
Outsourcing: Directions and Opportunities

Paper 1

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The information systems (IS) outsourcing revolution is spreading. IS expenditures are already over \$12 billion and may exceed \$40 billion in five years. Some of the world's largest companies are participating. This paper is one of a series that provide a strategic assessment of the IS Revolution:

- Outsourcing: Directions and Opportunities
- Outsourcing: Buyers' Perspectives
- Outsourcing: Contracting and Implementation
- Outsourcing: Vendor Characteristics

This series examines the rationale for IS outsourcing; the different types of IS outsourcing (it does not just apply to computer centers!); and the new opportunities in transition management, desktop services, and business operations outsourcing.



Outsourcing: Directions and Opportunities

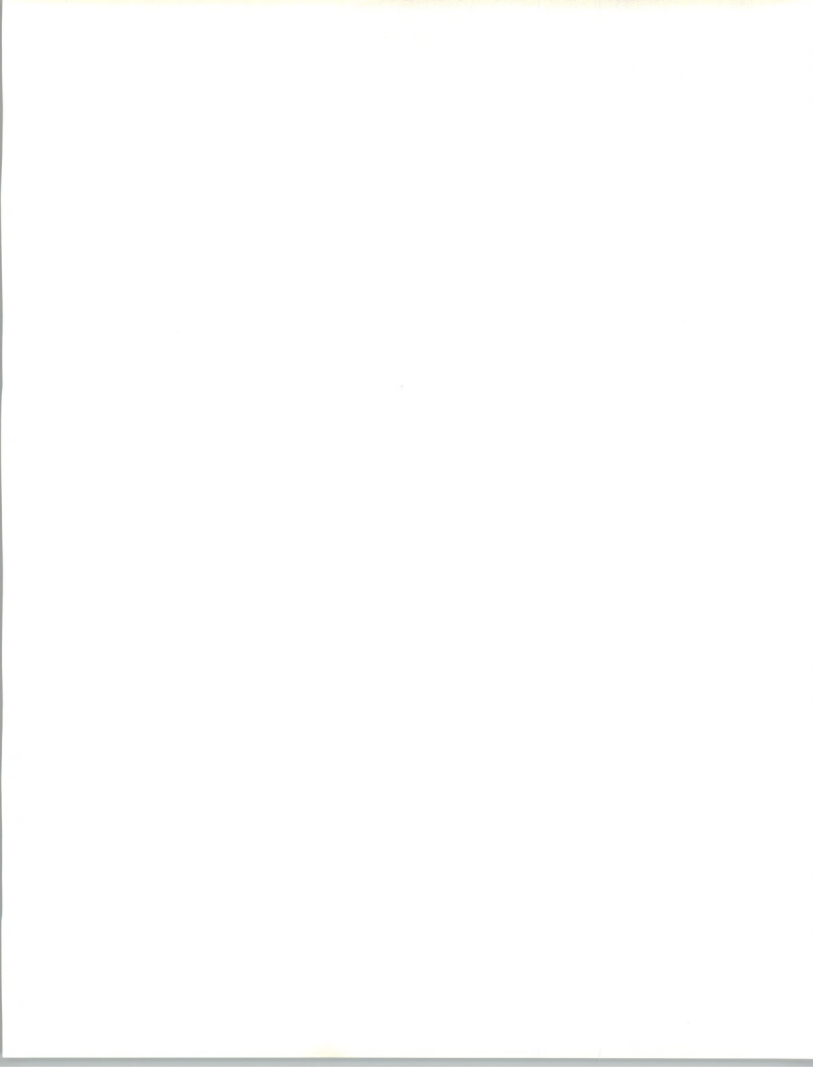
Definitions

IS outsourcing is the contracting of an information system function or process to a vendor on a long-term (at least one year) basis (see Exhibit 1).

EXHIBIT 1

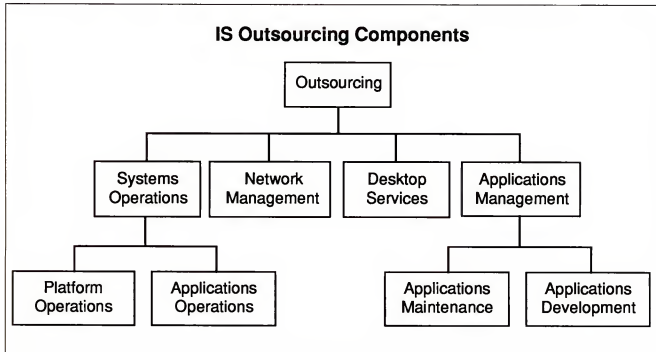
IS Outsourcing Definition

Information systems (IS) outsourcing is the contracting of an IS process or function to an external vendor on a long-term (1+ years) basis.



The various IS outsourcing segments are, as shown in Exhibit 2.

EXHIBIT 2



1. Systems Operations - Contracting to a vendor the information systems operations in either of two ways:

- *Platform Systems Operations* - The vendor is responsible for managing the computer systems and their associated networks.
- *Applications Systems Operations* - The vendor is responsible for developing and/or maintaining a client's applications software as well as operating and managing the computer systems and their associated networks.

2. Network Management - Contracting to a vendor for the operations and management of the computer-related telecommunications network, transmitting data and text, voice, image, and video as required. Voice-only network operations are not part of information systems outsourcing.

3. Desktop Services - Contracting to a vendor for the deployment, maintenance, support, and connectivity of the organization's PC/workstation inventory. The service may also include performing the "help desk" function.

4. Applications Management - The vendor is responsible for the development and maintenance of all the applications systems a client uses to support a business operation.

