SYSTEMS OPERATIONS

MANAGEMENT ISSUES AND PRACTICES

INPUT

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Systems Operations Program (SOP)

Systems Operations Management Issues and Practices

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Abstract

The need to manage information systems more effectively, coupled with the growing need to conserve cash and make investments more directly related to a company's core business, is having a major effect on the way companies manage their information systems operations.

The report examines issues and practices surrounding the growth of the systems operations market. It considers why companies have and have not entered into systems operations agreements. It also considers motivations that will cause companies to consider entering into agreements.

For companies that have entered into agreements, the report examines how the account relationships are managed, identifying factors that make the relationships successful.

The report also identifies key changes that will take place in systems operations over the next several years. The changes indicate a major shift in the way companies view their information systems and the types of services that vendors will provide.

The report draws upon other recently completed research providing a summary of the market for systems operations services.

This report has 106 pages and 54 exhibits.

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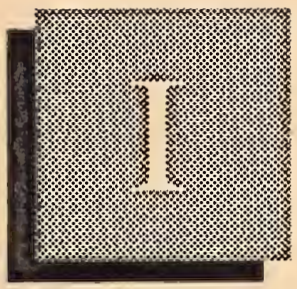
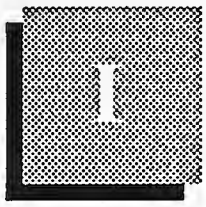


Introduction



Introduction

A Purpose and Scope

Plagued with ever increasing costs and growing pressures to place more emphasis on addressing core business requirements, information systems executives are venturing further from home to identify ways to better utilize resources. One approach growing in popularity is to contract for systems operations management with external providers.

The purpose of this report is to examine major trends and issues driving the systems operations market. Specific emphasis is placed on the following:

- Identifying the major reasons why companies contract for systems operations services
- Identifying major reasons why some companies have not contracted for systems operations services
- Identifying what factors would cause companies that have not contracted to contract in the future

In addition to identifying why companies have or have not contracted, the report discusses key management practices of systems operations vendors. The report also addresses questions such as the following:

- How do systems operations vendors ensure that their customers are satisfied with the level of service received?
- How do systems operations vendors measure their performance? How are the measures conveyed to their customers? What measures are important to users?

B Methodology

Research for this report included a review of published information to identify activities and trends in systems operations, and primary research with users and vendors. Key elements of the research included the following:

- Review of background data about trends and directions in systems operations
- Review of background data about the characteristics of organizations that have contracted and those that have not
- Interviews with large, medium, and small users to ascertain their willingness to contract for management of their operations and/or development activities
- Interviews with vendors of systems operations services to assess why organizations contract for services
- Interviews with vendors about how they market systems operations services and how they manage their relationships with clients

To understand differences that might exist between users and vendors, the primary research included both objective and subjective questions:

- The objective questions were aimed at understanding a vendor's organization and management practices.
- The subjective questions were aimed at understanding why users are for or against contracting for systems operations services.

The research placed specific attention on two different areas: personnel matters and factors that will cause the market to grow over the next several years.

Where there are discernible differences, comparisons between vendor and user responses are analyzed to identify opportunities to realize greater revenue potential through service differentiation or by altering marketing strategies.

C Report Organization

The remainder of the report is organized into five chapters:

- Chapter II, an Executive Overview of the report, includes a summary of key user and vendor analysis, a summary of the systems operations market, and key recommendations based on the research.
- Chapter III provides a summary market forecast of the systems operations industry. The market forecast is derived from other recently

completed research. The key focus of this chapter is on trends and issues that will cause the market to grow over the next five years.

- Chapter IV discusses user issues and analyzes key factors motivating buyers to contract for systems operations services, for not buying systems operations services, and factors that will cause companies to contract for services in the future.

- Chapter V discusses vendor management practices and policies. The primary focus of the chapter is to analyze how vendors interact with their customers to ensure success.

- Chapter VI provides a summary of conclusions and recommendations developed during the research.

The report also contains an appendix that includes the vendor and user questionnaires used for the research and a profile of INPUT services.

D

Related INPUT Reports

While INPUT believes that systems operations is a fundamental trend for the 1990s, its growth must be viewed in context with numerous other trends in the information services industry.

The following is a list of INPUT research reports that provide a foundation for understanding many changes taking place in the industry. They provide information about why systems operations is a growing method of conducting business in the 1990s.

1. Information Systems Management Reports
   - *The Future of Information Systems Management, 1989*
   - *Information Systems and Outsourcing—A Strategic Assessment, 1990*

2. Systems Integration and Systems Operations Reports
   - *Systems Operations—Growth for the 1990s*
   - *Network Operations Management, 1990-1995*
   - *Systems Integration Market Analysis, 1989-1994*

3. Market Analysis Program Reports
   - *U.S. Processing Services Market, 1989-1994*
   - *U.S. Professional Services Market, 1989-1994*
   - *U.S. Software Products Market, 1989-1994*

II

Executive Overview

II

Executive Overview

Systems operations—the contracting for all or a major portion of an information systems operation on a long-term basis—has received renewed interest in the last two years. While the concept is not new, the services it provides have become broader and have greatly improved the ability to manage complex computing and communications environments. Companies are examining or re-examining systems operations as a means to provide improved support to business processes.

A

Major Buying Issues

There are numerous issues related to contracting for systems operations services. Analysis of reasons for and against contracting indicates that the industry is young and that, while decisions to contract are based on business need, reasons against contracting are frequently based on emotional reaction or historical precedent.

There are also strong indications that users are only beginning to recognize systems operations as an option available to actually improve the process of delivering information to the company.

1. Contracting Reasons

There are clearly three primary reasons that companies contract for systems operations. They are summarized in Exhibit II-1 and discussed briefly below.

- Organizations consider information systems to be too important to the business—and critical to the decision process—to continue to accept delays in information delivery. Therefore, companies are seeking alternatives to ensure the availability of information.

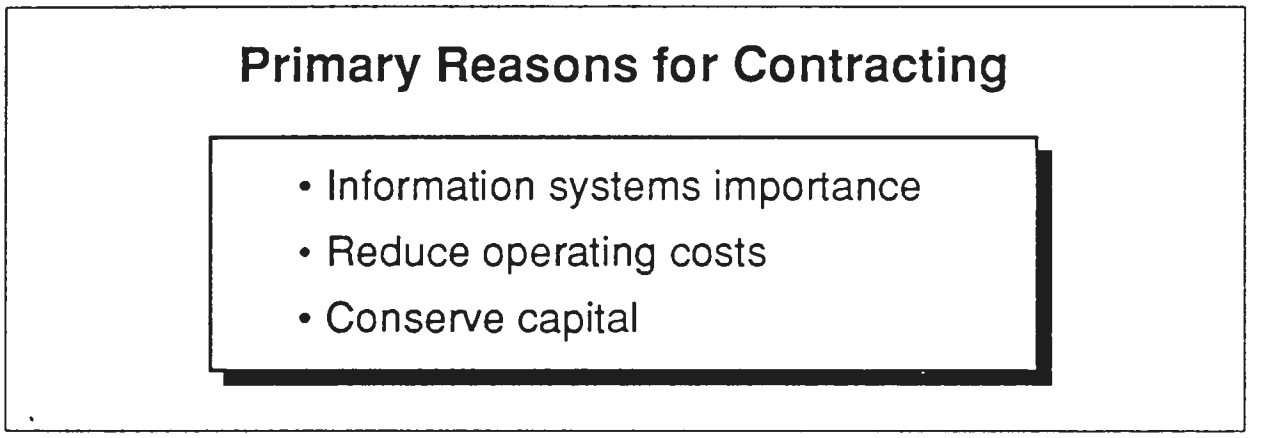
- Directly related to the need for information availability is the cost of delivery. While the per-unit cost of information processing has continued to go down, executives often see delivery costs go up at a rate

greater than the growth of the business. With growing financial pressures, there is a need to find ways to reduce, or at least contain, the cost spiral.

- There is also a need to conserve capital. Executives recognize that computing equipment is more a commodity than an essential asset and that capital expenditures can be better utilized to support the core business needs.

- Some companies believe that a vendor is in a better position to meet service-level commitments than an internal operations department. Removed from internal political considerations, a vendor is guided by contracted commitments and is not subject to internal pressures.

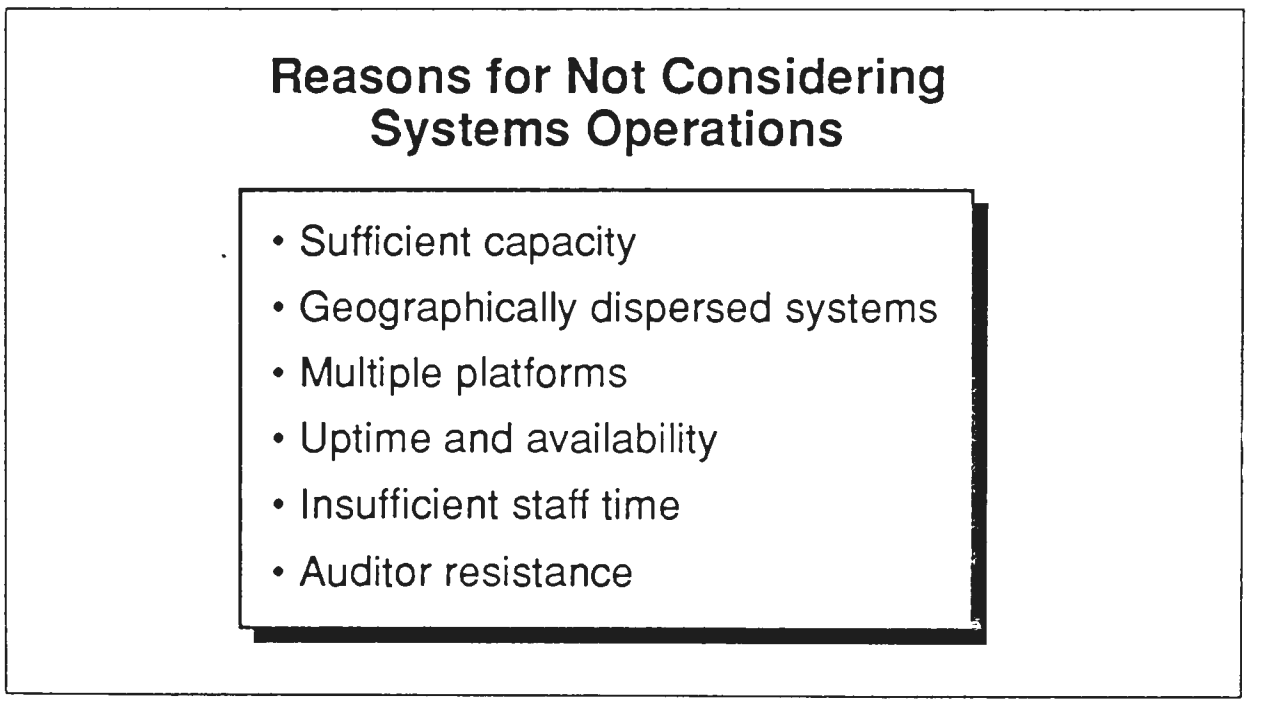
EXHIBIT II-1



While there are strong business reasons for considering contracting, it is equally clear that few organizations have, as yet, given serious consideration to systems operations. Research results indicate that 75% of the companies have not even evaluated systems operations as an alternative to improve their operations.

Exhibit II-2 highlights the most frequently identified reasons that organizations have not evaluated systems operations.

EXHIBIT II-2



Review of the reasons given indicates distinct but interrelated considerations:

- Organizations that currently have sufficient computer capacity are not inclined to want to consider alternatives. They don't see any need.

- Organizations with geographically dispersed (decentralized) systems, or systems that include multiple platforms (mainframes, minis, and micros), believe that they are better able to manage the systems than a vendor. Many users consider systems operations to be applicable only to large, central mainframe operations.

- In many organizations, the process of meeting production schedules allows little time to devote to analysis of systems operations benefits.

- Users indicate that auditors might object to having a key corporate asset controlled by a vendor.

INPUT believes that there are three key points underlying the responses:

- Vendors have not successfully conveyed their ability to manage complex, network-based platforms. Current perceptions are that systems operations is based on large, centralized platforms. Vendors also have not convinced users that they are better able to manage networks.

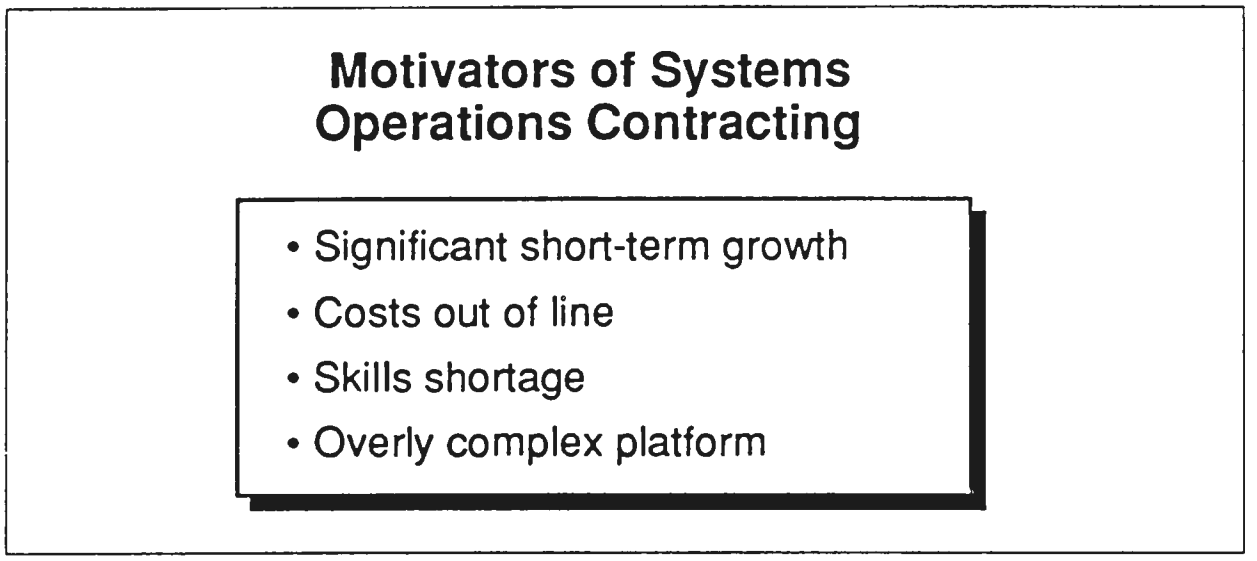
- Some information systems organizations have avoided evaluating the benefits of systems operations because it poses a threat to their organizations. Corporate executives must accept the possibility of potential benefit and demand that evaluation be performed before information systems organizations will allocate the necessary resources.

- More important than the allocation of resources, INPUT believes, is that information systems managers are frequently unable to perform the complex financial analysis necessary to capture internal costs and compare them fairly to outside services because they lack both the training and interest in financial analysis. Information systems executives need assistance, which can only come from internal financial organizations or vendors.

2. Contracting Motivations

Users identify several reasons for considering contracting for system operations. It is important to note that the motivations identified relate primarily to technology management, not management of the business. This technology orientation results from the predominance of information systems executives included in the survey. INPUT believes that there are other, more important reasons than those identified in Exhibit II-3.

EXHIBIT II-3



While current cost structures and growth that exceeds a user's existing capacity are important, there are other reasons systems operations will be increasingly considered:

- End-user demands for information are growing, increasing demand for staff to support new requirements. Additional staff is needed to develop new applications and to manage increasingly complex platforms. Many executives are interested in solutions that are responsive to the information needs but that do not require building staff.

- Many information systems organizations are not prepared to deal with the growing global system requirements. Services providers that can respond to global needs cost effectively will be in increasingly favorable positions.

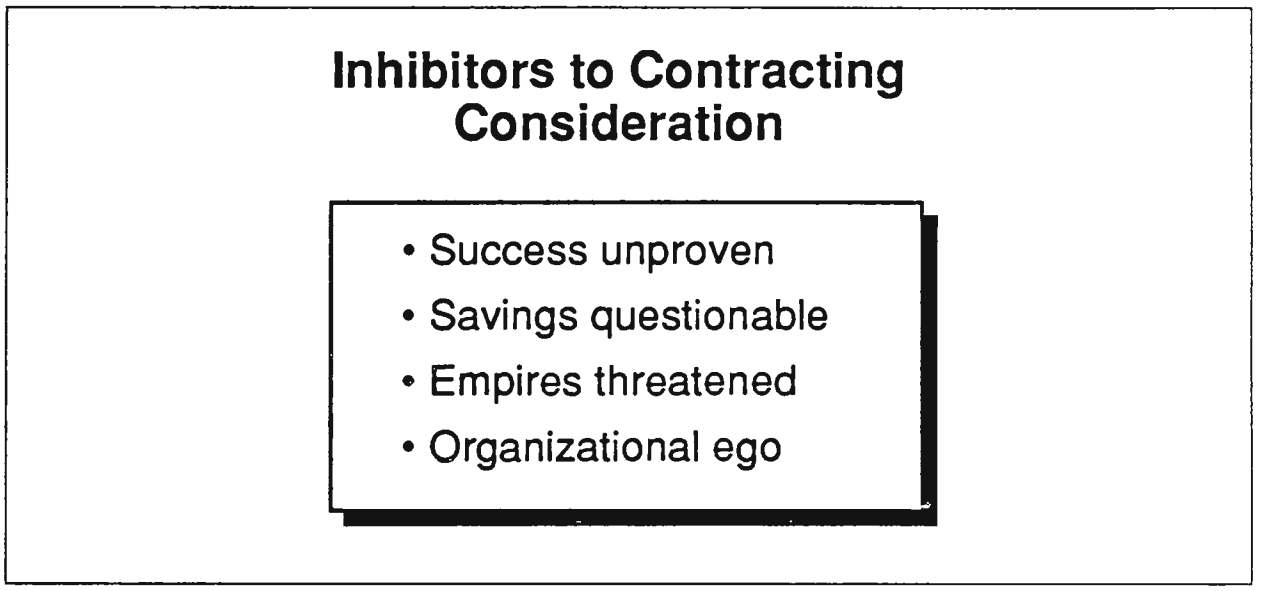
- Downsizing and restructuring are continuing. With the shifts in organizational focus, executives are interested in solutions that permit them to respond quickly while minimizing the impact on the staff and requirements to invest or replace equipment.

- The need to deliver information more quickly and effectively throughout the organization will continue to grow. With this growth, there will be continued demands for more telecommunications expertise, which is in short supply. Vendors that can provide strong networking expertise as part of their business offering will be in demand.

3. Contracting Inhibitors

Inhibitors to contracting are as much personal and emotional as they are based on fact. They also indicate that time will be needed for the market to prove itself. Exhibit II-4 summarizes key inhibitors to contracting.

EXHIBIT II-4



- Users indicate that proof of success and demonstrable savings are necessary for them to seriously consider systems operations services. Information systems managers are reluctant to pursue a solution that they believe may only be a fad. Many also believe that their operations are cost effective and that savings would be limited at best.

- The threat to individual managers is a major stumbling block. They are not inclined to pursue a solution that they recognize could cause them to lose their jobs or reduce their responsibility. In addition, many companies do not accept that a vendor can know as much about their business or perform as well as they do.

4. Personnel Issues

Concern about what will happen to personnel after a systems operations contract is signed is a key consideration for users and vendors; however, both users and vendors indicate that personnel concerns are being successfully addressed.

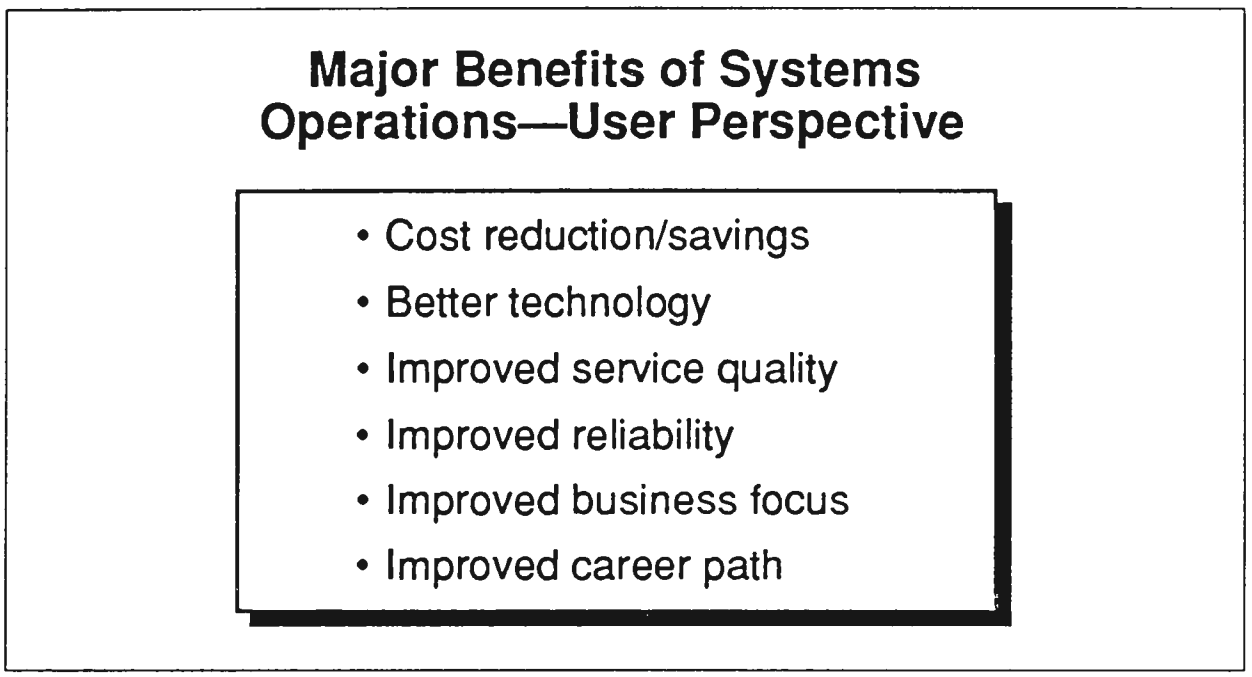
The method of addressing personnel concerns varies considerably. Some companies discuss the transition to systems operations well in advance. Some, fearing loss of staff, wait until a contract has been signed and announce the results. In either case, the future of the staff is reasonably well addressed.

At a minimum, most contracts provide a guaranteed term of employment as part of the contract. Some contracts include a transfer of all employee benefits from the user to the vendor. In either case, most companies consider systems operations contracts to be a benefit to employees, providing career path opportunities that would not be available within the company.

5. Systems Operations Benefits

Exhibit II-5 summarizes major benefits achieved by companies that have already contracted for systems operations.

EXHIBIT II-5



They reflect the need to realize cost savings, improve service delivery, and provide career opportunities for information systems staff. There are several additional key points:

- The key motivators to contracting, noted in Exhibit II-3, were oriented to technology management. The benefits realized by the contracting party are directly business oriented.

- While cost heads the list of benefits, that better technology and improved quality and reliability are included in the list indicates clearly that companies are interested in more than just cost reduction.

- Improvements in business focus and career path opportunities reflect that companies recognize that systems operations (particularly platform operations) is an anomaly to a business process. Although an essential element to the success of a business, information systems are not the business of the company, and the information systems staff has few real career opportunities in the core business. Systems operations removes the anomaly and provides greater career opportunities.

B
Management Practices

1. Contract Types

There is no fixed definition of a systems operations contract. They vary both in length and pricing to meet the needs of the user. However, there are several common themes:

- The majority of systems operations contracts are based on a fixed price for a fixed period of time. Contracts generally contain provisions to

renegotiate pricing based on changes in workload but remain constant as long as the workload mix does not change.

- Fixed-price/fixed-term contracts are more prevalent in professional service (facilities management) contracts. In these contracts, the vendor provides management expertise. There is no direct relationship between the staff needed to operate equipment and the volume of work processed.

- Resource usage pricing is more prevalent in processing services contracts. A holdover from the service bureau business, processing services are generally provided in a shared processor environment, where the vendor has less control over the mix of work at any given time.

The term of contracts also varies considerably:

- Federal contracts tend to cover longer periods than commercial contracts. Sixty-five percent of federal contracts cover a period of five to eight years. Many commercial contracts are for three to four years, although there are some that exceed 10 years in both categories.

- Many commercial contracts have evolved from the service bureau environment. The vendor provides services from its site, on its equipment, in a shared processor environment. In these situations, contracts tend to cover shorter periods, providing opportunities for the vendor and the user to renegotiate contract terms based on changing volumes.

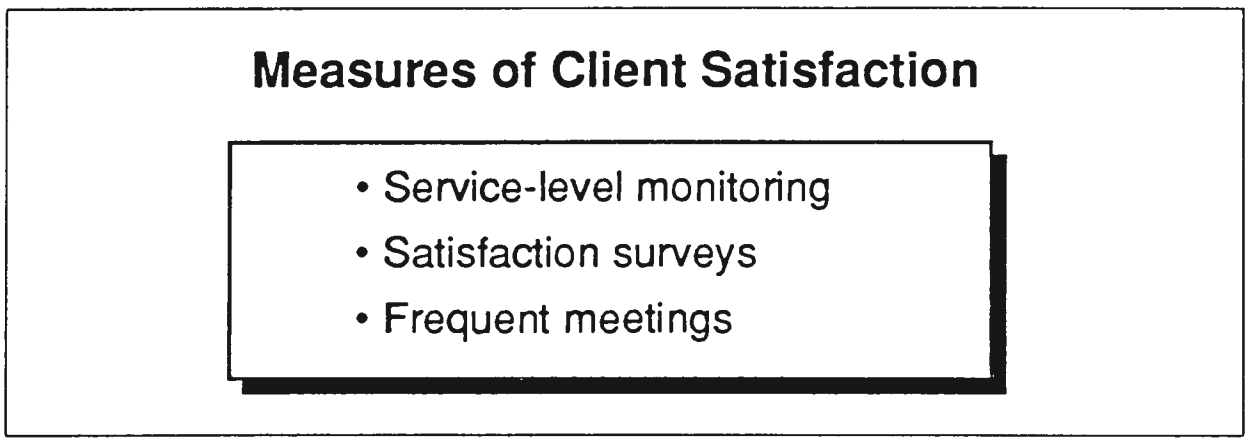
- In contracts where the vendor acquires the company's equipment, contracts tend to be more long-term. Since users may have carried equipment on their financial records at greater than real value, vendors must have longer contract terms to be able to recover their costs.

- INPUT expects contracts to move toward longer periods. However, they will generally remain in the five- to eight-year timeframe. Except in situations where longer periods are necessary for a vendor to recover investments made on behalf of the customer, the rapid pace of business change will have a limiting effect on contracts longer than five to eight years.

2. Customer Relations

Customer relations are critical to the success of a systems operations contract. Exhibit II-6 identifies the major methods used by vendors to assess user satisfaction. While specific measurements are important, INPUT believes that the major measure of satisfaction is the extent to which a vendor is viewed as part of the company's staff.

EXHIBIT II-6



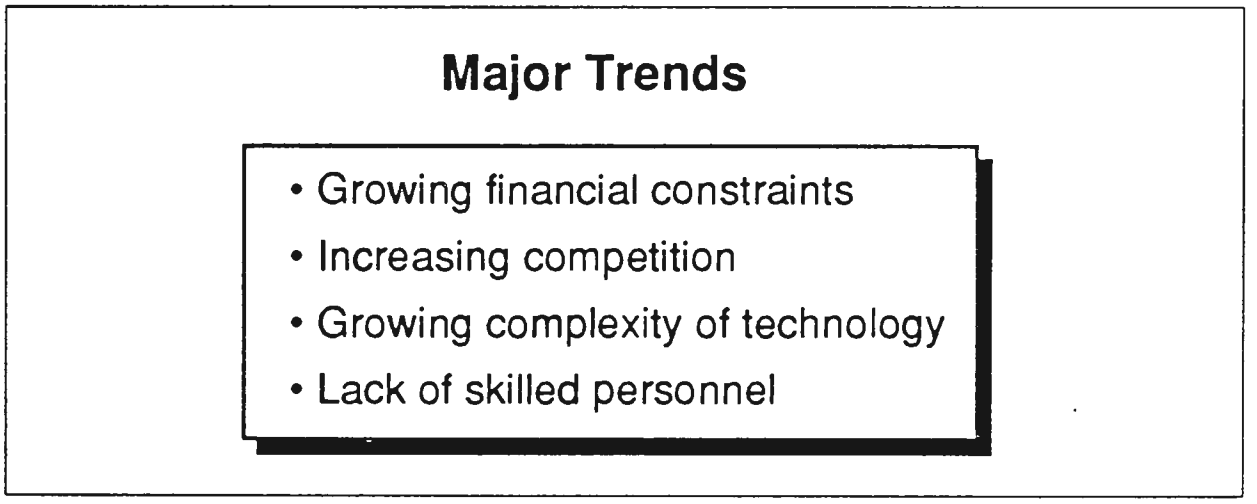
- Vendors typically have at least one staff member permanently located at the company site to provide both a coordination function and represent the vendor to the company. The key benefit results from the daily interaction between vendor and customer and the resulting perception that the vendor is a member of the company's staff.

- Continuous on-site support supports the idea of the partnership relationship. Companies that have long-term contracts consider the relationship to be more important than the contract.

3. Major Trends

While there is resistance, users and vendors agree that systems operations is growing for a number of reasons, which are summarized in Exhibit II-7.

EXHIBIT II-7



- Growing financial constraints is the most frequently mentioned reason for considering systems operations. This includes increasing demands for allocation of capital to core business needs and reducing the growth in information systems expenses. Users and vendors agree that the financial constraints will grow, fostering greater consideration of systems operations.

