawy, 1999). The characteristics of new business environment perceived by El Sawy (1999) include: amazing short product life cycle, compete in chaos, blurring industry and organizational boundaries, knowledge intensity, increasing returns to the scale, and information technology (IT) intensive strategic options. With blurring national boundaries, the numbers of competing organizations and knowledge workers have been increasing. To decrease their risk and remain competitive, organizations are compelled to use the expertise available through global sourcing and opt for alliances with organizations available globally. Additionally, the alliances help the organizations share expertise with each other and reduce their cost of product or services. This paper intends to identify the effect of competitive pressures on those organizations that specifically resulted from globalization initiatives and the resulting trends in global sourcing of various business functions/processes, including IT function.

Introduction

According to Gartner Glossary of information technology Acronyms and Terms, **outsourcing** is the procurement of resources, purely from an external source to accomplish business objectives, whereas **offshoring** is defined as the provision of services from a country that is geographically remote from the client enterprise. The offshoring can be categorized into near-shore or offshore outsourcing, and the key difference between the two is the geographical distance between the client and the vendor. For U.S. clients, near-shore refers to Mexico or Canada and offshore refers to more remote countries such as India, China, Russia, Singapore, and Eastern Europe.

Historical Perspective: In the past mostly everything was produced in the same industry, but overtime, as the product became complex and the scale of operations started increasing, the management of entire operations within the corporation became unfeasible, resulting in vertical disintegration of the corporations and outsourcing in the manufacturing sector. Initially, work was completed where the company was physically located, but as travel and communication became easier in the 1970s and 1980s, manufacturing started moving offshore.

The major candidates for originating outsourcing transactions are the advanced industrialized economies of the United States, Japan, and Europe (Koveos and Tang, 2004). In addition, some developed Asian economies, such as Taiwan and Korea, have both the experience and the location advantage in outsourcing to China and India. In 2002, India had 90 percent of the

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U.S. organizations' IT offshore business. However, many of the Fortune 500 companies that have outsourced to India are looking to diversify the risk associated with dependence on one country (Gupta, 2002). As an example, China looms as India's biggest competitor, although some consider the two as non-comparable at this time. Other countries considered to be attractive as offshore outsourcing sites include Malaysia, the Czech Republic, Singapore, the Philippines, Brazil, Canada, Chile, Poland, Hungary (Kearney, 2004), Russia, and Vietnam (Computerworld, 2004).

The decision to outsource is motivated by a desire to achieve improvements in the organizational structure, revenue enhancements, and cost reductions. To illustrate, outsourcing was introduced in Japan in the 1980s since then economic development in Japan and Europe in the 1990s generated an environment that has helped outsourcing practices. A recent survey reports that 40 percent of Europe's 500 largest companies are engaged in offshore outsourcing. Outsourcing is also not new to the U.S. For decades, U.S. firms shifted blue-collar jobs to low wage countries, and are now outsourcing white-collar jobs to save money and boost profits. Manufacturers of autos, computers, clothing, shoes, telecommunication equipment and other products have been using multiple inshore and offshore sources to obtain components of their products for quite a long time. The authors cite relocation of key manufacturing operations by major companies to China during the late 1980s and early 1990s to take advantage of its cheap labor and other incentives offered by the Chinese government under Special Economic Zones. Similarly, manufacturing operations had been outsourced to Mexico under NAFTA, while the offshoring of IT began in the 1980's with the transfer of hardware work (the production of computer chips) to Asia (Nakatsu and Iacovou, 2005). Since then, U.S. companies have shifted their emphasis on higher-value microprocessors. This shift, combined with globalized production and international trade, resulted in IT hardware being 30% less expensive. As Y2K approached, many U.S. companies decided to outsource their information technology to India where their companies were successful in making software changes to cope with Y2K requirements. ITAA estimates that spending for global sourcing (near-shore and offshore outsourcing together) of IT will increase to \$31 billion in 2008 from \$10 billion in 2003 (Information Technology Association of America, 2004).

Economics Perspective: According to the economic theory, free trade of goods and service create wealth when private firms compete and innovate to increase profitability and productivity. Businesses outsource many non-core activities including technology related activities to reduce waste and cut costs. The authors cite reduction in operating costs, freeing up of internal resources for other purposes, and an improvement in the profit margins as the main reasons to outsource. Outsourcing of IT work has provided larger cost savings for public as well as private sector growth and has been the fastest growing area since the late 1990s (Arora and Arora, 2004, pp.3). The reduction in transaction costs associated with finding vendors, monitoring their work, and sending their work overseas is helping to reshape the modern company, and transaction cost theory helps managers think about whether to buy, build, or partner (Robinson and Kalakota, 2005, pp. 16). With diminishing transaction costs and continued globalization, offshoring will grow steadily, thus, we anticipate that with lower transaction offshoring costs, companies will be able to focus on narrow product slivers or business activities and have external parties complete the rest.