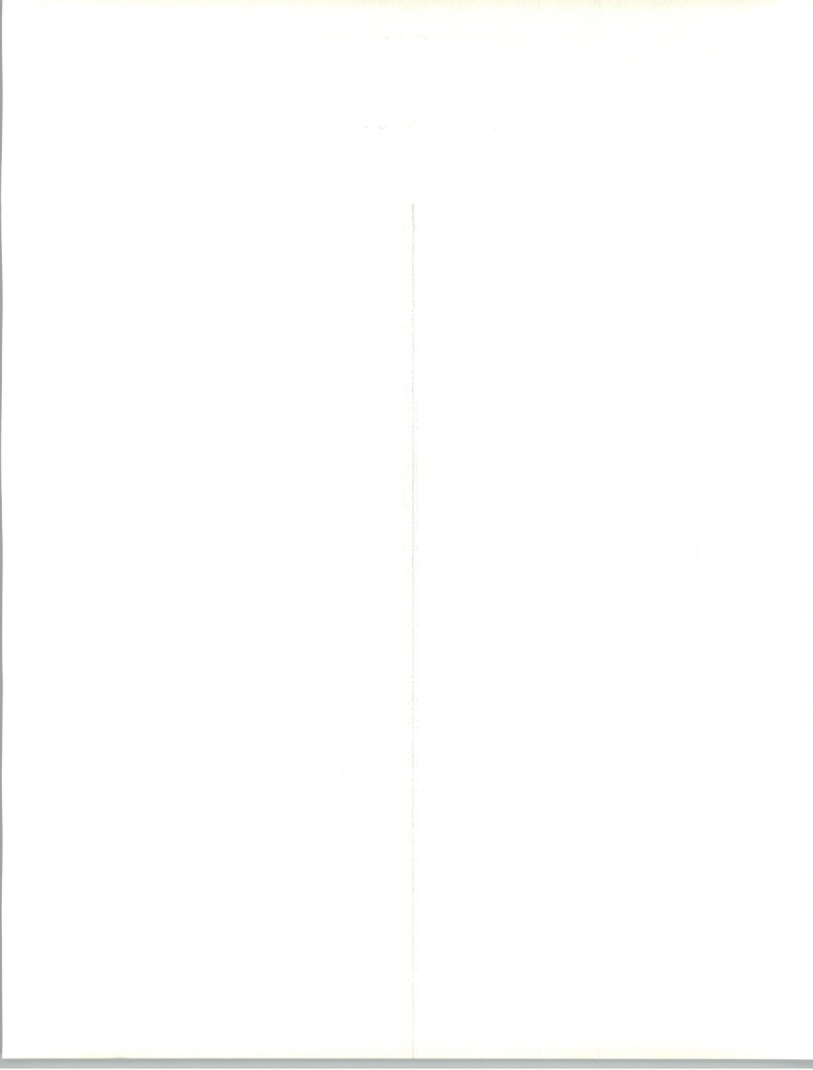
- *Applications Development* - Contracting for the design, development, maintenance and enhancement of new applications software associated with a business operation.
- *Applications Maintenance* - Contracting only for the maintenance of the existing applications software associated with a business operation.

Information systems outsourcing is distinguished from systems integration in the following way: Systems integration is project-oriented, i.e., there is a definable start and end point to the relationship other than the contract period. Systems operations and other forms of outsourcing are process-oriented, i.e., there is a continuing relationship. (See Exhibit 3.)

EXHIBIT 3

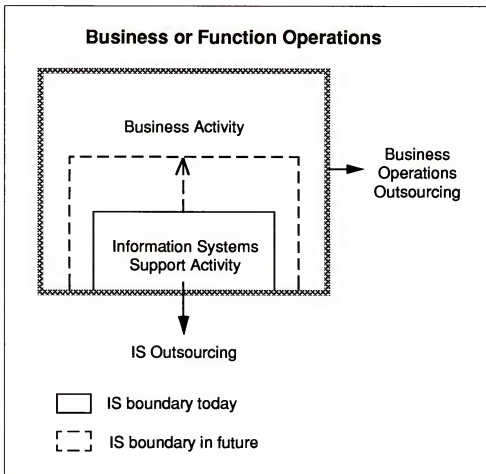
Systems Outsourcing vs. Systems Integration

- Systems outsourcing is *function-* or *process-oriented*
- Systems integration is *project-oriented*



Another area of outsourcing that relates to IS outsourcing is that of business or function operations. As depicted in Exhibit 4, a business activity that encompasses an IS activity can be outsourced. In some cases, the proportion of the business activity that is due to IS can be high as, for example, in credit card operations or airline reservations. In other cases it may be low, as in textile manufacturing.

EXHIBIT 4



When a business function is outsourced it includes the people and other organizational elements as well as IS.

In the 1990s the boundary between "IS" and non-IS inside a business function will be increasingly blurred. This will make the distinction between IS outsourcing and business function outsourcing more difficult to make, and perhaps less relevant.



- *Outsourcing: Buyers' Perspectives*

This study focuses on outsourcing from the buyers' perspective and provides brief case studies covering several types of IS outsourcing. Examples are provided for transition management, applications maintenance, platform systems operations, applications systems operations, and desktop services.

