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Achieving success in information systems outsourcing

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T he growth in outsourcing of information systems (IS) activities is being heralded in the popular and academic press around the world. Market expansion in some European countries, such as the United Kingdom, is estimated to reach 20 percent per annum. In the U.S. alone, the IS outsourcing market is projected to expand from $10 billion in 1991 to $26.5 billion in 1997.[1] With this sort of growth, IS outsourcing warrants top-level attention.[2]

Media reports about outsourcing arrangements are frequently euphoric and the expected benefits are described in glowing terms.[3] As is the case with new ideas or approaches, their value is often misrepresented due to underre-ported failures, assumed universal fit, and rationalized benefits after-the-fact.[4] Because failures carry recriminations, they are quickly buried.

This article reports the findings of a study of companies whose outsourcing agreements were announced in the popular press. We interviewed thirty-four managers who signed or administered IS outsourcing agreements that were at least two years old as of Spring 1995. Many of the managers were far less excited about the agreements after they had lived with them for a while. They not only discussed their disappointments with the agreements, but also provided their perceptions about entering outsourcing arrangements.

What Is Outsourcing?

Outsourcing has been defined as "the purchase of a good or service that was previously provided internally."[5] Some view IS outsourcing as a new word for an old practice—facilities management. That is, a company outsources its IS

when it pays another company to operate its computer center. More recently, the concept of outsourcing has been broadened by many to include farming out tasks, services, or functions (such as system programming, application development, system and application maintenance, network management, end user computer support, and technical support services) to a vendor.

Outsourcing practices have evolved in several ways over the last few decades. Larger companies with more mature IS departments are increasing their outsourcing, and they are outsourcing across a broader range of functions. The growing ranks of service providers are taking on increased management responsibility; some are even becoming long-term partners.

Outsourcing today means many things to many executives. It may mean a single-system contract for a relatively small percentage of the budget, or it may span multiple-systems and represent a significant transfer of assets, leases, and staff to a vendor who operates, manages, and controls the company's information systems functions.

Determinants of Successful Outsourcing

Core Functions

The conventional wisdom is that companies should never outsource core functions. A core function is one of a limited number of functions that provides strategic advantage to the company. A core function or competency is one that evolves slowly through collective learning and information sharing, cannot be quickly enhanced through additional large investments, and cannot be easily imitated or transferred to others.[6] To outsource a strategic function would leave a company potentially vulnerable to market failure. Instead, firms should concentrate their resources on a set of core functions and strategically outsource other functions.

Commodity functions that are not critical to the company's competitive edge, or that do not reflect special capabilities, are typically considered the best candidates for outsourcing. However, not all commodity functions are prime candidates for outsourcing. Commodity functions probably should not be outsourced when they are anticipated to become core functions in the future. That is, when a company's future competitive position is dependent upon innovative computer applications, outsourcing should be carefully scrutinized, and possibly avoided.

Similarly, core functions should be evaluated for their outsourcing potential. Several researchers have suggested situations where it is advisable to outsource core functions. For example, a firm may lack the talent and skills to develop potential core differentiating applications.[7] Another example is when a company incorrectly perceives IS as a core function. Continental Bank, the first money-center bank to outsource almost all of its information technology, contested the conventional wisdom that surrendering control over information

technology threatens the core competency of a bank. The decision to outsource at Continental was made only after management realized that customer service, and not information management, was the bank's core competency.[8] Companies in information-intensive industries (e.g. , insurance or finance) may be especially prone to misclassifying the IS function as a core competency when, in fact, it merely supports the companies' core function. Companies in these industries may wish to follow Continental Bank's lead in reassessing its core competencies when considering outsourcing decisions.

Partnerships

In an increasing number of cases, companies are opting to form partnerships with their service providers. Typically these are long-term commitments that allow firms to share risks and rewards and to better manage complex interrelationships. For example, EDS, a very successful service provider, usually buys an equity stake in a customer's firm.[9] In one instance, EDS paid $250 million in 1990 for a 50% stake in Texas Air Corp's System One before signing a $4 billion outsourcing agreement with the company. Les Alberthal, EDS Chairman, views this investment strategy as a customer-driven change in the contracting process.

However, two prominent researchers believe that outsourcing providers cannot be strategic partners because they do not share the same profit motive.[10] They suggest that the outsourcing vendor's profits are inevitably maximized at the customer's expense when the customer's costs increase. In this "fixed-pie" perspective of outsourcing arrangements, it is thus impossible for a provider to be a partner.