Offshoring might actually be good for developed countries because increasing the living standard in other countries increases their citizens' demands for consumer products that can, in turn, be supplied by highly efficient companies in developed countries. McKinsey Global Institute estimates that every dollar in spending that is diverted offshore creates \$1.45 - \$1.47 of value, of which the U.S. realizes \$1.12 - \$1.14 or 78 percent of the value (Arora and Arora,

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2004). Furthermore, white-collar offshoring has been inevitable (Altman, 2004), because service sector productivity in the United States has not kept up with manufacturing sector productivity. In the early 1950s, each service sector employee produced about \$39,000 in output (in 2000 dollars), while in manufacturing, the output was \$48,000. Now, 50 years later, service productivity has increased to \$54,000 (a 47 percent increase), whereas manufacturing productivity is at \$207,000 (a 330 percent increase).

Manufacturers have faced international competition, whereas service firms have not (Altman, 2004). Therefore, it should come as no surprise that service companies are tapping cheaper sources of labor because of globally available telecommunications technology. This global competition in services will force American companies to increase the productivity of their workforce in the same way and increase the quality of their services (Altman, 2004).

In this Internet age, companies now can send knowledge work anywhere including China, India, or the Philippines, where, for about \$2-\$3 per hour, companies can hire college graduates for jobs that cost about \$12-\$18 per hour in the United States (Arora and Arora, 2004). Ultimately, economies with production capacity (low costs but well-educated workers) are the most likely to benefit. Table 1 (Arora and Arora, 2004, p. 19) compares salaries of white-collar workers in the U.S. and India and Figure 1 shows the economics of offshoring.

Table1: Salary Comparison: Source – Paaras Group, 2002; International Labor Organization

Occupation	U.S.A.	India
Software Programmer	\$66,100	\$10,000
Mechanical Engineer	\$55,600	\$5,900
IT Manager	\$55,000	\$8,500
Accountant	\$41,000	\$5,000
Financial Operations	\$37,625	\$5,500

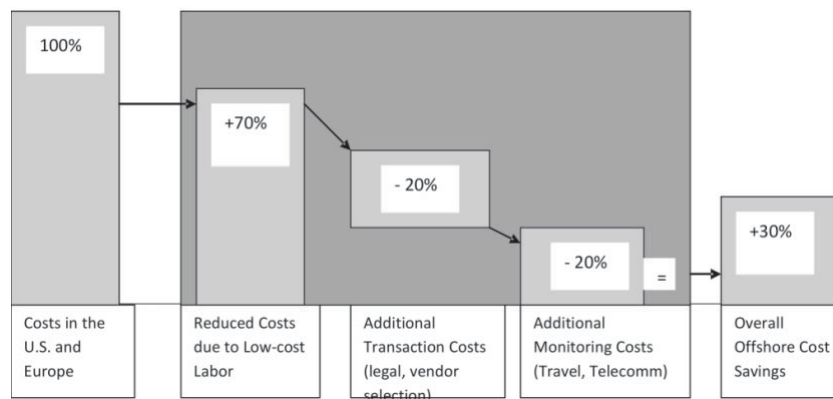


Figure1: The Economics of Offshore Outsourcing (Source: Robinson and Kalakota, 2005, pp. 17)

Sellers vs. Buyers Market: Contrary to a seller’s market where products/services produced was consumed, the buyer’s market envisions extreme competition with customers as a focal point. For most of the products/services, we are in a buyer’s market, whose environmental characteristics are identified by El Sawy et al. (1999): time-compression, short product life cycles, strategic discontinuity, increase in knowledge intensity, and customer-focused approach. Their perception of the voice of customers is given in Figure 2. Although the targets of free, perfect, and now are clearly unachievable, these targets will intensify the competition and exert

continuous pressures on organizations to provide more features, functions, or services at a lower price. To combat price deflation, firms are forced to adopt the offshore model in order to aggressively lower costs and thereby set lower prices for their products/services (Robinson and Kalakota, 2005). These lower prices set in motion a deflationary cycle that wreaks havoc with the weak or small companies. The continuum of a deflationary cycle may lead first to low-cost offshore labor and then building up expertise or economies of scale at the outsourcer's site.

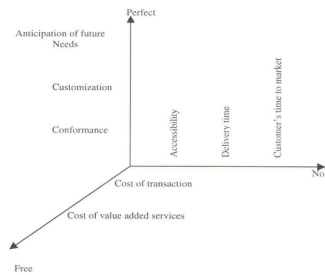


Figure 2: Aspects of Voice of the Customer (Source: El Sawy et al., 1999, p.311, fig 1)

The pressure of cost reduction led Sony to break its collaboration with Capgemini, a leading provider of consulting, technology, and outsourcing services. Although Sony was happy with the services provided by Capgemini, it switched to India's Wipro in 2002 by signing a \$5 million contract to write information technology applications for Sony's TV and computer assembly plants in the United States, and Sony expects to save 30% from the contract (Robinson and Kalakota, 2005). The quest for continual cost reduction with reasonable quality leads firms to embrace the offshore outsourcing model, but in doing so, they have to overcome two offshore outsourcing myths: (1) foreign work lacks quality and (2) offshore outsourcing is hard to supervise. Although true in some circumstances, these two myths are becoming less relevant as developing countries gain experience and expertise. Furthermore, the strategic discontinuity will result in organizational processes and resulting software applications, vulnerable to frequent change. These frequent changes in the software can be made at a reasonable cost by offshorers and the organizations may deploy their human resources in core activities, allowing them to gain strategic advantages (Agrawal et. al., 2001, 2005a).