- *Outsourcing: Selecting a Vendor*

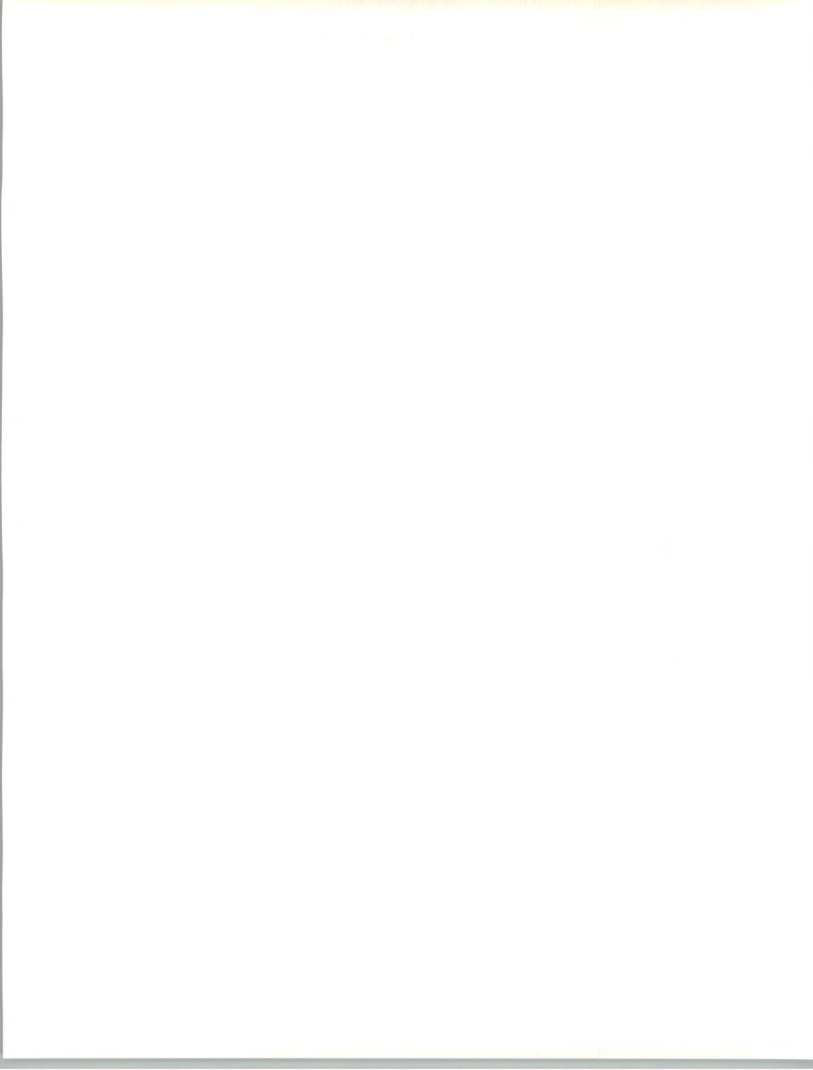
This report characterizes and categorizes vendor strategies and provides a framework for assessing vendor capabilities in various categories of outsourcing. Selected descriptions of individual outsourcing vendors and their capabilities are included.

- *Outsourcing: Successful Contracting and Implementation*

This study addresses the outsourcing decision process and the factors impacting decisions and vendor selection. It presents ideas for managing the partnership. It discusses "insourcing." The last section provides a framework for assessing benefits from outsourcing.

Related Reports and Research Bulletins

Research is being continued and new reports on the subject will be regularly published.





Outsourcing: Directions and Opportunities

Paper 2

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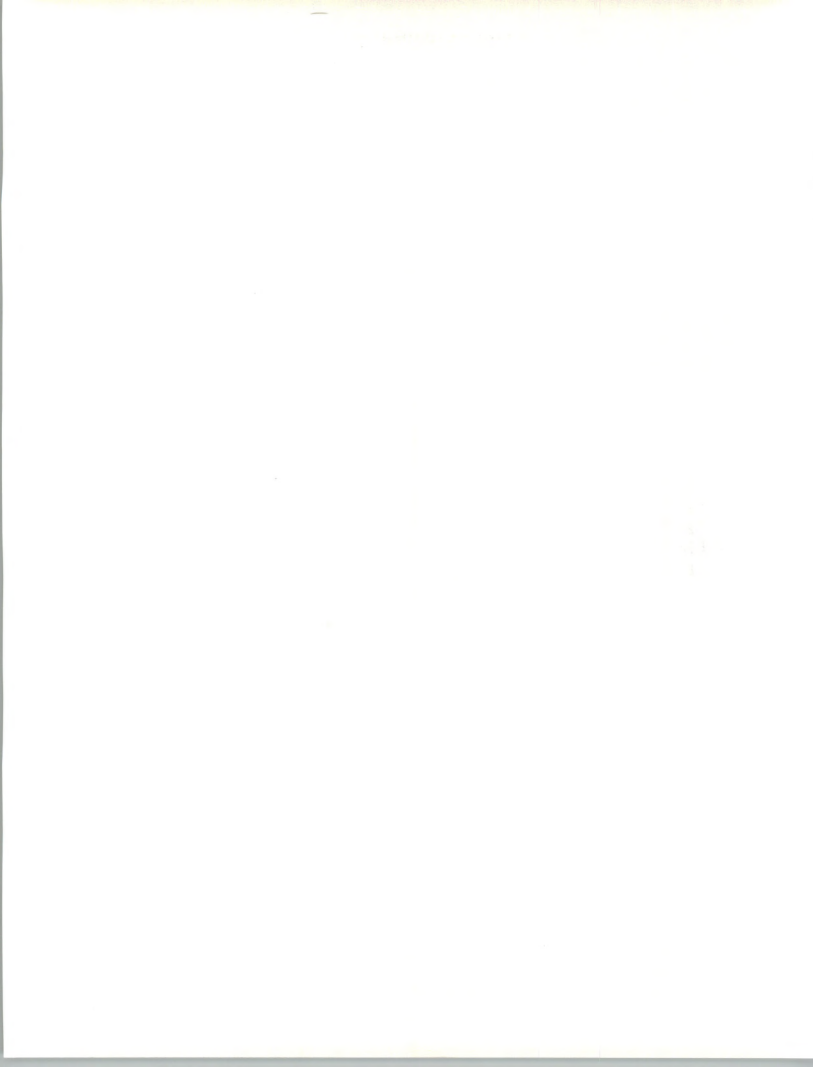
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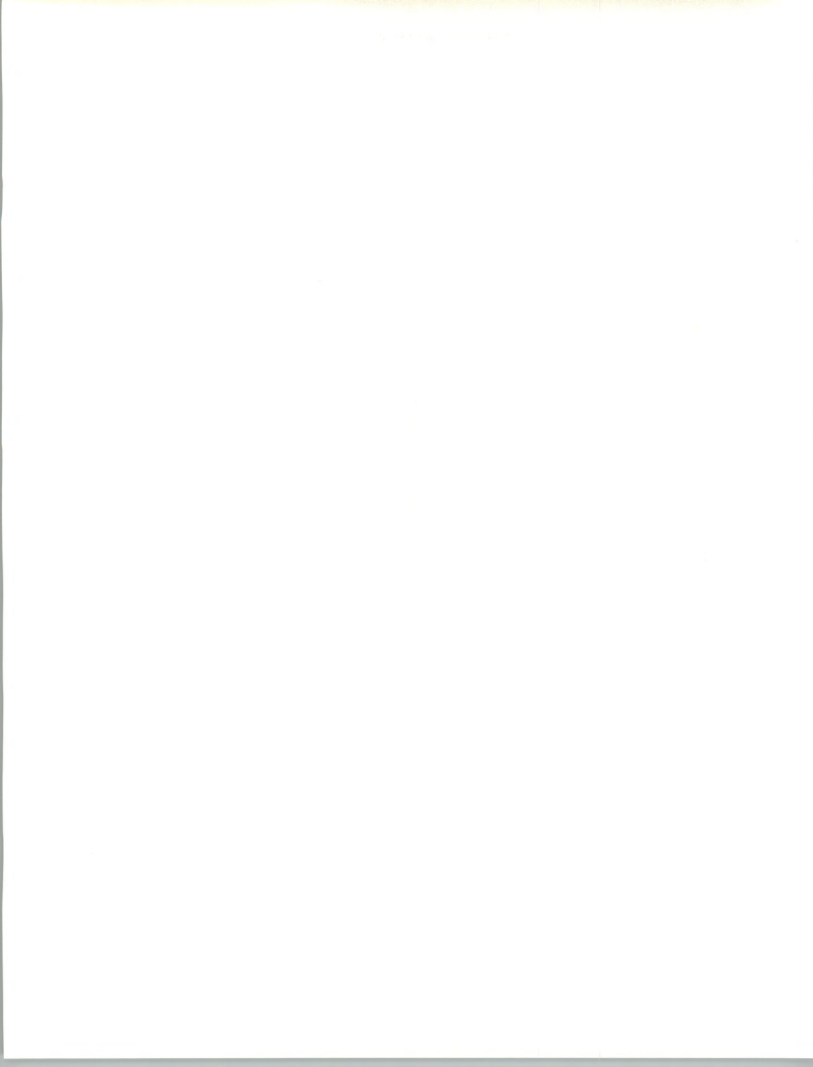
Conclusions

