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# Outsourcing in the New Economy: Highly Focused for Expertise and Speed

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In the past, large companies tended to provide virtually all of their I/S functions in-house, often through massive data centers equipped with mainframes and minicomputers and centralized I/S departments. Few end users made use of computers – and those were generally in the form of terminals. However, this form of centralized computing often led to a disconnect between IS departments and business units. With the advent and proliferation of the personal computer beginning in the early eighties, computing services started to spread throughout the corporation. Computers started to replace typewriters and provide added functionality. With the introduction of LAN's and dropping prices, PCs continued to make their presence felt in the corporation. And then came Windows, adding a degree of user-friendliness to the desktop. Computing took off. Office applications took off, email slowly made its presence felt, client-server computing made data driven applications far more complex and easily developed, but there remained many questions about returns on investment. And then came the Web.

When we look at the various trends that emerged in corporate computing, we notice several periods of rapid development. These growth periods have helped lead to the proliferation of outsourcing. New technologies required skills that could not always be found within corporate I/S departments as well as placing huge staffing demands for systems development and services that did not require extensive full time staff beyond the implementation

period. All but the simplest projects required increasing levels of specialized knowledge – often application specific – and the failure to engage in these projects would leave a company at a competitive disadvantage.

## ***Major Project Requirements***

In the late eighties and early nineties, two major types of projects were engaged in more or less universally: LAN development and development of client-server applications. In the early- to mid-nineties, enterprise resource planning (ERP) systems gained wide recognition. Demand for these systems far exceeded the pool of qualified personnel available to implement them. The costs associated with hiring new resources and providing adequate training for these projects made more sense for consulting organizations than for individual corporations. When the Web started to gain critical mass in the mid- to late-nineties, corporations again rushed to implement web-based systems. Again, demand for qualified personnel exceeded supply. Finally, in the late nineties, the imminent approach of Y2K forced corporations to make ready for the date changeover. These preparations to take care of the “Y2K bug” once again placed huge pressure on the supply of personnel, and the temporary nature of preparing for the date rollover made hiring and training of corporate employees a high cost proposition.

Against this backdrop, add application and system specialization as well as the

recognition of *best practices*, *best-of-breed* and a myriad of other buzzwords, and we end up in a new economy where outsourcing becomes a prime candidate for I/S work. Furthermore, many companies that have chosen to keep this work in-house and provide the training necessary for their I/S staff have begun to provide outsourcing services for other corporations.

### Outsourcing Trends

According to a recent survey conducted by CRITO, outsourcing of the I/S functions in corporations is growing. But the kind of outsourcing that is growing isn't "total outsourcing" – where nearly all of the I/S function is turned over to an outsourcer like EDS, CSC or IBM Global Services. Rather, it is "partial outsourcing" where certain functions like systems maintenance, e-commerce development or web site hosting are turned over to specialists.

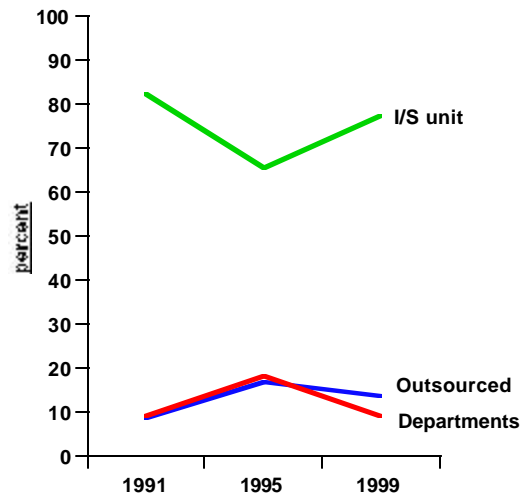
Most corporations continue to provide their information systems functions in-house through a centralized I/S department. However, the recent ITR Survey conducted by CRITO indicates that there is a slow

The *ITR Survey* is an annual survey conducted by CRITO to investigate corporate trends in Information Technology.

trend shifting I/S spending away from central I/S units towards departmental units and outsourcing (Figure 1). The survey indicates approximately 10% of the total I/S

expenses occurred outside of the I/S department in user departments and an additional 15-17% was used for outside services. The proportion of total I/S expenses allocated to outside services has tripled from 3.9 to 11.7% between 1991 and 1999.