Affordability: Since IT is embedded in every facet of business processes (Figure 3), the organizations dependability on IT applications will continuously grow to meet the functional requirements. An organization's revenue is generated through its product and services and therefore, will not be able to increase its IT budget beyond a certain level. Every organization will be under pressure to monitor IT investments and identify the economic solutions to meet its IT requirements.

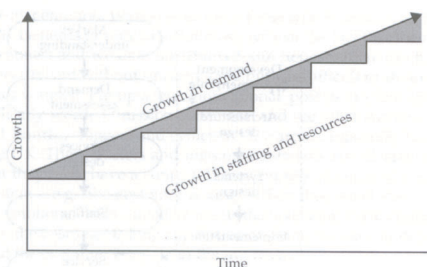


Figure 3: Growth in Staffing and Resources to Develop and Maintain IT Applications (Source: Managing the IT Services Processes by Noel Bruton, 2004, Butterworth Heinemann, U.K., pp.14)

Role of Information Technology in Getting Competitive Advantage

Intense competition leads to uncertainty and stimulates higher innovation and adoption rates (Ettlie, 1983; Lewin et al., 1987) that will, in turn, increase competition. Porter (1980) argued that in a competitive market with free entry, firms cannot earn sustainable supernormal profit. While in the short-run it may be possible to earn such profits, in the long-run the accounting profit will be just enough to pay for the cost of capital and for compensation to the owner for any unique inputs to production (i.e. management expertise). Li and Ye (1999) argued that in the era of time-based competition, it is possible to obtain a sustainable competitive advantage with IT if secrecy is maintained. However, the time to duplicate applications is months, not years, and new innovations (which are very fast and rapid) will make the old ones obsolete (Porter, 1996; Turban et al., 1999), raising doubts about the role of IT towards in gaining strategic competitive advantages. Conversely, there are a number of arguments identifying IT mostly as a commodity, or a strategic necessity for the organization. Hence, IT cannot be a source of sustainable competitive advantage (Brynjolfsson, 1996; Carr, 2003; Clemons, 1990-1991; Clemons and Kimbrough, 1986; Emery, 1990; Kermer and Sosa, 1991; McNurlin, 1991), though the shifting role of IT will affect strategic decisions about the level of corporate investment in IT.

Harvard Business School professor F. Warren McFarlan stated that IT is going to be much more important, much deeper, and much more powerful over the next 20 years. Given, the notion that this is becoming a commodity, back-office utility couldn't be further from truth (Anthes, 2005). Until now, it has been assumed that companies have to own the basic assets involved in computing, but it is now believed that we are moving to a time when that assumption will be overturned and those assets will begin moving from within companies to more centralized utility suppliers (Carr, 2005a). Carr (2005a) envisions this shift as similar to what we saw 100 years ago, when all manufacturing maintained their own electric generators to power machinery. Over 20 to 30 years, they shut down those generators and began to buy electricity from utilities. He argued that with everyone having to buy what, in many cases, is similar equipment and software, ultimately all the stuff will be centralized outside companies, leading to much greater efficiency that will translate into lower costs and greater reliability for users. Three technological advances are enabling this change: virtualization, grid computing, and Web services (Carr, 2005b). Under this model (Agrawal et. al., 2001, Agrawal, 2005a, Carr, 2005a) the IT department is unlikely to continue to exist in its present form, but the organizations still need people that combine deep technical knowledge with strong business and process knowledge, because there is still going to be a need for that person who can translate everything consumers buy from outside providers and interface it to their own process. Additionally (Agrawal et. al., 2001, Agrawal, 2005a-2005b), at operational level, the IT skilled people will be needed for trouble shooting and training to end users. Numerous vendors, especially IBM, HP, AT & T, and Sun, are promoting access rather than ownership. By supplying computer processing, network bandwidth, and applications on demand, they are selling the idea of turning clients' fixed IT costs into variable costs. Clients can then scale their IT infrastructure or handle spikes in computing demand without having to buy more IT assets.

Some industry pundits are strongly predicting the demise of corporate IT departments (Keefe, 2002), allowing business users the capability to take on operational-level technical tasks, freeing a small core of IT staffers to focus on analytical and strategic issues (Agrawal et. al., 2001, Agrawal, 2005a-2005b, Keefe, 2002). Agrawal (2001 et. al., 2005a-2005b) and Keefe (2002) further argued that because technology is becoming easier for end users, a lot of IT processes will move to outsourcers. Additionally, it will be too costly and risky to develop applications in-house; therefore, organizations will rely more on customized or off-the-shelf packages, including

ERP software.

Implications of Outsourcing/Offshoring

Outsourcing/offshoring is now embedded in the new economic model and consequently, is unstoppable. Organizations that resist the new phenomenon or the business model may end up with increase in cost of their products/services and will not be able to concentrate on core activities. Furthermore, the lack of expertise will lead to inefficient job performance and ineffective processes in which the organizations are not the best. Additionally, globalization helps increase productivity, which lowers prices for U.S. consumers and raises the standard of living. The consumer will pressure the government for reduction in cost of products/services. There is a lot of debate about job loss due to offshoring/outsourcing, but these concerns are unrealistic and discussed in detail below.