The key conclusions from an analysis of information systems (IS) outsourcing are shown in Exhibit 1:

EXHIBIT 1

IS Outsourcing Directions

- Outsourcing is a revolution in IS use.
- Outsourcing in the 1990s is different.
- Outsourcing offers great opportunities.
- Outsourcing can improve IS response time.
- Outsourcing can help the IS department change its role for the better.
- Outsourcing is being impacted by other IT revolutions.
- IS outsourcing can lead to business operations outsourcing.
- Transition outsourcing is growing rapidly.
- Vendor strategies are shifting in favor of outsourcing.
- Vendor performance is proving to be more than satisfactory.
- The volume of outsourcing activity can only increase.



- There is a revolution in IS outsourcing. For the first time the very largest companies (Sears, United Technologies, Kodak) are outsourcing major parts of their IS functions. The extent of the revolution is unpredictable; it changes relationships as shown in Exhibit 2.

EXHIBIT 2

IS Outsourcing Is Revolutionary

- Change in client thinking about IS
 - New way to do business
 - Vendors deal with users
 - IS unit 'gatekeeper' function disappears
- Changes buying and distribution patterns
- Vendor/client partnerships result
 - Functional responsibility to vendor
 - Increased dependence for clients
 - Increased responsibility and risk for vendor
- Vendor success tied to client success

- There are significant differences in the outsourcing being done today from just a few years ago. Most significant are the following:
 - Breadth of services contracted
 - Inclination to buy from a single vendor



- Magnitude of the professional services content of most outsourcing relationships
- Amount of management responsibility assumed by the outsourcing vendor
- Purpose of outsourcing contracts (see Exhibit 3)
- Length of outsourcing contracts

EXHIBIT 3**Changes in Outsourcing Purpose**

- IS cost reductions still important
- Business reasons more important
- Capital considerations more important
- Skills access more important
- Transition agent much more important

- Outsourcing is more than systems operations—including new and expansive combinations of products and services to provide applications management, transition management, and other services.
- The biggest challenge facing any organization today is response time. An IS organization that continues to do all or most activities by itself may well find difficulty in meeting the response expectations of management. Outsourcing is a tool to meet that expectation.
- The benefits to the information systems function from outsourcing can be many, but most significant is that IS can gain the freedom and ability to play a stronger leadership role.



- The other revolutions in the IS world are impacting outsourcing. Downsizing in particular is creating very large opportunities but is also a distinct threat to established services and vendors. Networking and re-engineering revolutions are also dramatically impacting the outsourcing wave.
- In the past, outsourcing was confined to the continuation of the existing IS architecture and processes. Now it is being regarded as an agent-of-change by which the client can move from the old IS environment to the new one.
- The progressive information systems and services vendors are shifting their strategies to provide broad, flexible products and services to meet outsourcing requirements. These vendors market a combination of professional services, systems operations, applications development, and support—and within vertical industries, focus on applications software and processes as well.
- INPUT's research in the systems operations and systems integration areas is recording better-than-satisfactory vendor performance. Vendors are proving they can provide the products and services on large agreements, provide systems management, and build solid partnership relationships with their clients.
- There is currently very little "fallout" from outsourcing contracts, although some is to be expected because of ill-conceived or ill-structured contracts. Outsourcing is by definition, a change of IS spending approach rather than creation of new spending. A large organization can change \$100 million or \$1 billion a year from internal "IS budget" to external "IS outsourcing" status with a few strokes of a pen!
- As IS and business functions become more integrated there will be many opportunities for IS users to expand their outsourcing relationships to non-IS activities. In this area there will be conflicts with non-IS competitors. This issue must be a significant consideration for organizations considering outsourcing.