Arrangements exist which rebut this "fixed-pie" perspective. When an application is developed by the vendor for a company, the outsourcing company may require the vendor to share revenues derived from the sale of the application to others. An example is the revenue sharing arrangement that Perot Systems Corp. entered into with Europcar International.[11]

Multiple Vendors

In a special form of outsourcing arrangement, multiple vendors work together to satisfy the customer's needs. This is a flexible arrangement which allows the customer to benefit from the strengths of each vendor. British Petroleum Exploration Operating Company benefits from such an arrangement with a trio of suppliers who are providing it with virtually seamless IS service.[12]

Tight Contracts

Recently, several researchers have explored the relationship between tight contracts and successful outsourcing arrangements.[13] Based upon their descriptions, we mapped twelve companies on the basis of their perception of the service provider (i.e., strategic partner vs. service supplier), the nature of the contract (i.e., loose vs. tight), and outsourcing success. The mapping employed a

FIGURE I. Outsourcing Success
Nature of Contract and View of Relationship in Previous Studies

S = Success; S- = Partial Success
F = Failure; F+ = Partial Failure
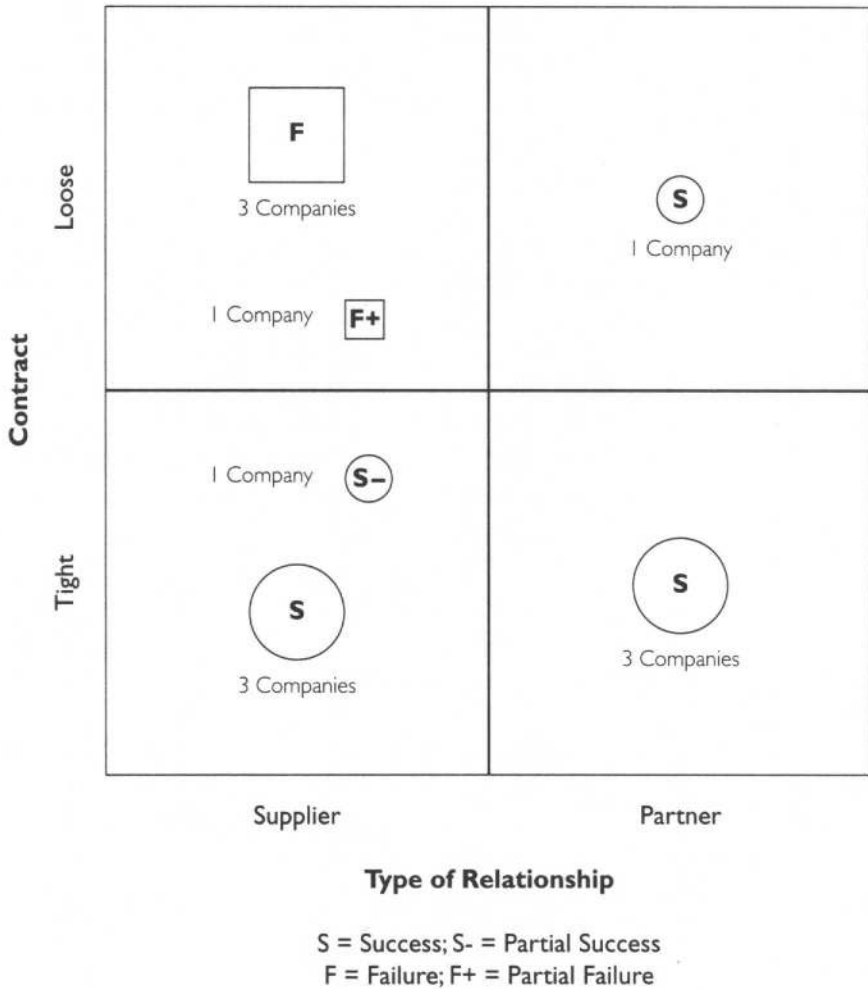
content analysis approach using key words and phrases in the cases to classify the relationship type and outsourcing success. The classification of the nature of the contract was based on: the inclusion in the contract of the clauses suggested by Lacity and Hirschheim, the use of legal or technical experts, and the respondent's perception of the completeness of the contract as described in the cases. The results of our mapping, displayed in Figure 1, strikingly indicate that companies with loose contracts viewed their outsourcing arrangement as a failure. The critical element in these outsourcing arrangements does not hinge on the view

of the service provider as a strategic partner or supplier, but rather on having a tight contract.

Winning Combinations

To ensure outsourcing success, organizations need to look beyond simple recipes such as tightly written contracts or outsourcing only commodity functions. Conditioned prescriptions are needed. A number of factors probably occur in conjunction with one another in cases of outsourcing success. Possible factors include perceptions of the service provider, the nature of the contract, and the view of the IS function as a commodity or core function.

Overview of the Study

Our findings are based on telephone interviews of individuals who were in charge of administering, or who played a role in negotiating, their firm's outsourcing contracts.[14] The response rate for our survey was 26 percent, or 34 of 129 companies that were reported to have signed outsourcing contracts between 1988 and 1993 and whose outsourcing arrangements were at least two years old.

During each phone interview we requested descriptive information about the contract, such as its length in years, value, and the types of services outsourced. We also explored the extent to which each contract contained the fourteen clauses recommended by Lacity and Hirschheim,[15] whether external legal and technical experts were consulted, and the respondent's perceptions of the completeness of the contract. The interview focused on economic, technical, strategic and other benefits derived from the outsourcing arrangement. Finally, respondents shared with us their perceptions of the role of information systems in their firms, and of the outsourcing vendor.

The companies included 9 public and 25 private American organizations in a wide range of industries. Almost 30 percent were financial institutions (other industries included airlines, utilities, consumer goods manufacturers, petroleum, and food processing). The contracts tended to be large, with an average value of more than $69 million. IS outsourcing included a broad range of services (including data center operations, application development, telecommunications and network support services, technical support services, and end user support) with 85 percent (29 companies) outsourcing some or all data center operations. An average of 69% of all IS services were outsourced in the contracts we studied. This high percentage is especially noteworthy since a majority of the companies were not outsourcing when they signed the contracts. More information about the companies and their outsourcing contracts is provided in Table 1.

