The IS Organization of the Future: Impacts of Global Sourcing

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ABSTRACT  Global sourcing will continue to have a major impact on IS organizations. Fourteen “new” and traditional skills that IS organizations will need in tomorrow’s global sourcing environment are highlighted.

KEYWORDS  global IS management, human resource management, IS capabilities, IS organization of the future, outsourcing

The IS organization of the future will be greatly impacted by the IT global sourcing phenomena that became highly visible after Kodak outsourced its data center operations in 1989 and which has since grown rapidly to encompass offshoring as well as domestic outsourcing. IS departments have already been impacted — some in carefully-conceived and planned ways; others in unplanned ways that have created a degree of chaos.

The basic rule today is that, “every IT activity that can be outsourced, may be outsourced,” because vendors are developing ever-more-sophisticated capabilities and the labor arbitrage and limited investment imperatives of both domestic and offshore outsourcing operate to demand that outsourcing be considered for most IT activities.

An Association for Computing Machinery Report (Aspray, Mayadas, & Vardi, 2006) delineates six varieties of work related to IS that are often offshored: (1) programming, software testing, and software maintenance; (2) IT research and development; (3) high-end jobs such as software architecture, product design, project management, IT consulting, and business strategy; (4) physical product manufacturing — semiconductors, computer components, computers; (5) business process outsourcing/IT Enabled Services — insurance claim processing, medical billing, accounting, bookkeeping, medical transcription, digitization of engineering drawings, desktop publishing, and high-end IT enabled services such as financial analysis and reading of X-rays; and, (6) call centers and telemarketing. Some of these are more relevant to future IS organizational management than are others.

To visualize what the IS organization will look like as this nearly 20-year-old process continues further, one needs to focus on those activities that cannot be conveniently outsourced, those that are too important to be outsourced and those that need to be given greater attention in this evolving sourcing environment.
GLOBAL SOURCING AS A BASIS FOR CONCEPTUALIZING THE IS “SHOP” OF THE FUTURE

The logic behind offshoring is twofold. On the one hand, it is a version of the outsourcing trend in other areas such as manufacturing, which posits that organizations should focus on their core competencies while contracting other necessary activities to specialists in those activities. It is also based on the classic strategy of economic arbitrage — the exploitation of price differences in order to profit from them. Thus, the offshoring of IT activities arbitrages wage differentials in the provision of outsourcing services by domestic or offshore contractors or by creating company operations in offshore locations.

The internal IS function is often viewed by senior managers to be costly, difficult to understand and peripheral to the firm’s core business. As firms shifted in the 1990s to business strategies that focus on their core competencies rather than strategies for mediating risk through diversification as had previously been emphasized, attention was focused on the role that IT played in the enterprise. Since IS was frequently judged to be non-core, it became a prime candidate for outsourcing.

The most important reasons for IS outsourcing are its perceived non-core nature (Grover & Teng, 1993), the significant cost savings that may often be gained if IS activities were performed outside the firm (Loh & Venkatraman, 1992), the difficulty that firms have in assessing the business value contributed by IT and the lack of understanding of IT by top-level business executives (Lacity & Hirschheim, 1993).

As Larry Ellison, CEO of Oracle has said, “Why should every automaker, publisher or doctor’s office have to be a tech company too, employing high-paid staff who spend all of their time fiddling around with computers?” (Kowula, 2004).

There has been considerable discussion in the literature of problems that may arise in outsourcing; these also apply to offshore outsourcing. These problems include structural, cultural, legal, and financial risks and costs. In the context of IT offshoring, additional problems may arise; these include the loss of IS skills to a degree that the client firm no longer has a choice of whether to outsource and the possibility of major offshore disasters. These problems may be exacerbated by the fact that IT activities are now so closely interwoven with organizational activities in general that it may be difficult to determine which activities indeed lie outside the organization’s core (King & Malhotra, 2000).

Regardless of these problems, it is inevitable that outsourcing and offshoring will continue to increase in volume and importance (Davis, Ein-dor, King, & Torkzaden, 2007). Therefore, it is important that the IS function designs, constructs and manages an IS organization that has both the traditional functions and skills that are too important or risky to outsource and the non-traditional skills and capabilities that will be important to success in this new environment.