- Most companies recognize that technology can be applied to make them more competitive. They also recognize that the environment is more complex and that they lack essential skills to successfully apply the technology. They increasingly recognize that vendors are in a better position to apply technology cost effectively.

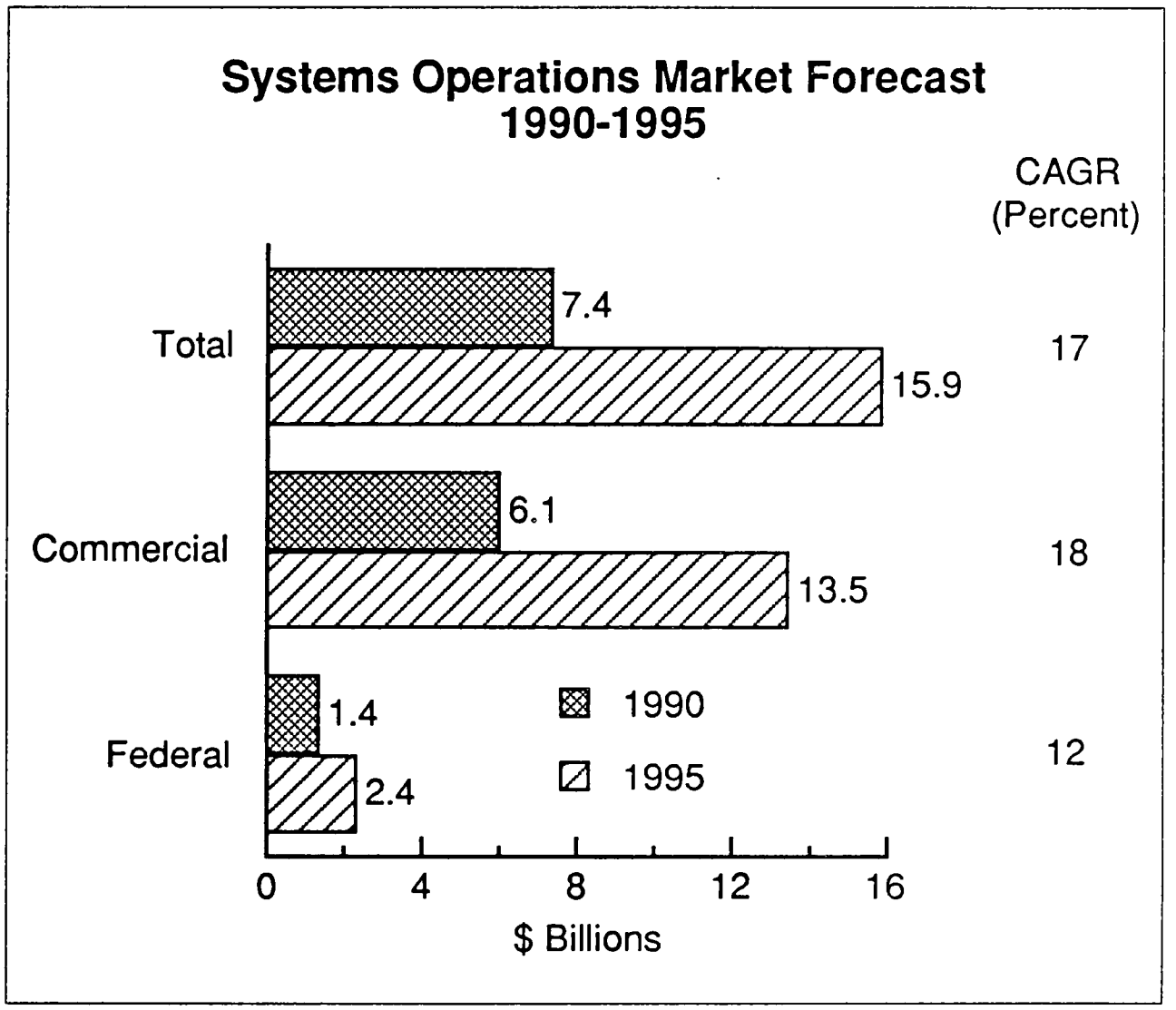
C

Systems Operations Market Forecast, 1990-1995

Growth of the market assumes evolutionary acceptance of systems operations as a way of doing business. During the past two years, several large contracts that have been signed are in the early stages of implementation. Their success or failure can significantly impact the acceptance of systems operations services.

As shown in Exhibit II-8, the market will grow at an average annual rate of 17%, from $7.4 billion in 1990 to $15.9 billion in 1995.

EXHIBIT II-8



- The commercial market is in the early stages of growth. Success in recent commercial contracts could set the stage for significant growth, increasing near the end of the five-year period.

- The rate of growth of the federal market has slowed over the past year. A reduction in the federal growth rate from 15% to 12% reflects the growing pressures on the federal budget to hold down and even curtail expenditures.

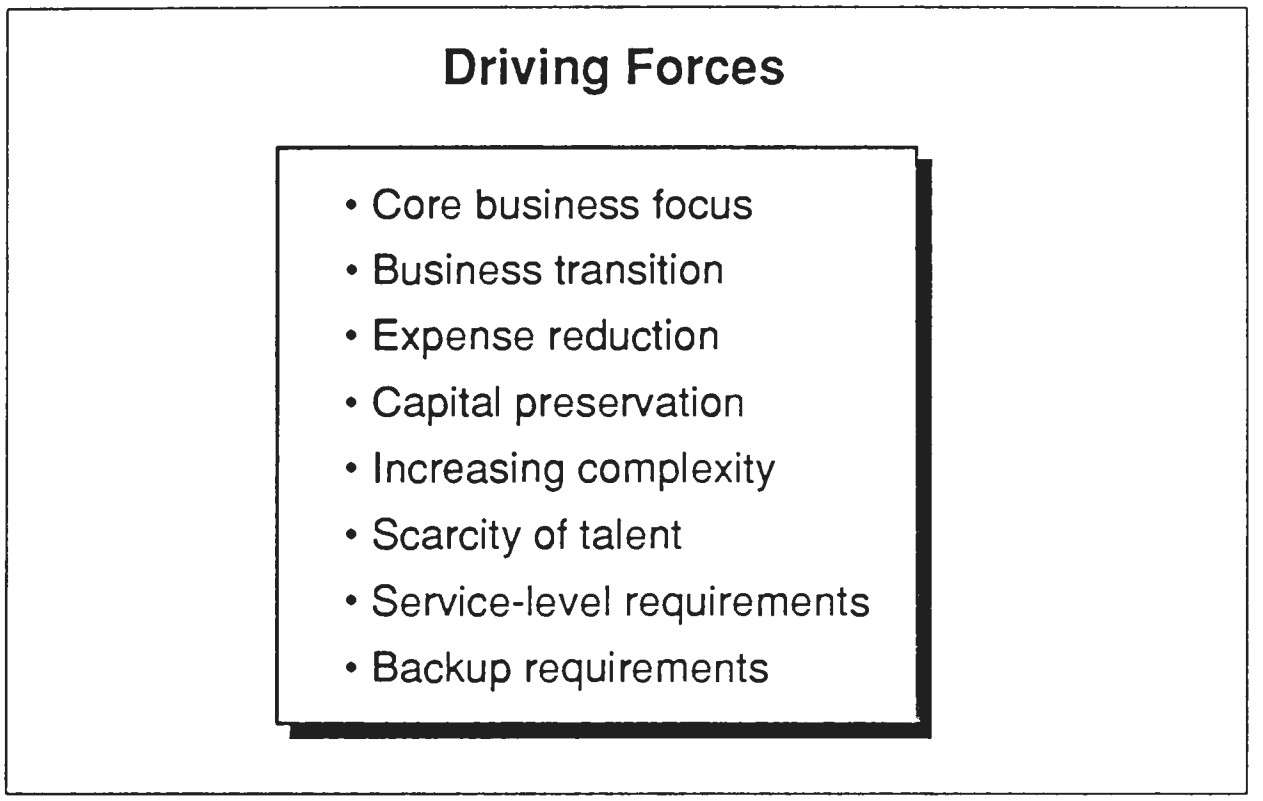
- While growth rate of 17% for the overall market appears to be stable, it actually represents an increase in the commercial forecast and a decline in the projected rate of the federal market.

D

Driving Forces

There are a number of forces driving the systems operations market, which are shown in Exhibit II-9. Of key importance is that these forces are predominantly business, not technical, forces.

EXHIBIT II-9



- While executives recognize that systems are critical to their businesses, they also recognize that operations is increasingly a commodity. Allocating significant portions of their time to information systems decisions reduces the amount of time available to focus on core business issues. With competition intensifying, executives must devote their attention to strategic and tactical issues and reduce the amount of time spent on the mechanics of operating information services.

- Businesses in transition are key candidates for systems operations. Companies facing financial difficulty or downsizing and companies facing mergers and acquisitions are increasingly inclined to consider systems operations as a method of stabilizing costs and ensuring focused attention on core business problems.

- With dwindling funds available for investment and information systems expenses increasing disproportionately, companies are interested in methods to conserve their capital and reduce, or at least stabilize, costs.

- Demands to integrate systems and networks is exceeding the ability of many organizations to respond to the need. While standards for connectivity are improving, there is an ever increasing set of integration options to select from. Systems integration vendors, with a broad base of technical expertise, are better able to address the integration of technologies than many companies. Systems operations is a natural follow-on service, and systems integration vendors are well positioned to promote and sell their systems operations services.

- Companies are increasingly focusing on service-level performance. Many internal departments are less able to meet service-level commitments due to conflicting operational and organizational requirements. Service levels built into systems operations agreements can often be managed and resolved more effectively than internal agreements.

- A byproduct of systems operations contracting is the ready availability of backup processing capability. Systems operations vendors typically have multiple data centers that provide backup capability that many organizations would find cost prohibitive.

E

Key Conclusions and Recommendations

A review of conclusions are summarized as follows:

- Companies are focusing increasingly on their core businesses. Activities that detract from executive attention on competitive positioning, product differentiation and strategy, or overall growth are candidates for outsourcing. While there is resistance to contracting for systems operations, the resistance is primarily from information systems managers, not executives.

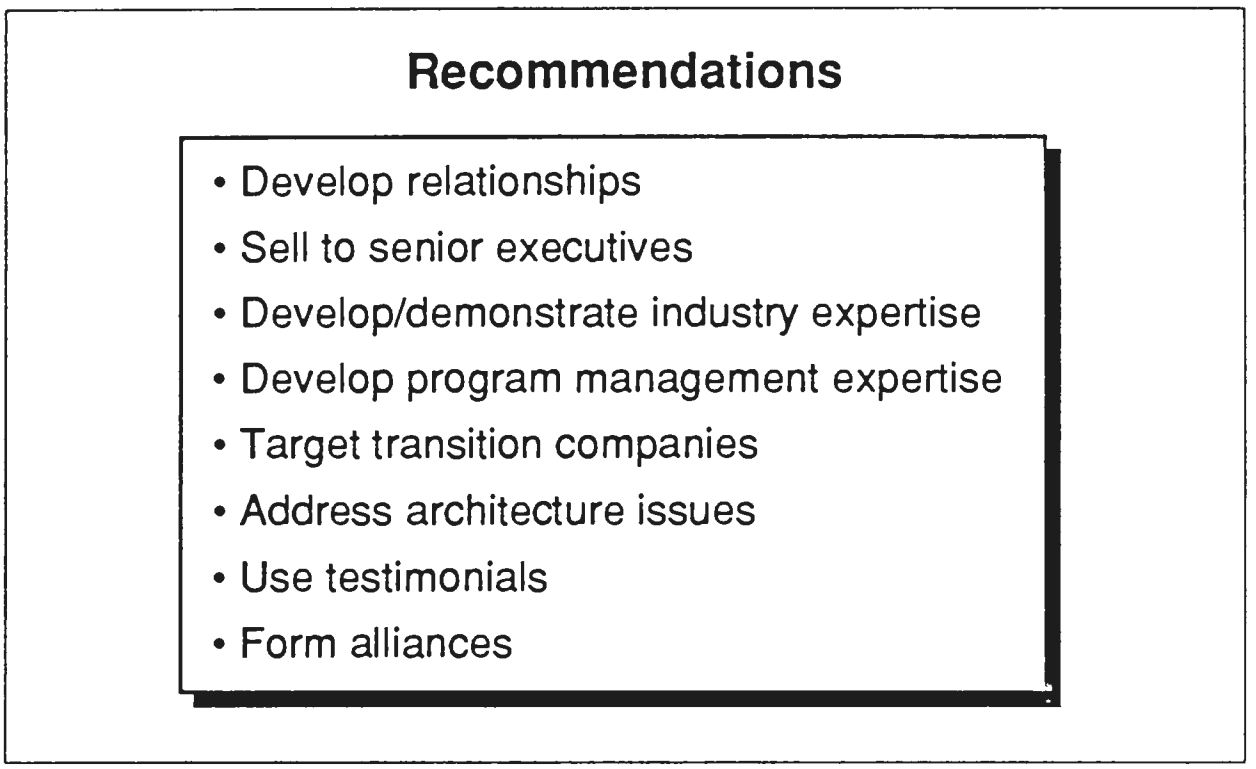
- Financial benefits are the primary reason that most companies consider systems operations, at least initially. Companies that have contracted recognize, after the fact, that improved quality and increased business focus are of equal or greater benefit. INPUT believes that this recognition will result in companies looking to their vendors for value that will result in strategic advantage.

- Until systems operations has become a proven and accepted approach, many organizations will continue to give it only cursory examination. As a result, vendors must proactively seek clients, call on executive management, and be prepared to provide analysis of the benefits of systems operations.

- A dedicated, full-time executive liaison—to address and resolve existing or potential problems—is necessary to the success of a systems operations contract because organizations that contract for systems operations services view the vendor as another department of their organization. This key contact is required in addition to regular meetings between vendor and customer executive management.

Recommendations to vendors entering or expanding in the field of systems operations include those shown in Exhibit II-10.

EXHIBIT II-10



- Vendors entering the systems operations market need to develop relationships with a variety of customers. This can most easily be accomplished through successive consulting and systems development contracts. Performing successfully in complex projects will demonstrate competence and build customer confidence.

- Vendors need to sell systems operations to corporate senior executives. Some information systems executives view systems operations as a threat. Senior business executives of the same company will view systems operations as an opportunity.

- Vendors need to develop and be able to demonstrate industry expertise. Companies usually will not select a vendor that does not understand their business.

- Demonstrated experience in managing operations is not sufficient. Vendors need to develop and demonstrate an ability to manage complex business relationships.

- Vendors entering the market will find the greatest opportunity among companies that are in transition. These companies will be more eager to consider savings opportunities than companies that are not under pressure to implement change.

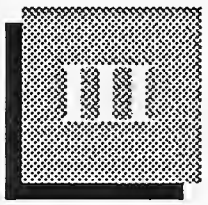
- Vendors need to be able to address system architecture issues. Organizations that have invested in developing distributed architectures may be reluctant to consider systems operations, perceiving that the systems operations approach is based on centralization and therefore is contrary to their direction.

- Where possible, vendors should use testimonials to validate vendor responsiveness to customers' needs.

- Alliances are necessary. Few vendors have the breadth of services necessary to meet the needs of all prospective clients.

INPUT believes that systems operations is a dynamic market that is just beginning to grow. While there is resistance to permitting a vendor to do successfully what many organizations have been unable to accomplish themselves, business demands will motivate companies to overcome the resistance and enter into systems operations contracts.

Market Overview



Market Overview

Managing the operation of a customer's systems (systems operations) is not new. Service bureaus (processing services) began and flourished for many years by processing all or a portion of the work of many companies. Likewise, facilities management (providing personnel to operate a client's equipment) grew steadily, particularly in the federal sector.

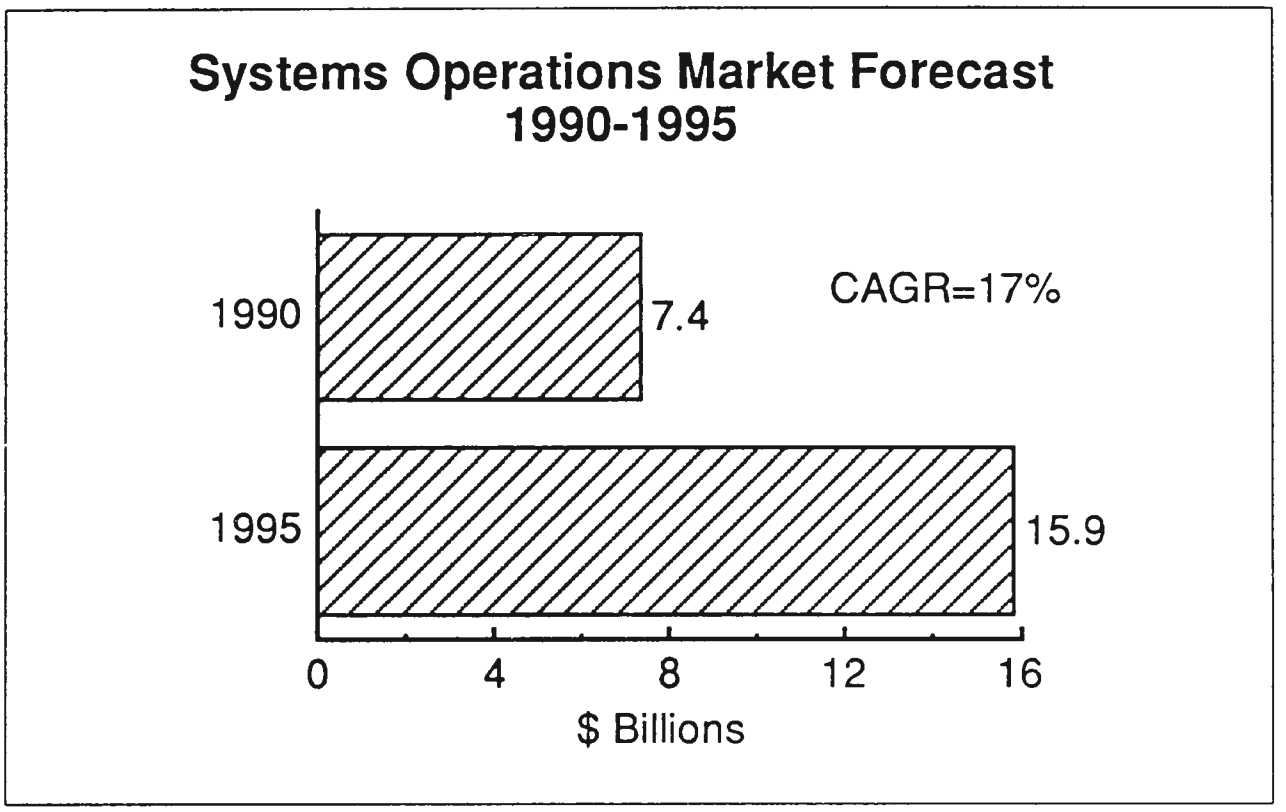
But, just as the move from service bureau to in-house processing caused a decline in early processing services, several changes are causing a rebirth of the information services outsourcing industry and expanding the scope of services offered.

Changes in the business environment and changes in technology have led to a resurgence in the use of vendors to manage the operation of a company's systems. Recent contracts for systems operations are laying a foundation for new approaches to systems management in the future.

A Systems Operations Forecast

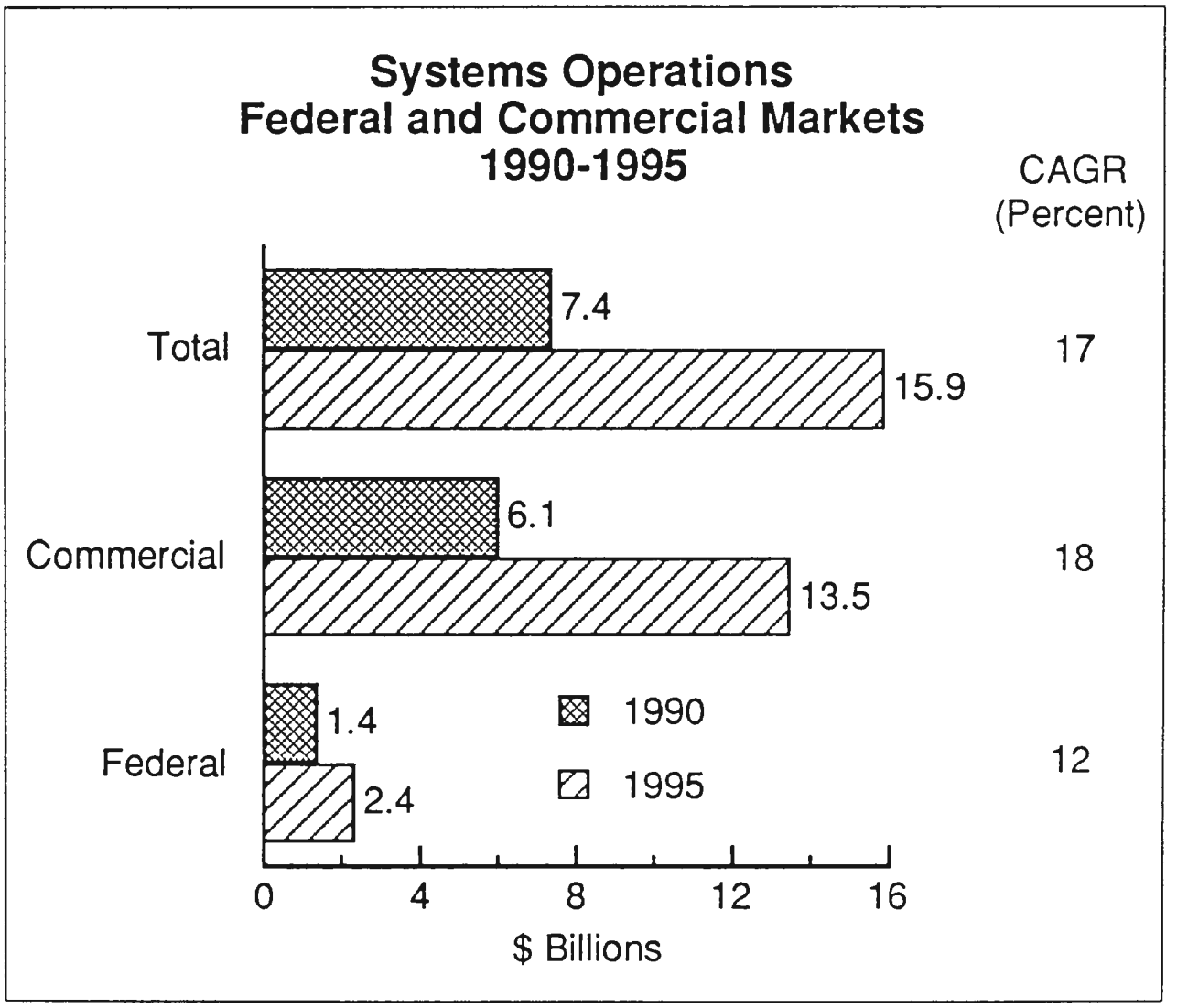
As shown in Exhibit III-1, the market for systems operations will grow from $7.4 billion in 1990 to reach $15.9 billion by 1995, a compound annual growth rate of 17%. This growth assumes an evolutionary acceptance of systems operations. During the past two years, several large systems operations contracts have been signed and are in the early stages of implementation. Their success or failure will significantly impact the acceptance of systems operations services.

EXHIBIT III-1



In 1990, the federal market represents approximately 19% of the total. By 1995, the federal share of the market will decline to approximately 16%, as shown in Exhibit III-2. There are two primary reasons for the shift.

EXHIBIT III-2



- The commercial market is in the early stages of growth. Success in recent commercial contracts could set the stage for significant growth, increasing near the end of the five-year period.

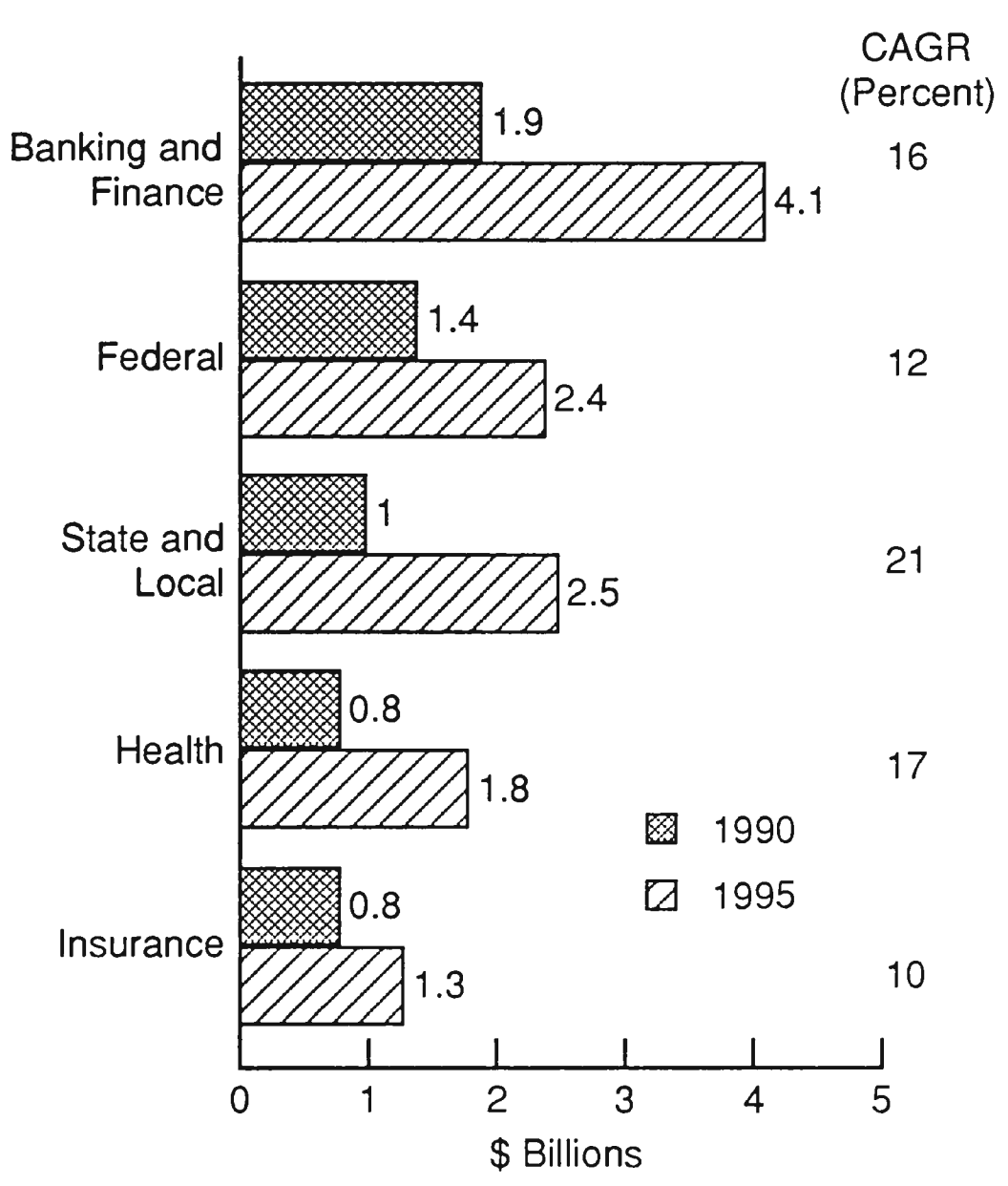
- The rate of growth of the federal market has slowed over the past year, from 15% to 12%, which reflects the growing pressures on the federal budget to hold down and even curtail expenditures.

The growth rate of 17% for the overall market is the same as forecasted for 1989. The mix of growth has changed however, with commercial growth rate increasing from 17% in 1989 to 18% and federal growth slowing, as described above.

Even though the federal market for systems operations shows a slight decline in growth rate, it is the second largest systems operations market. Exhibit III-3 provides a summary of the five largest industry markets for systems operations.

EXHIBIT III-3

Leading Vertical Markets
Systems Operations



There are several notable points about these industries:

- To a great extent, the they are heavily transaction oriented. Though not exactly the same, each has a need to process extremely high volumes of paper.

- Information systems in the largest systems operations industries are highly labor intensive. Just as banks have sought processing services to process checks and credit card charge slips, the leading industries are continually searching for ways to achieve economies of scale in processing documents.

- The largest systems operations industries are generally subject to low profit margins or heavy budget constraints. Opportunities to reduce costs, even marginally, are welcomed.

- It must also be noted that these industries are not generally considered to be high technology companies. Companies requiring factory floor automation or CAD/CAM systems are not among the largest systems operations markets. While these may be the next growth areas, the leading industries are those needing to achieve economies of scale in document processing. In addition, smaller organizations that lack resources to gain competitive advantage through access to more sophisticated software find systems operations companies that provide packaged application software a financially viable alternative.

B

Systems Operations Options

Systems operations services can be provided in a variety of ways:

- Services can be performed at the customer's or the vendor's premises.

- The customer's or the vendor's equipment may be used.