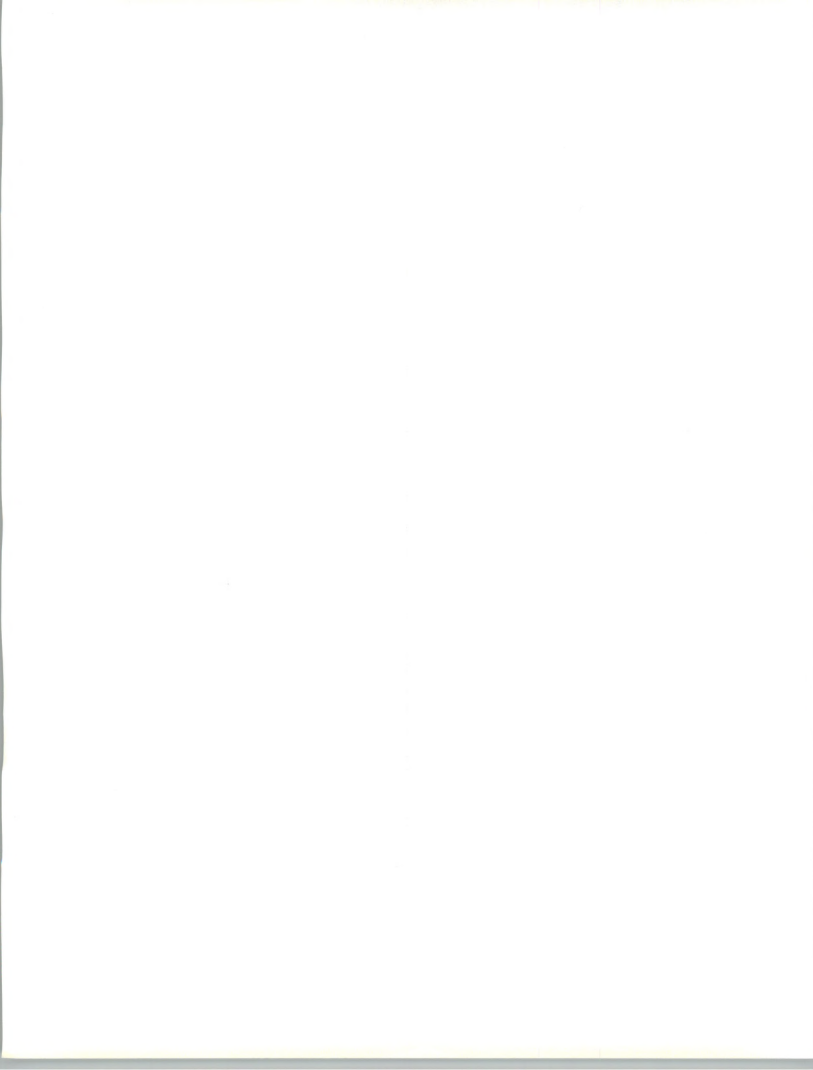
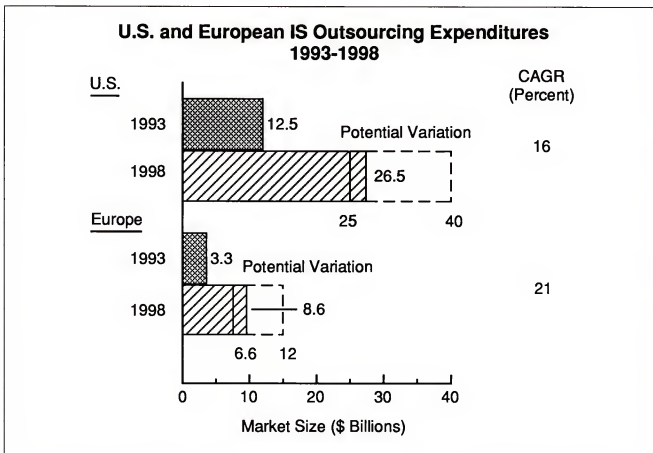


EXHIBIT 4



Recommendations

INPUT's recommendation is simple—consider outsourcing as an alternative for each and every information systems process. Outsourcing can unlock the potential of information systems from restrictions such as limited staff, application development backlog, ignorance of new technology, and lack of management skills.

- Use outsourcing to improve the overall effectiveness of data centers and networks. The result may be reduced costs, capital requirement, and management time and increased user satisfaction.



- Use outsourcing as a solution to the maintenance-versus-new-development dilemma. The result may be a more disciplined maintenance process, which can re-engineer existing systems and save money.
- Use outsourcing as a means to broaden the use of IS in operating units—they pay the bills and should have access to all alternatives.
- Use outsourcing as a means to reorient IS management to higher-level priorities. For example, the data center manager can become the architecture manager.
- Use outsourcing as a means to get the most out of a smaller, more proactive IS organization, or to get rid of many of your IS functions and problems.
- Use outsourcing as a transition vehicle to change the use of IT from a centralized, separate function to a user-owned process.

EXHIBIT 5

Recommendation

**Make outsourcing part
of the
information systems program**

Outsourcing, in the eyes of the progressive IS manager, is an opportunity to speed the change in his/her role from IS operations manager to IT tactician and strategist. Prudent use of outsourcing services can increase the opportunity of success in the short term and facilitate plans for the long term.

Outsourcing does lead to a decline in the role of IS executives as managers of resources. Their real role addresses the future, not the current, use of information technology. No IS executive need fear for his/her role unless the executive is comfortable only with the day-to-day activities of the IS function.