TABLE 1. Characteristics of Participating Companies (n=34)

Characteristic	Range	Mean (Std. Deviation)
Revenues (millions) First Quarter—1995	$9–$7,047	$2,082 (2,121)
Employees	90–60,000	9,498 (13,058)
Employees in IS Function	1–500	101 (139)
IS Budget as Percent of Revenues	.1%–60%	7.79% (13.03)
Percent of IS Services Already Outsourced Prior to Reported Contract	0%–85%	14% (25)
Percent of IS Services Outsourced in Reported Contract	10%–100%	69% (31)
Value of Contract (thousands)	$300–$526,000	$68,748 (115,985)
Length of Contract (years)	2–12.5	7.2 (3.2)
Years into Contract	2–6	3.7 (1.2)

The Contract is the Key

Over half the responding companies used the vendor's standard contract and modified it to a slight (24%, 8 companies) or moderate (32%, 11 companies) extent. Over a third (12 companies) did not use the vendor's contract at all when negotiating their outsourcing agreement. Eighteen companies (52.9%) did not use external legal or technical experts, although two respondents ruefully volunteered that they wished that they had done so.

Many of the managers we surveyed were aware of the prescriptions for contract negotiations provided in the academic and popular press.[16] At least twenty-five companies (74%) in our sample wrote contracts with these recommended clauses: service levels (e.g., terminal response times); resolution of performance disputes; termination clause; growth rates; or a specified account manager in the vendor company. Although they were savvy about including these clauses, some still experienced problems because of inadequate specification. For example, a petroleum company contractually specified how pricing would react to growth rates, but did not state specific growth rates. Moreover, a manufacturing company experienced growth rates much higher than it had specified. This higher-than-contracted usage proved very costly.

Companies had even more difficulty in specifying baseline period measures, cash penalties for nonperformance, service volume fluctuations, and change of character clauses (such as when switching from batch to on-line systems). One company that had specified baselines was over by 20 to 25 percent on these baselines within the first six months of its outsourcing arrangement.

Some companies renegotiated their contracts before the originally stated termination date to correct areas that had been overlooked. One bank started off with a vendor's standard three-page contract and ended up with a document three-quarters of an inch thick. However, despite the thickness of the original

contract, it failed to specify cash penalties for nonperformance. In the renegotiated contract it added clauses on expanded performance service requirements and cash penalties for nonperformance. Another bank had negotiated a five-year contract with an exit clause in year three. In year three, the bank renegotiated the contract to clarify the change of character clause.

The clauses suggested by Lacity and Hirschheim seem to be widely accepted, and there is a high correlation between their inclusion in the contract and the perception of the respondents that they had a complete contract.[17] However, not all clauses that they specified are necessary for all organizations. Some organizations do not experience service fluctuations; others do not need to reassign personnel. The contract of one petroleum company in our survey was evaluated on the basis of today's best practices by an outside evaluator. The company's IS manager was told by the evaluator that the clauses that were missing weren't applicable to his company.

Reports Are Often Inflated

Published reports of outsourcing contracts, like Mark Twain's death, are often exaggerated. First, the length of contract reported in the press was significantly longer than indicated by our respondents. According to the respondents, the length of their contract was, on average, 3.83 years, whereas the press reported an average contract length of 6.79 years. Many respondents mentioned extension periods, which may have been assumed to be part of the length of the contract in published reports. The value of the contract reported in the press was $12 million larger, on average, than that acknowledged by the respondents. That is, the average contract reported in the press was $78.04 million versus $66.66 million reported in our survey.

Second, phenomenal savings due to outsourcing did not materialize in this sample. The average savings of the nineteen companies that provided estimates was 15.40%, with a range of 0 to 40%. Five of these reported no savings. One organization indicated that it actually saved $16 million when it walked away from its contract and brought its IS processing back in-house.

Fifteen companies wouldn't or couldn't provide estimates of cost savings. Many of the surveyed companies, including those that had provided estimates, said that it was extremely difficult to determine savings. In the words of one manager, "It's an inexact world." Several reasons were given for estimation difficulties. First, savings were not consistent from year to year. Often the biggest savings were realized the first year. After that the percentage saved dwindled considerably. Second, in the companies' dynamic environments, things were changing so dramatically that it was impossible to determine savings based on operations that were no longer performed. Further, some savings were in other departments and hadn't been measured. Third, a number of companies turned to outsourcing to ease the transition to client/server structure. Given the change in technology, it was unrealistic to project cost savings. Fourth, some organiza-

TABLE 2. Primary Reasons for Outsourcing

Reason	Companies Citing
Technological Considerations (i.e., integrate technology; skills lacking in house)	8
Cost Savings	6
Strategic Considerations (i.e., quickly build infrastructure)	5
Human Resource Considerations (i.e., inadequate staffing for workload; seasonal workload)	3
Mandated by Central Office/Acquired by Another Company	3
Consolidate Data Centers	2
Never Insourced	1
Efficiency	1
Increase Range of Functions	1
Politics	1
Renewal of Contract (no reason not to)	1
Cash Infusion	1

tions were paying more for their IS operations, but were also receiving additional benefits or experiencing substantial growth in usage. Fifth, some companies had outsourced for so many years prior to the current contract that it was impossible to ascribe any savings to outsourcing. Sixth, it was impossible to calculate savings due to outsourcing in an organization that had never had an IS shop. Thus, it is hard to estimate the impact of outsourcing on the bottom line.