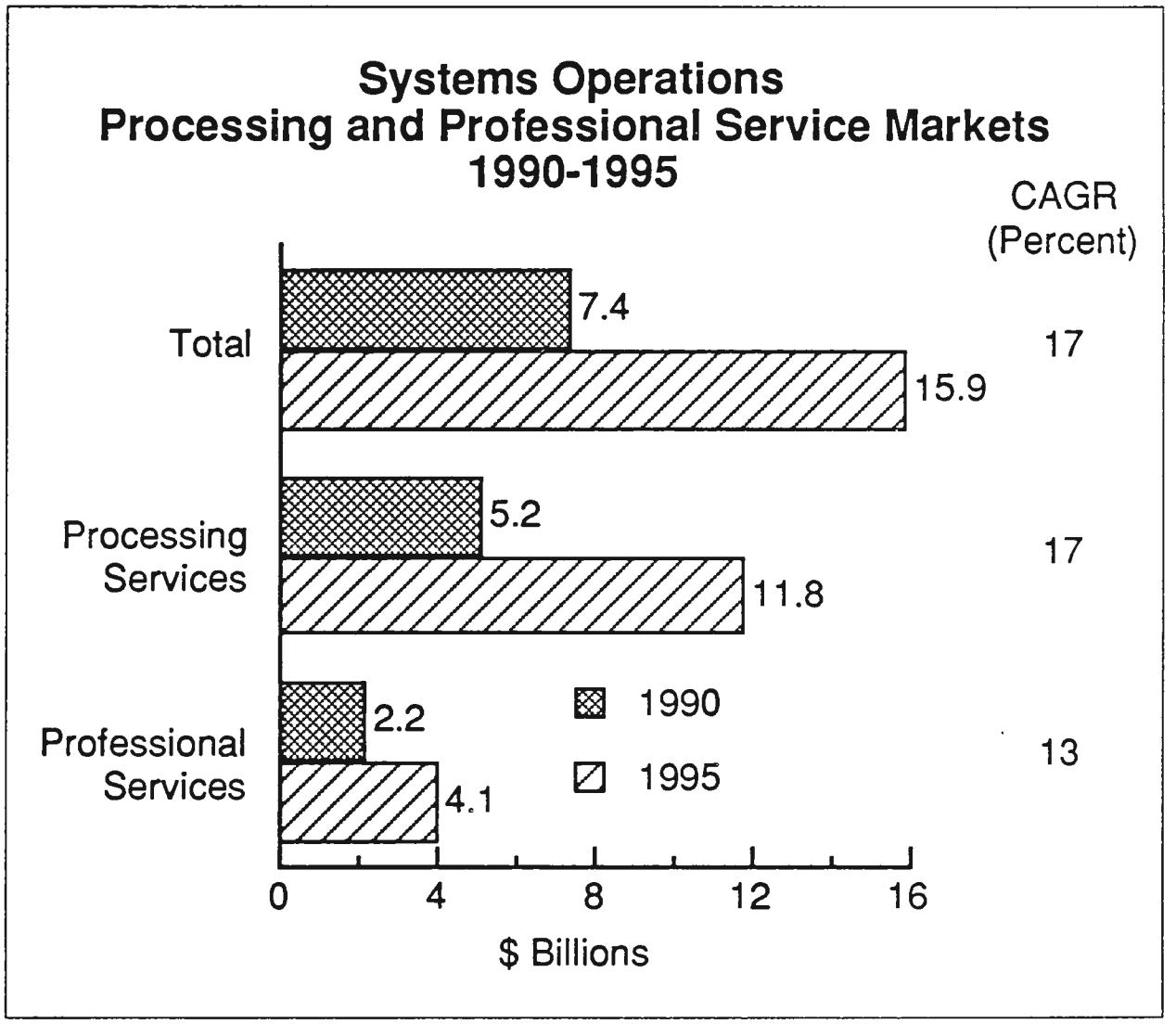
- Services may be provided using equipment dedicated to one customer, or the equipment may be shared by many customers.

- The contract may include application maintenance and/or development, or it may be limited to operations.

For purpose of analysis, INPUT divides systems operations into two categories—processing services and professional services. The distinguishing factor between the two is equipment ownership. If the equipment is owned by the vendor, the service is considered processing services systems operations, irrespective of the location from which the service is performed. If the equipment is owned by the customer, the service is professional services systems operations.

The professional services component of the systems operations market, as shown in Exhibit III-4, will decline from approximately 30% in 1990 to 26% by 1995.

EXHIBIT III-4



The shift is attributable to several factors:

- In the federal market, the dominant method of systems contracting is professional services. Federal agencies generally operate under a mandate to purchase, rather than lease, their equipment, believing that this is the most cost-effective alternative. Once the equipment is purchased, the government can find little advantage in reselling it to a vendor. Therefore, they contract with vendors for personnel and management services to operate government-owned equipment.

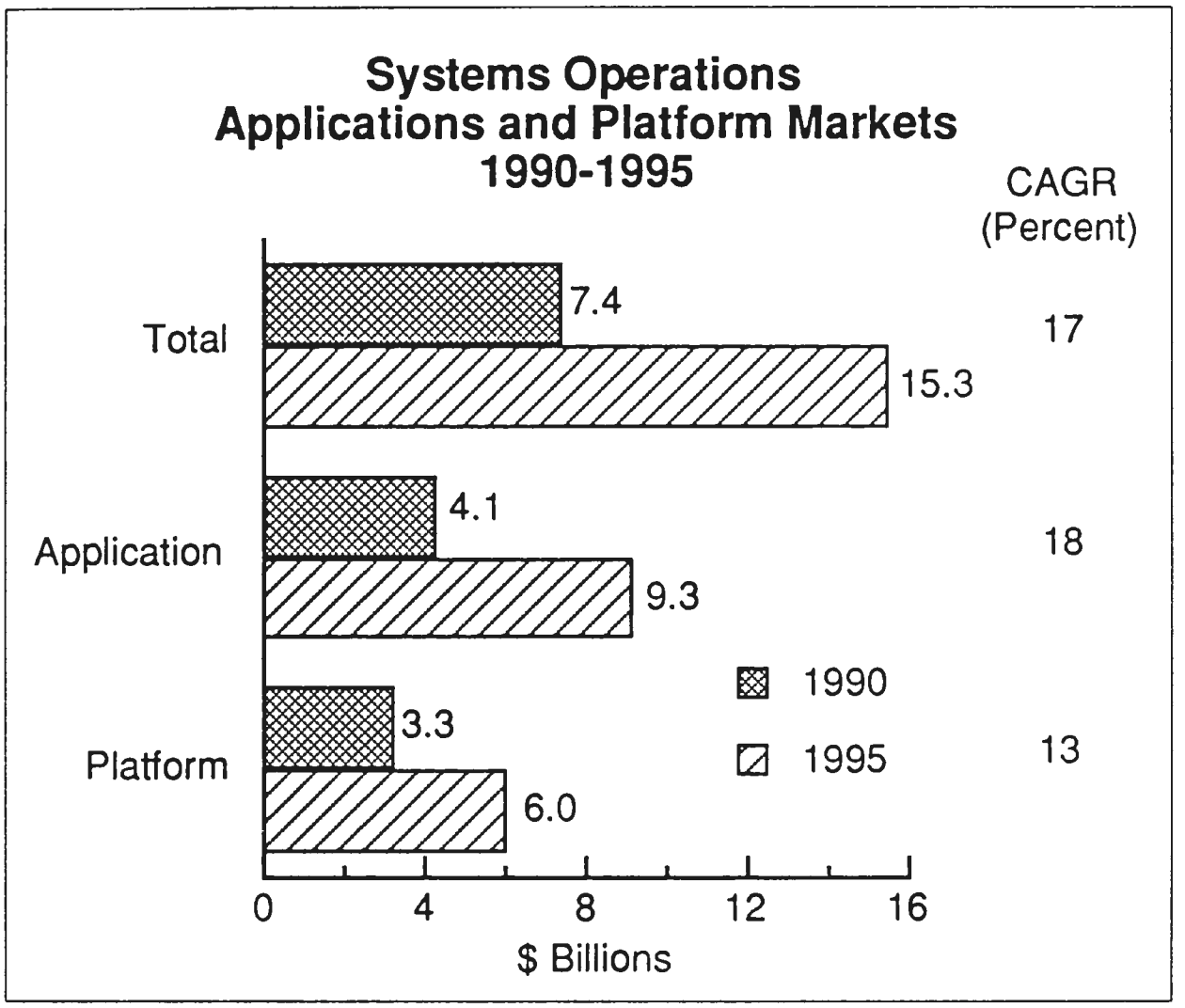
- Many federal systems operations contracts follow installation of newly purchased technology. The agencies find it more cost effective to use a systems operations firm than to provide extensive retraining of staff that do not have requisite skills.

- Growth in processing service is being fostered by the need of many commercial companies to conserve capital and reduce the rate of growth of information systems expenses. Transferring ownership of

hardware assets eliminates—or at least reduces—the need to continually invest in expensive hardware. Entering into long-term, fixed-price contracts reduces the growth rate of costs.

The market can also be divided by the type of processing performed—application or platform, as shown in Exhibit III-5. As the exhibit shows, platform operations currently represent 48% of the market.

EXHIBIT III-5



Platform operations refers to the management and operation of the computer and communications equipment; in a platform operations contract, the vendor does not maintain or develop applications. The platform operations percentage of the market will decline by 1995.

The primary reason for the change is a shift in emphasis that will be seen over the next several years.

- Use of vendors to develop complex systems (systems integration) has been accepted. Systems integration is growing rapidly, building confidence with users that vendors can successfully address company needs.

- The use of vendors to maintain application code has also been growing. Continued growth of the use of vendors to maintain applications will build confidence in vendor capabilities.

- Over time, companies that contract for systems operations will be increasingly willing to consider having vendors maintain their applications. This will, in turn, lead to greater vendor involvement in systems development and foster further growth of systems integration services.

- Over time, the distinction between platform and application management will blur, as vendors become more heavily involved in the total life cycle process of system development and operations.

INPUT believes that resistance to outsourcing systems operations is beginning to decline. Over the next five years, companies will increasingly look to vendors to perform application maintenance to release their staff for development, and to reduce the costs of systems maintenance. As relationships are built and vendors demonstrate ability to maintain systems, they will become more heavily involved in development activities as well.

C

Systems Operations Vendors

There are many vendors providing systems operations services. They range from very large companies like CSC, EDS, and IBM, to smaller companies like Genix, SCT and Information Systems Inc. Large vendors generally provide service to large companies and to the federal government. Small vendors usually provide service to smaller companies, divisions of large companies, and to local governments.

In addition to size, vendors can be identified by areas of specialty. Vendors such as Systematics specialize almost exclusively in banking. Shared Medical Systems specializes in the medical industry, and Systems and Computer Technology (SCT) specializes in the education and local government markets.

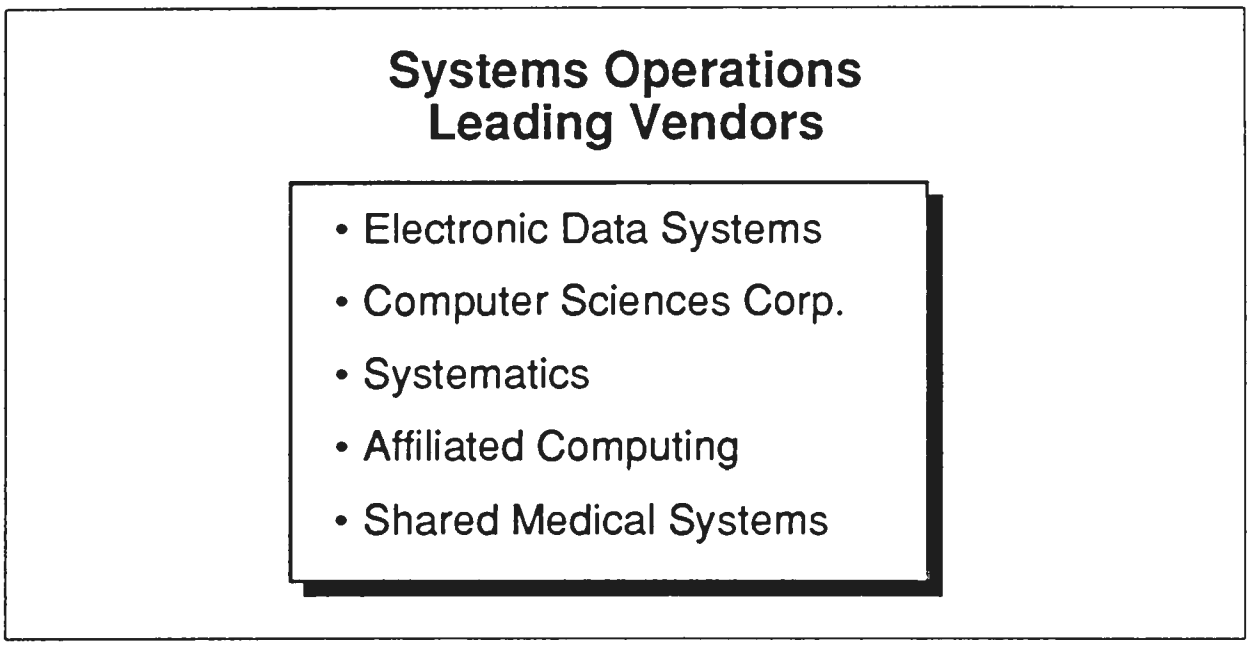
Exhibit III-6 identifies the leading five vendors in systems operations.

- Of the five leading vendors, the majority of revenues are derived from the top two vertical industries—banking/finance and federal government.

- Both of the two leading vendors derive revenue from the state and local sector, but the majority of this is from state governments. With nearly half the state and local sector being local government, there is ample opportunity for smaller vendors that elect to specialize in local governments.

- Both Systematics and Shared Medical Systems entered the market through their knowledge of specific industries. However, EDS and CSC entered the market through experience in operating very large data centers efficiently.

EXHIBIT III-6



From the listing of leading vendors, it is apparent that the approach to entering the market is not totally dependent on industry knowledge. However, vendors entering the market must be able to demonstrate knowledge of the user's industry as well as efficient systems management skills.

D

Market Forces and Issues

The systems operations market is beset by strong, conflicting forces. On the positive side, forces are dominated primarily by business needs such as growing need to focus on the core businesses. On the negative side, there is strong resistance to losing control over an important support activity.

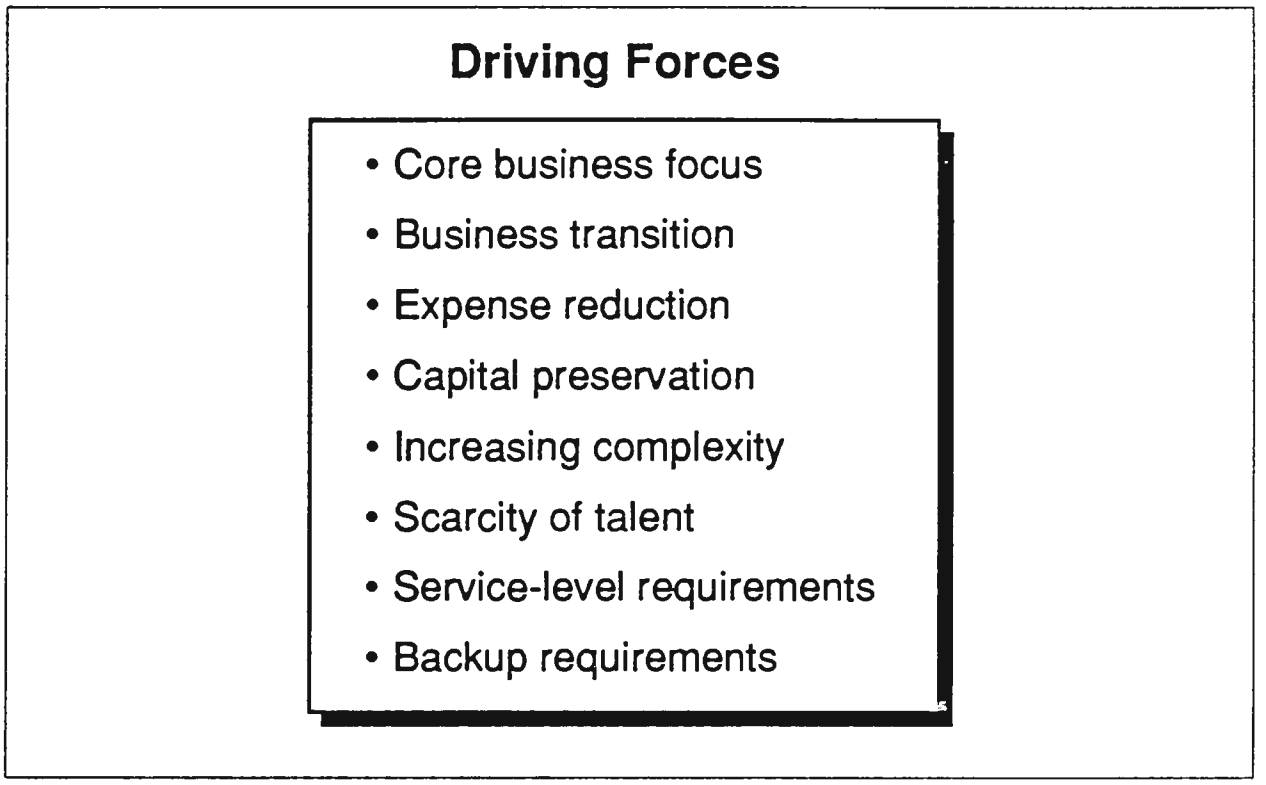
1. Driving Forces

Exhibit III-7 summarizes the driving forces behind growth of systems operations. A key point is that the leading forces are business-related, not technical.

- While executives recognize that systems are critical to their businesses, they also recognize that operations is increasingly becoming a commodity-like service. Allocating significant portions of their time to making systems operations decisions reduces the amount of time available for focus on core business issues. With competition intensifying, executives must devote their attention to strategic and tactical issues and reduce the amount of time spent on the mechanics of operating information services.

- Businesses in transition are key candidates for systems operations. Companies facing financial difficulty and companies facing mergers and acquisitions are increasingly inclined to consider systems operations as a method of decreasing and then stabilizing costs and ensuring focused attention on core business problems.

EXHIBIT III-7



- With dwindling funds available for investment, and information systems expenses increasing disproportionately, companies are interested in methods to conserve their capital and reduce, or at least stabilize, costs.

- Demands to integrate systems and networks is exceeding the ability of many information systems organizations. While standards for connectivity are improving, there is an ever increasing set of integration options to select from. Systems integration vendors, with a broad base of technical expertise, are better able to address the integration of technologies than many companies. Systems operations is a natural follow-on service, and systems integration vendors are positioned to provide these services.

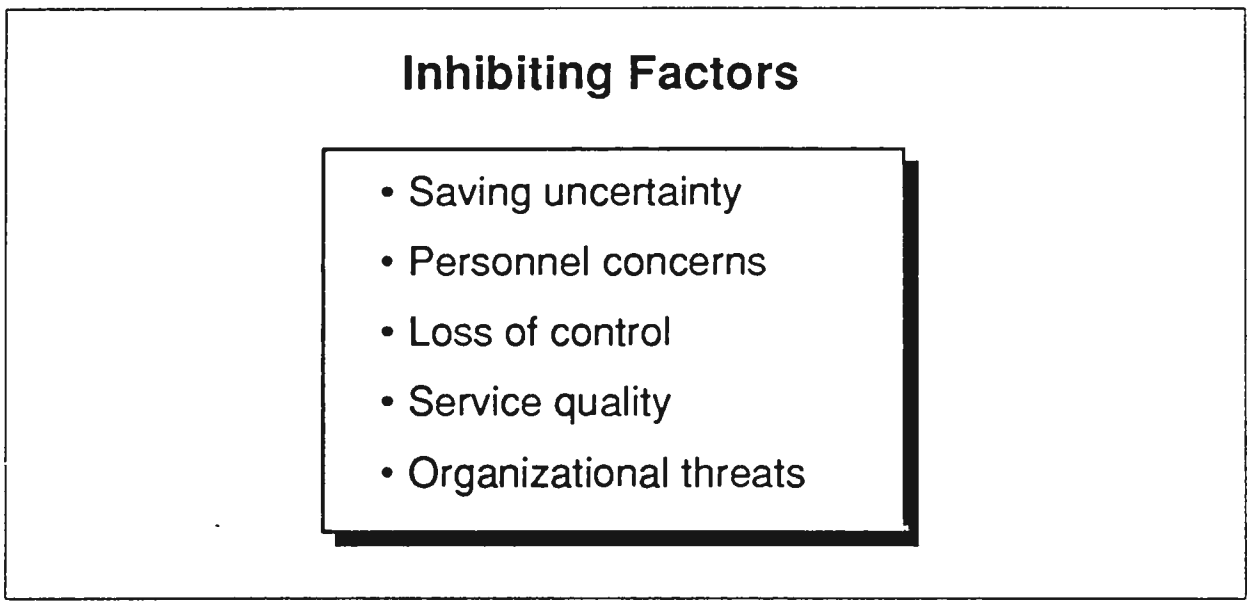
- Companies are increasingly focusing on service-level performance. Many internal departments are less able to meet service-level commitments due to conflicting operational and organizational requirements. Service levels built into systems operations agreements can often be managed and resolved more effectively than internal agreements.

- A byproduct of systems operations contracting is the ready availability of backup processing capability, which many organizations find cost prohibitive to implement internally.

2. Inhibiting Factors

Counteracting the driving forces are a number of factors inhibiting industry growth. Unlike the business nature of the driving forces, the inhibiting factors are predominantly technical or cultural in nature. Major inhibiting factors are shown in Exhibit III-8 and discussed below.

EXHIBIT III-8



- For many companies, there is uncertainty about whether systems operations will save money. For a few, there may be, in fact, only limited opportunity to save money. However, INPUT believes that the uncertainty is based on emotions rather than a thorough analysis. Most companies that question savings have not completed a comprehensive analysis.

- A second, smaller group of companies are those that utilize processing services. Many of these companies justify bringing systems operations in-house on the basis of savings and are hard-pressed to identify how a systems operations contract would result in true savings. They believe that a vendor's profit margin is a significant contributor to the costs of a contract.

- Many organizations are concerned about the future of their staff. Having invested in quality staff that has been loyal, they are reluctant to transfer them to a vendor, with the uncertainty as to how the vendor will treat them. They are concerned about career paths, benefits, etc.

- Loss of control is predominantly a cultural issue. Organizations believe that they must have direct control over their operational and development activities to ensure success. Trading project management for vendor management is a difficult transition. There is also concern about how to bring operations back inside if the systems operations agreement fails.

- Many organizations believe that serving multiple clients reduces a vendor's ability to respond to their needs in a timely manner. They believe that, in any given situation, the vendor's priorities—not the company's—will prevail, and that the vendor's priorities will be guided by the need to service other, more important customers.

- Entering into a systems operations contract typically results in a refocusing of information systems executive staff. Many are reluctant

or unable to make the transition from a large operations organization to a downsized organization that manages the relationship with the vendor.

The inhibiting factors are perceived as being important, but, over time, should diminish. Success with existing contracts should eliminate many of the issues. Over time, personnel concerns will remain, and some information systems executives will struggle to refocus their efforts from tactical issues to developing strategic business support systems.

3. Major Issues

There are a number of major issues in the systems operations industry. Exhibit III-9 identifies a number of issues that will become increasingly important as the industry grows.

EXHIBIT III-9

Major Issues

- Mainframe platform focus
- Centralized/decentralized operations
- Systems as strategic assets

- Many organizations perceive that systems operations contracting is tantamount to committing to a central mainframe strategy. Vendors have promoted their strong, multiple mainframe capability as a means to achieve economies of scale and reduce a customer's costs. To customers that are pursuing a distributed architecture, these approaches appear to be incompatible, raising questions about the benefits of systems operations.

- To many organizations, systems operations equates to centralization. Having invested in decentralized systems, they are reluctant to reverse their direction.

- The concept of strategic systems weighs heavily on many organizations. As part of their business strategies, vendors have promoted the concept that systems are strategic tools. Systems may be referred to as weapons. Following years of promotion, executives have come to believe in the strategic value of their systems.

- INPUT believes that the strategic value of a system lies not in the system itself, but how the system is used. True value results from the use of the system to support competitive product or service offerings

and achieve greater market share from these offerings: the value is not in the systems, but in the products and services that are supported. An example from the financial services industry illustrates the point.

- Mastercard and Visa have been strong competitors since their inception. In recent years, they have placed increased attention on competing with American Express.

- Both Mastercard and Visa have considered their network services to be critical competitive tools. Though banks are members of both the Visa and Mastercard programs, the two organizations refused for many years to permit transactions entering one system to flow directly to the other. Both refused to establish direct connections to American Express. This has significantly changed.

- Following early refusal, both organizations realized that their member banks did not compete on the basis of how transactions flowed through networks or what processing was done by Mastercard or Visa. The banks realized that they competed on the basis of products they were able to deliver to their customers (cardholders and merchants) as a result of the networks. The products, not the networks or systems, provided the competitive advantage. The networks are only a mechanism that permits the implementation of more competitive products.

- Today, the networks of American Express, Mastercard, and Visa are interconnected for both authorization and document clearing. A transaction entering a point-of-sale terminal at a Mastercard merchant for a Visa cardholder will flow through the Mastercard and Visa networks as though the networks were one. They both interact directly with American Express.

The real value of a system is in the ability to enhance a company's product positioning and increase its market share. INPUT believes that vendors need to build understanding about ways that more effective systems operations contribute to better business operations, not just reduce costs and alleviate operational headaches.

User Issues

IV

User Issues

Analysis of trade literature might suggest that every organization that has any concern about the cost effectiveness of its information systems operations is on the verge of contracting for systems operations services. This is not the case.

Much of the same trade literature suggests that reductions in cost and an increasing attention to core business are the key reasons that organizations are considering entering into contracts. These reasons are partly accurate.

Research indicates that, while there are a number of major reasons for contracting, there are, in fact, as many underlying reasons for contracting as there are companies entering into or considering contracting.

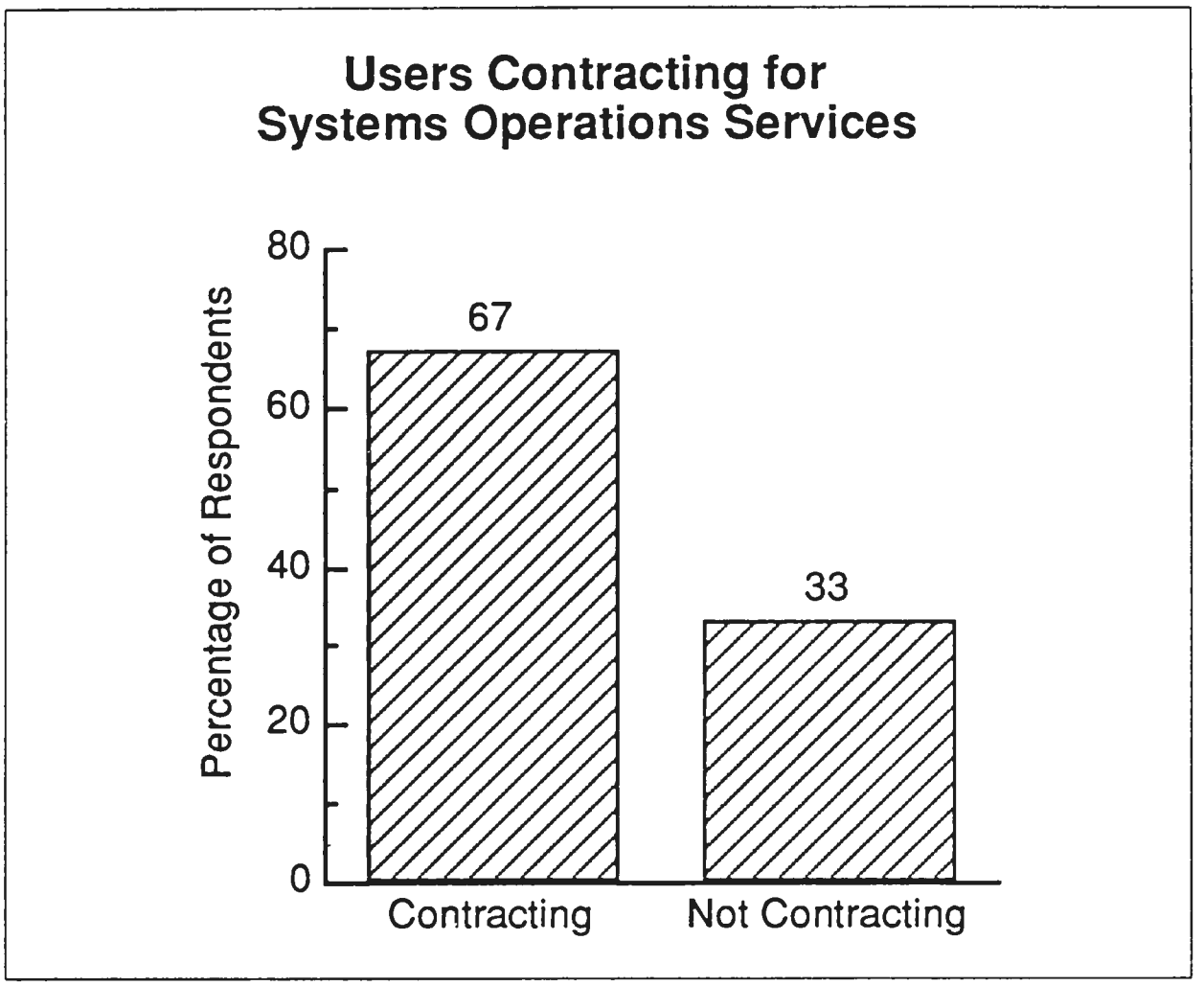
This chapter provides an assessment of a number of the reasons that organizations enter into systems operations agreements. It also considers why companies are not entering into agreements and why decisions could change over the next several years.

A Buying Practices

Companies included in the research represent a variety of industries, including banking/finance, process manufacturing, discrete manufacturing, medicine, and education.

Since a primary purpose of the research for this report was to identify management issues and practices, the percentage of respondents was weighted toward those companies that contract for services. The percentage of respondent companies that do and do not currently contract for services is shown in Exhibit IV-1.

EXHIBIT IV-1



For those that do not currently contract for services, the reasons fell into several categories.