Fear of Job Loss: A survey by Deloitte Research estimates that the top 100 global financial companies with a market cap of more than \$10 billion will each offshore an average of \$2.1 billion of their operating costs in 2005 (Arora and Arora, 2004). As a result, Forrester Research predicts that the U.S. will lose a total of 3.3 million service jobs (Table 2, Arora and Arora, 2004, p. 20) to outsourcing between 2000 and 2015. A report released by the Labor Department cites that about 4,600 out of 182,456 jobs lost during the first quarter of 2004 had been shifted abroad (Arora and Arora, 2004).

Job Type	Number of Jobs
Management	288,281
Business	348,028
Computer	472,632
Architecture	184,347
Life Sciences	36,770
Legal	76,642
Art, Design	29,564
Sales	226,564
Office	1,659,310
Total	3,322,138

Table 2: Projected Number of U.S. Jobs to Move Overseas by 2015 (Source: Forrester Research, Inc. November, 2002)

As many as 35% to 45% of U.S. and Canadian IT workers will find themselves replaced by contractors, consultants, offshore technicians and part-time workers by 2005, according to a report issued this week by New Canaan, Conn.-based Foote Partners LLC (Hoffman, 2003). Additionally, based on a survey of 1,880 private sector and government employers, American companies cannot afford application development in the U.S. anymore. In another survey conducted by Hewitt Associates, of 500 human resources executives the findings conclude (Arora and Arora, 2004): (1) 92 percent of the firms that had moved jobs overseas did so to cut cost, (2) an average of 13 percent of jobs at each company is already located offshore and an additional 12 percent could be relocated within the next three years, (3) 45 percent of the 500 firms have overseas operations, (4) 71 percent of the remaining companies plan to move some jobs abroad by 2005, (5) of the firms who are currently using offshore labor, 29 percent began doing so in the years 1995-1999, while 43 percent began in 2000-2003.

There is evidence to suggest that offshoring can produce domestic job growth, rather than reduction (Nakatsu and Iacovou, 2004). Offshoring can lead to organizational expansion with improved employment opportunities in the U.S. By providing income to foreign professionals while keeping their own product price low, U.S. companies are able to sustain their competitiveness vis-à-vis foreign high-tech firms and sell more of their output to consumers abroad. By increasing their competitiveness, U.S. companies will be able to expand their business

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and employee pools, both domestically and abroad. Second, while the small sector of the IT labor pool is likely to be hurt by offshoring, this impact is likely to be small. Given that the labor market in the U.S. has more than 130 million workers and that millions of jobs are created and eliminated every few months, the impact of this projected change isn't likely to be very significant.

Outsourcing/Offshoring is Function

Since 1989, outsourcing/offshoring evolved successively from *IT outsourcing* to *transitional outsourcing*, *best-of-breed outsourcing*, *business process outsourcing*, *e-business outsourcing*, and *knowledge process outsourcing*. Like author Daniel Altman (2004), Karmarkar (2004), research director of UCLA's Center for Management in the Information Economy, believes that outsourcing of services is inevitable and that the real concern of service firms should be their competitive loss, not job loss in their own country. Karmakar (2004) stated further that the service economy is in the midst of restructuring itself, which is terribly painful in any industry. Offshoring, automation, and self-service are all combining to cause the industrialization of services. Like manufacturing firms before them, service firms therefore need to find new ways to add value.

The traditional set of responsibilities for IS has included managing operations of data centers, remote systems, and networks; managing corporate data; performing system analysis and design and constructing new systems; planning systems; and identifying opportunities for new systems.

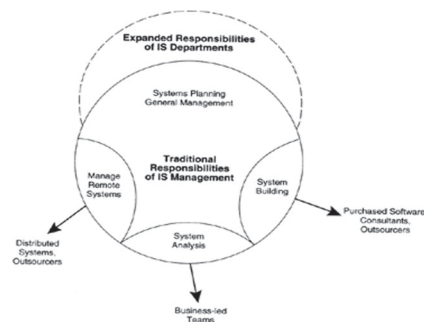


Figure 4: Traditional Responsibilities being “Nibbled Away” from IS Department (Source: Barbara C. McNurlin and Ralph H. Sprague, Jr., “Information Systems Management in Practice,” Upper Saddle River, NJ: Pearson Prentice Hall, 2006, pp. 55)

Although all these functions still need to be performed (McNurlin and Sprague, 2006), the following trends are moving their performance out of IS into other parts of the organization or to other enterprises: *distributed systems*, *ever more knowledgeable users*, *better application packages*, and *outsourcing*.

Thus, as shown in Figure 4, the work of IS departments is being “nibbled away.” On the other hand IS jobs are expanding.

Gartner’s Perspective: Cox (1994) stated that IS is not a single monolithic organization, but rather a cluster of four functions: *run operations*, *develop systems*, *develop architecture*, and *identify business requirements*.

Each of these functions requires a different set of skills and a different management strategy. A function that aims for cost efficiency and requires technical skills (such as running operations) needs to be managed differently from one that aims to add business value and requires business expertise (such as identifying business requirements).

Figure 5 shows the four functions on a matrix with two dimensions: the kind of impact an activity has on the organization (from cost efficiency to value added) and the type of expertise needed by the activity (from technical to business expertise).