Outsourcing: Not Just for Cost Savings

Companies turn to outsourcing for reasons other than just cost savings. In our sample, technological and strategic considerations were also among the primary reasons for outsourcing (see Table 2).

Strategically, outsourcing arrangements may become even more critical in the future as the focus on information technology management shifts from technology and computers to the better use of information. Instead of putting major resources into the ever more challenging task of building the appropriate computer infrastructure, executives will concentrate on providing information to respond better to market changes.[18] They can hedge difficult decisions such as setting up a client-server environment or designing and implementing enterprise networks by turning to outsourcing vendors. This strategy not only reduces the risks of investing in the wrong technology, it also frees up the resources needed to focus on providing information to improve the management of their organizations. Inarguably, the respondents in our sample who turned to outsourcing to quickly integrate and build their technological infrastructure were better able to focus on strategic issues as a result of their outsourcing decision.

Although the managers in our study were clearly frustrated in their attempts to measure cost savings, they stressed other aspects of success (such as strategic impact and technical flexibility) that were equally important when assessing the benefits of an outsourcing contract. Even though outsourcing may not provide the phenomenal cost savings promised in earlier reports of these arrangements, it helps firms successfully make the transition to new technologies, deal with seasonal business, and realize strategic advantage. Furthermore, it shifts the role of the IS function from acquiring and maintaining computers to providing more useful information.
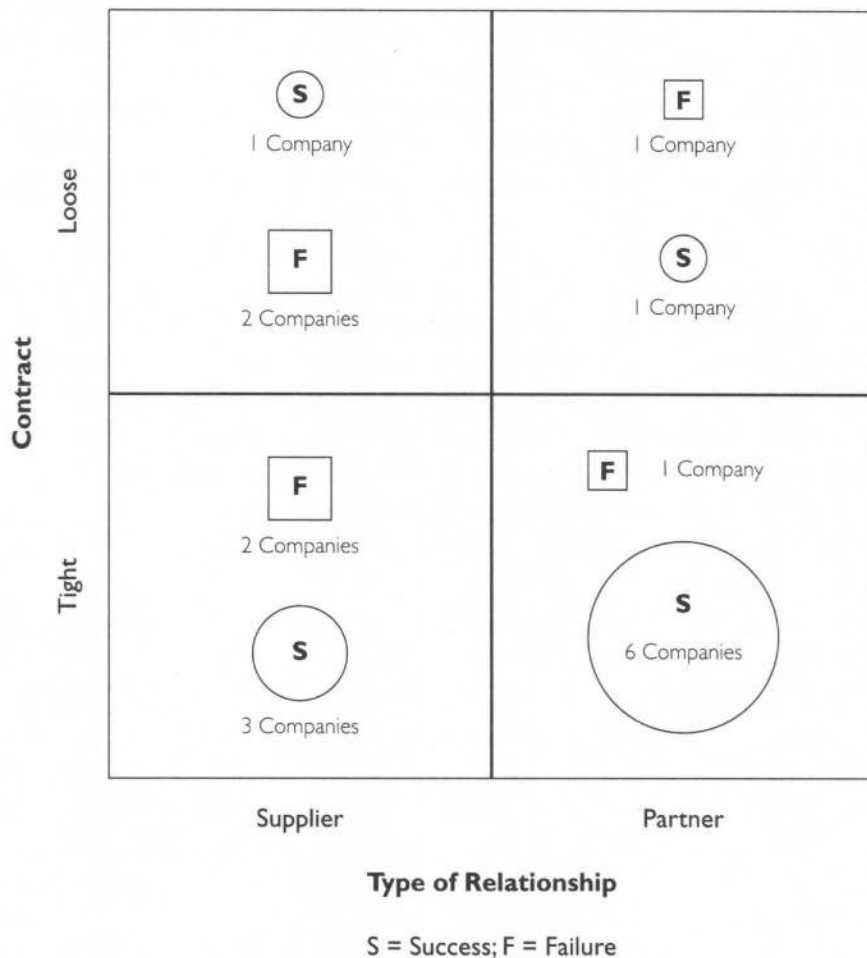
Ingredients for Success

The nature of the contract, perception of the IS role, and perception of the relationship with the vendor are possible ingredients for outsourcing success. Since there were so many reasons for outsourcing, we measured success along multiple dimensions:

- *Economic*—the efficiency of the outsourcing arrangement and the extent to which it helped the company avoid a major capital expenditure;

- *Technological*—the technological flexibility, new skills, and new technologies afforded as a result of outsourcing;

- *Strategic*—the strategic advantage, insourcing capability, and changed focus on strategic activities derived from the outsourcing arrangement; and

- *Overall Satisfaction with Contract*—the overall success of the outsourcing arrangement and the desire to change vendors.[19]

It is especially important to consider these multiple dimensions in order to form a complete picture of underlying motivations. If the outsourcing arrangement is for a core function, the strategic measures of success may be more salient. On the other hand, outsourcing of a commodity function may be judged predominately on the basis of economic success.