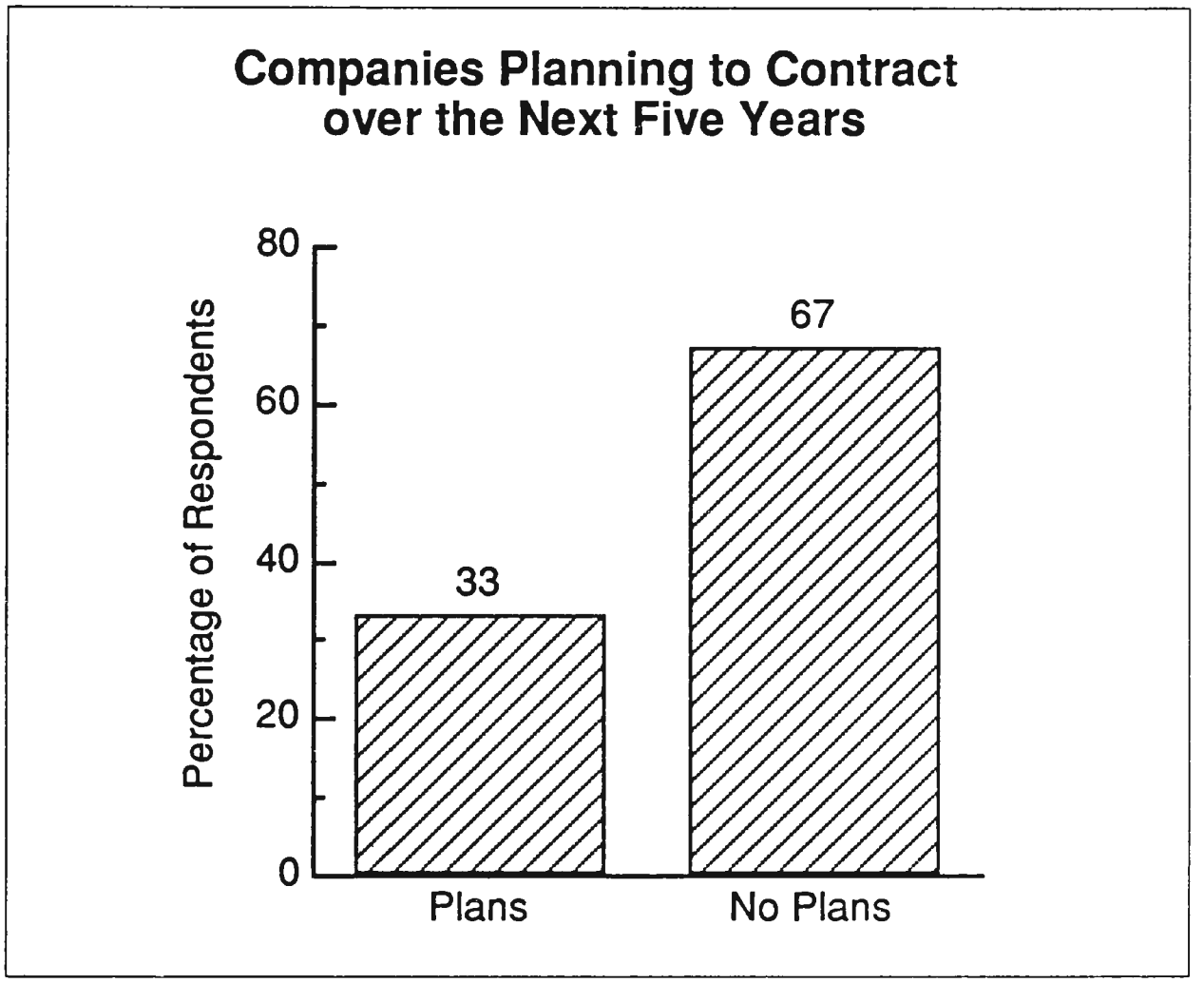
- Organizations with geographically dispersed systems believe that systems operations contracting is not applicable to their environment. In the minds of many organizations, systems operations is synonymous with centralization. Contracting for systems operations is therefore not applicable to a geographically dispersed (decentralized) operation.

- The ability of systems operations vendors to accommodate multiple platforms is a concern. Many users have invested heavily in distributed systems with a variety of system types and sizes. For these users, contracting for systems operations services would mean a change in direction from multiple platform (decentralized or distributed) to a single platform (centralized).

- The ability of a vendor to provide levels of uptime and availability that the customer considers acceptable is a concern for many companies. Whether the concern is real or perceived is questionable, but it is a problem that must be overcome.

Of the companies that do not currently contract for systems operations services, one-third have specific plans to contract for services over the next five years, as shown in Exhibit IV-2.

EXHIBIT IV-2



Of those that do not currently contract, two-thirds have no specific plans to enter into a contract in the foreseeable future. However, judging by their reasons, this could change.

- While there are no specific plans, one user indicated that there is a feeling in the company that a systems operations contract could be worthwhile.

- Other responses indicated a more prevalent theme.

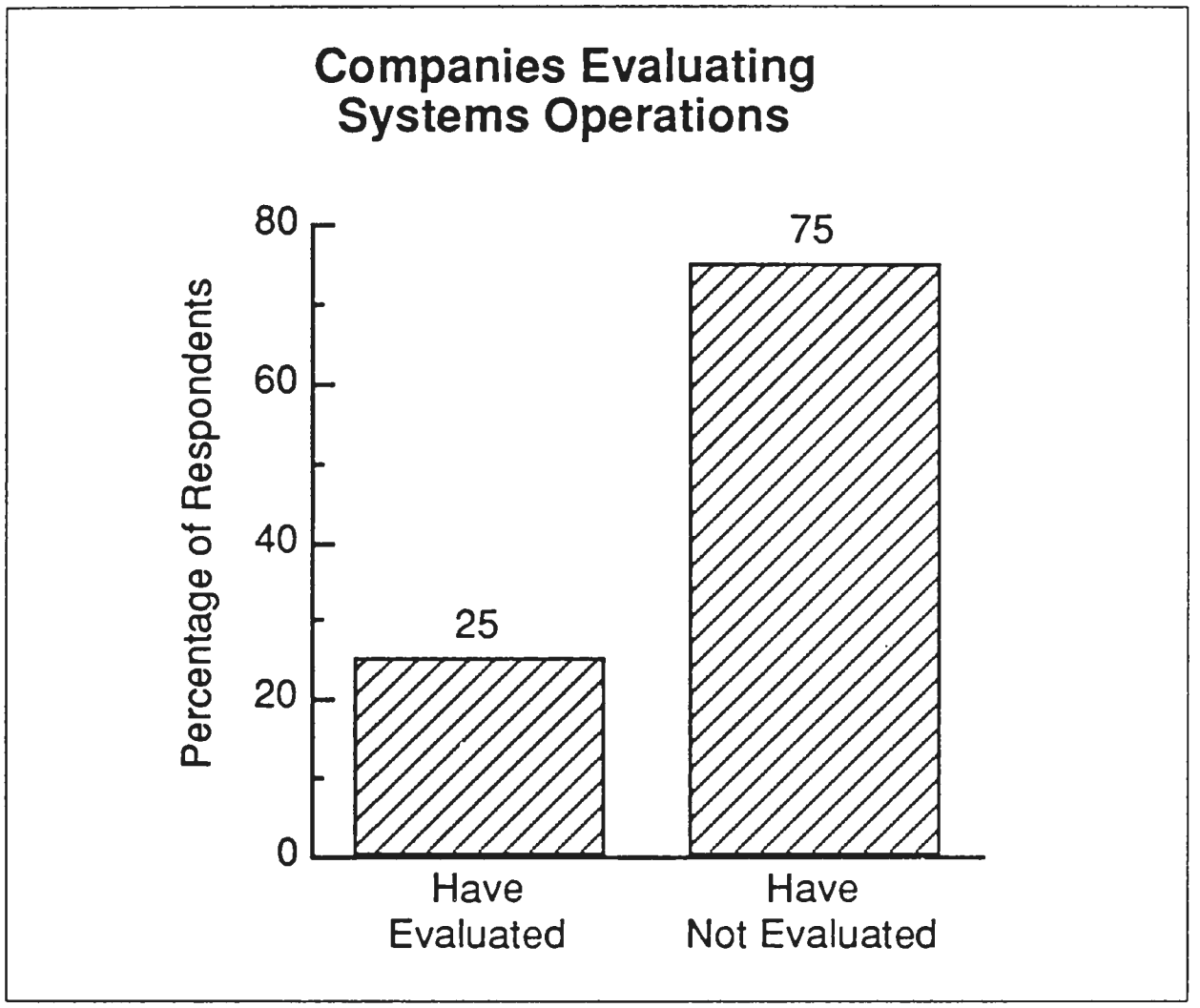
  - Contracting is more expensive than performing the same work in-house.

  - The need for high service levels and reliability is too great to turn operations over to a systems operations vendor.

- Responses from users not currently contracting are indicative of existing attitudes. There is a perception that contracting for systems operations may not save any money, or that vendors are not capable of providing the same service levels they have provided internally. Users fail to recognize that since systems operations is the vendor' core business, service levels may in fact improve.

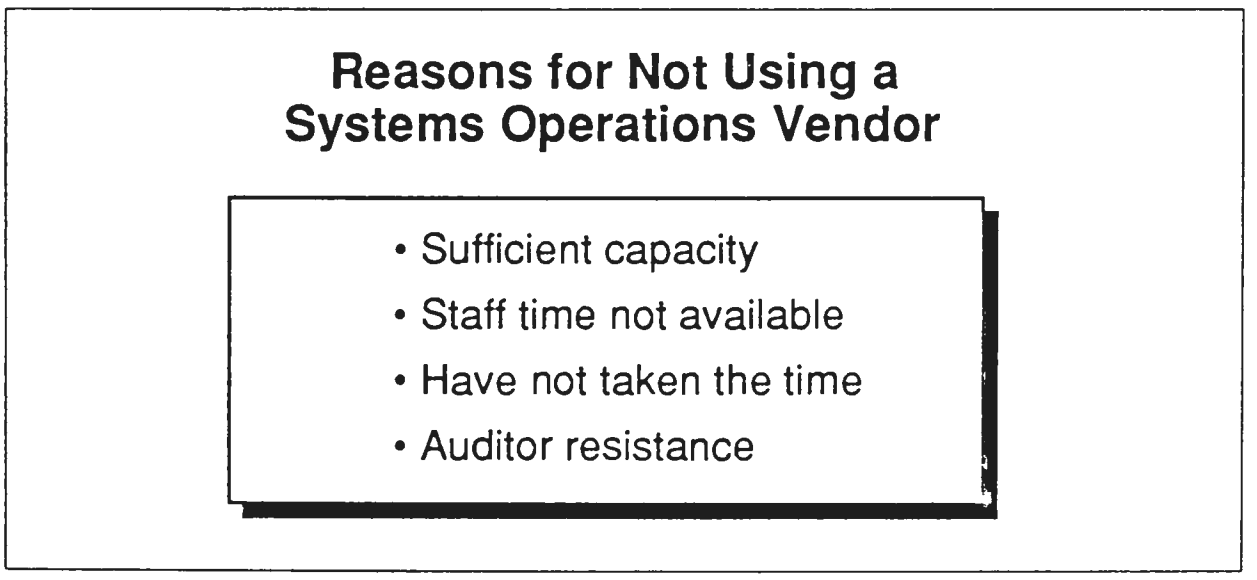
While the problems do exist, there is strong indication that the problems are more perceived than real. Of the companies that are not currently contracting, only 25% have evaluated contracting for systems operations services, as shown in Exhibit IV-3

EXHIBIT IV-3



The reasons that companies have not contract for services vary greatly, as shown in Exhibit IV-4.

EXHIBIT IV-4



Analysis of the reasons for not contracting suggest several considerations:

- Organizations that have recently acquired additional capacity will not be inclined to consider contracting for services. The opposite is equally true. Organizations facing investment decisions for increasing capacity are more likely candidates for considering alternatives. While cost performance continues to improve, capital is in increasingly short supply.

- Faced with development and maintenance backlogs, organizations are generally not likely to devote manpower to analyze the benefits of contracting for systems operations. For an analysis to be performed, senior (corporate) executives must believe that there is sufficient potential benefit to warrant a realignment of priorities. As an alternative, vendors must be willing to perform an analysis and recover the cost of that analysis as part of a contract.

1. Reasons for Contracting

The reasons that companies enter into agreements for systems operations services vary greatly. Some do it to reduce costs. Others do it to permit greater attention on the needs of the business.

Responses to questions rating the importance of reasons for contracting or not contracting provide some interesting, and somewhat conflicting, results.

Exhibit IV-5 provides a summary of the ranking of a number of factors that users have used as reasons to either enter into or not enter into a systems operations agreement.

The importance of information systems to the business was ranked as the leading reason for contracting and for not contracting. While this may appear to be contradictory, it is not.

- The ranking does clearly indicate that the importance of information systems to a business is a significant consideration for all organizations. However, the fact that business importance is ranked first by those contracting and those not contracting indicates that business importance cannot be the sole justification for contracting. In the absence of other factors, the importance of information systems to a business may equally result in a decision to not contract.

- The importance of information systems to the business was ranked highest by all organizations that currently contract for systems operations services. With a couple of exceptions, it was also ranked highest by those that do not currently contract.

EXHIBIT IV-5

Evaluation of Contracting Importance Factors

Overall Ranking		Currently Contracting	Not Contracting
1	Information systems importance	1	1
2	Operating costs	2	2
3	Capital costs	3	6
4	Service levels	5	4
5	Security/privacy	4	6
6	Development responsiveness	7	3
7	Change responsiveness	8	3
8	Dedicated system	6	7
9	Near-term cash flow	9	5
10	Internal skills availability	9	7
11	Executive time/attention	10	7
12	Labor relations/unions	11	8

- Little difference was noted in the ranking by industry. Information systems are as important to utilities and medical organizations as they are to manufacturing or financial service organizations.

- Likewise, little difference was noted in the ranking by level of respondent responsibility. Operations managers were just as likely as senior executives to rank the importance high.

Exceptions noted during the analysis are important. For some organizations, they indicate a key motivating reason for contracting.

- A number of organizations noted that operating cost and capital requirements are of greater importance to their decision process than the overall importance of information systems. In all of the cases, the organizations either are currently or have recently experienced financial or organizational difficulty of some nature.

- One organization contracted for systems operations services as part of bankruptcy (reorganization) proceedings, which have taken several years. With the reorganization completed, they are terminating the contract.

- Another organization has been a target in a hostile takeover. During the takeover process, the organization contracted for systems operations services. The contracted service was continued following the takeover to integrate systems of the organizations involved.

- From the data, there is a strong indication that organizations that are experiencing difficulties are more interested in reducing their costs and conserving cash than in the overall importance of information systems to the business.

- While the data did not produce specific evidence, INPUT believes that organizations that are in highly competitive markets and have limited capital available for information systems are also key candidates for systems operations. Medium-sized banks are an example.

- The banking industry is highly competitive, and larger (money center) banks make extensive use of information technology. Medium-sized banks that cannot afford to make the same investments may turn to systems operations services to gain technologcial advantages that they might not be able to afford to develop in-house. The advantage of a broader base of technology more than offsets the specific differences in applications, and permits them to develop more competitive banking products.

- INPUT believes that the business importance rating for companies not currently contracting is more a reflection of feelings than of comprehensive benefits analysis. Since 75% of those not contracting have not even evaluated the benefits, the responses can only be based on past experiences or ingrained beliefs. Whether these beliefs are based on feelings or facts, vendors must develop marketing approaches to address the problem.

When considering the overall ranking, there is an additional point to consider. In INPUT's 1989 systems operations research, users were asked to rate the importance of their mission-critical applications as an evaluation criterion for systems operations contracting decisions. This year, users were asked to rate the overall importance of information systems as a decision factor. There was considerable difference in responses between the two years.

- In the 1989 research, companies not contracting for systems operations services rated the importance of mission-critical systems twelfth out of 13 factors. Those contracting rated the importance first.

- In the 1990 research, companies not contracting for systems operations services rated the importance of information systems first. Those contracting also rated the importance as first.

- Analysis of the responses did not produce specific reasons for the significant change in ranking. There are a few possible explanations.

  - The difference in wording may have caused some confusion in the minds of some users. While the term *mission-critical* is reasonably common, it is not a universally accepted business phrase. Users not familiar with the term may have tended to rate the importance lower because they did not understand the true meaning of the term.

  - Systems operations may be of greater importance to meeting the needs of the total information systems function than to meeting the needs of just critical systems. Users may believe that they are capable of meeting the organization's critical system needs, but are having difficulty meeting all the needs.

- The differences have potential marketing significance. Vendors that focus on providing added value for critical applications may be missing opportunities. If an organization's major problems are in being able to support a wide range of systems, they may be more inclined to consider systems operations, to achieve greater balance in meeting company needs.

  - Vendors need to understand the real problems that exist in an information systems department. A corporate executive may place emphasis on mission-critical systems. An information systems executive may have a real need to get rid of what are believed to be secondary functions. In this situation, different marketing approaches are needed within the same organization.

  - Vendors need to ensure that they have expertise in not only an organization's critical systems, but also in the total operation of the business.

Further analysis of the data used to prepare Exhibit IV-5 indicates several other factors.

- INPUT believes that organizations that do not currently contract consider responding to application changes and development to be more important than companies that do currently contract. This does not suggest that applications changes and development are less important among those that currently contract, but rather that companies that do not contract are afraid of the unknown.

  - Organizations that have contracted for systems development or maintenance in the past have experienced cost overruns, poor work quality, and an insensitivity to the business needs of the organization.

Experience has resulted in a bias—which must be overcome—against contracting for development and maintenance services.

- The experience of organizations that have contracted for systems development or maintenance as part of their operations contracts results in importance ratings that are considerably lower. The lower rating indicates that vendors are meeting the customer's needs. Vendor responsiveness has eliminated customer concerns.

- It is important to note that the lower rating of importance among those contracting for systems operations was not significantly different between those that have retained development and maintenance responsibility and those that have included development and maintenance responsibility in their systems operations contracts.

- Security and privacy are considered to be of higher importance among those that do not contract than among those that do. While security is important to all organizations, responses indicate that vendors are adequately addressing this concern.

2. Contracting Motivators

As part of the research, users that do not currently contract for systems operations services were asked to identify factors that would cause them to consider contracting over the next five years. There is as much importance in factors that were not stated as in those that were identified. Factors that were most frequently mentioned are shown in Exhibit IV-6.

EXHIBIT IV-6

Motivators to Systems Operations Contracting

- Significant short-term growth
- Costs out of line
- Skills shortage
- Overly complex platform

- Cost-related factors were the most frequently mentioned. Significant short-term growth or costs that become unacceptable to users' companies are primary drivers. A key difficulty with cost factors however, is an understanding of what is acceptable and what is not acceptable. There are few measures of cost effectiveness. Many organizations do not know whether their expenditures could be lower or whether their operations could be more cost effective. Comparability factors could become important marketing tools.

- As technology is changing, there is need for more, different, or upgraded skills. Sudden changes can result in a need for skills that the organization does not have. An inability to acquire necessary skills is a key motivator for some organizations to consider contracting for systems operations. Likewise, vendors that have skills to meet a wide range of needs are in the best position to respond quickly.

- Closely aligned with both cost and skills availability is the complexity of an organization's processing platforms and applications. Over the past few years, the increases in the number of vendors, available technologies, and de facto standards have contributed to a making it more difficult to provide cost-effective processing. Few organizations can afford all the skills necessary to manage this increasingly complex environment.

Costs are always a consideration, but in negotiating a systems operations contract, the actual reduction in cost is not always a key motivator.

From researching this report, INPUT found that the amount of reduction in cost, as a result of contracting, ranged from a high of 40% to a low of 10%. The average cost reduction was 22%. Likewise, contract values varied considerably. Contract values ranged from a high of $30 million per year to a low of $800,000.

From the data, it is clear that cost is a consideration, but not the only consideration, for contracting.

While the factors noted are identified as leading factors that would motivate systems operations contracting, INPUT believes that factors not mentioned are of equal, if not more importance. INPUT believes that they were not mentioned because the majority of the respondents were information systems managers, who are frequently not aware of many business issues that may need to be considered when entering into a systems operations contract. Other factors include the following:

- End-user demands for information are growing, creating demand for staff increases. Many executives are interested in solutions that are responsive to business needs but that do not require building staff.

- Many information systems organizations are not prepared to deal with the requirements to make a business globally competitive. Service providers that can respond to worldwide needs cost effectively will be favorably positioned.

- Downsizing and restructuring are continuing. With the shifts in organizational focus, executives are interested in solutions that permit them to respond quickly while minimizing the impact on the staff.

- The ability to deliver information more quickly and effectively throughout the organization will continue to grow. With growth, there will continue to be demands for more telecommunications expertise, which is in short supply. Vendors that can provide strong networking expertise as part of their business offerings will be in demand.

The implications of user demands, domestic and global competitive positioning, restructuring and downsizing, and demands for more timely information delivery are factors that may be more readily recognized by corporate than by information systems executives. All are as important, if not more important, than short-term cost considerations.

3. Contracting Inhibitors

Key inhibitors to contracting include those shown in Exhibit IV-7. It is as important to understand the inhibitors as it is to understand the factors that compel organizations to consider contracting.

EXHIBIT IV-7

Inhibitors to Systems Operations Contracting

- Success unproven
- Savings questionable
- Empires threatened
- Organizational ego

In general, the inhibitors are predominantly problems of perception and emotion, but are frequently more difficult to overcome than the more tangible problems of costs and contract terms.

- Where information systems technology is concerned, most organizations are followers, not leaders. Organizations typically prefer to use proven technology and technological approaches. This is consistent with the organization's focus on business requirements. Most organizations will therefore wait until success in systems operations contracting has been demonstrated.

- In the minds of most organizations, a systems operations vendor's ability to reduce costs is questionable. General logic suggests that what they save in personnel and equipment costs will be offset by service charges. In addition, the vendor's fees must include profit margins. True savings are not readily identifiable to most users.

- Systems operations vendors pose a significant threat to information systems executives that have invested considerable time and energy into building an empire. Even at the higher levels, the prospect of such a dramatic change is not welcomed. The prospect of moving from a senior (company) position to a more junior (vendor company) position is feared by many managers.

- Many organizations have an ego, and many have difficulty accepting that any vendor could possibly know as much about their requirements as they do. To overcome the difficulty, vendors must be able to demonstrate knowledge of the client's specific requirements, not just industry knowledge.

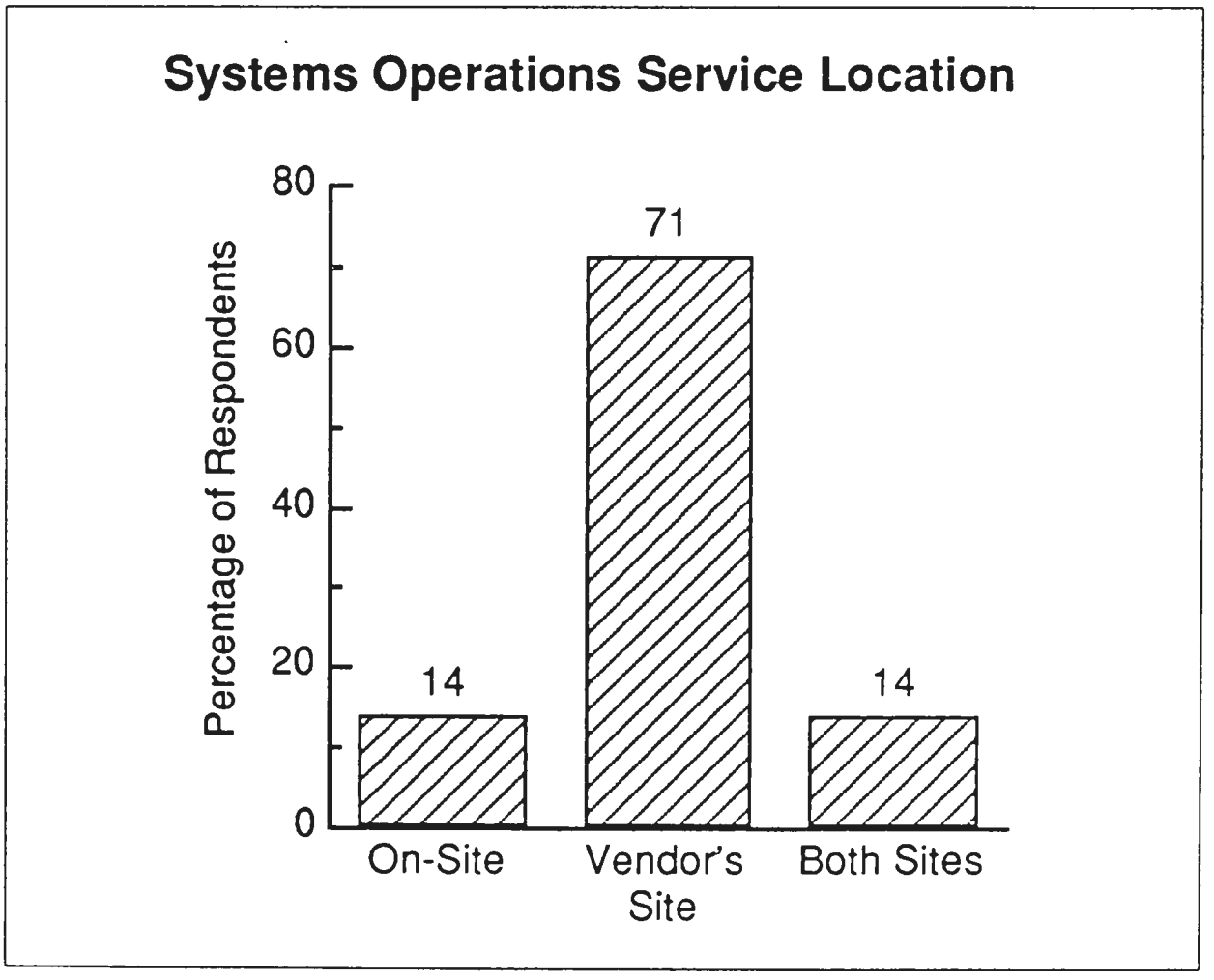
Overcoming perception and emotion is more difficult than addressing capital costs and expenses. But they must be effectively addressed if systems operations is to be successful.

B
Contract Types

1. On-site versus Off-site

As shown in Exhibit IV-8, the majority of systems operations contracts are performed at the vendor's site. The services may include both operations and applications development and/or maintenance.

EXHIBIT IV-8

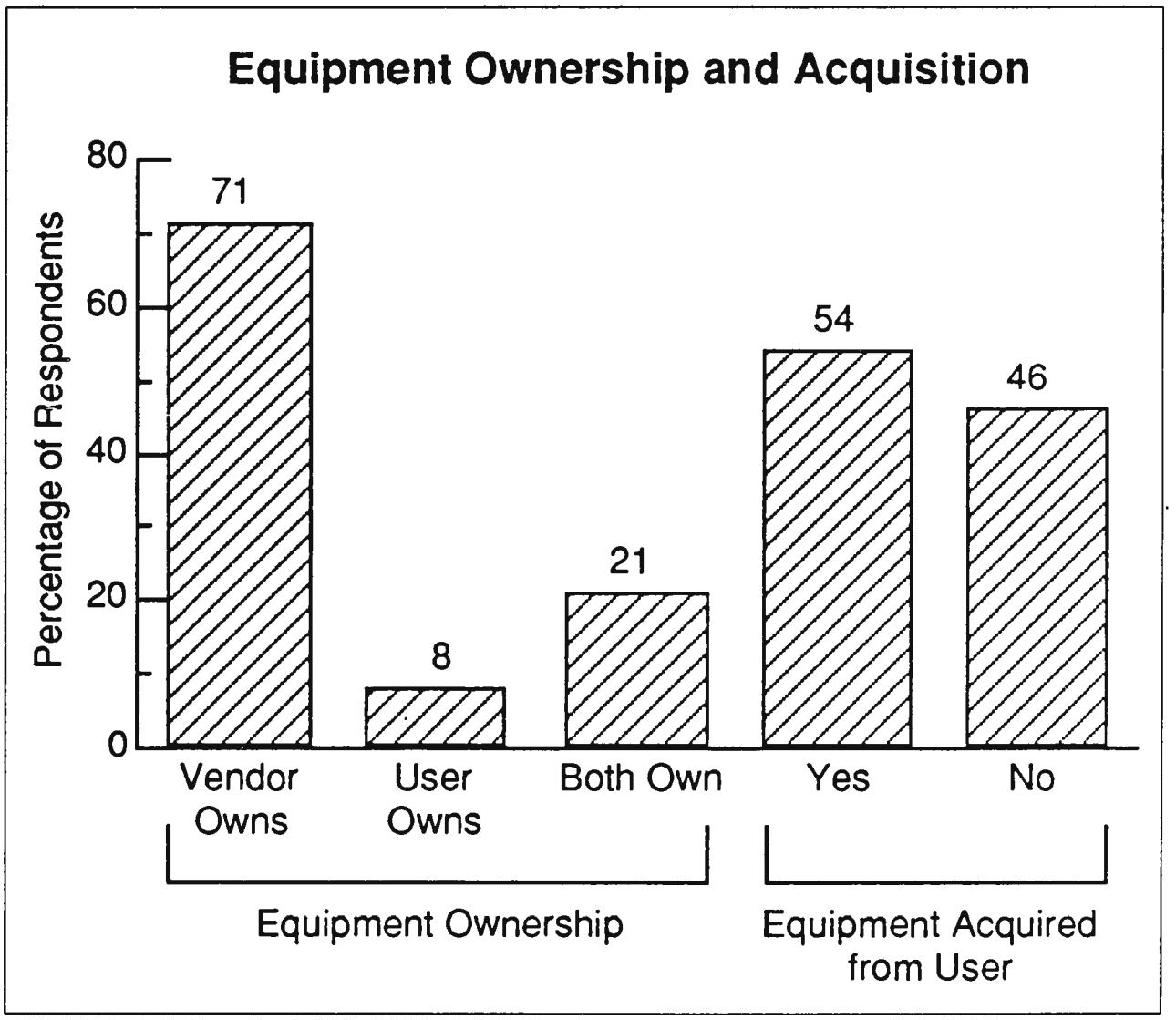


In a number of cases, users note that services are provided at both the vendor's location and at company locations. These are typically cases where the user has multiple plant or field locations with remote processing capabilities. In these cases, the user may retain responsibility for control and operation of the remotely located equipment.