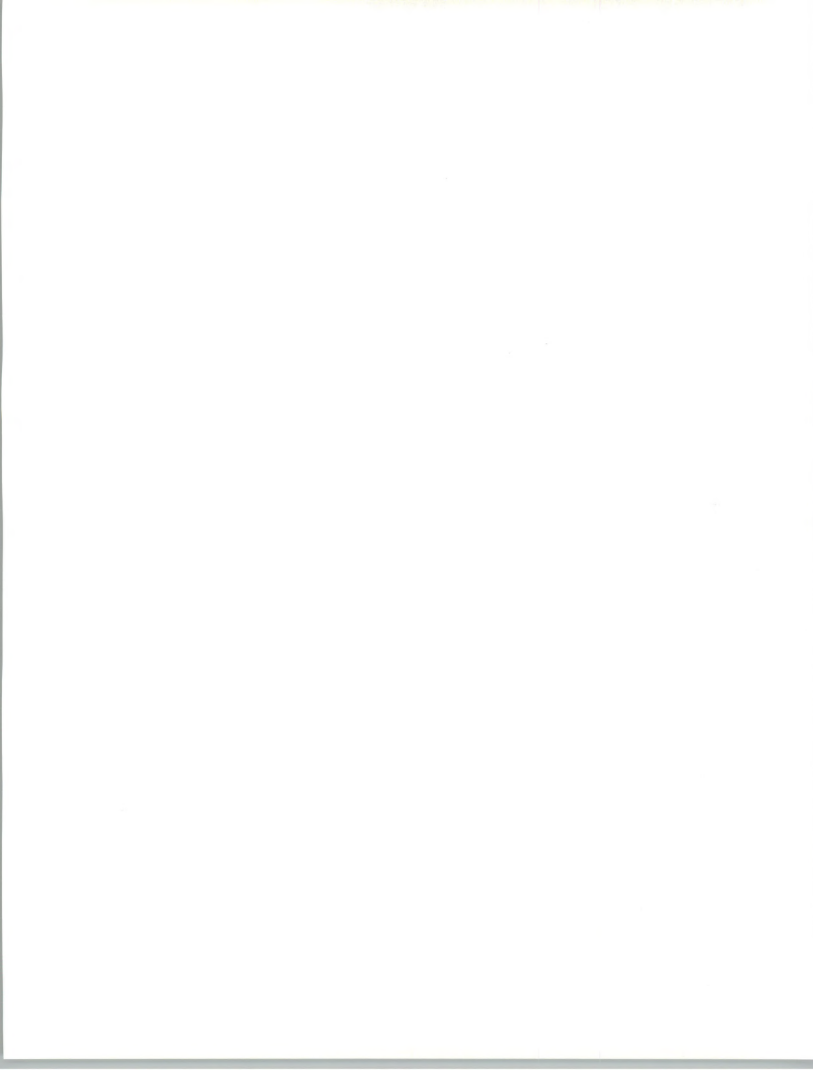


Outsourcing: Directions and Opportunities

Paper 3

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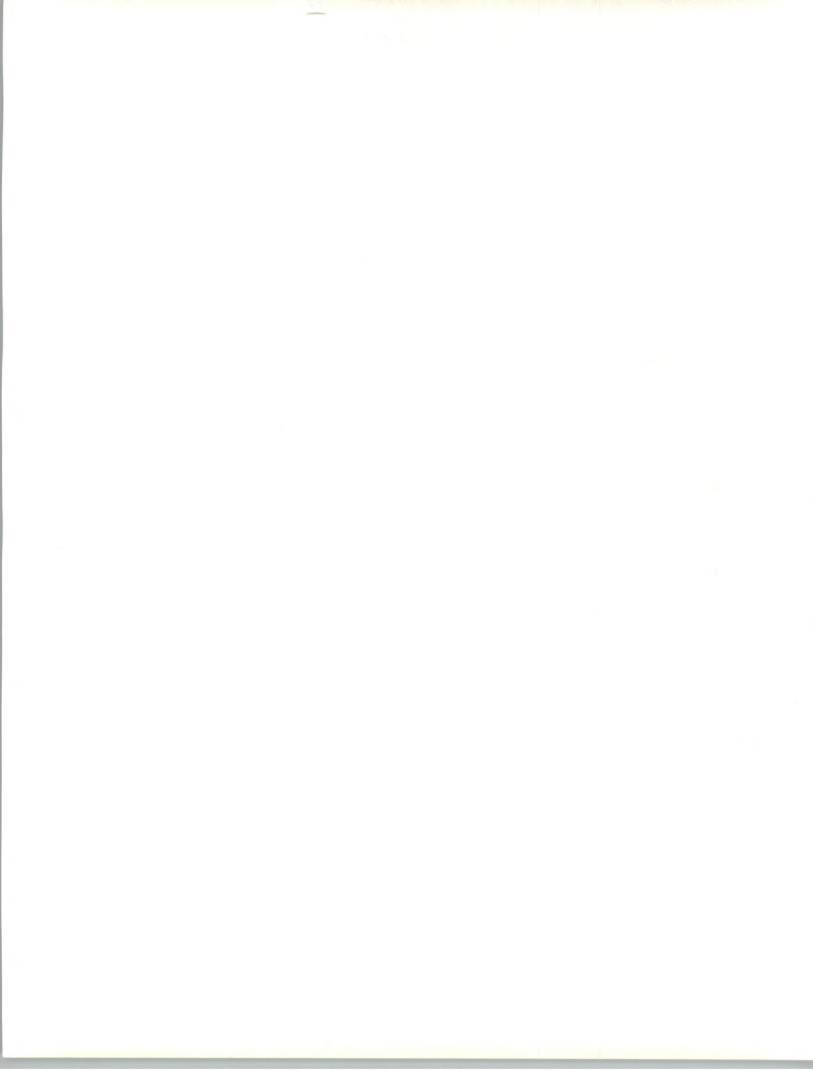
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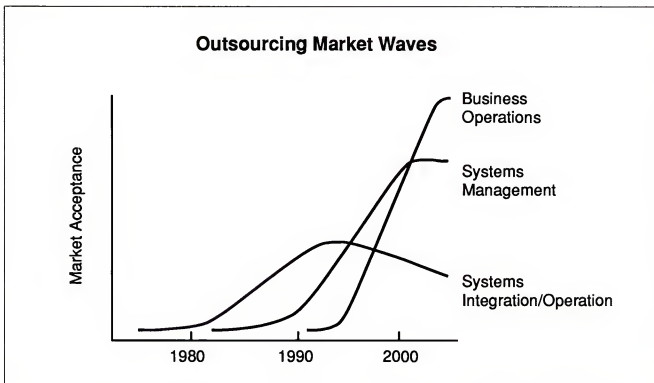


Outsourcing: Directions and Opportunities

Outsourcing Market Waves: Evolution to Business Operations Outsourcing

There are waves of market acceptance of information services, as shown in Exhibit 1.