**Figure 1**  
Percent of Total I/S Budget Devoted to Outsourcing (Median)



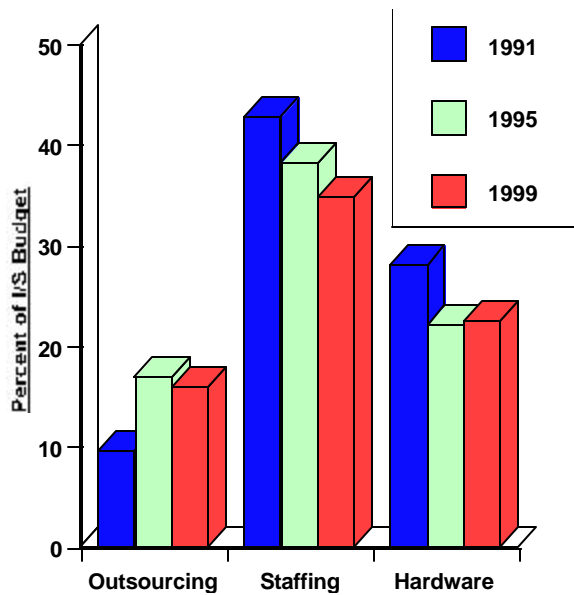
Staffing and hardware expenditures have declined over the past ten years relative to the total I/S budget. Meanwhile, the portion of the I/S budget allotted to outsourcing has seen a significant increase over the same period (Figure 2). Data is not available between 1996 and 1998. However, it should be noted that the slight decrease in outsourcing as a portion of the total I/S budget from 1995 to 1999 may be largely due to the Y2K issue.

Outsourcing was at a high level in the mid to late nineties due to implementations of large, corporate-wide systems – especially ERP systems like SAP and Peoplesoft – and changes from legacy systems to client-server based systems. However, after completing Y2K preparations in 1999, many firms were reluctant to begin new projects prior to the date rollover.

Additionally, the decrease in staffing expenses (Figure 2) is not surprising given the general business climate during the nineties – a trend toward corporate downsizing and a shift toward focusing on

core competencies. The trends for outsourcing and staffing can also be attributed to providing increased flexibility and specialized expertise.

**Figure 2**  
**Percent of I/S Budget Expenses Allocated to Staffing, Hardware and Outsourcing**



### **Distribution of Outsourcing**

There are a variety of I/S functions that could be outsourced including software development, technical support, networking, web development, inventory management and data center operations to name a few (Table 1). In 1999, among all firms in the ITR survey, the greatest proportion of firms outsourced new systems development (85%), which might include implementation of ERP, CRM or web based systems.

Three of the tasks presented in Table 1 are activities that outsourcers can excel in while freeing up I/S resources for other activities. These are data center operations, managed desktop services and network operations. Outsourcers can provide these tasks through specialized expertise, greater experience and

resources. Outsourcing the maintenance and enhancement of current systems can allow a firm to redeploy current staff to new projects because maintenance may not necessarily represent a *full time* task. Also, the experience provided by the outsourcers can prevent serious blunders when making hardware and infrastructure choices.

Over two-thirds of the firms in the survey utilized outsourcing for maintenance and enhancement of current systems and for managing desktop services (which includes installation, maintenance and management of desktop computers). Additionally, nearly half utilized outsourcers for network operations. Surprisingly, only 28% of the firms used outsourcing for data center operations.

It is interesting to note that although 85% of firms utilized outsourcing for new systems development, they used it for only a portion (25%) of their new development activities. Such outsourcing usually stems from a firm's desire to make use of best-of-breed technology, specialized expertise or to rapidly mobilize for the development of a new system. This suggests that the developments tend to be project based and of limited scope.

**Table 1 – Outsourced Activity Rates**

I/S function	% Firms using outsourcing	Mean % of activity outsourced
Data center operations	27.9	34.8
New systems development	85.4	24.6
Maintenance and enhancement	69.1	30.8
Managed desktop services	72.1	36.4
Network Operations	46.5	28.7

## **Outsourcing Decisions**

There are several reasons why firms might turn to outsourcing. They include the decision to acquire new competencies, dissatisfaction with internal provision of services, cost reduction, quality gains, incorporation of best-of-breed technology and best practices, staffing shortages, expertise requirements and experience.