2. Equipment Ownership and Acquisition

From the results, it is clear that vendors acquire a significant amount of the equipment from users. As shown in Exhibit IV-9, the vendor owns the equipment needed to provide service, and has acquired equipment from the user.

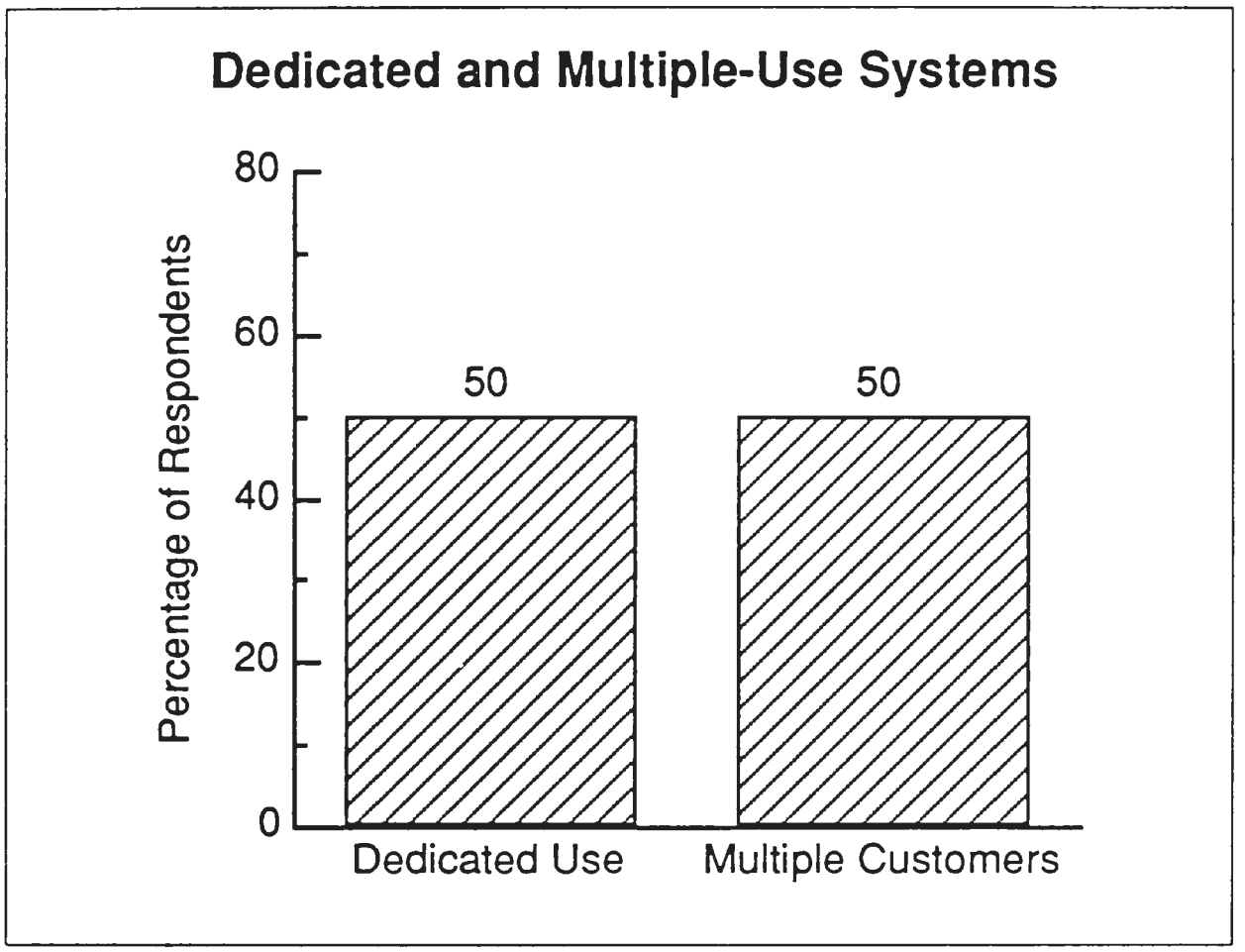
EXHIBIT IV-9



Note that in situations where users indicated that both they and the vendor own the equipment, this generally refers to situations where the vendor owns the central processing equipment and the user continues to own equipment located at remote processing locations. The remote locations provide input and receive output from the central location. The remote locations may also perform local processing on data received from the vendors site.

The use of a system for multiple customers is not a significant problem either to existing or potential customers, however there could be some initial customer resistance to this arrangement. As shown in Exhibit IV-10, the percentage of users whose work is performed on systems for multiple users is equal to those whose work is performed on dedicated systems.

EXHIBIT IV-10



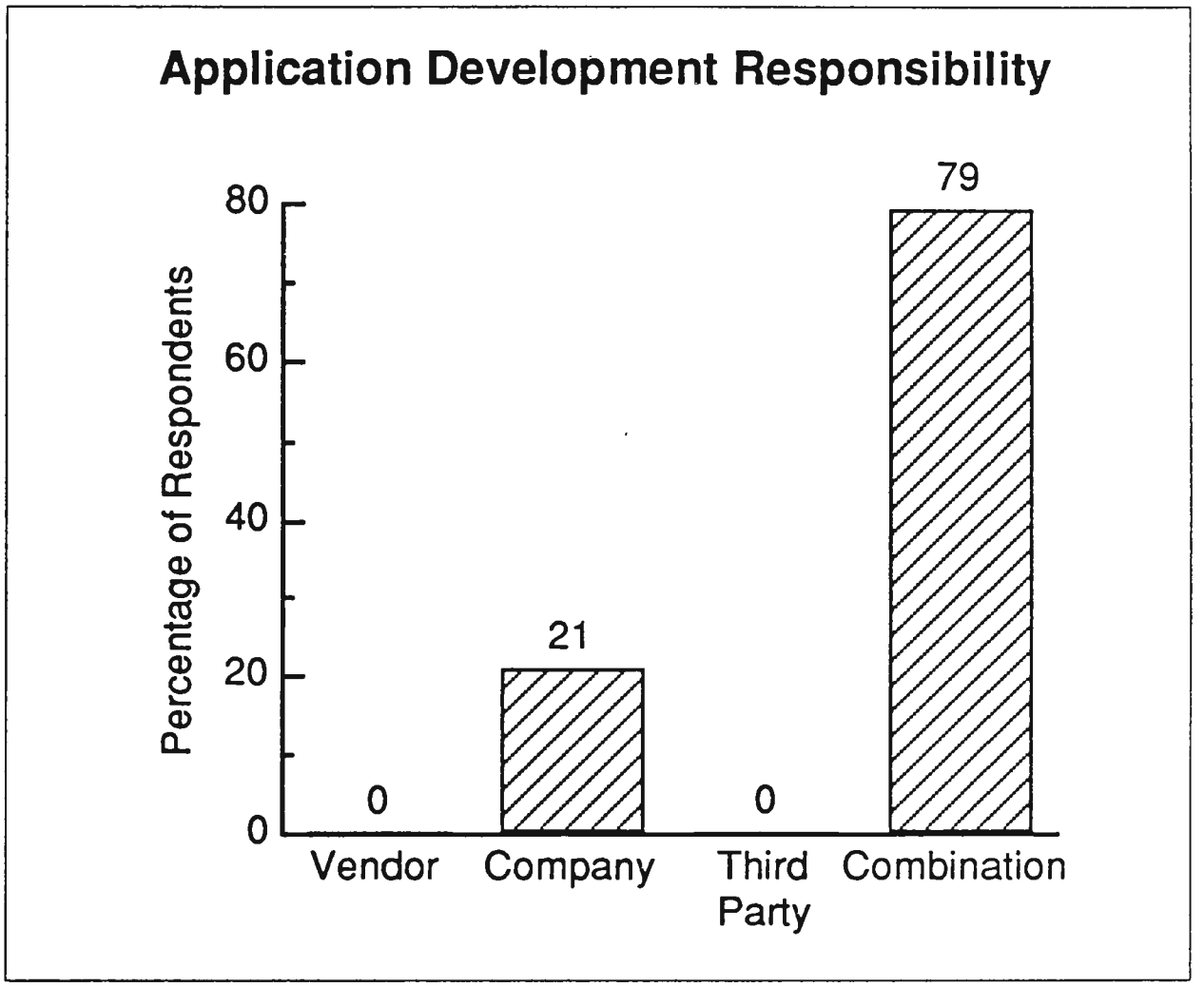
The percentage split is consistent with the importance ratings conducted earlier in the research.

- Service-level concerns were ranked higher than concerns about the use of dedicated systems. Most management is interested in the service received, not how the work is performed or what equipment is used. Many organizations dedicate systems to applications to meet service commitments.

- Security and privacy were rated higher than whether or not dedicated systems are used. The higher rating for security and privacy indicates that users could be concerned about where work is performed, unless the vendor demonstrates proper levels of security and privacy.

As shown in Exhibit IV-11, while systems operations vendors may provide application software services, responsibility for application development rests with a number of organizations.

EXHIBIT IV-11



As the data indicates, in none of the existing contracts does the vendor have sole responsibility for application development. In the majority of the cases, responsibility is divided among the company, the vendor, and third parties, such as independent packaged software providers.

Many vendors recognize that they do not have the technical expertise to develop the wide range of required applications. While some vendors can develop a broad range of applications, 60% of them have alliances for applications development.

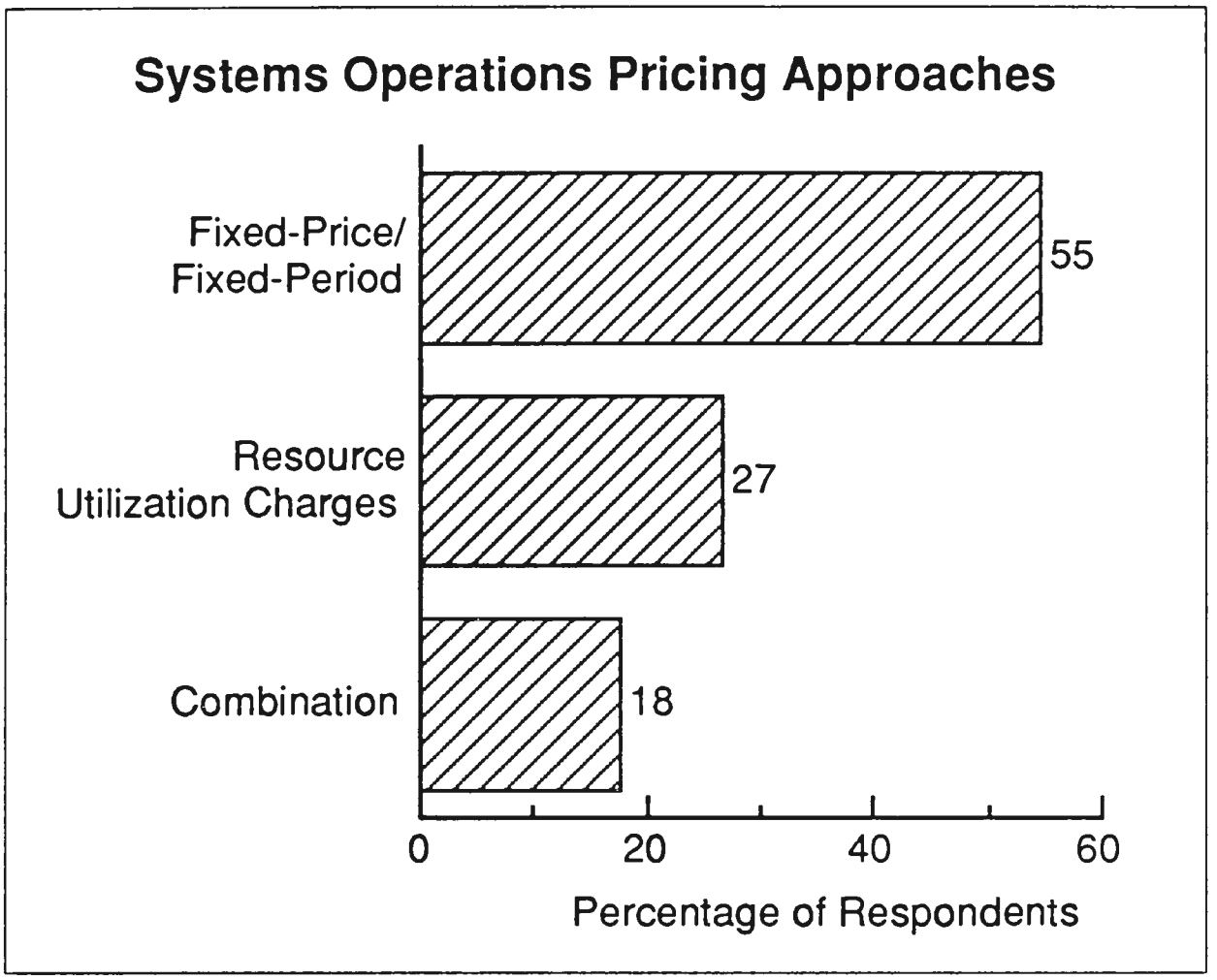
3. Pricing/Contract Policies

A consistent theme noted in conversations with all vendors is that there is no standard formula for systems operations contracts. Each contract must be structured to meet a client's specific needs and requirements.

There are, however, a couple of areas of consistency. The first is the method of charging for services. The second is the length of contracts.

There is clear indication that fixed pricing is a preferred pricing method. However, it must be noted that this type of contract must generally include an option to renegotiate pricing if the work mix or volume changes. As noted in Exhibit IV-12, three general pricing approaches are commonly used.

EXHIBIT IV-12



- Analysis of the data and the result of discussions with users suggest that resource utilization-based charging is most common in processing service-type contracts. In these contracts, the exact volume of work is frequently unknown. In addition, determining a fixed price per customer is difficult when work for multiple customers is run on the same system.

- Many resource-utilization based contracts are a holdover from the service bureau days when customers were offered reduced transaction prices if they would commit to staying with the service bureau for an extended period of time. The concept of reduced, per-unit pricing for longer-term commitments has not changed.

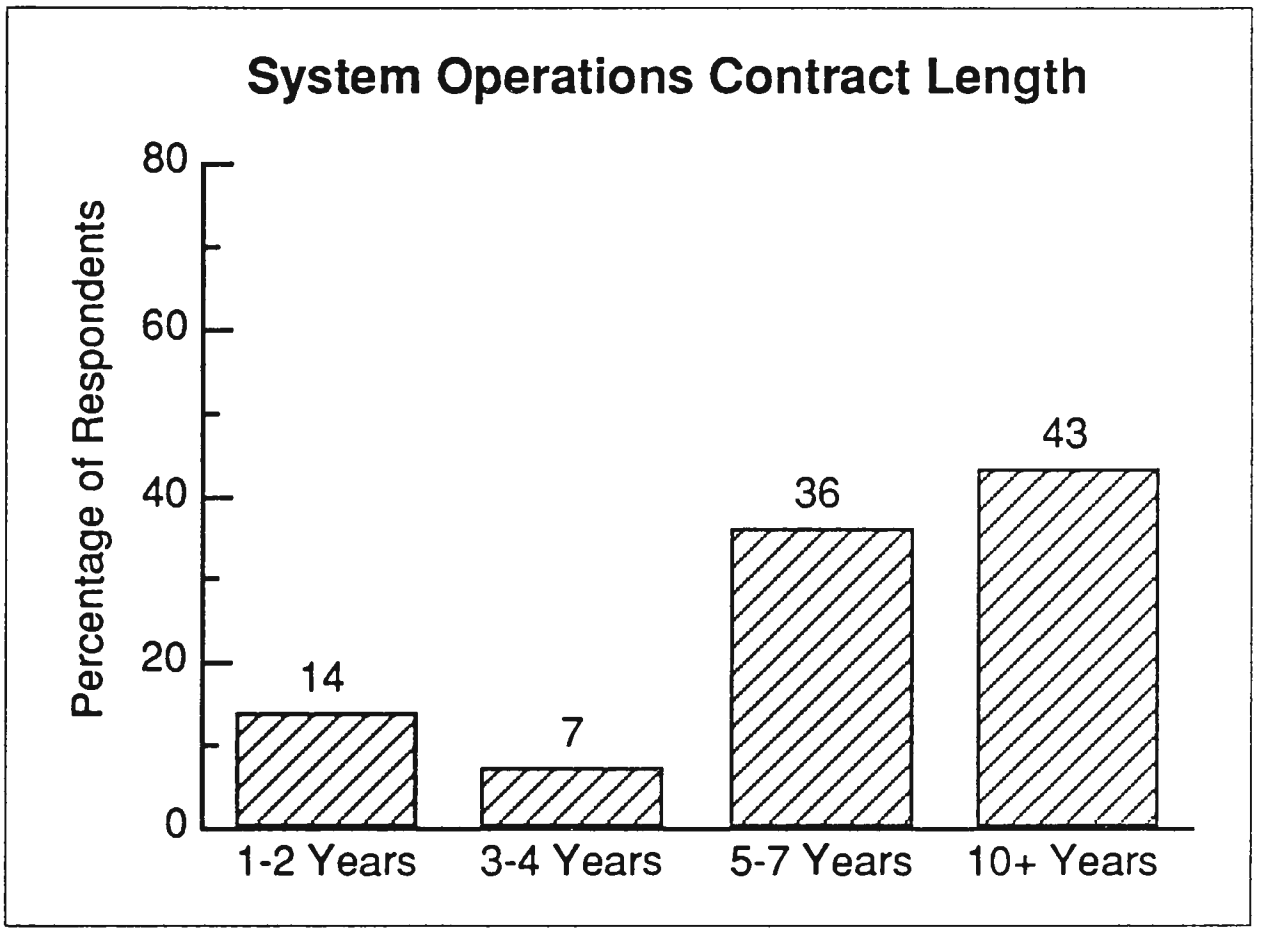
- Fixed-price policies are most common when a vendor accepts responsibility for all of a client's work. Since the client's processing environment can be thoroughly analyzed before contracting, workloads can be determined in advance. Whether the work is actually performed on dedicated equipment or in a shared work environment becomes less important.

- INPUT believes that the fixed-price approach will become the dominant method as the industry grows. With the growing need to contain or lower operating and capital costs, vendors that provide fixed pricing will have a competitive advantage.

4. Contract Length

The length of a contract is highly dependent on the reason that a user enters into a systems operations agreement. A summary of the contract duration of the surveyed users is shown in Exhibit IV-13.

EXHIBIT IV-13



- The sample contains an abnormally high percentage of users in the 10+ years category. Most contracts are in the 5-7 year category. This is consistent with the vendor responses discussed in Chapter V.

- Shorter-term contracts are generally entered into by companies with specific needs such as those with financial difficulties or those faced with restructuring issues. Whether they continue to contract is determined by the resolution to the short-term problem.

- Shorter-term contracts are also a derivative of the service bureau environment. Companies using processing-based services have historically been those that were growing and were either looking for specific applications or short-term capabilities until they could develop in-house capabilities.

- INPUT believes that the trend in the industry is toward longer-term contracts. Companies are interested in methods by which they can achieve a degree of predictability in their information systems costs. Long-term, fixed-price contracts fill this need.

C

Personnel Issues

Hiring, training, and providing career opportunities for information system staff is, and has always been, a problem for many companies. This is particularly true for operations personnel.

Systems operations requires a high degree of technical expertise. But the expertise needed is not the same as the expertise needed for the core business. While systems development staff are frequently able to learn enough about the business to transfer into business departments, operations personnel frequently do not have career opportunities.

Systems operations vendors can provide career growth opportunities for operations staff. The research indicates that while users are concerned about the effect that contracting will have on their staff, vendors are responding to the concerns successfully.

Included in the research were questions about capabilities that users look for in prospective system operations vendors. Exhibit IV-14 provides a ranking of the importance of some of these capabilities.

EXHIBIT IV-14

Vendor Capability Importance Ranking

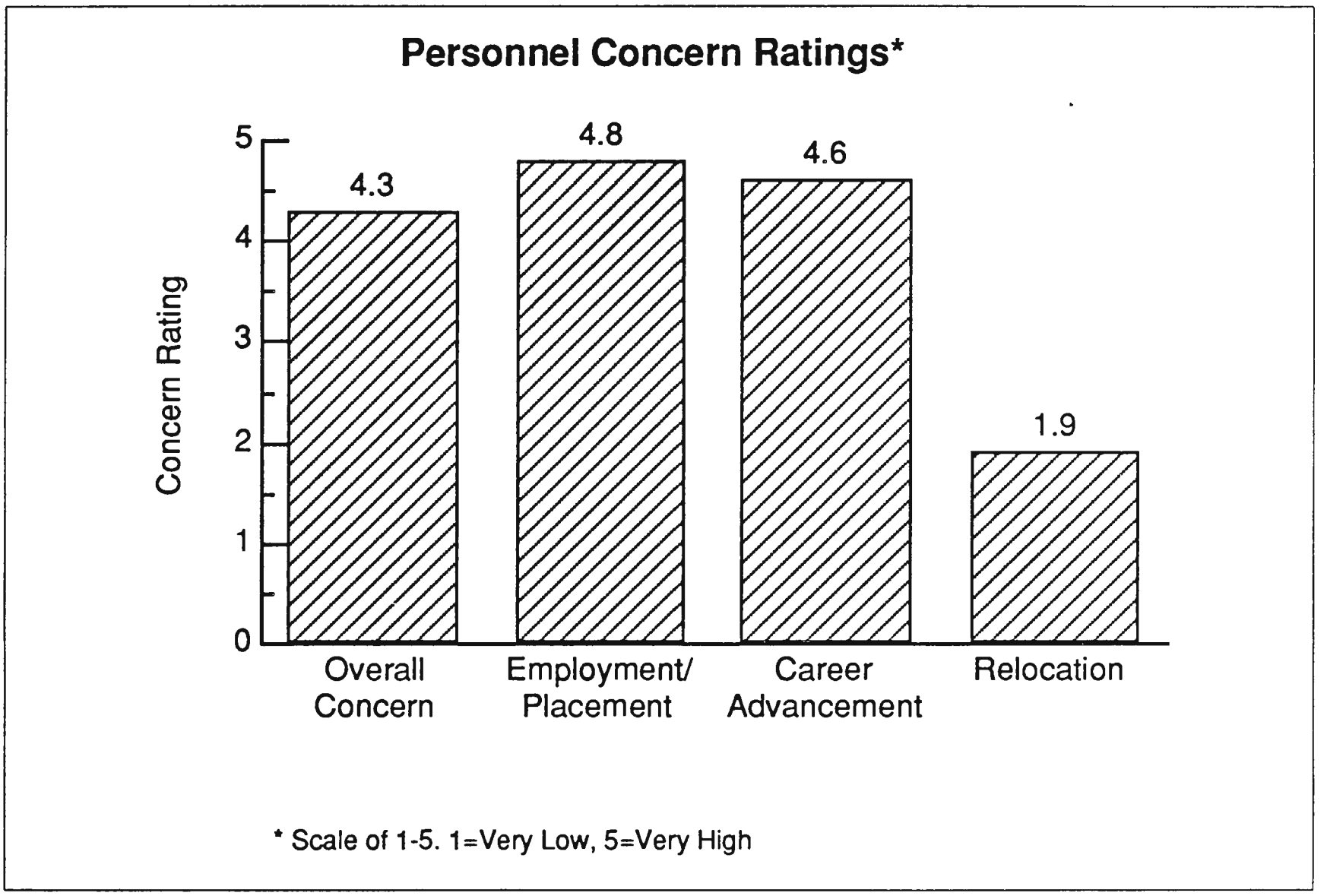
	User Ranking
Systems (Mainframe) Operations	1
Network Operations	2 *
Systems Programming	2 *
Management Planning	3
Technical Support	4
Network Design/Development	5
Legal/Contract Support	6
Applications Programming	7

* Ratings tied

It is interesting to note that applications programming capability is ranked at the bottom of the list. However, this ranking is not surprising when considering that users are heavily involved in developing and maintaining applications systems. As previously noted (Exhibit IV-11), most companies are involved directly or indirectly in nearly all applications-related work.

The overall concern about the future of an organization's operations staff is high, as might be expected. Exhibit IV-15 identifies the overall rating of concern and the ratings for three specific areas.

EXHIBIT IV-15



Companies entering into a systems operations contract handle personnel issues in a variety of ways, but there is a common theme. Exhibit IV-16, highlights a number of common methods identified by users to address staff needs and requirements.

EXHIBIT IV-16

How Personnel Concerns Are Addressed

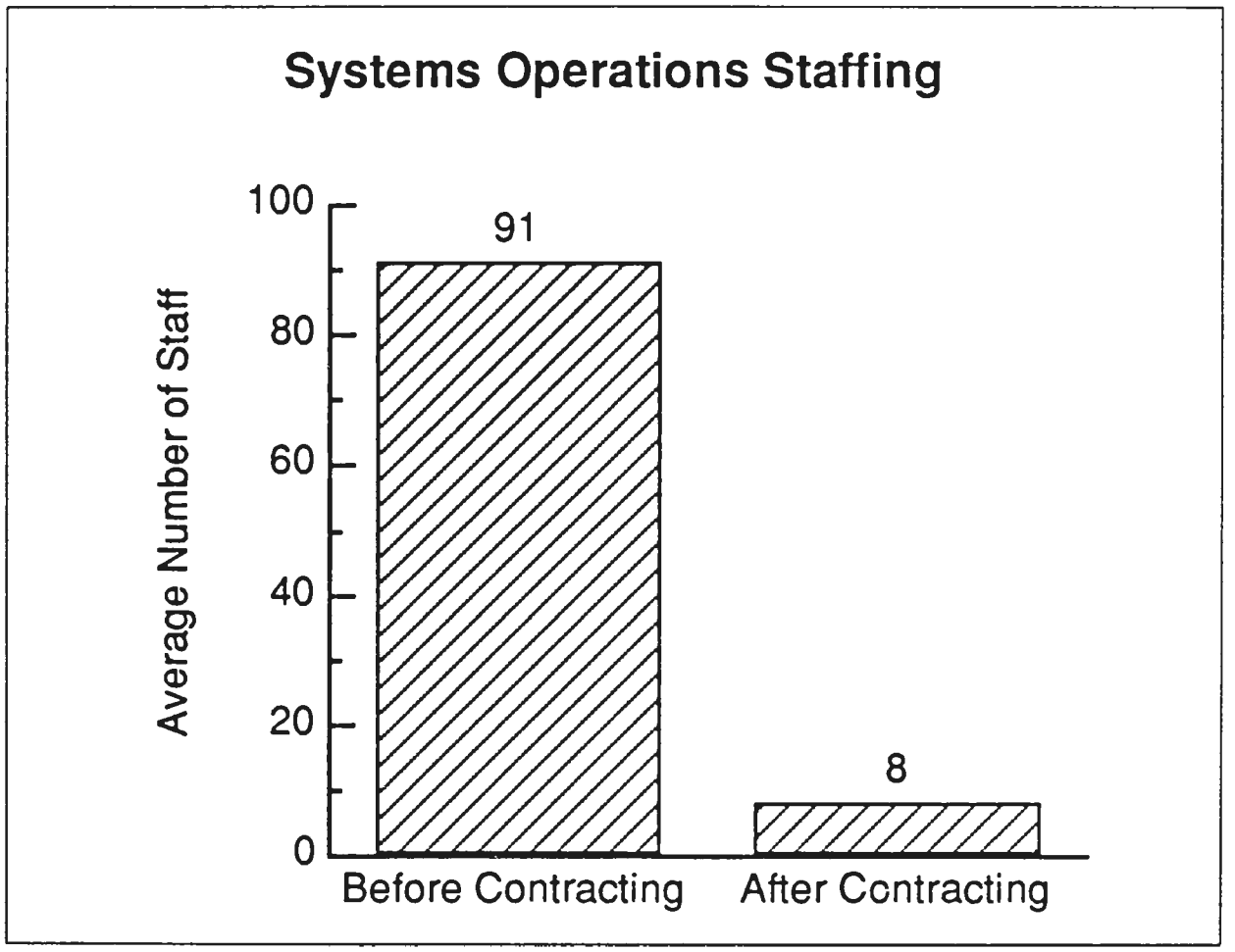
- Guaranteed employment term
- Transfer employment and benefits
- Discuss transition in several meetings
- Announce contract one morning
- Provide good severance package

The predominate method of addressing staff needs is to ensure a guaranteed employment term with the vendor. This is frequently accompanied by a transfer of benefits to the vendor.

It is important to note that many vendors guarantee only a term of employment, not permanent employment. In many cases, the period is intended as a transition period, during which an employee must prove himself to the vendor or look for another job, or both.

Users and vendors are generally successful at addressing personnel concerns and issues. As shown Exhibit IV-17, the average number of staff was reduced from 91 to 8 as a result of entering into a systems operations agreement.

EXHIBIT IV-17



- The number of user staff before entering into the agreement ranged from a high of 600 to a low of 8. The number remaining after the contract ranged from a high of 43 to a low of zero.

- Thirty-eight percent of the respondents indicated that, after entering into an agreement, they had no staff remaining. The majority of users entering into an agreement retain at least some staff for applications development and maintenance. In addition, most retain some staff to ensure coordination and control.

  - Of users reporting that they had no remaining staff, all but one were referring to operations staff. In all but the one case, the company

retained applications staff. One user reported that they have neither development or operations staff: the vendor is responsible for all work.

- However, even when the vendor performs all work, the vendor typically provides a full-time, on-site representative to coordinate activities between the user and the vendor. Even in these cases where users reported no remaining staff, there was a full-time vendor representative.