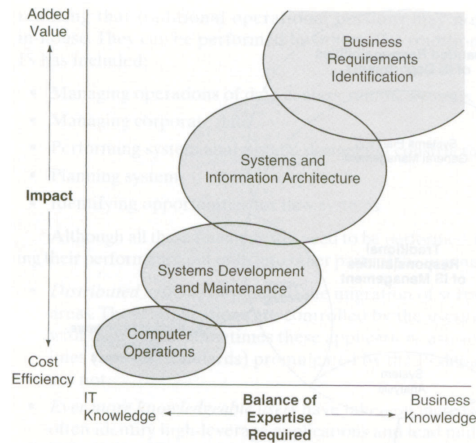


Figure 5: Four Major IS Activities (Source: George Cox "Time to Reshape the IS Department?" Wentworth Research Program (now part of Gartner Executive Program, Stanford, CT), June 1994.)

Two technical activities that focus on cost efficiency - operations and system development and maintenance - are of less importance to the business; hence, they are smaller bubbles. Meanwhile, business-oriented activities that seek to add value to the enterprise are of far greater importance to the enterprise; hence, the larger bubbles.

Companies that have failed to recognize the differences among these four areas – the relative importance of each and how to manage each properly – have, in some cases, misplaced their resources or underdeveloped their expertise. Until recently, most IS organizations invested heavily in computer operations and system development/maintenance, while neglecting the other two (developing architectures and identifying business requirements). Operations and systems development can be purchased because they are commodity-like; architecture development and business requirements identification cannot because they are unique to each organization.

Most IS organizations have had to re-skill their staffs to move these to more value-added kinds of work. Consequently, they see a "squeeze" similar to the "nibbling" discussed earlier. As shown in Figure 6, external services in the form of outsourcing compete well in the lower left of the matrix, the technical arena. Meanwhile, increasingly knowledgeable users assume more of the responsibility and initiative in the upper-right area of the matrix, the business-centric arena.

If this trend continues, the IS organization will be squeezed into oblivion, outsourced on one end and absorbed into business units on the other. Cox (1994) thinks that two roles will emerge as dominant for the IS function.

First, it is not reasonable to expect an outsourcing service provider to understand and satisfy all the needs of the organization without active management and counsel, because they sell commodities. Therefore, IS organization is needed to develop and manage these contractual relationships with a variety of external suppliers. Thus, IS is becoming the broker between technical service providers and business units.

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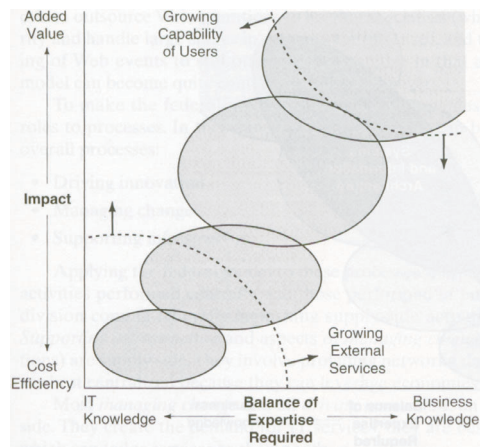


Figure 6: The Squeeze on Traditional IS Activities (Source: George Cox “Time to Reshape the IS Department?” Wentworth Research Program (now part of Gartner Executive Program, Stanford, CT), June 1994.)

Second, a crucial role for IS organizations is development and management of the IT architecture for the enterprise, providing the framework for IT to support the business. Architecture is the biggest challenge, especially given IS organizations’ systems development and operations heritage. Figure 7 shows these two new roles and how they overlap the past roles.

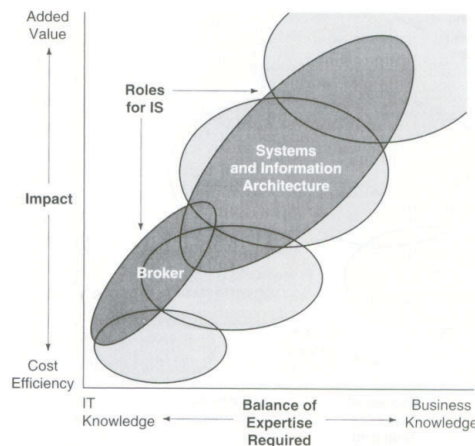


Figure 7: Roles for IS (Source: George Cox “Time to Reshape the IS Department?” Wentworth Research Program (now part of Gartner Executive Program, Stanford, CT), June 1994.)

In short, Figure 7 illustrates how IS organizations have moved from the lower left to upper right in their role in the business, from efficiency to value added and from technical to business expertise.

Toward IS Lite: Woolfe (2000) has furthered the thinking at Gartner EXP about the role of IS departments by studying how they have responded to this evolution. He notes that IS has evolved into a federal model, where some activities (such as standards setting and operations) are handled centrally because they can be leveraged across the enterprise, whereas other activities (such as application development) have been dispersed to business units so they can best meet local needs. Unfortunately, making this split has produced continual swings between

centralizing and decentralizing specific activities to try to best fit the current business environment. With the entry of outsourcers in the scene, the federal model became quite complex with lots of players.