Research from IDC indicates prime causes for outsourcing include limited access to IT expertise and other resources required for implementing large-scale applications and the rapid growth of e-commerce and other new technologies in which the company has an insufficient established base of expertise. [Tracking the Trends: IDC on Outsourcing by Anne-Christine Strugnell, Oracle Publishing/Profit Magazine: Feb, 2000]

The variance between the number of firms outsourcing activities and the percentage of the activity outsourced indicates that staffing concerns are a significant factor leading to outsourcing, especially where the work could be done internally at the cost of losing those resources for other projects. Three examples of this are in the provision of managed desktop services, maintenance and enhancement of software, and network operations. For each of these activities, outsourcing is an ideal solution if staffing requirements are a concern or if the total cost of an outsourcing contract is lower than internal cost.

The survey also revealed an interesting aspect of outsourcing. When firms outsource an activity, they do not outsource it entirely, although nearly one-third of all activities presented in table 1 are outsourced. It is also important to recognize that outsourcing tends to be project based.

Project based outsourcing allows a firm to maintain control of their systems development as well as I/S functions in general. Complete outsourcing could represent a loss of control to outside firms. If either the outsourcing contract is not renewed or the outsourcers must be fired, the firm may lack information necessary to successfully take control of their systems. Using outsourcers for project-based assignments allows the firm to maintain control and limit their potential losses. Each project should be independent with specific objectives and quality metrics, and should be independent. Moreover, utilizing project based outsourcing leads to simpler handoffs and allows a company to detect quality problems at predetermined project milestones.

Furthermore, the trend toward outsourcing projects is an extension of prior investments in I/S departments and their treatment as profit/loss centers. Many firms have taken the approach of treating infrastructure and basic IT functions as a corporate expenditure while requiring individual business units to use their own budget for I/S projects. This creates a situation where firms have already been *insourcing* their projects to I/S departments. The logical extension – business units can choose to outsource the same projects if they believe they will receive better service, more advanced technology, and/or lower costs.

## **Outsourcing Costs and Risks**

In light of the trend toward outsourcing, it is important to consider the associated costs. The decision to outsource must do more than take into account the dollar value of the endeavor, but also the opportunity costs and risks involved. Outsourcing is supposed to provide expertise without the need for additional significant training – which can become a major expense for some projects.

Consider the cost of training staff in the inner workings of a product like SAP – training costs can easily run into the hundreds of thousands or millions of dollars. Bringing in outside consultants reduces training costs and also allows the project to begin sooner with a lower probability of failure due to experience.

Similarly, the time required to become well versed in new technology can impede the momentum of a project or delay its implementation past the point of usefulness. By the time internal staff is able to implement a new system, there may be better technology available. What then? Switch to the new technology and consider the time and money spent in training and preparation a sunk cost? Or proceed with the project anyway? The delay can also lead to a competitive disadvantage where competing firms are always a few steps ahead – possibly resulting in huge dollar losses.

Additionally, where large costs and staffing expenditures are necessary through implementation but diminish substantially afterwards, the choice to perform the work in-house requires employees to be retrained at its completion or let go – a cost that is avoided by outsourcing.

Of course, outsourcing is not without significant risks relating to agency costs and intellectual property. Eric Clemons associates three types of significant risk from outsourcing in his article, “The Build/Buy Battle” [CIO Magazine: Dec 1, 2000 Magazine]:

1. **Shirking** – This is when a vendor deliberately under performs while claiming full payment.
2. **Poaching** - Representing a client’s loss of control over an information asset.
3. **Opportunistic repricing or holdup** – After initial investments, vendors may

demand additional payment or a reworking of the contract.

## **Conclusions**

An analysis of data from the ITR survey indicates a slowly increasing trend toward outsourcing. But the type of outsourcing occurring is very selective. It is mainly for new systems development, desktop services or maintenance, and even then, only a portion of these activities are outsourced. This trend may be explained by the increasing complexity required in new systems development. The lack of available resources with the required training and experience to implement them led to increased outsourcing, and the increasing pace at which new technologies are emerging help to explain this upward trend. Many experts believe this trend will continue, due in large part to future web development projects.

The costs and benefits associated with outsourcing often make decisions to outsource I/S activities difficult. Only through a careful analysis of the benefits and risks can this decision be made.

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This article is the first in a series discussing the findings of the current ITR Survey.

## **About the ITR Program**

The IT Returns Program (ITR) is an industry-university cooperative research program conducted by the Center for Research on Information Technology and Organizations (CRITO) at the University of California, Irvine. It is supported by grants from the NSF and the CRITO Consortium (an NSF Industry-University Cooperative Research Center). For further information on the ITR Program, please contact Dr. Kenneth L. Kraemer at (949) 824-5246 or [kkraemer@uci.edu](mailto:kkraemer@uci.edu).