EXHIBIT 1





Prior to the 1980s buyers generally bought IS components: IS consulting, software development, timesharing, applications software products, computers, telephone lines, etc. They then assembled these components into systems that provided services to their clients: the operating units in companies. The degree of success they achieved was variable.

In the 1980s, increased pressures for success and reduced risk, coupled with more complexity and diversity of systems, caused the growth of commercial systems integration (SI) and then systems operations (SO). This wave started to grow in the 1984-1985 time frame. INPUT introduced systems integration "as the two magic words that will change the industry." Andersen Consulting espoused SI and started strong promotion efforts. This brilliant strategy was a fundamental reason for the emergence of Andersen Consulting as one of the most powerful forces in the IS industry.

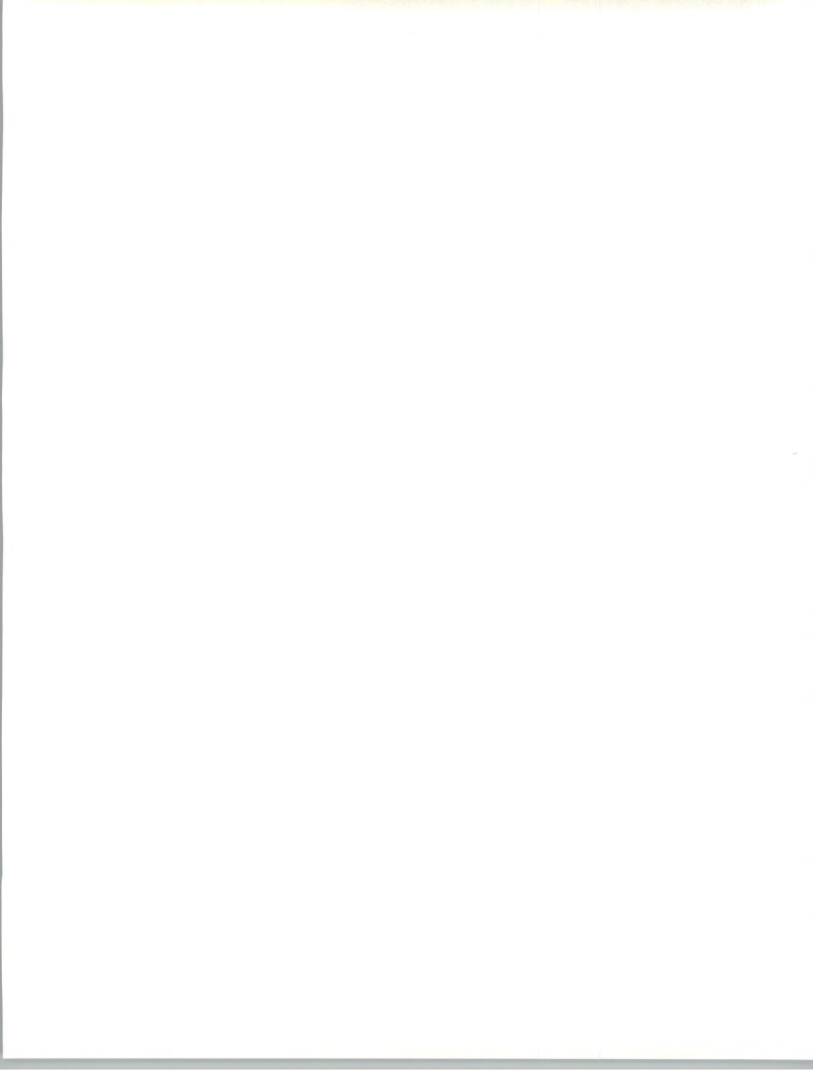
In the late 1980s, SO grew out of facilities management (FM) to be the operational equivalent of systems integration. EDS had always been a leader in the FM business but now found itself joined by powerful competitors, notably IBM.

Again strong pressures of the various kinds discussed earlier combined to drive buyers into sharing responsibility for IS operations with providers instead of managing them on their own.

So the wave of system integration market acceptance as a separable business grew rapidly in the late 1980s. But it has now crested and is receding.

That does not mean that the SI and SO markets are declining. On the contrary they are still growing. But they are being absorbed into the next evolutionary stage, that of systems management (SM).

SI and SO are often still separate procurements. SI is project oriented. SO is process oriented but in the 1980s was often limited to data center and possibly data network management.



In systems management the buyer asks the vendor to take even more responsibility. The buyer expects the vendor to be a full partner in the provision of information systems of all kinds, at all levels in the organization. This is driven by the interaction of the components of the IS process. Historically, development and operations were separate components: mainframe-oriented "central" systems were handled independently of desktop "office" systems; R&D, engineering and/or marketing systems were independent of financial, sales, and production systems. This separability has now disappeared. All these components must work together; they are all changing all the time.

Thus the interaction between the buyer and the vendor is driven to an even larger total package, from system integration to system management. As reported earlier, a greater number of outsourcing contracts are including development, user support, all telecommunications networks, desktop services, and data center operations.