To make the federal model work better, companies are shifting attention from roles to processes; therefore, the IS organization can be viewed as managing three overall processes: driving innovation, managing change, and supporting infrastructure.

Applying the federal model to these processes sharpens the distinction between IS activities performed centrally and those performed in business units. Woolfe (2000) sees the division coming from distinguishing supply-side activities from demand-side ones. *Supporting infrastructure* and aspects of *managing change* (such as delivering applications) are supply side, and involve providing networks, databases, and processing; they are best centralized because they can leverage economies of scale.

Most *managing change* and all *driving innovation*, on the other hand, are demand side. They create the demand for IT services and are best localized in business units, which can tailor services to their needs.

To serve this split, some IS organizations have created centers of excellence to pool expertise and leverage it across the enterprise. Such centers now exist for such areas as e-commerce, supply chain management, policies and standards, help desk support, and systems integration.

The result is that much of the supply and demand sides of IS's work is being given up, as noted previously, to outsourcers and knowledgeable users, causing IS organizations to move to *IS Lite*, as shown in Figure 8.

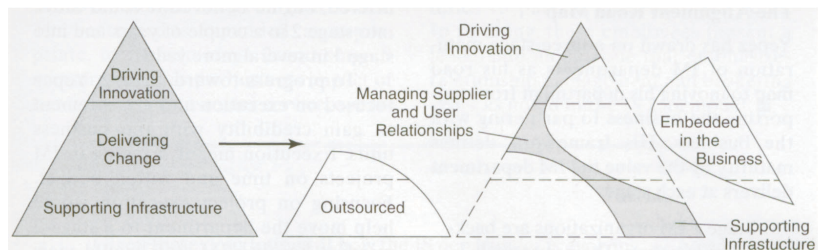


Figure 8: IS Lite (Source: Roger Woolfe, "IS Lite," Gartner EXP, 56 Top Gallant, Stamford, CT 06904; www.gartner.com, July 2000)

The remaining processes are *driving innovation*, which includes information and systems architecture, and *managing supplier and user relationships*, which includes brokering. A company that is moving in this direction is LifeScan (Yepez et. al., 1999).

Split of IT Budget: In a lecture at UCLA, William Congleton, a former IS executive, stated the split of his total annual IS department budget (McNurlin and Sprague, 2006):

- o 33% for systems and programming, of which 70% was for maintenance and 30% for new development.
- o 10% for department administration and training.
- o 57% for operations.

Considering the above split as typical for IS departments, one can argue from financial angles that the maximum savings lie by outsourcing operations and then from systems development and maintenance.

Process Selection Ties to Critical Success Factors and Core Competencies (Luftman et al., 2004): Ideally, organizations should strongly consider an arrangement with a transaction partner to handle IT functions that are both non-core competencies and non-critical to the success of the organization. The transaction partnering describes the relationships that embrace ERP vendors, application service providers (ASPs), as well as mainstream outsourcing arrangements. Organizations should perform in-house the IT functions that are both core competencies and critical to the success of the organization, which include day-to-day operation, ability to competitively differentiate itself, ability to deliver value to its partners and its customers, and ability to innovate.

Organizations should consider a strategic alliance arrangement in situations where the IT functions are not considered to be a core competency but are critical to the organization's success. In this situation, the organization should consider either hiring or buying the resources and/or skills needed to meet the requirements expressed as critical success factors. An example of this arrangement might include an organization that contracts for the creating and operating a telecommunications network that is critical to the operation of its business, but has determined that these competencies are not core to its business value proposition.

Lastly, in situations where the IT functions under consideration are a core competency but are not critical to an organization's success, the organization needs to reassess its role and contribution to the organization's value proposition. Even though they may be considered to be a core competency, the organization may wish to consider other arrangements for IT functions that clearly have no critical role in contributing to its success.

One last caution: organizations should be aware that a decision to outsource the IT function in total seems to be almost irreversible. Once the IT function has been outsourced, the overwhelming evidence is that it is almost impossible to insource these functions again.

Trends in Outsourcing Market and Future Projections

Outsourcing by Japan, Europe, and the rest of the world (Carpenter and Agrawal, 2007): In Japan, following the 1991 Bubble Burst, the economy faced a number of cyclical and structural challenges (Viotor and Evans, 2001). A number of measures aimed at restructuring Japanese economy have been brought forward, such as internal measures as well as promotion of greater integration of Japanese economic and business systems with the rest of Asia and the world. European economies have also been facing numerous challenges, budgetary issues, slumping demand at home, and lack of global competitiveness loomed over most of the countries of the EU in the 90s. The most serious problems, such as labor market inflexibility, continued to be structural, and therefore, cumbersome to address.

- **Japan and Offshore Outsourcing:** outsourcing was introduced to Japan in the 1980s. Companies adopted a "Japanese" outsourcing style by initially dealing with one service provider. The new environment, however, brought about a change in their attitudes and tactics. The market for IT system development alone has been estimated at 6.7 trillion Yen a year (approximately US\$ 104 billion; Rowley, 2004). Since the Japanese IT market as a whole is expected to grow at an annual rate of 15.6 percent up to 2008, the outsourcing market should also grow (Kajino, Kinoshita, and Kobayashi, 2004, p.1). Japanese companies have established relationships with providers in many countries, especially in Asia, but are also expanding to Europe and North America. Hong Kong, India, the Philippines, Thailand, Vietnam, Malaysia and other countries have been vying for a piece of the Japanese outsourcing market. However, Japanese companies increasingly look to China for most services, from programming to system design and R&D (Rowley, 2004). Japanese IT companies are also

considering embarking on relationships with Russian service providers (Outsourcing-Russia.com, 2004) and have also used North America as a market to offer their own outsourcing services (Koveos and Tang, 2004).