D

Vendor Relations

The relationship between a user and a vendor is critical to the success of a systems operations contract. When a user gives up direct control of its operations, the user needs to be certain that proper attention is being given to its work and that the work does not get neglected in the vendor's other projects.

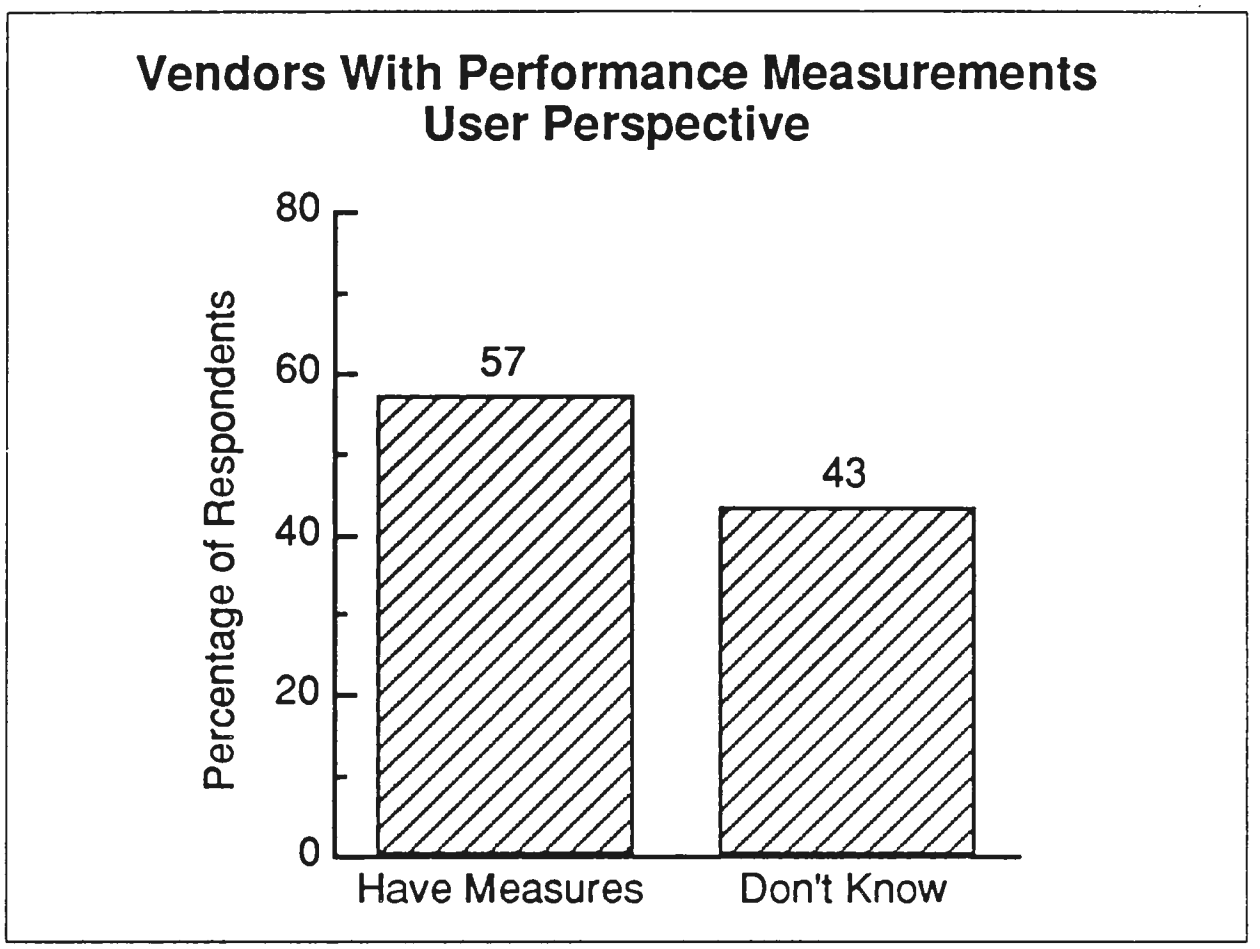
Two facts become clear from the research. The first is that in many user organizations, vendor representatives are continually on-site at the customer's location. The second is that many users are not aware of whether vendors have established performance measures. In fact, it must be noted that there is no dominant measure of performance included in systems operations contracts.

1. Performance Measures

As shown in Exhibit IV-18, while the majority of users are aware of performance measures for the vendor's staff, a high percentage do not know whether or not their vendors have performance measures. Vendors indicate that performance measures are included in the contract in 67% of the cases.

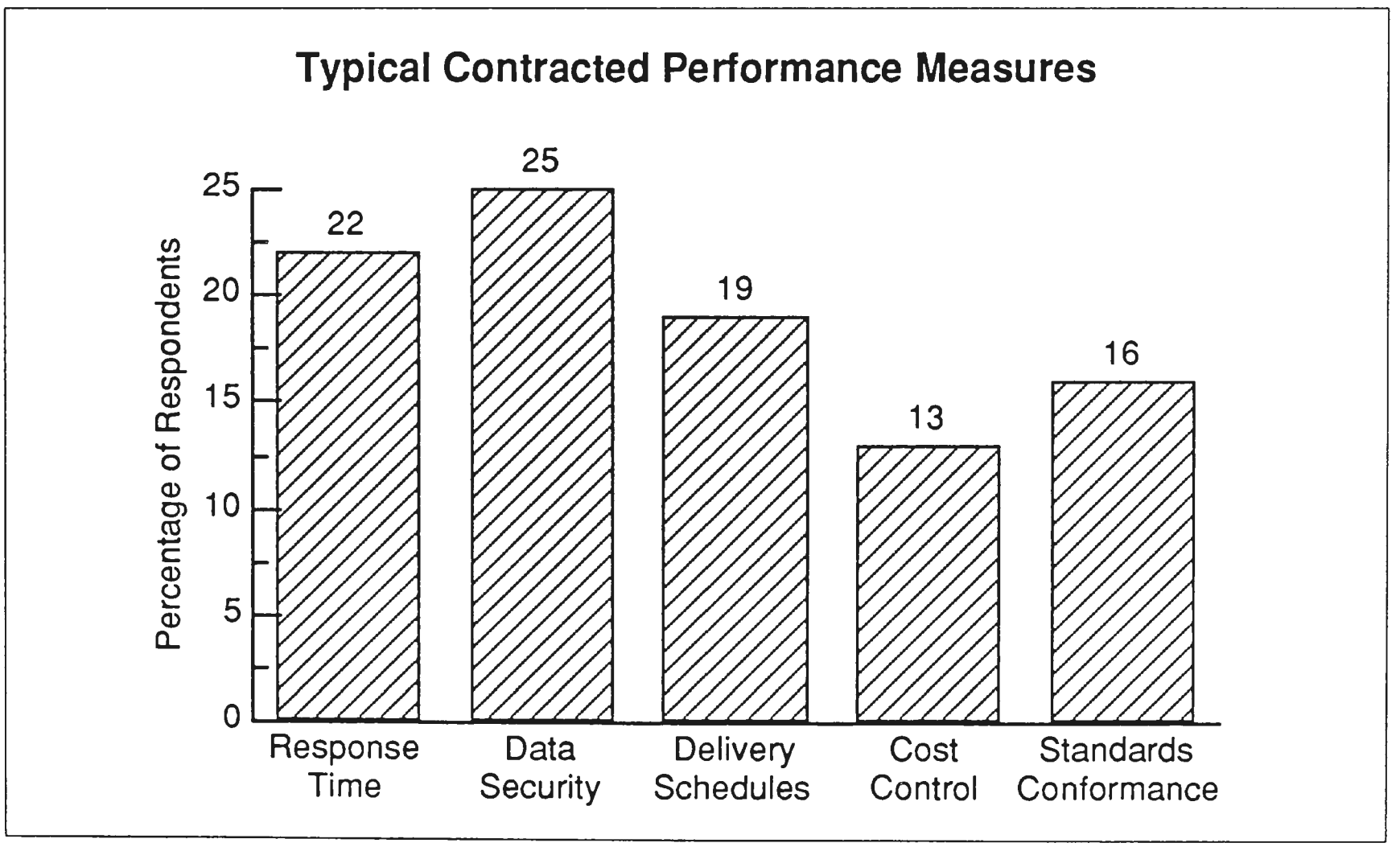
That some users are not aware of vendor performance measures does not suggest they lack concern. Rather, it suggests that the relationships between vendors and users are more closely defined as true partnerships, in which problems that may arise are worked out to the satisfaction of each.

EXHIBIT IV-18



Performance measures vary and none is dominant, as shown in Exhibit IV-19.

EXHIBIT IV-19



- The fact that cost control measures represent such a small percentage of the respondents indicates that many systems operations contracts are fixed-price contracts, where there is no need to have strong cost performance measures.

- That data security rated so highly indicates the need for users and vendors to demonstrate strong security and privacy standards. This need for security measures is consistent with the user rating for security and privacy when considering contracting.

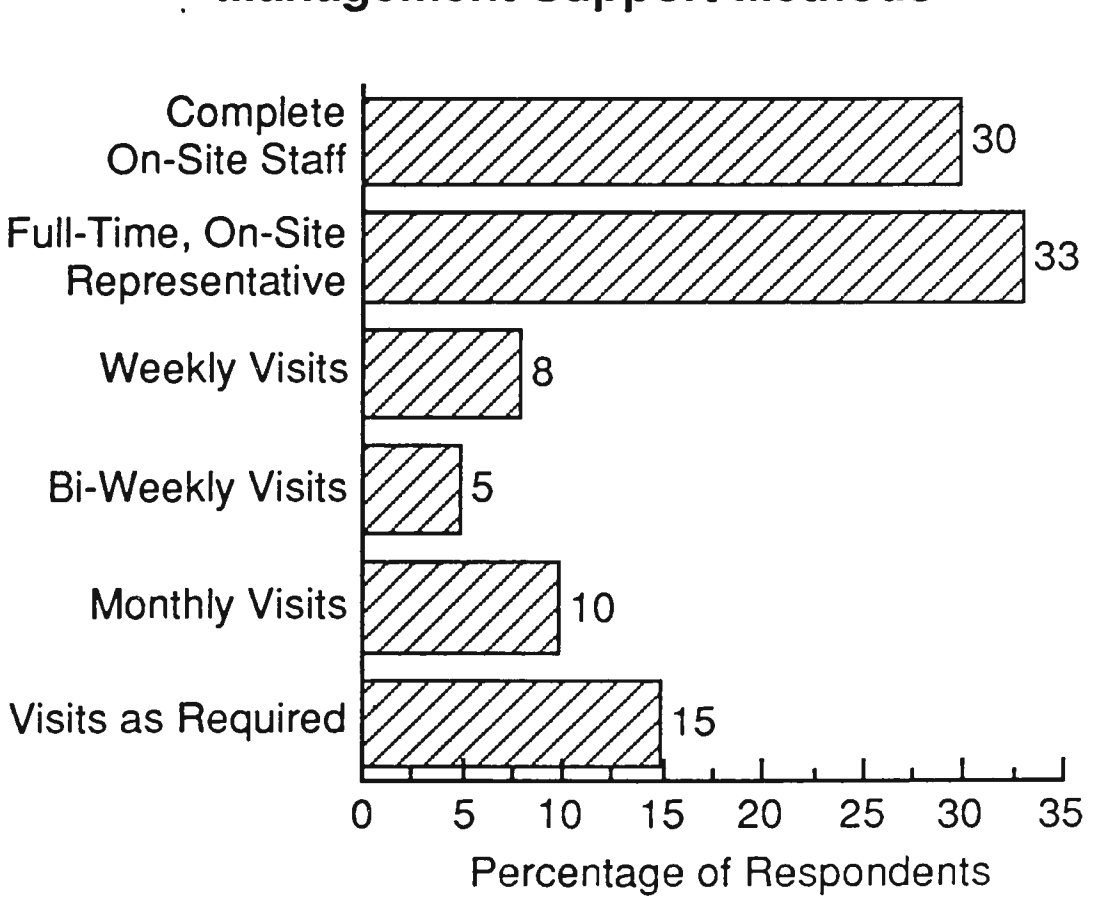
2. Management Support

As evidenced by the lack of lengthy, contracted performance measures and the user's belief that its service relationship is a partnership, communications between the user and vendor is extremely important.

As indicated in Exhibit IV-20, communications between vendors and users is a continuous process, with more than 60% of the vendors having full-time representation at the user's site. Ongoing communications is the key ingredient of supporting customer needs.

EXHIBIT IV-20

Management Support Methods



Monthly and as-required visits were frequently noted as being in addition to an on-site staff person or representative. The research confirms that a constant flow of communications between users and vendors is essential for integrating the user and vendor organizations; organizational integration is important—if not essential—for a long-term relationship.

E

Trends and Benefits

1. Trends

Respondents generally believe that there are two major reasons that systems operations will grow. Both are related directly to the business, rather than to information systems. Exhibit IV-21 summarizes the most frequently noted reasons for growth of systems operations.

EXHIBIT IV-21

Trends Motivating Systems Operations Growth
User Perspective

- Financial/economic incentives
- Increased core business focus
- Improved service/reliability
- Better technology
- Better management of change
- Management frustration with operations
- Trend toward lights-out operations
- Everybody doing it

- Collectively, financial/economic incentives and increased focus on the core business were mentioned more frequently than all others combined.

- The opportunity to obtain improved technology management is seen as a key trend. Opportunities to improve service, obtain better technology, have better control over change, and reduce operational headaches are all directly related to better management processes.

- There is a belief that there is a trend toward *lights-out* operations and that systems operations are well-suited to implement this remote operations concept. However, many organizations have not concluded, as yet, whether systems operations is a real trend, a short-term fad, or a service that only applies to a select few.

2. Benefits

Users noted many benefits to contracting for systems operations services. Many of the benefits are highly individual, relating to the users' needs at a specific point in time. However, there were several common themes, which are shown in Exhibit IV-22. The points noted appear in order of frequency of mention.

EXHIBIT IV-22

Major Benefits of Systems Operations User Perspective

- Cost reduction/savings
- Better technology
- Improved service quality
- Improved reliability
- Increased business focus
- Improved career path

- The first two items are closely related. While many users do receive short-term cost benefits, significant benefits are realized from having improved technology available without having to continually make capital outlays.

- Improved service quality includes reduced need to continually monitor operations performance. In general, users feel that not having to spend as much time worrying about operations is a major benefit to the company.

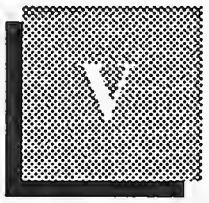
- Improved career opportunities are a major benefit to the staff of many information systems organizations. In most organizations, information systems staff moving to the mainstream of an organization is, at best, difficult. For many, the transition is just not possible. As part of the staff of a systems operations vendor, they have significantly greater career opportunities.

In summary, companies contracting for systems operations indicate success with the service and the vendor, at least to date. Companies not contracting indicate that the concept of systems operations is growing in acceptance and could provide a solution to problems that they have experienced for some time. But most companies are operating in a wait-and-see mode. They want to be certain that systems operations is not just a fad or a service for a select few.

Many information systems executives are resistant to new concepts, and many resist letting vendors have too much control. They have had too many experiences with solutions that were short-lived or did not work and with vendors that used control to promote their own business interests.

With demonstrated success, the systems operations business will grow. But it will take time to accept systems operations as a way of doing business.

Vendor Practices



Vendor Practices

A Organization

A vendor's relationship with a customer is critical to the success of a systems operations contract. Vendors must understand the business and customer needs and be prepared to provide a wide variety of services.

INPUT's research indicates that vendors understand that the systems operations business requires flexibility in meeting customer needs and constant contact with the customer, at all levels, to ensure responsiveness to changing requirements and potential problems.

To meet customer needs successfully, most vendors (80%) have established their systems operations businesses as separate divisions or subsidiaries. Establishing systems operations as a separate reporting entity is important for the following reasons:

- Keeping key systems operations staff within the central (vendor) organization will inevitably lead to conflicts in priorities, detracting from service to the customer. To ensure quality service, the customer's work must be clearly established as the leading priority, even at the expense of internal work. Priority conflicts can frequently lead to preferential treatment of internal over client work.

- Customer requirements change—quickly, at times—necessitating fast response by technical staff. Resources committed to other internal projects may not be available, leading to a less than timely response.

Whether through internal staff or through alliances, vendors must have the management and technical staff necessary to meet customer requirements. Exhibit V-1 presents percentages of staff that vendors generally have dedicated to key technical and management positions. There are two significant points to note.

EXHIBIT V-1

Vendor Staff Capabilities

	Percentage of Staff
System/network operations	40
Technical support	20
General management	10
User support	9
Network design/development	8
Applications design/development	8
Project management	4
Sales	3

Note: Total does not add to 100% due to rounding.

- Even though system and network operations is labor intensive, the fact that 60% of a vendor's staff is allocated for operations and support indicates that, in 1990, operations—rather than development activities—is the key focus of most vendors. Users rate systems and network operations as their greatest need.

- Application design and development is clearly not a high systems operations priority for either vendors or users. Vendors allocate only 8% of their staff to applications development, and users rate applications programming near the bottom of the list of important capabilities they believe vendors should have.

- It is important to recognize that this is a 1990 view of systems operations. Vendor-provided applications development and maintenance are becoming major information service offerings through both systems operations and professional services. INPUT believes that these services will be included in an increasing number of systems operations agreements during the next five years.

Alliances are an important ingredient in providing systems operations services. They serve two primary purposes. The first is to augment internal capabilities, to meet specific needs, and to serve as a resource to meet growing commitments when the vendor does not have sufficient staff readily available. The second is to serve as a source of expertise that the vendor does not have available.

Exhibit V-2 summarizes areas where vendors have expertise and areas for which vendors have alliances to provide needed expertise. From the data, several points are evident.

EXHIBIT V-2

Sources of Vendor Capabilities

	Percentage	
	Company	Alliance
Business consulting	90	50
Computer systems operations	100	40
Network management	10	30
Applications design/development	90	60
Applications maintenance	80	60
Packaged applications software	80	60
Disaster recovery	60	80
Equipment maintenance	50	70

- Only 10% of vendors have in-house staff to meet network management requirements and only 30% have alliances to provide this service. On a scale of 1-5 (with 5 being high), user respondents rated network management capability reasonably high (3.6), indicating that network management is important to the success of their business. This difference between vendor capability and user interest raises several considerations.
  - The first is whether network service is as critical to users' businesses as users would like to believe.
  - The second is a question of where vendors are obtaining the expertise to manage user networks.
- From research conducted for this project (and others), INPUT believes that the differences can be explained as follows:
  - The majority of the network expertise needed by users is for long-line (data) networks. To meet the need, vendors rely on carriers to perform network maintenance activities.

- While there is growing concern over network management, vendors are able to meet network management requirements through systems operations staff. In many large organizations, network and systems operations are becoming integrated. With the integration, there is little need for a separate staff.

- There are currently few requirements for systems operations vendors to manage user local-area (LAN) networks. Were there to be extensive requirements for LAN management, vendors would need either more extensive in-house expertise or more alliances to meet the need.

• The majority of vendors have very strong in-house applications development and maintenance expertise, as well as a wide range of alliances. While users do not rate the need for applications development or maintenance capabilities very high (2 on a scale of 1 to 5, with 5 being high), the extent of in-house expertise does support the concept that vendors will increasingly be providing a full range of services to their customers. The services will include systems development and maintenance as well as systems operations.

- Applications, not operations, are the lifeblood of most businesses. Many vendors have entered the systems operations business on the strength of their applications or business knowledge.

- The success of industry leaders indicates that vendors entering or expanding into systems operations should ensure that they are able to demonstrate applications knowledge.

B

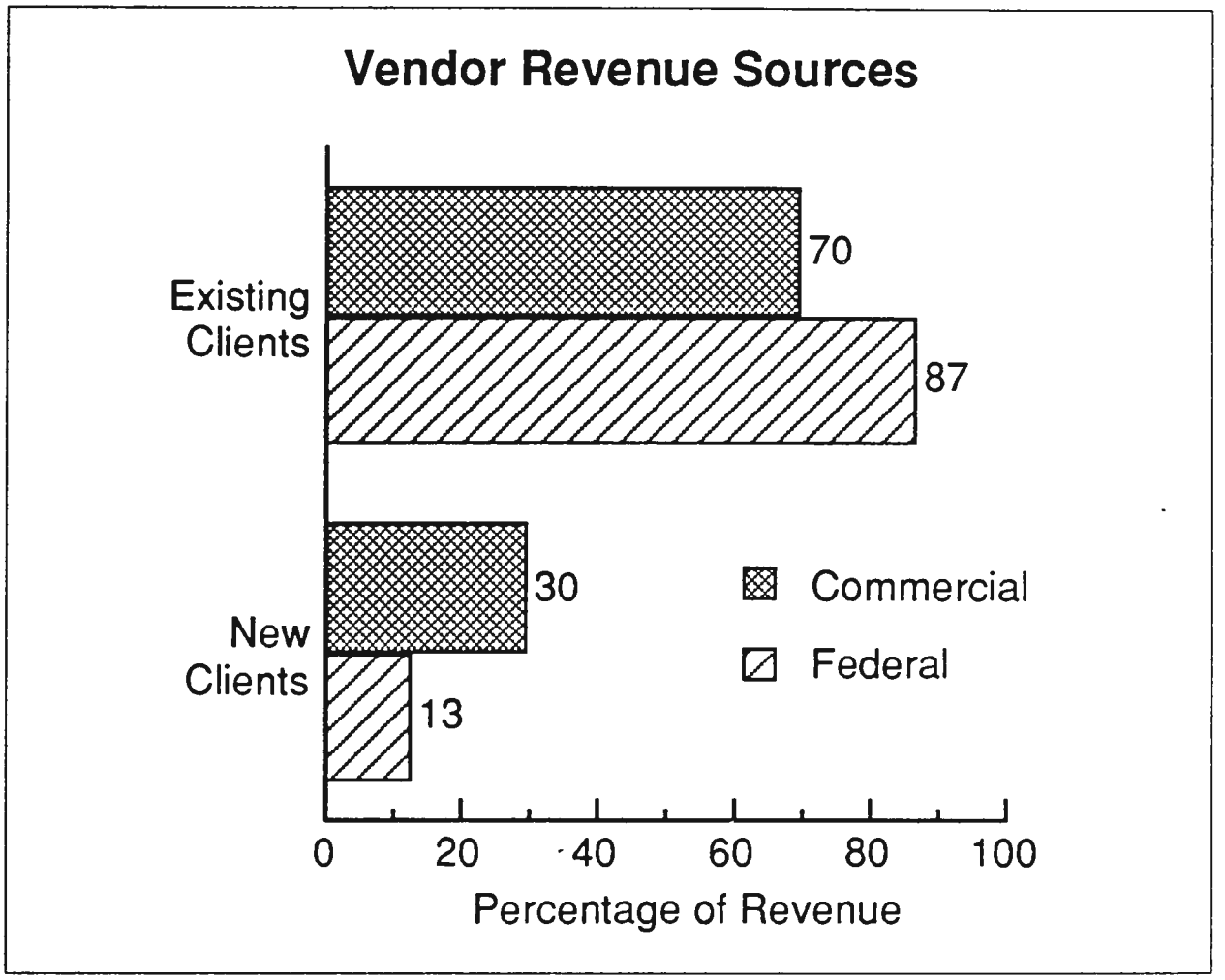
Marketing and Sales

While the majority of vendor revenue is derived from the existing client base, the amount of revenue derived from new clients is substantial. As shown in Exhibit V-3, there is a difference between commercial and federal contracts.

As indicated by the data, it is reasonably clear that once users enter into a systems operations contract, they tend to continue the relationship for an extended period of time. The data also suggests that vendors have strong marketing and sales activities. The fact that 30% of commercial revenues are derived from new clients reflects a strong market.

INPUT believes that the data should not be viewed as conclusive, particularly for professional services-type contracts. Professional services (facilities management)-type contracts are comparatively new, and there is little data to indicate whether these contracts will be readily renewed over extended periods.

EXHIBIT V-3



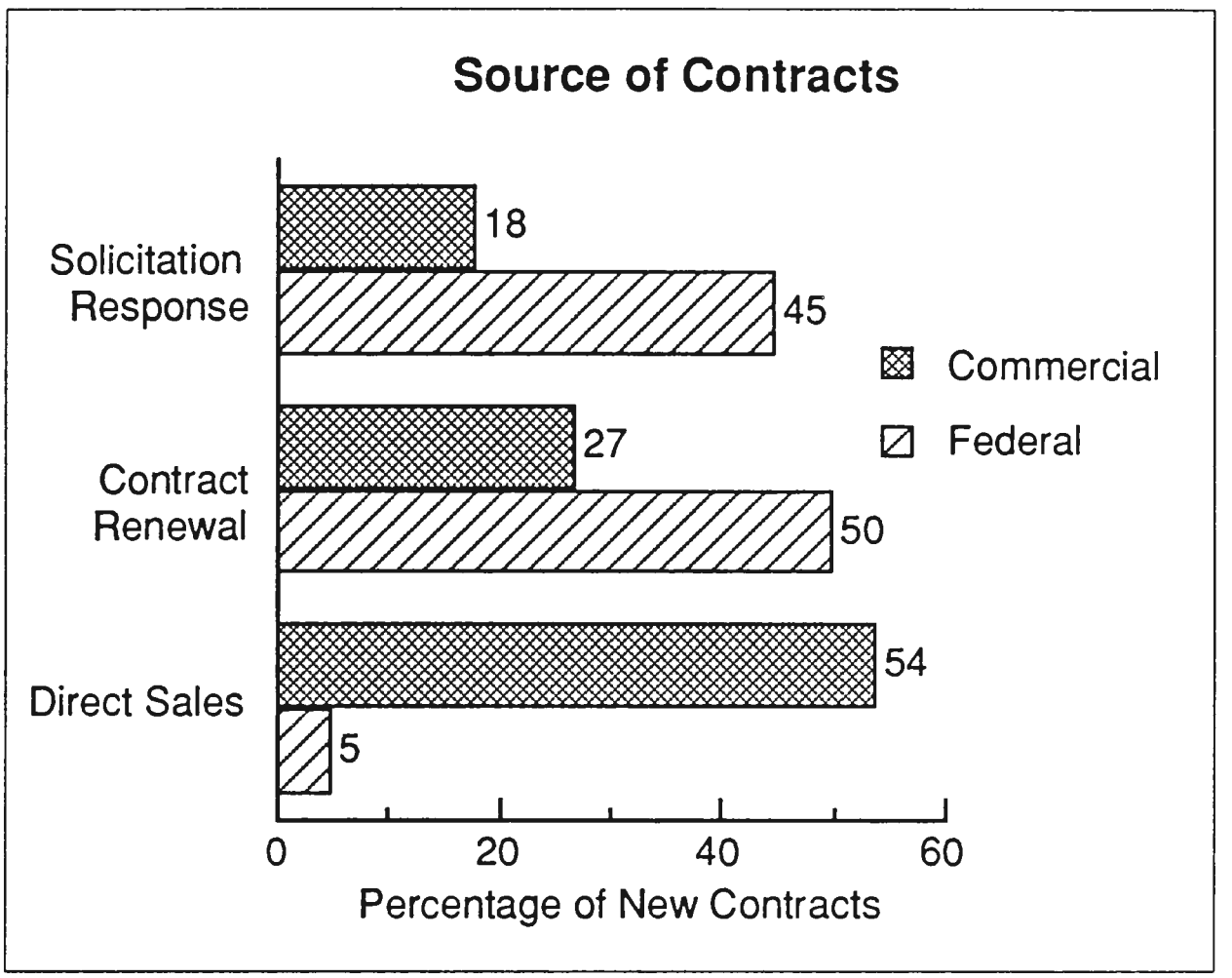
While there may be questions about repeat business from professional service contracts, there is little question about the fact that getting new business requires a concerted effort to identify new opportunities. Exhibit V-4 provides a summary of the source of contracts for commercial and federal clients.

- In the federal government, issuing solicitations (RFPs) is a way of doing business. Vendors need to ensure that they are continually aware of RFPs that have been issued or are likely to be issued.

- In the commercial sector, users are more inclined to request a vendor to perform the analysis for them. However, as many vendors have discovered, commercial users have a tendency to be "tire kickers." They request a vendor to perform an analysis, with no specific intent of contracting for service.

- It is important to note that even though federal vendors obtain 50% of their business from existing clients, renewal of a contract is not always automatic, as it can be with commercial customers. Federal contracts frequently have provisions that require a rebid of an existing contract after a number of years. While the existing federal contractor is frequently in a preferred position to respond to a rebid contract, new vendors have an opportunity to bid, and in many cases, they win.

EXHIBIT V-4



Contract Types

1. Pricing Alternatives

Over the next three years, contract pricing will increasingly be fixed-price for fixed periods. As shown in Exhibit V-5, the trend is away from resource utilization-based pricing, toward fixed pricing.

There are a number of differences between data reported by vendors and data provided by users.

- As discussed in Chapter IV, users indicated that 27% of the contracts are based on resource utilization pricing, while vendors report that 42% of the contracts are. Users also indicated that the pricing for service in 18% of their contracts is a combination of pricing alternatives. Vendors did not indicate any pricing combinations.