THE NEW AND TRADITIONAL IS ROLES THAT FOR A GLOBAL SOURCING ENVIRONMENT

In the future, the global sourcing phenomenon will dictate that IS organizations will need greater skills in a number of areas that will importantly determine the efficacy of the IS organization of the future. In the areas of the contract and the relationship with vendors, the critical skills are:

- contract negotiations and management;
- relationship management;
- developing and implementing partnerships, strategic alliances, and joint ventures;
- vendor and partner assessment and selection; and,
- risk assessment and management

In the areas of system implementation and new systems development, the critical skills are:

- collaborative system customization, implementation and integration;
- technology assessment and monitoring;
• business process redesign;
• integrated business and IS planning;
• mission-critical systems development and testing;
and,
• systems testing.

Among the general skills that IS will need to emphasize are:

• security;
• IS personnel development; and,
• awareness of national cultures.

The Contract and Relationships with Vendors

Areas related to the sourcing contract and relationships with vendors are discussed first below: contract negotiation and management, relationship management, developing, negotiating and implementing partnerships, strategic alliances and joint ventures, vendor and partner assessment and selection and risk assessment and management.

Contract Negotiation and Management

One of the things that the early birds outsourcing clients quickly realized was that when one outsources an activity, it needs to be replaced by another activity that will focus on developing, negotiating, implementing, and controlling the contract.

Although the basic offshore contract will be drawn up by attorneys, they are usually not well-informed about IT and, in my experience, leaving the task to them is often problematic. For instance, IS people need to provide expertise on service-level benchmarks that should be put into the contract. IS people will also know which areas of activity are most dynamic and therefore most likely to require changes as the term of the arrangement progresses. This will permit the contract to be written in a manner that will accommodate reasonable change rather than, as has been the situation in some instances, allowing changes to become so costly that the client believes that the vendor, who is in something of a monopoly position when changes are requested, is taking advantage of this position.

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Relationship Management

Effective relationship management has been frequently shown to be related to outsourcing success. Many firms who thought that they could offshore through a contract and then do little to monitor and manage the client-vendor relationship have been surprised with negative results from this style of outsourcing management. In these instances, communications and coordination processes and their associated costs often were not given much attention.

For success in global sourcing, close attention must be paid to everything about the client-vendor relationship, from the criteria for selecting a vendor, to the frequent monitoring of progress, to the level of control exerted over the vendor and to the level of trust that is developed in the client-vendor relationship. None of these things can be ignored or taken lightly since all have been shown to be critical success factors for effective outsourcing.

Developing, Negotiating and Implementing Partnerships; Strategic Alliances, and Joint Ventures

Although many offshoring client-vendor relationships are referred to as partnerships, few of them are much more than contractual business relationships. However, this is likely to change in the future as two or more organizations recognize that they have complementary skills and that for one organization to develop the entire range of skills that are necessary for success in IS is excessively expensive. Whether these cooperative ventures are formatted as real partnerships, or strategic alliances or joint ventures, the identification of the need for cooperative effort, the negotiation of the deal, and the implementation of an arrangement which provides

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benefits to all parties is a skill that IS departments increasingly need to develop.

Vendor and Partner Assessment and Selection

Since the days of the early computer era when outside vendors were used primarily for hardware, vendor assessment and selection has played a role in the IS organization. However, in this new era, it becomes of greater importance. The success or failure of the entire IS function can rest on the performance of a few vendors to whom critical tasks have been outsourced. So, picking the right vendors becomes an IS critical success factor. Having a methodology and people who are skilled in applying it is key to success.

The same is true of potential partners and alliance participants. The IS organization must be aware of the array of potential partners and not merely respond to opportunities that are presented in a haphazard fashion. This involves identifying potential partners and their capabilities, assessing each for their fit with one’s organization and for likely major new projects for which complementary skills may be required.