- **Other Countries:** In addition to Japan, other Asian countries have been engaging in offshore outsourcing. Companies from Korea, Hong Kong, and Taiwan, among others, have been actively developing offshore outsourcing relationships that have enabled them to enhance the effectiveness of their business model. For example, Taiwan's MITAK-SYNNEX Group can globally deliver 98% of its orders in two days, which the company attributes at least partly, to its outsourcing strategy (Miau, 2004).
- **Europe and Offshore Outsourcing:** A recent survey (Farrell, 2004) reports that 40% of Europe's 500 largest companies have engaged on offshoring. Of the 58 billion euros (\$76 billion) worth of major outsourcing contracts awarded last year, Europe represented 49% of the value, while the U.S. took 44% and Asia 7% (Pruitt, 2005). Here, major contracts were defined as those worth over \$40 million. In all, Europe netted 58 billion euros worth of the major contracts won in 2004, almost doubling the value of those awarded in 2002. In particular, growth in German outsourcing helped boost Europe's standing as an outsourcing market leader. Germany accounted for 12.5% of the value of the worldwide contracts awarded in 2004, coming in at the heels of only the U.K. with 20%, and the U.S. as the largest country market. Germany has increased its share of worldwide contracts from less than 1% to its present double-digit place in just four years.

Outsourcing by U.S. Organizations: The successful outsourcing of manufacturing operations from the US to Asia and Latin America since the early to mid-1970s has been well documented (Rishi and Saxena, 2004). In the late 1970s and 1980s, jobs were "exported" from developed countries to East Asian countries like Korea, Malaysia, and Singapore. During the late 1980s and early 1990s, U.S. companies were engaged in relocating their key manufacturing operations to mainland China and Mexico. Though outsourcing of manufacturing operations has been going on for a good thirty years, the outsourcing of services happens to be relatively new phenomenon as earlier U.S. companies did not consider it a viable business strategy. However, this thinking changed in the late 1990s, particularly during the years leading up to Y2K. For example, Indian consulting companies, like Tata Consultancy Services, had already establish themselves as a provider of low end services such as maintenance of legacy systems or projects associated with the millennium bug (Y2K) and euro conversion. These firms undertook small projects overseas for MNCs and moved up the value creation chain as their reputations were established. By 1999, 41 percent of software services were provided in India, rather than on-site at the client's location, compared to only 5 percent in 1990 (Bajpai et. al., 2004). Current estimates indicate that spending for global sourcing of computer software and services is expected to grow at a compound annual rate of almost 26 percent, increasing from approximately \$10 billion in 2003 to \$31 billion in 2008 (Information Technology Association of America, 2004).

Another example of offshoring can be found in the field of radiology, where the average annual salary offered to candidates for U.S. radiology positions in 2002-2003 was \$317,000. By contrast, interviews conducted by Diagnostic Imaging magazine with radiologists in India showed that a typical Indian radiologist earns between \$15,700 and \$21,000 annually. Radiologists skilled enough to read CAT scans, MRIs, and ultrasounds earn about \$26,000 (Brice, 2003).

Traditionally, pharmaceutical companies have outsourced drug development and manufacturing to outside Contract Research Organizations (CROs) and Contract Manufacturing Organizations (CMOs). They kept R&D and Marketing in-house as core competencies. In recent years with changing industry climate the nature and role of outsourcing is changing. Today, pharmaceutical

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companies are also increasingly outsourcing downstream drug discovery research to global contract research organizations (Doshi, 2004). Average development cost per compound has increased from \$131 million to \$200 million with the chances of FDA approval falling from 73 to 59 percent. While R&D expenditures have remained around 16-18 percent of sales, average sales per patented product have declined from \$457 million in 1990 to \$337 million in 2001 (Higgins and Rodriguez, 2003). Thus, there is a decline in R&D productivity, as the global pharmaceutical market with outsourcing opportunities is estimated at \$40 billion. The major players in the global market include the U.S., Europe, Canada, and Japan. International pharmaceutical and bio-tech companies have selected India as a preferred offshore location for drug development and manufacturing. The research trend is towards outsourcing of downstream drug discovery research as well.

There are an estimated 75,000 – 100,000 contact centers for customer care in the United States alone, employing 4 million people (Robinson and Kalakota, 2005). Organizations spend an estimated \$160 - \$180 billion annually in direct expenditures to run contact centers. However, multifunctional contact centers are a \$650 billion industry, and the number of companies outsourcing and offshoring their contact centers is rising steadily. For example, General Electric Information Services, which offers customer credit cards for retailers such as J.C. Penney, has 3,000 call center employees in the United States and 11,000 in India (Goldstein, 2003). The primary reasons for creating offshore customer care strategy include cost, flexibility in handling a large volume of incoming customer requests at peak times, and quality of educated human resources (graduates) available with minor increase in cost. The offshore call centers can result into substantial cost savings as depicted in Table 3.