Each dimension of success was measured using several questions, which were averaged to yield a composite score for that dimension. Companies whose composite score on a success dimension was greater than the median were considered successful on that dimension. Failure on a dimension was ascribed to companies whose composite scores fell below the median. We then focussed on the companies that had most succeeded and failed along each dimension, and we related loose and tight outsourcing contracts to how respondents perceived their vendors (i.e., strategic partner vs. service supplier) and the role of IS (i.e., core vs. commodity) in their companies. These three factors (nature of contract, perception of vendors, and role of IS) are not significantly correlated to one another in our sample. Mapping the factors with the success dimensions highlights the complex nature of outsourcing interrelationships and, with the exception of those related to technological success, demonstrates the importance of considering them in conjunction with one another.

FIGURE 2. Outsourcing Success (Overall)
Nature of Contract and View of Relationship

Type of Relationship

S = Success; F = Failure

Tight Contract

Though the mappings are not as pronounced as those based on the earlier reported cases, we found that tight contracts were an important ingredient for outsourcing success. As is demonstrated in Figure 2, over 80 percent of the outsourcing arrangements that were perceived as successful had tight contracts. In contrast, loose contracts tended to be viewed by the respondents as less successful outsourcing arrangements.

FIGURE 3. Outsourcing Success (Overall)
Nature of Contract and View of IS Function

Type of IS Function

S = Success; F = Failure
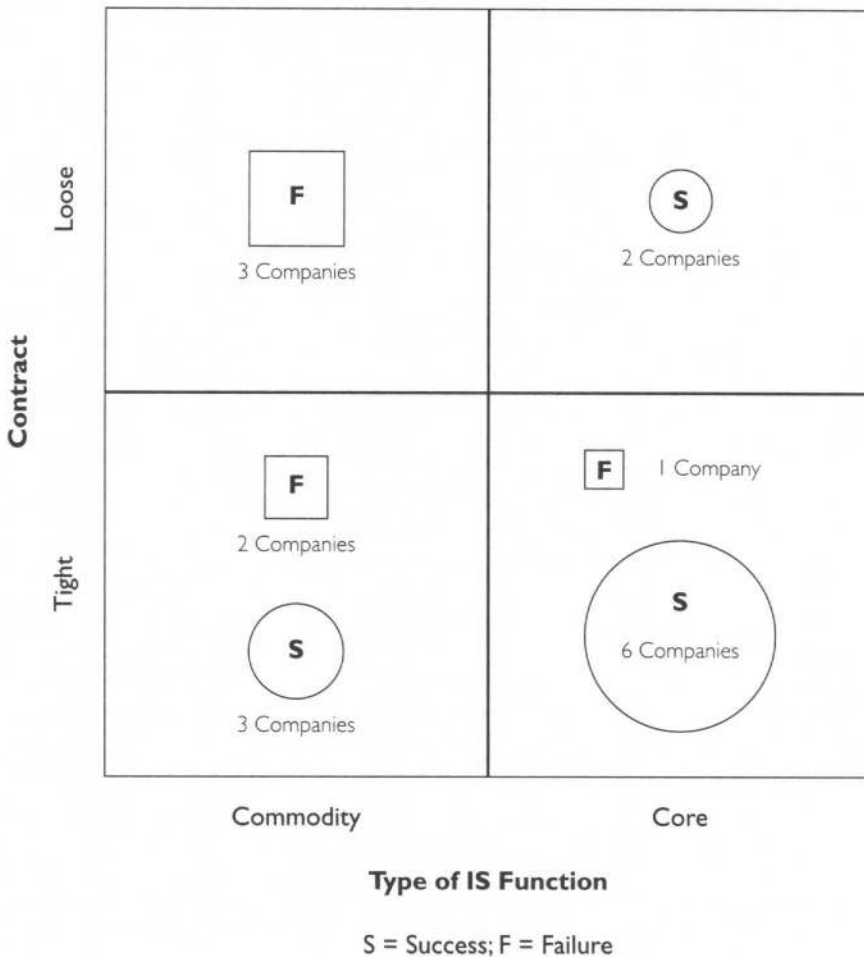
Core Function

Even more striking relationships emerge in Figure 3. Once again, satisfaction with outsourcing is linked to having a tight contract. In sharp contrast to popular belief, though, outsourcing seems to be most successful when IS is viewed as a core function. Outsourcing failures are more prevalent in companies that viewed IS as a commodity. This is especially true for arrangements with loose contracts. Companies that considered IS to be a core function may have been more thorough in negotiating their outsourcing contracts. On the other hand, loose contracts may be symptomatic of inadequate preparations for outsourcing arrangements involving less critical, commodity functions.