Risk Assessment and Management

Risk assessment and management will become a greater focus in vendor selection and in continuing relationship management. The risks that are involved in performing critical functions in Third-World countries have not been fully recognized by many firms who have begun offshoring. Everything from political risk, to risks of natural disasters, to the risks associated with marginal communications infrastructures needs to be identified and monitored. After all, India — the primary location for offshore vendors — almost became involved in a nuclear confrontation only a few years ago and while international communications from India have improved dramatically, local communications and transportation infrastructures are often marginal. These lead to greater risk, especially when unplanned activities must be performed. Often, this will be addressed using backup sites, often in the Phillipines, but this involves a new layer of complexity in the overall management process. Kliem (2004) provides a good framework for assessing risks in global sourcing.

System Implementation and New System Development

The areas that relate to system implementation and new systems development are discussed below in terms of collaborative system customization, implementation and integration, technology assessment and monitoring business process redesign, integrated business and IS planning, mission-critical systems development and systems testing.

Collaborative System Customization, Implementation and Integration

The focus for systems implementation and integration will need to shift from an internal orientation to one which addresses working in joint consultant-client teams. For instance, the typical ERP implementation project, in which joint teams work, sometimes for extended periods, to customize and implement a vendor-supplied system to meet a firm's unique needs, is a good prototype for a process that will become increasingly common for various types of vendor-supplied systems. Thus, inter-firm implementation processes will need to be more fully developed (eg., Ko, Kirsch, & King, 2005).

So, system customization, implementation and integration is another area in which competence must be maintained and enhanced by an IT department that is going out of the programming and systems development business, (which will increasingly be the norm). Increasingly, software will be developed by vendors, purchased by clients and then customized and integrated with other internal systems. These implementation and integration processes
may be aided by external consultants, but they often cannot be effectively done by outsiders; an internal capability that reflects a deep understanding of the business, its operations, goals and priorities, is required. This extends to the software testing arena since externally-developed software, must be thoroughly tested on an independent basis.

Even when external consultants are used in these roles, the goal of the client must be to have their own personnel learn the skills that are necessary to perform these tasks with ever-less levels of outside help.

**Technology Assessment and Monitoring**

In an outsourcing/offshoring environment, a technology assessment capability must be maintained, or developed, by the outsourcing client since the vendor’s objectives with regard to technology are not always consistent with those of the client. In many situations, vendors wish to consolidate the work of many clients on their own legacy technology to achieve economies of scale and high returns. This may not always well serve specific clients, even if it meets their initial cost goals, since some clients might benefit greatly from greater accuracy, reduced cycle time or a greater security level than is initially offered by the vendor.

The day-to-day monitoring of technological advances may, in fact, be performed outside the client organization. But the CIO and other IS executives must be certain that they are aware of these developments, if only because it will enable them to anticipate technological changes that a vendor may be about to consider, or that they may be motivated to consider.

The need to independently keep abreast of technology becomes apparent to every CIO shortly after he or she outsourced operational computing systems. The outer office is no longer filled with vendor salespeople because the outsourcing client is no longer a potential customer for entire categories of hardware and software. Only on recognizing that the outer office is no longer full do many IS executives realize how much important technological information they formerly obtained from salespeople. Those “pests waiting for an appointment” (as one IS executive put it) suddenly are recognized for their value and the IS manager realizes that he/she must do something to replace those old sources of information concerning technology.

So, the client must independently assess evolving technology in order to maintain an awareness of potential service-level improvements that may become feasible through technological advances.

The client must continuously be aware of the technological offerings and service levels offered by other vendors as well. Even if a client is involved in a long-term contract, this is necessary. It also illustrates why negotiations and the terms of the contract are so important. No client should allow themselves to be truly “locked into” a long-term contract in which the vendor can attempt to provide, on a continuing basis, service levels that are less than others routinely offer. Contracts must provide for the continuous benchmarking of service-levels against other providers.

**Business Process Redesign**

Business processes cannot be effectively redesigned at a distance; direct contact between analysts and employees who are involved in operating the processes is required. Therefore, while many offshoring contracts relate to operating business processes, the analysis and modeling skills that are required for process redesign must reside in the organization’s internal IS function.