Number of Call Center Jobs	Total Annual Salary in U.S.	Total Annual Salary Offshore	Total Annual Savings
50	\$1,456,000	\$312,000	\$1,144,000
100	\$2,912,000	\$624,000	\$2,288,000
500	\$14,560,000	\$3,120,000	\$11,440,000
1,000	\$29,120,000	\$6,240,000	\$22,880,000
5,000	\$145,600,000	\$31,200,000	\$114,400,000

Table3: The Labor Savings from Offshore Customer Care Center (Source: Robinson and Kalakota, 2005, p. 124)

Business processes like finance and accounting, human resources (HR), and R&D (Robinson and Kalakota, 2005) are migrating offshore rapidly. But by 2008, Datamonitor expects offshore spending by financial services firms in Europe and the U.S. to nearly double to more than \$2 billion. Among the services these financial companies will increasingly send offshore are business process functions such as mortgage processing, insurance, underwriting and claims processing. The move is also seen as an opportunity to improve business processes that companies may be struggling to fix internally because of political resistance.

More sophisticated firms have begun migrating some of the commodity HR tasks offshore as they concentrate on functions central to their mission. Many executives think that HR is not core to their business. Business process outsourcing is projected to be the fast-growing segment of HR services, increasing at an annual rate of 16.1 percent to \$16 billion in 2009 (Gonsalves, 2005).

Now companies are farming out R & D to cut costs and get new products to market more easily (Figure 9). Today, Dell, Motorola, and Philips are buying complete designs of some digital devices from Asian developers, tweaking them to their own specifications, and selling with their own brand names (Engardio and Einhorn, 2005).

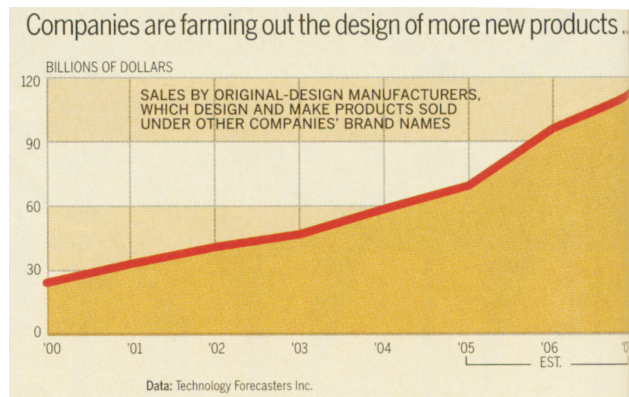


Figure 9: The New Not Invented Here Syndrome (Source: Engardio, Pete and Bruce Einhorn, "Outsourcing Innovation," BusinessWeek, March 21, 2005, p. 86)

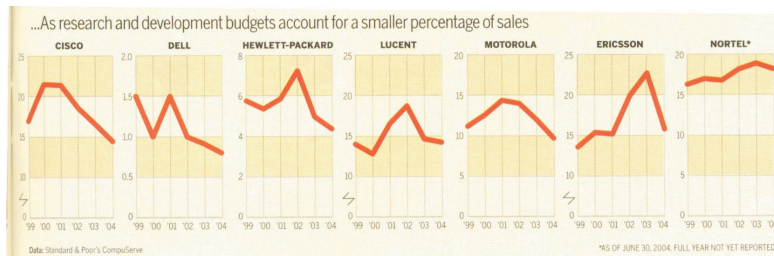


Figure 10: The New Not Invented Here Syndrome (Source: Engardio, Pete and Bruce Einhorn, "Outsourcing Innovation," BusinessWeek, March 21, 2005, p. 87)

While the electronics sector is further down this road, the search for offshore help with innovation is spreading to nearly every corner of the economy. On February 8, 2005, Boeing Co. said it is working with India's HCL Technologies to co-develop software for everything from the navigation systems and landing gear to the cockpit controls for its upcoming 7E7 Dreamliner jet (Engardio and Einhorn, 2005). Boeing is in discussion with India's Larsen and Toubro (L&T) to strike another outsourcing deal. Plans to outsource e-engineering, aircraft-related IT services and commercial aircraft parts manufacturing to L&T in India (Hardsamalani, 2005) are on the table. The trends in the decline of R&D budget (Figure 10) in a number of companies also supports the rethinking of CEOs on their R&D operations. There, where mission critical research ends and commodity work begins is questionable (Engardio and Einhorn, 2005).

The U.S. film industry has started outsourcing its production work to Indian film production companies (Abraham, 2005). The U.S. company Global One entertainment Inc is outsourcing the production of its film The Woman from Georgia to an Indian company, Fast Track Entertainment, at only 20% of what it costs to shoot the film in the U.S.

Summary and Conclusion

In conclusion, outsourcing has become a strategic alternative. With the rapid pace of business change, the best hope of many enterprises is to tap the expertise of companies that are keeping pace, rather than trying to do everything themselves, the reason so much inter-company collaboration is taking place. However, outsourcing does not mean relinquishing responsibility. In fact, taken to its extreme, it can mean devoting resources for suppliers to improve their processes. We believe it is a coming focus in the world of IS Lite.

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