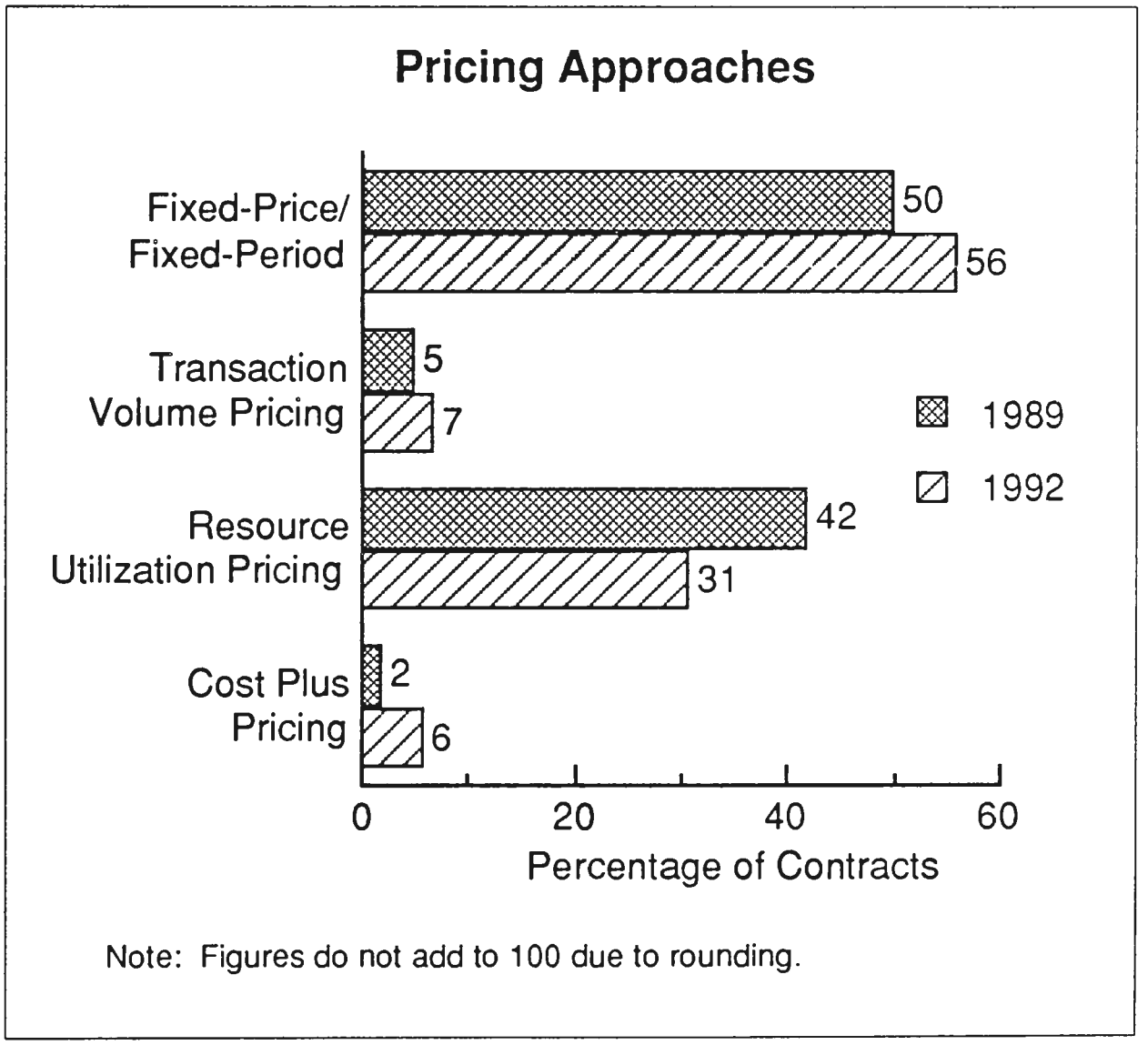
- Several reasons account for the differences:

  - The research included a wide range of types of users, reflecting a variety of approaches to pricing. Vendors included in the research were primarily larger vendors that are placing emphasis on fixed-price contracts.

- There is a difference in interpretation of fixed price. A user that is charged on the basis of transactions or resources used, but has a minimum amount and a ceiling on its prices, will most likely consider the pricing to be transaction or resource based. A vendor providing the service may consider the same contract to be fixed-price because the price per transaction is fixed, and there are upper limits to the amount that can be charged.

- Eighteen percent of the users indicated that their contracts are based on a combination of pricing terms. This typically reflects the situation where their charges are based on transactions, but contain a fixed minimum charge. Adding the 18% that users indicated for combination pricing to the 27% they indicated for resource utilization pricing results in a figure close to the 42% indicated by vendors.

EXHIBIT V-5



Note: Figures do not add to 100 due to rounding.

While a variety of pricing approaches are used, there is a clear trend toward fixed pricing for commitments that extend over a period of time. There is, however, an additional, potentially significant consideration when negotiating with a company in transition or one that is experiencing financial difficulties; systems operations can provide a major benefit to

there companies. Contracting for service provides an opportunity to stabilize costs and rid themselves of unneeded assets, such as computers. But the financial situation can pose significant additional risk to the vendor.

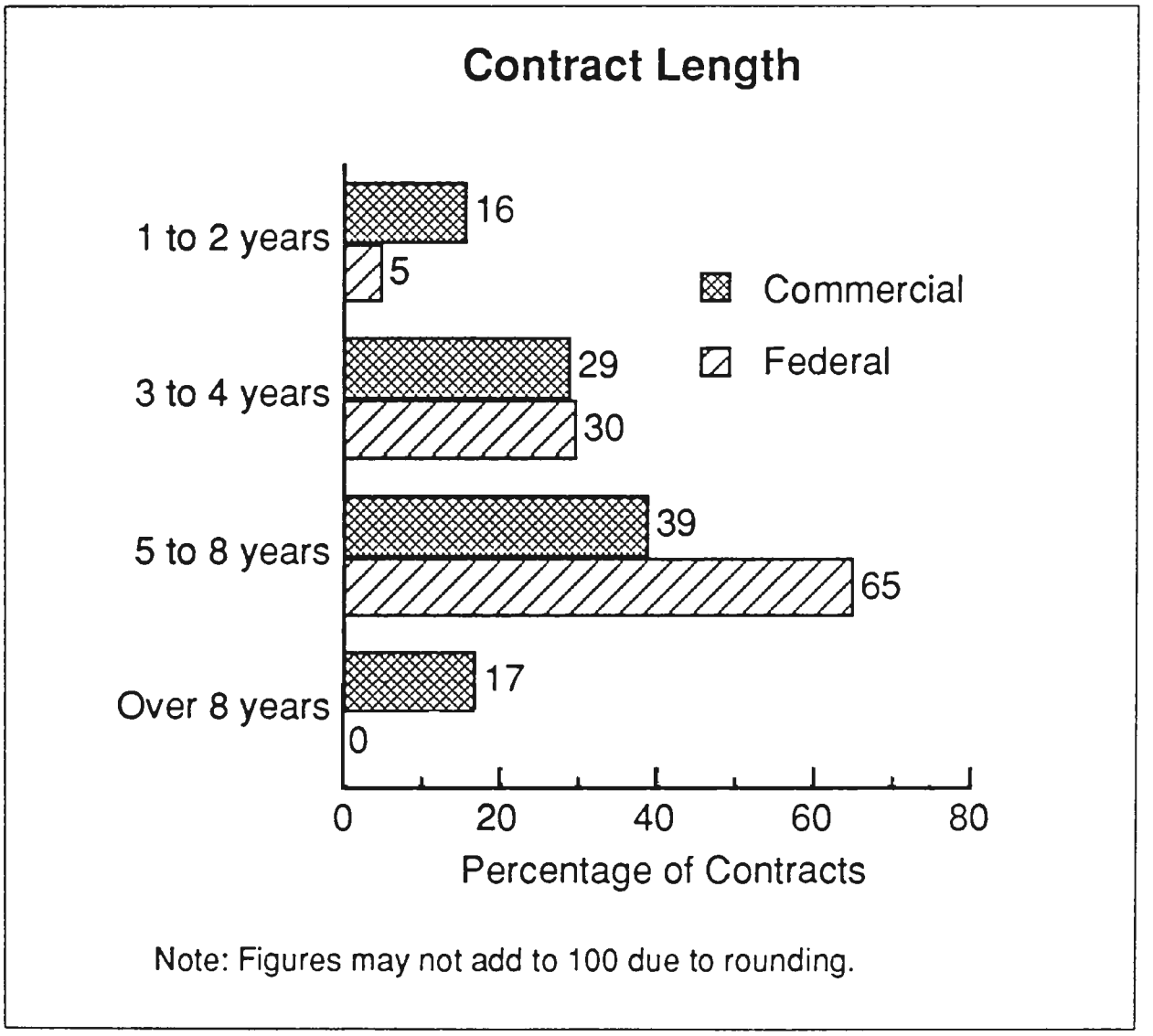
The risk lies in the ability of the company to perform on a long-term contract. In long-term, fixed-price contracts, vendors may expect to realize the majority of their profits near the end of the contract term. If the company is not able to accomplish a financial recovery, vendors are at risk of losing their investments.

One method of providing protection from future risk is to require that a company place a portion of the contract value in escrow. The escrowed amount equivalent to the value of the last year of the contract, for example, would provide financial protection for the contract period during which they would expect to be receiving the greatest return on their investment. If the recovery or transition were successful, the escrowed amount would be applied to the contract.

2. Contract Length

Unlike in the public sector, in the private sector, the length of a contract varies considerably. There are several points to note about the data shown in Exhibit V-6.

EXHIBIT V-6



Note: Figures may not add to 100 due to rounding.

- Federal contracts tend to be for extended periods of time. However, it is important to note than when federal contracts cover long periods, the contract typically contain clauses that either permit or require a rebid sometime during the contract period. While the existing provider has an edge in the bidding process, the rebid process does provide an opportunity to replace the existing vendor.

- The difference in contract lengths in the commercial market reflects the difference in reasons that companies have for entering into a contract. Shorter term contracts tend to be for processing services, either for smaller companies that are augmenting their internal capabilities or companies that have not made substantial investments in their platforms.

- Included in the over eight-year category is a new type of contract that is becoming popular:

  - In a number of recent contracts, vendors have taken equity positions in the company for which they are providing systems operations services. These contracts are considerably longer than typical contracts.

  - In a number of cases, vendors have entered into agreements to, effectively, buy the entire informations systems organization. As part of the contract, the vendor buys all hardware, personnel resources, and other assets. The vendor may also buy the facility or commit to building a facility to provide contracted services. Once built, the facility and customer's former hardware may provide service to other customers. To recover the vendor's investment and reduce the customer's annual expense, it is necessary to establish the long-term contract.

While the terms of commercial contracts vary considerably, INPUT believes that the trend is toward longer term, fixed-price contracts. However, with the exception of the contracts just described, contracts will generally not exceed the five- to eight-year timeframe.

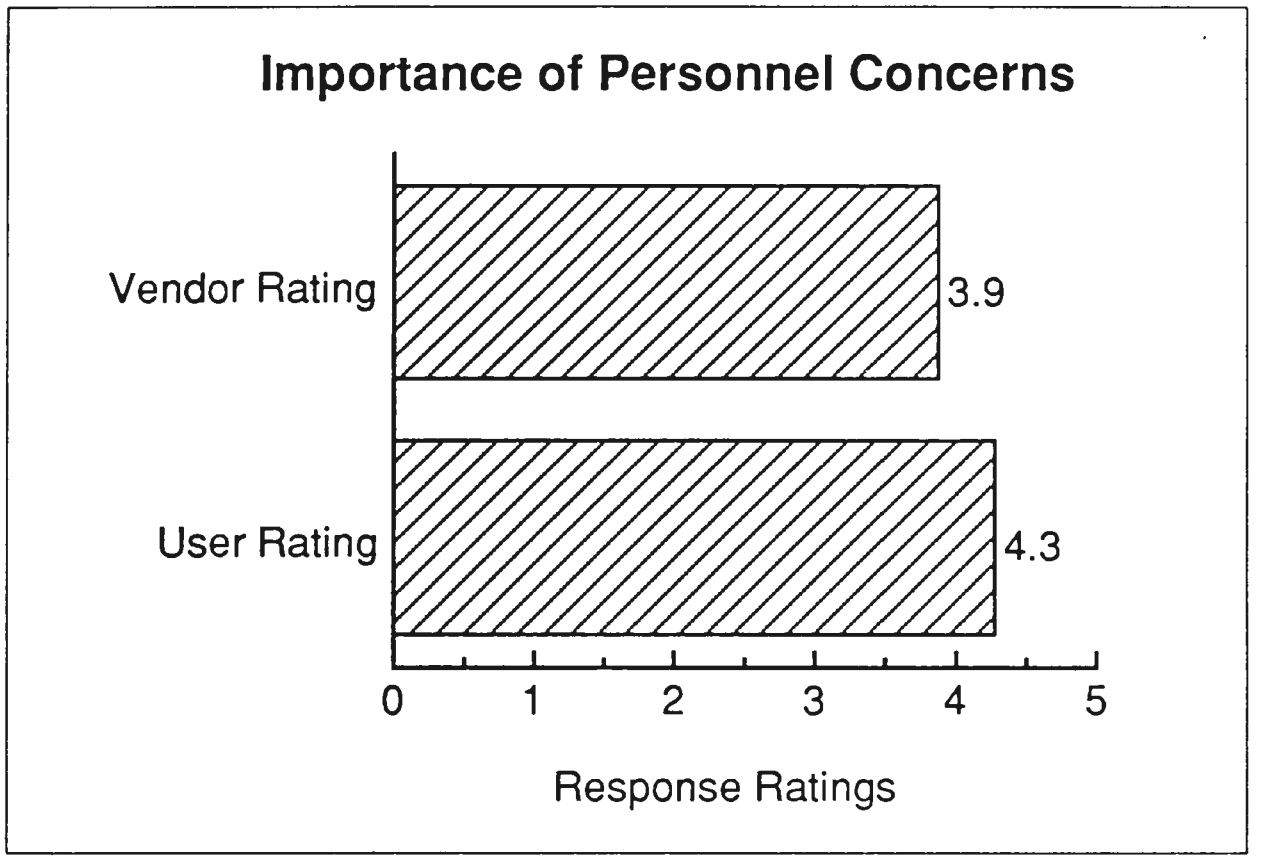
D

Personnel Issues

The effect of systems operations contracting on a customer's personnel is clearly a concern to both vendors and users, as shown in Exhibit V-7. There are some difference in their views about the personnel issues.

The differences do not reflect that vendors view personnel issues as less important; rather, the slightly lower rating reflects vendor experience in successfully addressing personnel issues. Vendors recognize that personnel issues must be solved if the contract is to be successful.

EXHIBIT V-7



One approach to addressing personnel issues is for vendors to transfer personnel to their payroll as full-time employees. On average, vendors hire 50% of a customer's staff. Of the other 50%, many are systems development staff that the customer retains. A certain percentage are operations staff that the vendor will guarantee employment for a specified period of time, frequently one to two years. During that period, the employee may either find a permanent position with the vendor or look outside the company for permanent work.

For staff that is not retained by the vendor, the vendor typically assists by providing placement services. Seventy percent of vendors interviewed indicated that they provide placement assistance. Thirty percent indicated that they do not. Comments from users indicate that placement assistance is most often provided for staff that will not be retained by the vendor and when no salary continuation has been provided for as part of the contract. Salary continuation, for a defined period, provides an opportunity for the individual to seek other employment.

Exhibit V-8 provides a summary of the types of personnel that a vendor is most likely to want to retain. While a vendor's priority may shift over time, the ranking is indicative of the type of personnel vendors believe are needed to successfully execute a systems operations contract. The rankings are derived from vendors identifying the top three types of expertise they try to retain as part of a contract.

EXHIBIT V-8

Personnel Expertise Retained by Vendors

	Rank
Applications design/development	1
Technology planning	2
Systems programming	3
General management	4
Network operations	5
Network design/development	6
User support	7
Project management	7
Systems operations	8

When comparing this with a user's perspective of important vendor capabilities (Exhibit IV-14), there are some distinct differences:

- Based on a rating of importance, users rank applications programming as the least important of a range of vendor skills. Vendors note that applications design and development skills are their top priority when considering skills that they would like to retain.

- INPUT believes that the primary reason that vendors rank application skills at the top of the list is that vendors recognize that if they are going to be able to expand their services to include applications maintenance and development, they need to provide a broader base of industry skills. While users do not have a high level of interest currently, applications maintenance and development skills will become more important to users as vendors enhance their services.

- It should also be noted that users ranked systems operations skills as the leading requirement. Vendors ranked systems operations skills at the bottom of the list of needed skills. The difference is understandable. Users are interested in obtaining high-quality operational skills as part of a systems operations contract. Vendors—that already have operational skills—do not have major requirements to acquire additional skills.

E

Customer Relations

1. Performance Measures

As discussed in Chapter IV, many users (43%) are not aware of performance measures that vendors may have, but most vendors do have established measures for both management and technical staff. Performance measures are generally divided into two groups—management and technical.

- There are three dominant measures of management performance. Management staff is typically measured on profitability and staff productivity. Information technology staff is also measured on client satisfaction, which is the only measurement common to both management and technical staff.

- The effectivenes of technical staff is measured by two criteria. The first is client satisfaction. The second is system performance. System performance typically is further divided according to specific areas of responsibility—such as system uptime, reliability, meeting service levels, etc.

2. Customer Support

Vendors measure customer support by a variety of means. Exhibit V-9 identifies the most frequently mentioned approaches that vendors use to ensure they are meeting their customers' needs.

EXHIBIT V-9

Measures of Client Satisfaction

- Service-level monitoring
- Satisfaction surveys
- Frequent meetings

The measures are not mutually exclusive. Most vendors cited a variety of methods used to ensure that they are meeting the customers' expectations. Service-level monitoring is the most frequently used method to measure daily/weekly performance. Satisfaction surveys are conducted quarterly or annually.

Service-level monitoring and satisfaction surveys provide specific, measurable statistics, but are only part of a more comprehensive process of ensuring customer satisfaction.

The method that yields the greatest results is continued, face-to-face contacts on both a day-to-day (technical and department management), and monthly or quarterly (executive management) basis.

Vendors have learned that, while technical interaction is necessary to resolve detailed problems or issues, executive interaction is the means to ensure commonality of direction. While statistics are valuable, no amount of statistical measurement will ensure executive satisfaction.

3. Partnerships

As with users, vendors find that defining a partnership is difficult. But, unlike users, 100% of the vendors are certain that a partnership exists in a systems operations agreement. Exhibit V-10 identifies the most commonly identified elements of a partnership. These characteristics represent the most common themes expressed by vendors.

Based on a review of both user and vendor descriptions of a partnership, INPUT believes that Exhibit V-10 represents the best description of a systems operations partnership.

EXHIBIT V-10

Key Partnership Characteristics

- Business planning involvement
- Mutual business/financial investment
- Shared objectives
- Common focus on end user

- Involvement in the customer's business planning process is frequently viewed as necessary to ensuring the success of an agreement. Vendors believe that unless they can be involved in the customer's planning process, they are not able to apply technology in the manner best suited to meeting the customer's strategic and tactical needs.

- Mutual investment refers to the need of both parties to make some form of financial investment. This does not necessitate the vendor making a capital investment in the customer's business. In making an investment, the user may incur slightly higher costs for the contract that otherwise necessary, with an understanding that the vendor will apply the added value to ensure use of the latest technology. In return, the vendor may realize a slightly lower profit margin, investing in new (application or hardware) technology to provide the customer with an opportunity for competitive advantage.

- Vendors and users must have shared objectives. More precisely, the vendor must be able to accept and work to achieve the customer's business objectives.

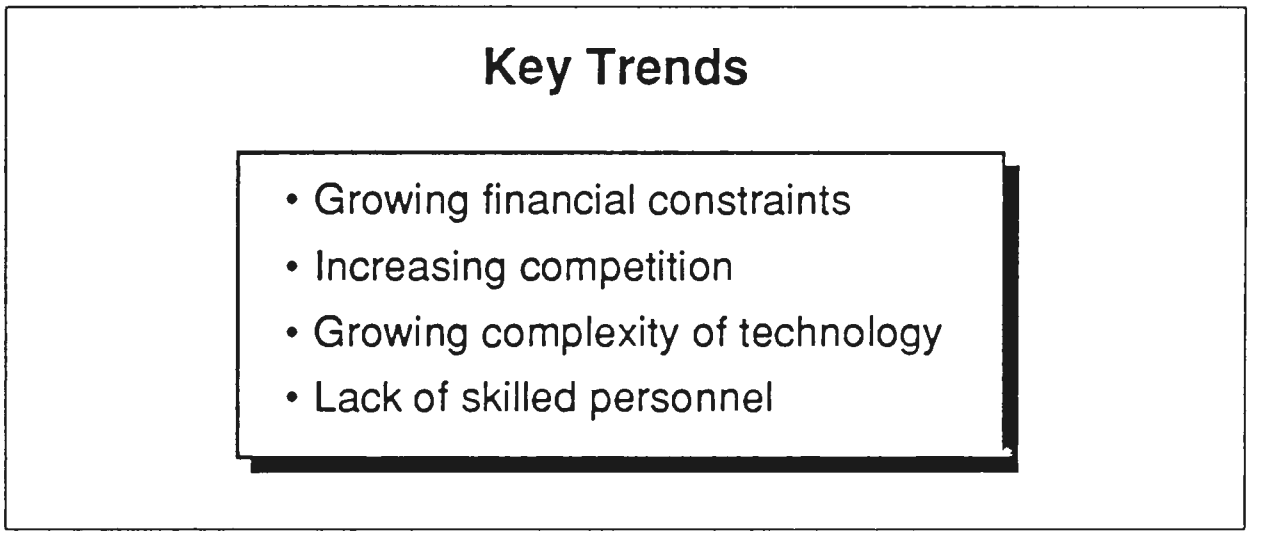
- Both the vendor and the customer must accept that the real customer is the user of the client company's product or service, not the internal user of the products or information systems. Only by focusing on the needs of the company's customers will the vendor and customer be able to make strategic investments.

F
Major Trends

1. Vendor Perspective

There are numerous reasons that companies elect to enter into a systems operations agreement. In many cases, they are unique to a company's financial or strategic situation. Exhibit V-11 identifies the four primary trends causing users to enter into systems operations agreements over the next five years, as expressed by vendors.

EXHIBIT V-11



- Organizations are experiencing continued need to reduce, or at least stabilize, their expenses. In addition, they must make increasingly difficult decisions about where to apply a shrinking supply of investment dollars.

- National and global competition is driving most companies to look for better ways to conduct their business. One method is to make better use of technology. After years of limited success, they are searching for alternative methods to realize greater benefits from their investments in technology.

- Technology has become increasingly complex. Integrating local and remote data bases; local- and wide-area networks; and super, mainframe, mini, and microcomputers has stretched the technological capability of many companies. Companies are increasingly in need of acquiring expertise to integrate technology and manage the infrastructure following integration.

- Compounding the growing technological complexity is a growing lack of skilled personnel. While personnel are available to perform any single task, there is a growing lack of expertise to address complex integration and manage a complex environment.

Trends noted by users and vendors are the same, with one difference.

- Both users and vendors note financial considerations as the trend that will be at the forefront of growth in systems operations.

- Users do not identify a lack of skilled personnel as a key trend. Vendors believe that there is a lack of skilled personnel to meet user requirements.

- INPUT believes that the reason that users do not identify a lack of skilled personnel among the trends is that the effort needed to meet today's needs does not permit time to assess future requirements. In many cases, they do not recognize that there are needs to enhance their skill sets to address emerging technological requirements.

2. Account Development

Companies are wary of systems operations. Companies that believe their internal information systems organizations are well run perceive no real benefit in contracting for this service. Others are concerned about the reality of cost savings and the danger of losing control. Whether the perceptions are real or not, they must be addressed for the market to grow.

Vendors entering or expanding in the market need to understand that the nature of systems operations contracts is beginning to change. The change will have an effect on all types of vendors.

- Today, system operations contracts are oriented primarily toward the operating environment. Users are reluctant to have vendors take over their applications maintenance and development, but this is changing.

- Over the next several years, clients will look increasingly to vendors to provide application maintenance and development services. The effect of this transition will be different for different types of vendors.

  - Systems operations companies, whose expertise is primarily platform operations, will need to develop greater application skills or establish strong alliances to ensure availability of the skills.

- Professional services companies that have established relationships based on system development or systems integration opportunities will need to demonstrate an ability to manage the operation of large, complex, geographically dispersed platforms.

- Equipment manufacturers need to develop an ability to deliver application development and platform operations skills. Equipment manufacturers must also demonstrate a willingness to accept and manage multivendor platforms. The client's platform strategy may or may not be consistent with the vendor's platform strategy.

While most vendors recognize the need to broaden their base of skills and knowledge, INPUT believes that, within the next five years, vendors must be able to deliver a fully integrated set of information systems services. This must include applications maintenance and development, information technology (operations) management, and network development and management.

Conclusions and Recommendations

VI

Conclusions and Recommendations

There are a number of conclusions and recommendations that can be drawn from data developed for this report. This chapter provides a summary of key conclusions and a number of recommendations to guide the development of strategic marketing plans

A Conclusions

A review of conclusions drawn from research for this report indicates clearly that the issues related to growth of the systems operations market are predominantly business, not technical, issues. Exhibit VI-1 highlights key conclusions.

EXHIBIT VI-1

Conclusions

- Core business focus is increasing
- Financial benefits are key motivator
- Transition companies are likely candidates
- Preliminary analysis necessary
- True costs not known
- Executive time not a major factor
- Full-time executive liaison necessary

- Companies are focusing increasingly on their core businesses. Activities that detract from executive attention on competitive positioning, product differentiation and strategy, or overall growth are candidates for outsourcing. While there is resistance to contracting for systems operations, the resistance is primarily from information systems management, not executives.

- Financial benefits are the primary reason that most companies consider systems operations, at least initially. While strategic value may be of greater importance in the long term, it is intangible and difficult to identify. Strategic value benefits must be perceived after the fact.

- Companies in transition are the most likely candidates for systems operations services. Companies experiencing financial difficulties will readily consider opportunities to reduce or stabilize cash flow and to conserve capital. These companies have little time to consider major information systems projects or the problems of daily requirements of operational management.

- Until there has been sufficient time for systems operations to become a proven and accepted approach, many organizations will continue to give it only cursory examination. As a result, vendors must be prepared to provide analysis of the benefits of systems operations.

- In many organizations, the true costs of information processing are not known. Vendors need to assist users with structural approaches to capture existing costs.

- Users frequently do not consider opportunity costs from the use of newer technology or development approaches. Vendors assisting with financial analysis need to ensure that opportunity costs are identified.

- As a marketing approach, establishing that systems operations contracts save time for senior management is not effective. Users currently contracting and those not contracting for systems operations services did not identify executive time as a significant factor in decisions to contract for systems operations.

- A dedicated, full-time executive liaison at the customer's site is necessary to the success of a systems operations contract. Organizations that contract for systems operations services view the vendor as another department of their organization. Having a contact person to address and resolve existing or potential problems—in addition to regular meetings between vendor and customer executive management—is necessary.

B

Recommendations

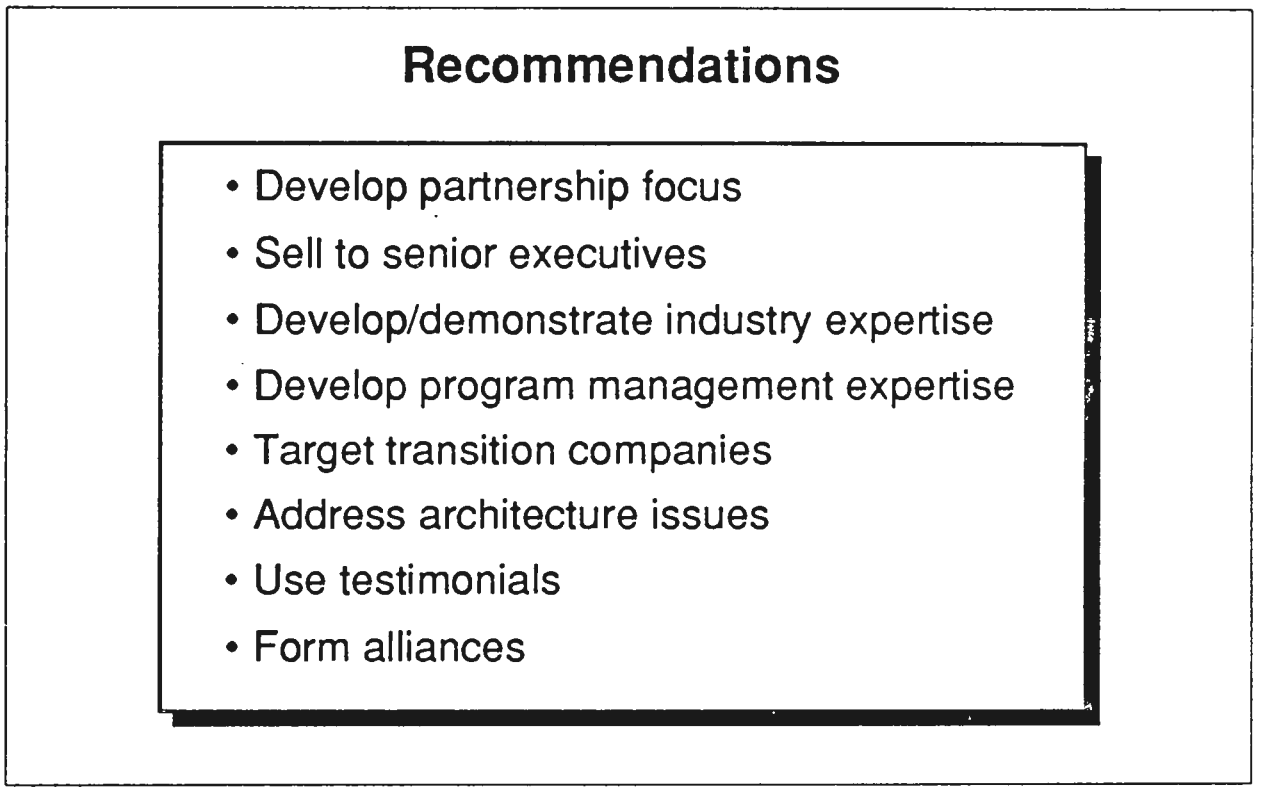
Recommendations to vendors entering or expanding in the field of systems operations include those shown in Exhibit VI-2

- To be successful in the future, vendors need to develop partnership relationships. Vendors need to develop a belief, in the minds of their clients, that their goals are the same as the client's.