**Integrated Business and IS Planning**

Strategic IS planning is the link between the business strategy and the mission, strategy, goals and architectures for IS in the organization. As such, this planning process requires in-depth understanding of the firm. It should never be outsourced or offshored.
IS strategic planning has been integrated into strategic business planning in many firms. This activity will need to be maintained as no firm can ignore the potential role of IT in its future business strategy. When outsourcing takes place, top managers tend to presume that IT’s role in the business is lessened and they may give less attention to it. IT people must understand business strategy and IT’s role in it (even when large segments of traditional IT have been outsourced) and keep these issues in the mix of those treated in strategic business planning.

**Mission-Critical Systems Development**

The development of mission-critical software/systems must usually be retained in-house since this is where the essence of one’s informational core competence resides. Most organizations have trade secrets and/or critical key processes embedded in their software and systems that they would not wish to be made available to outsiders.

**Systems Testing**

The testing of software is typically performed by the developer, but in the case of offshored development, clients often wish to perform their own post-delivery testing.

**General Skills**

Among the “general skills” that IS must maintain or attain are security, IS personnel development and awareness of national cultures.

**Security**

Sharing critical processes and software with vendors may increase risk to some degree. Of course, most vendors apply elaborate security systems and procedures. Indeed, in some cases, consultants have found that vendor security is better than client security. Nonetheless, the ultimate responsibility for the security of data, especially customer data, is with the client, so the necessary skills must be available in-house to oversee security.

**IS Personnel Development**

IS employee development programs involving the IS jobs that are kept in-house as well as the IS interface jobs in the marketing, production, finance and other departments should also be retained in-house. Such programs may involve on-the-job training and/or job rotations through IS and business functional job assignments. In that way, career progressional plans can be developed involving the set of IS functions that are retained.

**Awareness of National Cultures**

Another critical need will be developing an understanding of relevant foreign cultures. For instance, the Indian culture is quite unique. Although the caste system has been officially outlawed, its vestiges remain strong. In many vendor nations, businesses and government agencies operate on the routine basis of bribery, hiring of relatives, unaccountability of employees who are relatives, and other-than-merit-based promotions. Of course, large Indian outsourcing vendors are much less traditional and more Westernized, but one need only look at the marriage system to recognize how much traditional cultural practices permeate all aspects and levels of Indian society.

Anyone who routinely deals with foreign vendors must recognize these, and many other, aspects of the national culture of the vendor in order to understand the proposals of, and responses given by, the employees of foreign vendors. Rao (2004) provides details of “best practices” in this, and other areas of global sourcing.
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CONCLUSIONS

To summarize, global sourcing must be treated as a major and central IS paradigm for the IS organization of the future. It can no longer be thought of as an interesting appendage to basic IS.

Second, the specific skills necessary for performing the activities that will remain in the IS portfolio in the new world of global sourcing—contract negotiation and management, relationship management, developing and implementing partnerships, strategic alliances, and joint ventures; vendor and partner assessment and selection, risk assessment and management, technology assessment and monitoring, collaborative systems customization, implementation and integration, business process redesign, integrated business and IS planning, mission-critical systems development, system testing, security, IS personnel development and greater awareness of relevant national cultures — must be given central focus in the IS organization of the future. Many of these are typically not major foci of today’s IS departments.

This means that IS people will need to understand negotiation techniques, contract law, change management and develop the “softer” skills involved in partnering and developing trust between client and vendor. Strategic issues such as understanding the sort of benefits that may be expected from various kinds of possible “strategic alliances” with vendors will become essential.

All of the key strategic management concepts — core competencies, critical success factors, internal markets etc., which have been little known to IS professionals, must also become familiar to them through revised curricula and training.

REFERENCES


BIOGRAPHY

William R. King holds the title University Professor in the Katz Graduate School of Business at the University of Pittsburgh. He has served as president of TIMS (now INFORMS), founding president of the Association for Information Systems (AIS), and editor-in-chief of MIS Quarterly.