FIGURE 4. Economic Outsourcing Success
Nature of Contract and View of Relationship

Type of Relationship

S = Success; F = Failure
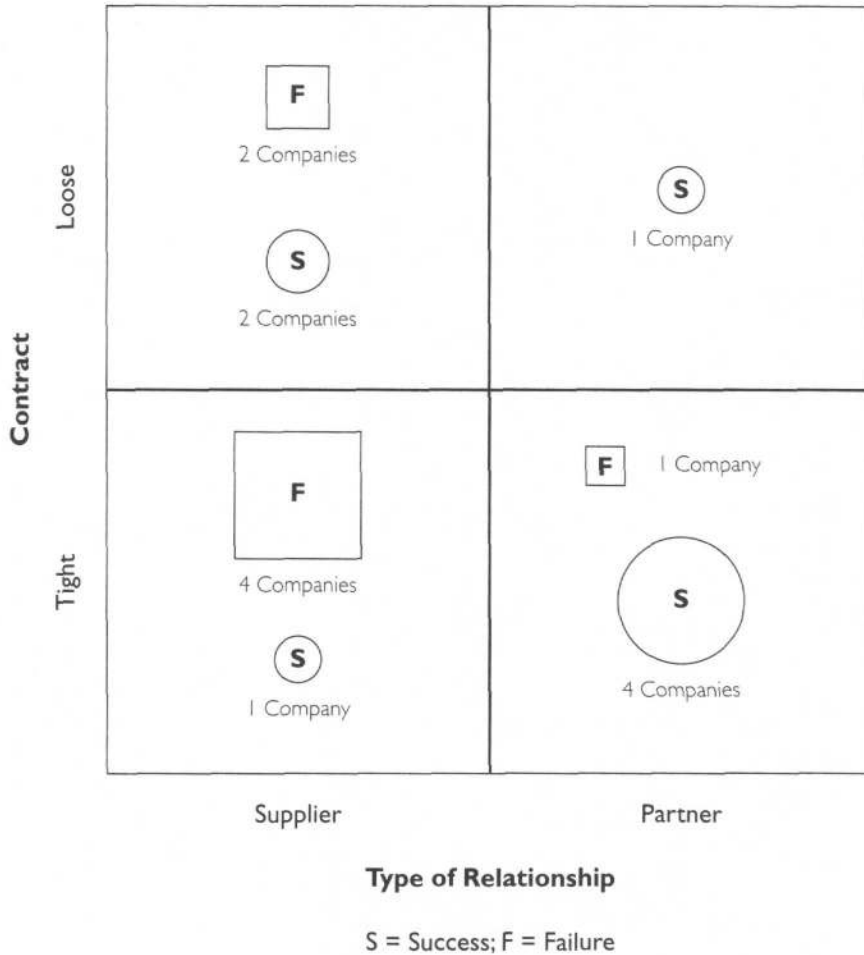
Partnership

Another noteworthy pattern emerging from Figure 2 is that partnership arrangements are more likely to be successful than supplier relationships in our sample. This is especially true when detailed contracts are applied to partnership relationships.

As illustrated in Figure 4, companies that felt their vendors were strategic partners tended to view their outsourcing arrangements as highly successful economically, whereas companies that viewed their vendors merely as suppliers rated their arrangements low in economic success. The reasons for this finding are apparently quite varied. For example, one company viewed its service

provider as a strategic partner and treated the provider's staff as one of its departments. The respondent acknowledged that the outsourcing arrangement probably did not generate savings in the IS budget, but was financially beneficial because the service provider gave his company major clients. In another case, an article announcing an outsourcing agreement with a company in the health care industry noted that the service provider would be a technology partner because of its ability to help control costs while improving the quality of and access to health care. Although the respondent in this company could not cite specific savings, he did note that some efficiencies had been realized in IS operations.

In contrast, companies that perceived their outsourcing vendors as suppliers tended to realize below-average economic savings. This could be attributed to problems with the contract. One bank that realized no cost savings or improved efficiencies of operation viewed the supplier as a "villain." The outsourcing arrangement hurt the company and received a negative review in a front-page article in Computerworld. A manufacturing company reported similar lack of savings and efficiencies from its outsourcing supplier. The respondent in this company attributed the lack of economic benefits to the failure of his company to correctly gauge growth. Their extra use was a big cost and the supplier was not as flexible as his company had hoped it would be.

But not all companies that viewed their service provider as a supplier were displeased with the arrangement. One company with extremely seasonal patterns viewed the arrangement as an effective way of dealing with dramatic shifts in IS needs, even though there were limited economic savings.

The Right Mix

Whatever the reasons for the perceptions of economic success or failure, a supplier-type relationship is much more likely to be economically successful when a tight contract has been written for the arrangement. This also applies to the likelihood of an arrangement having strategic success. As shown in Figure 5, all arrangements that were deemed to have low strategic success had loose contracts. In contrast, tight contracts were written for over three-fourths of the contracts in companies experiencing strategic success. Tight contracts are clearly important in both supplier and partnership arrangements.