- This focus is essential if vendors are to be successful at managing their clients' applications and operations.

- For vendors entering the market, they must recognize that the road to a partnership is long. It is frequently built on successes that begin with small projects and evolve to more complex projects. At each step, the vendor must demonstrate that it understands the client's business and that their goals are the same.

EXHIBIT VI-2



- Initial systems operations selling needs to be done at the senior executive level. Most information systems executives prefer the status quo and view systems operations as a threat. Senior management of the same company will view systems operations as an opportunity.

- Vendors need to develop and be able to demonstrate industry expertise. Companies will not select a vendor that does not understand their business.

- Screen projects carefully. Vendors need to assess if prospective buyers are serious about systems operations or are merely using the vendor's recommendations to improve internal operations.

- Demonstrated experience in managing operations is not enough. Vendors need to develop a partnership relationship with the user company that includes participation in both tactical and strategic planning.

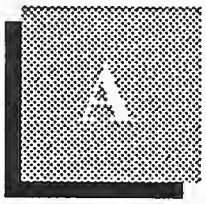
- Vendors entering the market will find the greatest opportunity among companies that are in transition; they will be more eager to consider savings opportunities than companies that are financially solid.

- Vendors need to be able to address system architecture issues. Organizations that have invested in developing distributed architectures may be reluctant to consider systems operations, perceiving that the approach is based on centralization and is therefore contrary to their direction.

- Where possible, vendors should use testimonials to validate vendor responsiveness to a customer's needs.

- Alliances are necessary. Few vendors have the breadth of services necessary to meet the needs of all prospective clients.

Appendixes



Vendor Questionnaire

Systems Operations Management Practices and Policies

Background/Strategy

1. How long has your company been in the systems operations (SO) business—also called Facilities Management (FM) or Operations Management (O&M)? _____ years

2. If you participate in both the commercial and federal systems operations markets, please identify how long you have participated in each.

   Commercial _____ years Federal _____ years

3. There are a number of characteristics that describe a vendor's systems operations business. One might be the percent of total revenue your firm derived from systems operations on equipment your firm owns versus on client-owned equipment. For each of the following, please provide the percent of revenue derived for the alternatives listed in 1989 (in column 1) and what you believe it will be 1992 (in column 2).

	Percent of Revenues 1989	Percent of Revenues 1992
a. Equipment owned by:		
The client	_____	_____
You, the vendor	_____	_____
TOTAL	100	100

	Percent of Revenues 1989	Percent of Revenues 1992
b. Operations located:		
On client premises	_____	_____
In a facility you own	_____	_____
TOTAL	100	100
c. Equipment dedicated:		
To a single client	_____	_____
Shared among multiple clients	_____	_____
TOTAL	100	100
d. Application software developed by:		
The client	_____	_____
Your company	_____	_____
A third party	_____	_____
TOTAL	100	100

4. In how many data centers does your organization provide systems operations services? Please provide responses for both client-owned and vendor-owned data centers.

_____ Number of client-owned data centers
_____ Number of data centers your company owns

5. Please provide an estimate in column 1, of the percent of your current contracts under each of the pricing alternatives listed below. In column 2, give an estimate of this mix in 1992.

	1989	1992
Fixed price for a fixed period	_____	_____
Charges based on transaction volumes	_____	_____
Charges based on resource utilization	_____	_____
Cost plus a predefined margin	_____	_____
Other (specify):_____	_____	_____
_____	_____	_____
Combinations (specify):_____	_____	_____
_____	_____	_____
TOTAL	100	100

6. What percentage of your commercial and federal systems operations contracts have durations in the ranges listed below?

	Commercial (Percent)	Federal (Percent)
1 to 2 years	_____	_____
3 to 4 years	_____	_____
5 to 8 years	_____	_____
Over 8 years	_____	_____
TOTAL	100	100

Organization and Responsibilities

7. Is systems operations your major line of business, or is your organization a subsidiary or separate division of a company that offers other products and/or services?

SO is major line of business _____
Subsidiary _____
Division _____

7a. If a subsidiary or division, please identify your parent firm and describe the major services or products it offers.

Name/Description: _____

_____

_____

8. Please give the name and title of the top executive in your systems operations organization. If commercial and federal systems operations are separate, please provide the requested information for both.

	Commercial	Federal
Name	_____/	_____
Title	_____/	_____
Address	_____/	_____
	_____/	_____

9. If systems operations is operated as a subsidiary or separate division, to whom does it report in the parent organization?

Name _____

Title _____

10. Would you provide an organizational chart for your systems operations organization?

_____. Yes/No. If yes, please include the organizational chart with this questionnaire when you return it to INPUT.

11. How large a staff do you currently employ in your systems operations business? If commercial and federal businesses are separate, please identify the percentage of personnel allocated to each.

Total full-time SO staff _____

Percent commercial _____

Percent federal _____

12. The following table identifies key staff capabilities required by systems operation firms. Please indicate the percentage of your total staff associated with each category.

Capability	Percent
General management and administration	_____
Project management	_____
Applications design and development	_____
Network design and development	_____
Systems and network operations	_____
Technical support	_____
User support	_____
Sales	_____
Other (specify) _____	_____
TOTAL	100

Current Customer Base

13. Approximately how many customers do you currently provide systems operations services to?

    Commercial _____ Federal _____

14. What is the average annual contract value?

    Commercial _____ Federal _____

15. What is the rough distribution of the products and services costs in your company's systems operations contracts? (Column entries should add to 100%.)

	Percent of contract value
Professional services	_____
Equipment	_____
Application software	_____
Systems software	_____
Other (specify):_____	_____
TOTAL	100

16. Please name three or more systems operations clients and briefly describe the type of service you are providing them?

1. _____

   _____

2. _____

   _____

3. _____

   _____

4. _____

   _____

5. _____

   _____

Financial Characteristics

17. Please complete the following revenue table.

Business Segment	Revenues ($M) 1988	1989
Commercial Systems Operations	_____	_____
Federal Systems Operations	_____	_____

18. What do you estimate as the compound annual growth rate (CAGR) for the systems operations industry over the next five years?

Commercial _____% Federal _____%

19. Are systems operations margins increasing (I) or decreasing (D)?

Commercial _____(I/D) Federal _____(I/D)

20. What have been the recent before tax profit (loss) margins for your systems operations business?

Commercial _____% Federal _____%

Strategy and Markets

21. Are there specific markets on which you focus your systems operations activities? Are these vertical industry, functional, or other markets?

Vertical _____
Functional _____
Other _____

22. Please list target vertical, functional, or other markets.

_____

_____

_____

_____

23. Does your current strategy include expansion in your existing market(s) and/or entry into new vertical or functional markets?

Expansion in current market(s) _____ (Y/N)
Entry into new markets _____ (Y/N)

24. What selection criteria do you use for identifying new target markets?

_____

_____

_____

_____

25. What percent of your annual systems operations business comes from your current base as opposed to new accounts?

	Commercial (Percent)	Federal (Percent)
From existing client base	_____	_____
New accounts (solicited for SO	_____	_____
Other (specify):_____	_____	_____

26. What percent of your new contracts are a result of the following?

	Commercial (Percent)	Federal (Percent)
Responding to bid solicitations or RFPs	_____	_____
New contracts with existing clients	_____	_____
Proactive direct sales activity	_____	_____
Other (specify):_____	_____	_____

27. How does your company position itself with prospects regarding customer benefits, skills, capabilities, and differences from competition?

_____

_____

_____

_____

28. Who do you consider to be your primary competitors in the systems operations business?

Commercial	Federal
_____	_____
_____	_____
_____	_____
_____	_____

Capabilities/Products

29. The following list identifies major capabilities that may be involved in delivering systems operations services.

Please identify in column 1 if your organization has the capability (Y for yes and N for no). In column 2, indicate (Y or N) if you use alliances or partnerships with other companies to provide this capability.

	Exists	Alliances
Business Consulting	_____	_____
Computer Systems Operations	_____	_____
Network Management	_____	_____
Applications Design/Development	_____	_____
Applications Maintenance	_____	_____
Packaged Applications Software	_____	_____
Disaster Recovery Service	_____	_____
Equipment Maintenance	_____	_____
Other (specify):_____	_____	_____

30. Do you have any formal alliance program for systems operations? _____ (Y/N)

31. Briefly describe how you use alliances to support your company's systems operations business.

32. Please identify any alliances that your company has established for the systems operations business and the purpose of these relationships.

Company	Purpose of Relationship

33. Are there particular proprietary technologies, products, or services that you believe give your firm a competitive advantage when bidding for a systems operations contract? _____Y/N)

34. If you have proprietary systems operations technologies, products, or services, please identify them below and describe the advantage they provide.

Product/ Technology/ Service	Advantage Description

35. What major trends in the user community do you believe are motivating the growth in the systems operations market?

_____

_____

_____

_____

36. On a scale of 1-5, please indicate the degree of concern that prospective clients have to issues related to the placement of their staff (1=no or little concern, 5=very high concern)

_____ Rating

37. Considering staff issues, please estimate the percentage of the client's staff that is typically retained as part of the management contract.

_____ Percent retained

38. Considering the staff that is retained, please provide a ranking of the top three (3) types of expertise that you try to retain. The ranking should reflect your order of preference.

_____ General management

_____ Project management

_____ Applications design and development

_____ Systems programming

_____ Network design and development

_____ Systems operations

_____ Network operations

_____ Technology planning

_____ User support

_____ Other (specify): _____

39. Do you generally assist a client in placing personnel that will be released when implementing an SO contract?

_____ Yes

_____ No

40. Please indicate which of the following describe the types of performance incentive that you typically provide for management and technical staff. (Check all that apply).

	Management	Technical
Profitability	_____	_____
Staff Productivity	_____	_____
Application Integrity	_____	_____
System Performance	_____	_____
Customer Relations	_____	_____
Client Satisfaction	_____	_____
Other (specify):_____	_____	_____

41. Are performance incentives generally included as part of a contract with your customers?

_____ Yes

_____ No

42. How do you measure client satisfaction?

_____

_____

_____

_____

43. Do you agree that future vendor-client relationships will be like partnerships in nature?

_____ Yes

_____ No *(skip to 45)*

44. Please describe a partnership relationship in your own words.

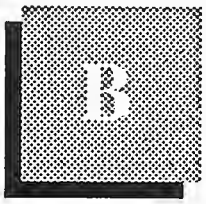
_____

_____

_____

_____

45. Please describe how you ensure that there is ongoing management communications between your company and your client's management. (How frequently do you communicate and in what form? Are your communications formal or informal? Do you meet weekly, monthly, etc.?)



User Questionnaire

Systems Operations Management
User Questionnaire

1. Does your organization currently contract with a vendor for the management of part or all of your systems operations?

   _____ Yes *(go to 9)*

   _____ No

2. Have you evaluated the economics of having a vendor manage all or part of your systems operations?

   _____ Yes

   _____ No (why?)

   _____

   _____

   _____

3. Please provide a rating of the importance of each of the following factors as reasons for not contracting for systems operations. (1 = not at all important, 5 = very highly important).

	Rating 1-5
Availability of internal operations skills	_____
Executive energy/time devoted to information-related decisions	_____
Operating costs	_____
Service levels	_____
Responsiveness to requests for application changes and improvements	_____
Responsiveness to requests for new application development	_____
Capital investment requirements for new systems	_____
Near-term cash flow	_____
Data security and privacy	_____
Importance of application and/or information processing to the success of your business	_____
Operation on a system dedicated to your company's work	_____
Labor relations/unions	_____

4. Do you plan on contracting with a vendor for the management of all or part of your systems operations within the next five years?

_____ Yes

_____ No (why?)

_____

_____

_____

5. Please indicate the top two or three reasons that you have not considered contracting for systems operations management.

1. _____

_____

2. _____

_____

3. _____

_____

Now, a couple of last questions.

6. Please identify what circumstances would cause you to consider contracting for systems operations.

_____

_____

7. There has been considerable discussion in the industry about systems operations contracts being partnership agreements. Do you agree or disagree with the concept that major systems operations contracts represent a partnership between the vendor and customer?

_____ Agree (go to end)

_____ Disagree

_____ Don't know

8. How would you generally describe a systems operations agreement?

_____

_____

_____

Go to end. Terminate interview.

Before we address specific points, I would like to ask you a couple of general questions related to the nature of systems operations contracts.

9. There has been considerable discussion in the industry about systems operations contracts being partnership agreements. Do you agree or disagree with the concept that major systems operations contracts represent a partnership between the vendor and customer?

_____ Agree
_____ Disagree
_____ Don't know

10. How would you generally describe a systems operations agreement? (Interviewer note: Is a systems operations agreement time and material work, a processing services agreement, a long-term professional services agreement, or something else?

_____

_____

_____

Thank you. Now we'll move on to some specific questions.

11. Please provide a rating of the importance of each of the following factors as reasons for contracting for systems operations. (1 = not at all important, 5 = very highly important).

	Rating 1-5
Availability of internal operations skills	_____
Executive energy/time devoted to information-related decisions	_____
Operating costs	_____
Service levels	_____
Responsiveness to requests for application changes and improvements	_____
Responsiveness to requests for new application development	_____
Capital investment requirements for computing equipment and facilities	_____

Near-term cash flow _____

Data security and privacy _____

Importance of application and/or information processing to the success of your business _____

Operation on a system dedicated to your company's work _____

Labor relations/unions _____

12. Are the services you contract for provided on your site or from the vendor's site?

_____ Our site

_____ Vendor's site

13. Is the equipment owned by you or by the vendor?

_____ We own *(go to 15)*

_____ Vendor owns

14. Did the vendor acquire this equipment from you as part of the contract?

_____ Yes

_____ No

15. Is the equipment used dedicated to your use or is it used to provide service for multiple customers.

_____ Our use

_____ Multiple customers

16. Are the applications developed by the vendor, your company, or by a third party?

_____ Vendor

_____ Company

_____ Third party

_____ Other (Please explain)

_____

_____

_____

17. From the following list, please indicate which of the pricing alternatives best represents the method you currently use.

_____ Fixed-price for a fixed period

_____ Charges based on transaction volumes

_____ Charges based on resource utilization

_____ Cost plus a predefined margin

_____ Combinations (specify):_____

_____ Other (specify):_____

18. Please indicate the duration of your management contract from the ranges listed below.

_____ 1 to 2 years

_____ 3 to 4 years

_____ 5 to 7 years

_____ 8 to 9 years

_____ 10 years or over

19. How large a staff did you employ to manage your systems operations before contracting for management services?

_____ Number

20. How large a staff do you currently employ in your systems operations?

_____ Number

21. The following table identifies key staff capabilities provided by many systems operation firms. On a scale of 1-5, please indicate the importance to you of each of the following vendor-provided capabilities. (1 = not important, 5 = very high importance).

_____ Management, Strategy and Planning

_____ Legal Support/Contract Administration

_____ Systems (Mainframe) Operations

_____ Network Operations

_____ Applications Programming

_____ Systems Programming

_____ Technical Support (help desk, customer support, etc.)

_____ Network Design/Development

_____ Other (Specify):_____

22. On a scale of 1-5, please indicate the degree of concern that you had about personnel issues when you were considering contracting for system management services. (1 = no or little concern, 5 = very high concern)

_____ Rating *(if 4 or above, go to 24)*

23. Please provide a brief explanation about why your concern was not rated higher.

_____

_____

_____

24. Considering personnel concerns, please rate the importance of each of the following concerns regarding your staff on a scale of 1-5. (1 = no importance, 5 = very high importance).

_____ Continued employment or placement

_____ Career advancement

_____ Relocation

_____ Other (Please explain)

_____

_____

_____

25. Briefly describe how you addressed the personnel concerns.

_____

_____

_____

26. Does your vendor have established performance measures for management and technical staff? Please indicate yes (Y) or no (N) for each.

_____ Management staff

_____ Technical staff

_____ Don't know *(skip to 29)*

27. Are your vendor's performance measures greater, less, or different measures than the ones you had employed?

_____ Greater

_____ Less

_____ Different

_____ Don't know

28. Please indicate which of the following describe the types of performance measures that are included in your management contract with the vendor. (Check all that apply).

_____ Response time

_____ Data security

_____ Delivery schedules (reports, etc.)

_____ Cost control

_____ Standards conformance

_____ Other _____

29. Please indicate which of the following best describes the method used by your vendor to ensure ongoing *management* support.

_____ Provide complete on-site staff

_____ Provide full-time, on-site representative

_____ Management visit at least weekly

_____ Management visit at least bi-weekly

_____ Management visit at least monthly

_____ Management visit periodically (as required)

30. What is the annual cost for services your are receiving?

$ _____ millions

31. How much higher or lower is your current cost than your previous internal cost?

_____% higher

_____% lower

32. Please provide your estimate of the distribution of costs among the following products and services in your company's systems operations contract(s)? (Total should equal 100%.)

_____% Professional Services (Sys, Appl, Net. Dev)

_____% Equipment

_____% Packaged Application Software

_____% Systems Software

_____% Other (specify):_____

33. Please identify the vendor currently providing systems operations services.

_____

34. Please briefly describe the two or three key benefits that have resulted from your contract for systems operations services.

1. _____

_____

2. _____

_____

3. _____

_____

35. What major trends in the user community do you believe are motivating the growth in the systems operations market?

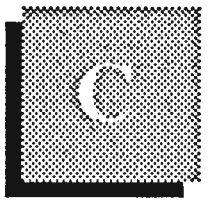
_____

_____

_____

End

Thank you for your help. If we can get your correct address, we will send a copy of the overview when the report is complete.



About INPUT

Company Profile

INPUT provides planning information, analysis, and recommendations to managers and executives in the information services industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/ consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software products, processing and network services, systems management, and systems/software maintenance and support).

Many of INPUT's professional staff have more than 20 years' experience in their areas of specialization. Most have held management positions in large organizations, enabling them to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

Staff Credentials

INPUT's staff have been selected for their broad background in a variety of functions, including planning, marketing, operations, and information processing. Many of INPUT's professional staff have held executive positions in some of the world's leading organizations, both as vendors and users of information services, in areas such as the following:

- Processing Services
- Professional Services
- Turnkey Systems
- Applications Software
- Field (customer) Service
- Banking and Finance
- Insurance
- Process Manufacturing
- Telecommunications
- Federal Government

Educational backgrounds include both technical and business specializations, and many INPUT staff hold advanced degrees.

U.S. and European Advisory Services

INPUT offers the following advisory services on an annual subscription basis.

1. Market Analysis Program—U.S.
The Market Analysis Program provides up-to-date U.S. information services market analyses, five-year forecasts, trend analyses, vertical/cross-industry market reports, an on-site presentation, hotline inquiry service, and sound recommendations for action. It covers software products, turnkey systems, processing and network services, and professional services markets. It is designed to satisfy the planning and marketing requirements of current and potential information services vendors.

2. Market Analysis Program—Europe
This program is designed to help vendors of software and services with their market planning. It examines the issues in the marketplace, from both a user and a vendor viewpoint. It provides detailed five-year market forecasts to help plan for future growth.

3. Vendor Analysis Program—U.S.
A comprehensive reference service covering more than 400 U.S. information services vendor organizations, VAP is often used for competitive analysis and prescreening of acquisition and joint-venture candidates. Profiles on leading vendors are updated regularly, and hotline inquiry service is provided.

4. Vendor Analysis Program—Europe
This is an invaluable service for gaining competitive information. Two binders are provided—one is a directory listing names, addresses, and turnover of some 700 European software and services vendors. The second binder contains profiles of about 300 key vendors.

5. Electronic Data Interchange Program
Focusing on what is fast becoming a major computer/communications market opportunity, this program keeps you well informed. Through monthly newsletters, timely news flashes, comprehensive studies, and telephone inquiry privileges, you will be informed and stay informed about the events and issues impacting this burgeoning market.

6. Network Services Program—Europe
Network services is a fast-growing area of the software and services industry. This program is essential to vendors of EDI, electronic information services, and network products and services. It keeps clients informed of the latest developments and includes a monthly newsletter on EDI.

7. Systems Integration Program—U.S.
Focus is on the fast-moving world of systems integration and the provision of complex information systems requiring vendor management and installation of multiple products and services. The program includes an annual market analysis of the U.S. systems integration market, SI vendor profiles and updates, topical market analysis reports, and an annual SI seminar.

8. Systems Operations Program—U.S.
This program focuses on the exciting resurgence of the market for outsourcing systems operations. It includes an annual market analysis report of the systems operations market, SO vendor profiles and updates, topical market analysis reports, and an annual SO seminar.

9. Systems Management Program—Europe
Systems integration and systems operations (facilities management) are key growth areas for the decade. This program examines these two areas and analyzes current market trends, user needs, and vendor offerings.

10. Federal Information Systems and Services Program
This program presents highly specific information on U.S. federal government procurement practices, identifies information services vendor opportunities, and provides guidance from INPUT's experienced Washington professionals to help clients maximize sales effectiveness in the federal government marketplace.

11. State Information Systems and Services Program (proposed)
This program presents extensive information on state government spending, procurement policies, identifies key contacts, opportunities, and provides guidance from INPUT's experienced professionals to help clients maximize sales opportunities in the state government marketplace.

12. Information Systems Program
ISP is designed for executives of large information systems organizations and provides crucial information for planning, procurement, and management decision making. This program is widely used by both user and vendor organizations.

13. Customer Service Program—International
This program provides customer service organization management with data and analyses needed for marketing, technical, financial, and organizational planning. The program pinpoints user perceptions of service received, presents vendor-by-vendor service comparisons, and analyzes and forecasts service markets for large systems, minicomputers, personal computer systems, and third-party maintenance. A monthly newsletter helps clients keep informed of the latest developments in the market.

14. Customer Service Program—Europe
Customer service is an expanding area. Companies are now expanding from hardware service to more software-related maintenance and professional services. This program helps vendors penetrate these new areas and provides guidelines for future market strategy. A monthly newsletter helps clients keep abreast of the latest developments in the market.

15. Worldwide Information Services Market Forecasts
In 1989 INPUT initiated this research study, which provides an international forecast for the information services market.

Customized Advisory Services

In addition to standard continuous-information programs, INPUT will work with you to develop and provide a customized advisory service that meets your unique requirements.

Acquisition Services

INPUT also offers acquisition services that are tailor-made for your requirements. INPUT's years of experience and data base of company information about information systems and services companies have helped many companies in their acquisition processes.

An Effective Combination

INPUT'S Executive Advisory Services are built on an effective combination of research-based studies, client meetings, informative conferences, and continuous client support. Each service is designed to deliver the information you need in the form most useful to you, the client. Executive Advisory Services are composed of *varied combinations of the following products and services:*

Research-Based Studies
Following a proven research methodology, INPUT conducts major research studies throughout each program year. Each year INPUT selects issues of concern to management. Topical reports are prepared and delivered throughout the calendar year.

Information Service Industry Reports
INPUT's Executive Advisory Services address specific issues, competitive environments, and user expenditures relative to:

- Software Products
- Processing Services
- Network Services
- Systems Integration
- Systems Operations
- Professional Services
- Turnkey Systems
- Small-Systems Service
- Third-Party Maintenance
- Large-Systems Service

Industry-Specific Market Reports

Detailed analyses of market trends, forces driving the markets, problems, opportunities, and user expenditures are available for the following sectors:

- Discrete Manufacturing
- Process Manufacturing
- Transportation
- Utilities
- Telecommunications
- Retail Distribution
- Wholesale Distribution
- Banking and Finance
- Insurance
- Medical
- Education
- Business Services
- Consumer Services
- Federal Government
- State and Local Government
- Miscellaneous Industries

Cross-Industry Market Report

A separate analysis covers the following cross-industry application areas:

- Accounting
- Education and Training
- Engineering and Scientific
- Human Resources
- Office Systems
- Planning and Analysis
- Other Cross-Industry Sectors

Hotline: Client Inquiry Services

Inquiries are answered quickly and completely through use of INPUT's Client Hotline. Clients may call any INPUT office (San Francisco, New York, Washington D.C., London, or Paris) during business hours or they may call a voicemail service to place questions after hours. This effective Hotline service is the cornerstone of every INPUT Executive Advisory Service.

The Information Center

One of the largest and most complete collections of information services industry data, the Information Center houses literally thousands of up-to-date files on vendors, industry markets, applications, current/emerging technologies, and more. Clients have complete access to the Information Center. In addition to the information contained in its files, the center maintains an 18-month inventory of over 130 major trade publications, vendor consultant manuals, economic data, government publications, and a variety of important industry documents.

Access to INPUT Professional Staff

Direct access to INPUT's staff, many of whom have more than 20 years of experience in the information industry, provides you with continuous research and planning support. When you buy INPUT, you buy experience and knowledge.

Client Conference

You can attend INPUT's Client Conference. This event addresses the status and future of the information services industry, the competitive environment, important industry trends potentially affecting your business, the impact of new technology and new service offerings, and more.

You will attend with top executives from many of the industry's leading, fastest-growing, and most successful vendor companies—and with top Information Systems (IS) managers from some of the world's most sophisticated user organizations.

On-Site Presentation by INPUT Executives

Many of INPUT's programs offer an informative presentation at your site. Covering the year's research, this session is scheduled at the convenience of the client.

Proprietary Research Service

INPUT conducts proprietary research that meets the unique requirements of an individual client. INPUT's custom research is effectively used:

For Business Planning

Planning for new products, planning for business startups, planning for expansion of an existing business or product line—each plan requires reliable information and analysis to support major decisions. INPUT's dedicated efforts and custom research expertise in business planning ensure comprehensive identification and analysis of the many factors affecting the final decision.

For Acquisition Planning

Successful acquisition and divestiture of information services companies requires reliable information. Through constant contact with information services vendor organizations and continuous tracking of company size, growth, financials, and management "chemistry," INPUT can provide the valuable insight and analysis you need to select the most suitable candidates.

For the Total Acquisition Process

INPUT has the credentials, the data base of company information, and—most importantly—the contacts to assist you with total acquisition and/or partnering relationship processes:

- Due Diligence
- Schedules and Introduction
- Criteria & Definitions
- Retainer and Fee-Based
- Active Search

For Competitive Analysis
Knowing marketing and sales tactics, product capabilities, strategic objectives, competitive postures, and strengths and weaknesses of your competition is as critical as knowing your own. The career experience of INPUT's professionals—coupled with INPUT's collection and maintenance of current financial, strategic, tactical, and operational information about more than 400 active companies—uniquely qualifies INPUT to provide the best competitive information available today.

For Market and Product Analysis
Developing new products and entering new markets involves considerable investment and risk. INPUT regularly conducts research for clients to identify product requirements, market dynamics, and market growth.

More About INPUT...

- More than 5,000 organizations, worldwide, have charted business directions based on INPUT's research and analysis.

- Many clients invest more than $50,000 each year to receive INPUT's recommendations and planning information.

- INPUT regularly conducts proprietary research for some of the largest companies in the world.

- INPUT has developed and maintains one of the most complete information industry libraries in the world (access is granted to all INPUT clients).

- INPUT clients control an estimated 70% of the total information industry market.

- INPUT analyses and forecasts are founded upon years of practical experience, knowledge of historical industry performance, continuous tracking of day-to-day industry events, knowledge of user and vendor plans, and business savvy.

- INPUT analysts accurately predicted the growth of the information services market—at a time when most research organizations deemed it a transient market. INPUT predicted the growth of the microcomputer market in 1980 and accurately forecasted its slowdown in 1984.

For More Information . . .

INPUT offers products and services that can improve productivity, and ultimately profit, in your firm. Please give us a call today. Our representatives will be happy to send you further information on INPUT services or to arrange a formal presentation at your offices.

For details on delivery schedules, client service entitlement, or Hotline support, simply call your nearest INPUT office. Our customer support group will be available to answer your questions.

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Report Quality Evaluation

To our clients:
To ensure that the highest standards of report quality are maintained, INPUT would appreciate your assessment of this report. Please take a moment to provide your evaluation of the usefulness and quality of this study. When complete, simply fold, staple, and drop in the mail. Postage has been pre-paid by INPUT if mailed in the U.S.

Thank You.

1. Report title: ***Systems Operations Management Issues and Practices*** (SOSP2)

2. Please indicate your reason for reading this report:
   - ☐ Required reading
   - ☐ Area of high interest
   - ☐ Area of general interest
   - ☐ New product development
   - ☐ Business/market planning
   - ☐ Product planning
   - ☐ Future purchase decision
   - ☐ Systems planning
   - ☐ Other _____

3. Please indicate extent report used and overall usefulness:

	Extent		Usefulness (1=Low, 5=High)				
	Read	Skimmed	1	2	3	4	5
Executive Overview	☐	☐	☐	☐	☐	☐	☐
Complete report	☐	☐	☐	☐	☐	☐	☐
Part of report (_____ %)	☐	☐	☐	☐	☐	☐	☐

4. How useful were:

	1	2	3	4	5
Data presented	☐	☐	☐	☐	☐
Analyses	☐	☐	☐	☐	☐
Recommendations	☐	☐	☐	☐	☐

5. How useful was the report in these areas:

	1	2	3	4	5
Alert you to new opportunities or approaches	☐	☐	☐	☐	☐
Cover new areas not covered elsewhere	☐	☐	☐	☐	☐
Confirm existing ideas	☐	☐	☐	☐	☐
Meet expectations	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐

6. Which topics in the report were the most useful? Why?_____

_____

7. In what ways could the report have been improved? _____

_____

8. Other comments or suggestions: _____

_____

Name _____ Title _____

Department _____

Company _____

Address _____

City _____ State _____ ZIP _____

Telephone _____ Date completed _____

Thank you for your time and cooperation.

M&S 633/01 12/89

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