Prescriptions for Good Arrangements

Our findings conflict with some of the commonly accepted beliefs about outsourcing arrangements. In particular, we found that it is possible to outsource IS activities that may be perceived as core to the company and to do so successfully. Outsourcing may even enhance the strategic impact of these IS activities. The caveat is that when a core activity is outsourced, a tight contract must be

FIGURE 5. Strategic Outsourcing Success
Nature of Contract and View of Relationship

Type of Relationship

S = Success; F = Failure
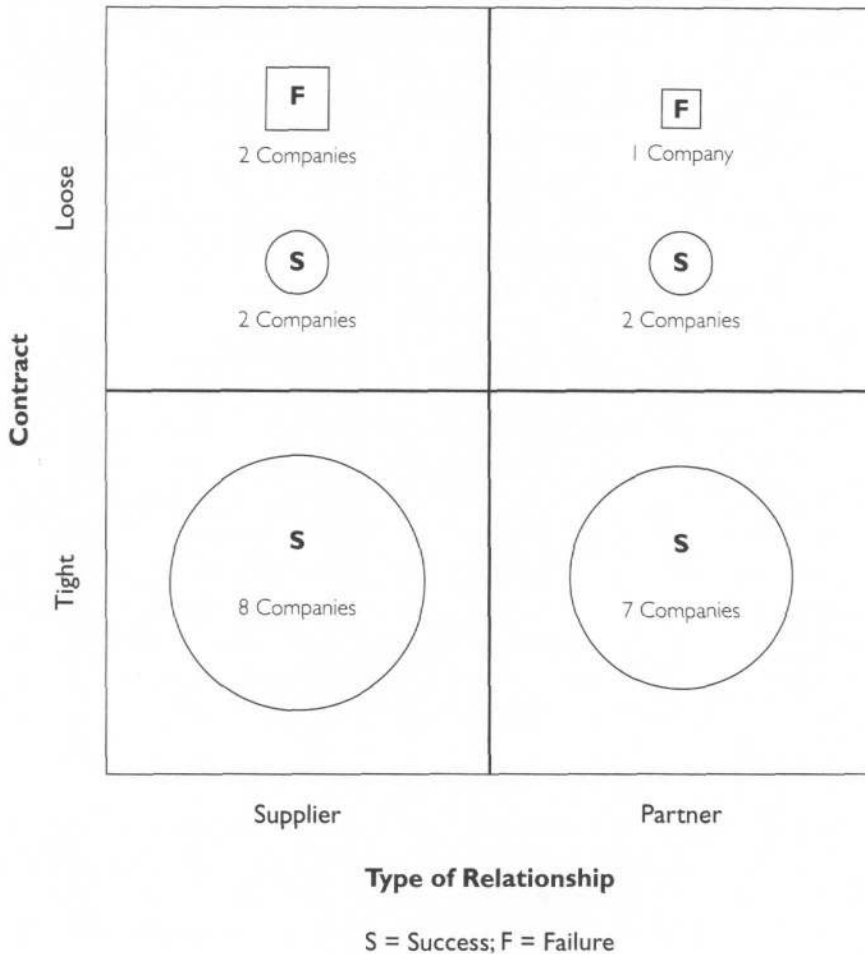
written both to restrict the vulnerability of the strategic activities and to provide control over the vendor performing them.

The experiences of the managers in our study lead us to suggest several strategies for negotiating outsourcing contracts:

- *Carefully define all aspects of the outsourcing arrangement.* Loosely defined growth rates, poor baseline measurements, and unspecified nonperformance clauses often came back to haunt the managers in our study. Though full specification may be an elusive goal, every effort should be made to develop a complete contract.

- *Each organization is different and will require a different contract.* Not all recommended outsourcing clauses are required by every organization entering into an outsourcing agreement. Most companies in our sample wrote clauses with regard to service levels, resolution of performance disputes, termination, growth rates, and an account manager in the vendor company. However, reassignment of personnel was an issue at far fewer companies.

- *Get a second opinion.* In-house technical experts are essential in providing an understanding of the company's information processing requirements. However, due to the complex nature of outsourcing issues, it may be worth the additional cost to hire external technical experts to help measure baseline services and performance levels as well as legal experts to write the outsourcing contract and negotiate with the vendor.

- *Build a renegotiation option into the contract.* Inevitably, something will be forgotten or underspecified in the original contract. One option is to build a "technology price index (TPI)" into the contract. With a TPI, outsourcing fees are automatically renegotiated when the customer's computer processing workload changes by more than a specified percentage in a one-year period or if benchmark studies show data center operating costs have dropped by a specified percentage within the same time period.

- *Establish partnerships via profit sharing.* Even if the outsourced IS activities are perceived as a commodity, profit sharing with the vendor can create a "win-win" situation. Revenues from applications, increased efficiencies, and reduced customer costs can benefit both parties in a profit-sharing partnership.

- *Get the right mix.* Deciding on whether or not to outsourced based only on the core/commodity rule is simplistic. Similarly, entering into a loose or tight contract, or seeking a partner or a vendor, are decisions that should not be made separately. These factors must all be considered in conjunction with one another.

Interest in outsourcing is clearly growing, despite the many uncertainties associated with its implementation. The constant changes in information technology along with increasing global competition will certainly put more pressure on executives to use outsourcing. The complexity of outsourcing contracts has also increased as companies become more sophisticated in their approaches to outsourcing. However, executives must continue to be alert to new issues and approaches as they negotiate in the outsourcing arena.

Notes

1. See V. Grover, M. Cheon, and J.T.C. Teng, "An Evaluation of the Impact of Corporate Strategy and the Role of Information Technology on IS Functional Outsourcing," *European Journal of Information Systems*, 3/3 (1994): 179-190.

2. In a recent survey by Clark, IS senior executives considered acquiring outside services as one of the six most important strategic issues confronting their organizations. T.D. Clark, Jr., "Corporate Systems Management: An Overview and Research Perspective," *Communications of the ACM*, 35/2, (1992): 61-75.

3. This is mentioned in a number of articles, including Prashant Palvia, "Objectivity in MIS Research," *Information Systems Research*, 8/3 (1995): 3-4; Mary Lacity and Rudy Hirschheim, *Information Systems Outsourcing: Myths, Metaphors and Realities*. (New York, NY: John Wiley & Sons, 1993); Mary Lacity and Rudy Hirschheim, "The Information Systems Outsourcing Bandwagon," *Sloan Management Review*, 35/1 (Fall 1993): 73-85.

4. See James A. Waters, Paul F. Salipante, Jr., and William Notz, "The Experimenting Organization: Using the Results of the Behavioral Science Research," *Academy of Management Review*, 3 (1978): 483-392.

5. See James Brian Quinn and Frederick Hilmer, "Strategic Outsourcing," *Sloan Management Review*, 35/4 (Summer 1994): 43-55.

6. See William King, "Strategic Outsourcing Decisions," *Information Systems Management*, 36/1 (Fall 1994): 58-61.

7. See King, op. cit., p. 59; F. Warren McFarlan and R.L. Nolan, "How to Manage an IT Outsourcing Alliance," *Sloan Management Review*, 36/2 (Winter 1995): 9-23.

8. See Richard L. Huber's rich discussion of Continental Bank's decision to outsource in "How Continental Bank Outsourced Its Crown Jewels," in *Harvard Business Review* (January/February 1993), pp. 121-129.

9. See Paul Gillin, "EDS Rides Outsourcing to Riches," *Computerworld*, October 14, 1990, p. 113+.

10. Lacity and Hirschheim (Fall 1993), op. cit., p. 76. Also see Mary Lacity, Leslie Willcocks, and David Feeny, "IT Outsourcing: Maximize Flexibility and Control," *Harvard Business Review* (May/June,1995), pp. 84-93.

11. See Mark Halper, "Outsourcing's Pricing Conundrum," *Computerworld*, August 2, 1993, p. 1+.

12. See John Cross, "IT Outsourcing: British Petroleum," *Harvard Business Review* (May/June 1995): 94-102. The Sema Group agreed to run data centers in Glasgow and provide IT services for BP Exploration's offices in Stockley Park and BP Company's head office in London. Science Applications International Corp. managed IT facilities for BP Exploration's European headquarters. It also provided most of the company's applications support. Syncordia (a subsidiary of British Telecommunications) managed the telecommunications and telex networks. European antitrust laws prevented the three companies from forming a formal alliance. However, these companies agreed to provide combined services to all sites.

13. Lacity and Hirschheim [(1993), op.cit.] wrote a book describing in detail the efforts of fourteen U.S. companies in negotiating outsourcing agreements. Eventually eight of these companies completed the contracts. These eight companies are mapped in Figure 1. In depth studies of five companies in the U.K. were conducted by Willcocks and Fitzgerald. The description of one of these, Company D, did not provide enough information for mapping. We have mapped the other four in Figure 1. Leslie Willcocks and Guy Fitzgerald, "IT Outsourcing: Preliminary Findings form Recent UK Research," RDP93/10, Oxford Institute of Information Management, 1993.

14. A sample of contracts was generated from an electronic search of three major CD-ROM databases, *Newspaper Abstracts Ondisc, Business Dateline Ondisc*, and *ABI/INFORM-GLOBAL*, which are produced by University Microfilms International (UMI). These databases were used in a previous study to identify 60 contracts spanning the time period from April 1988 to August 1990. Probably the best-

known academic study of outsourcing was conducted by Lawrence Loh and N. Venkatraman. They used a modeling approach to study outsourcing adoption rates. Lawrence Loh and N. Venkatraman, "Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect," *Information Systems Research*, 3/4 (1992): 334-358. In our survey, we included these contracts and identified 69 more active contracts in the next three years.

15. Lacity and Hirschheim, op. cit., dwell on contract clauses and prescriptions for successful contract negotiations in both their book and their *Sloan Management Review* article.

16. For example, Lacity and Hirschheim, op.cit.

17. Ibid.

18. James Teng, J.J. Cheon, and Varun Grover, in "Decision to Outsource Information Systems Functions: Testing a Strategy-Theoretic Discrepancy Model," *Decision Sciences Journal*, 3 (1995): 75-103, found that IS outsourcing decisions are more likely when executives perceive that they are not receiving the information that they need. These companies did not turn to outsourcing to improve IS cost effectiveness or because of the firm's poor financial performance

19. Economic, technical and strategic benefits are frequently discussed in outsourcing articles. V. Grover, M.J. Cheon, and J.T.C. Teng used these categories of benefits in their study, "A Descriptive Study on the Outsourcing of Information Systems Functions," *Information and Management*, 27 (1994): 33-44. We have added an additional, overarching category of overall satisfaction.