This is systems management—an envelope for all the outsourcing and SI activities. The system management wave builds on the SI and SO wave. It is now taking off. Again Andersen Consulting and EDS are leading the way. Andersen Consulting no longer talks about "systems integration" as its basic service; it now stresses "business integration." Both companies now view SI or SO as only part of the solution. They are both moving strongly in SM and beginning to position themselves for the next wave.

The next wave in the outsourcing market revolution involves a major change in thinking. This is the step from outsourcing information systems activities to outsourcing a business or functional operating unit for a customer, including its IS activity. It is the "business operations" wave, and its drivers, shown in Exhibit 2, are fundamental to the use of outsourcing.



EXHIBIT 2

Drivers to Business Operations Outsourcing

- Required demonstration of effectiveness of vendor products/services
- Integration of IS with business functions
- Customer focus on core value
- IS solutions replaced by business solutions
- Vendor expansion of business opportunity

This is not an easy step for an IS services company to consider. It involves far more responsibility and also dealing with people and organizational issues outside the IS area. Many people are not comfortable with this concept.

In one recent interview with a major information services company, INPUT asked about the skills in manufacturing that it possessed. In some discrete manufacturing industries this company claimed a complete set of skills and capabilities existed within its own organization supplemented by a few consulting partners. It covered product design, manufacturing engineering, shop floor design and management, materials planning and management, quality control, manufacturing resource planning and control, distribution, labor scheduling and reporting, financial management, logistics, etc. Not only did it claim the systems capabilities and knowledge but also the installation, training, and operational management capability.

There was nothing in a manufacturing plant this company claimed it could not deal with. Yet when we asked the vendor if it would consider offering to outsource the operation of a complete manufacturing plant it said, "no!" When we asked why



not, they replied they were not sure they could make it all work! Our reply then was that if they were not sure they could make it work why should any buyer buy any part of their products or service portfolio?

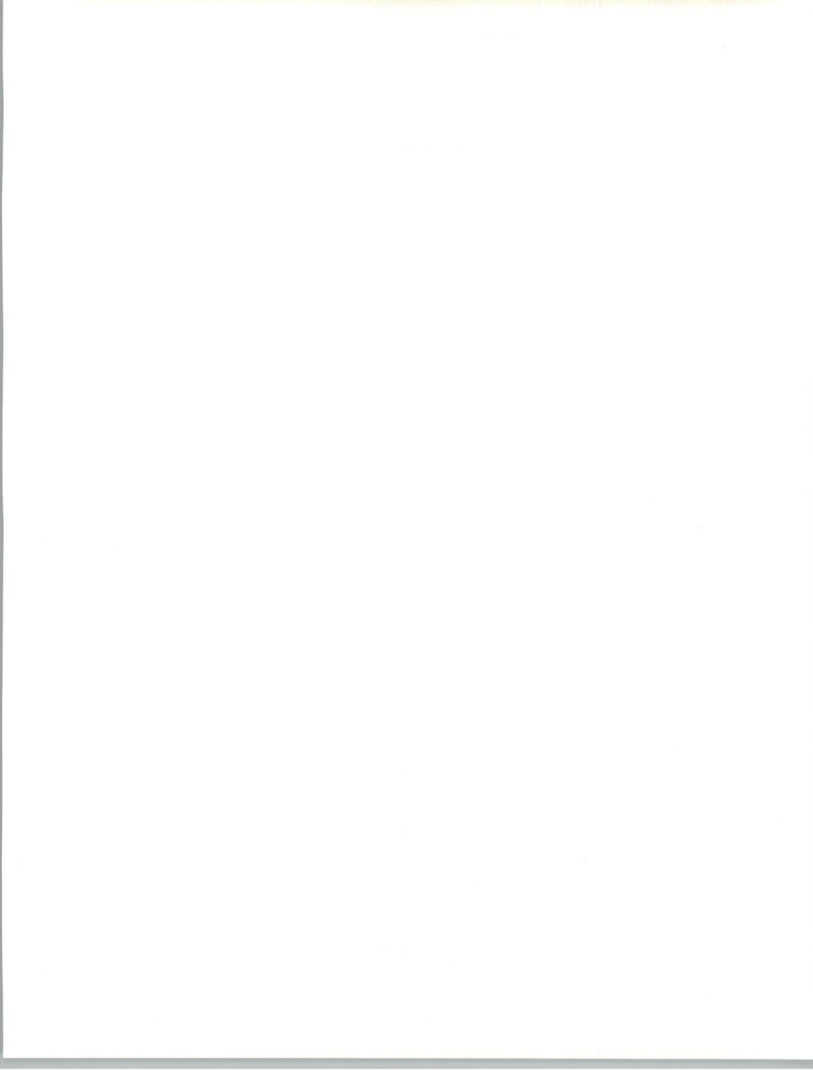
In the 1990s a qualification for consideration as a major IS supplier to any business function will be an ability and willingness to outsource that function. This is the ultimate demonstration of the vendor's belief in the value of its products and services. The customer in most cases will not choose to buy the complete outsourcing service, but the fact that the vendor is prepared to step up to that prospect provides the buyer with the security that

- a) The vendor truly believes in its products and services and is prepared to "put its money where its mouth is," and
- b) It can expand the services and products it uses from the vendor, if necessary, in a seamless manner up to, and including, outsourcing responsibility for the whole operation.

A key driver, then, to business operations outsourcing is the vendors demonstrating the required capability.

Another driver to this outsourcing wave is the increased integration of IS with the business function. IS and functional development and operations are becoming inseparable. Therefore systems management as a separable business will eventually disappear. There may exist a residual market for a computer utility, but this will be commodity—priced with little value added—and in any event will probably be embedded in the network. In the absence of regulatory protection, the telecommunications companies will be the primary suppliers. Certainly this SM wave will last a long time—well into the 2000s. But it will be overtaken by the business operations wave as all such operations become more IS intensive.

The increased customer focus on core value will also drive this wave. Every major company has to choose its most important capabilities and emphasize them. In some cases these may be product creation and design, in others operations efficiency and quality, in yet others distribution and client support, etc.



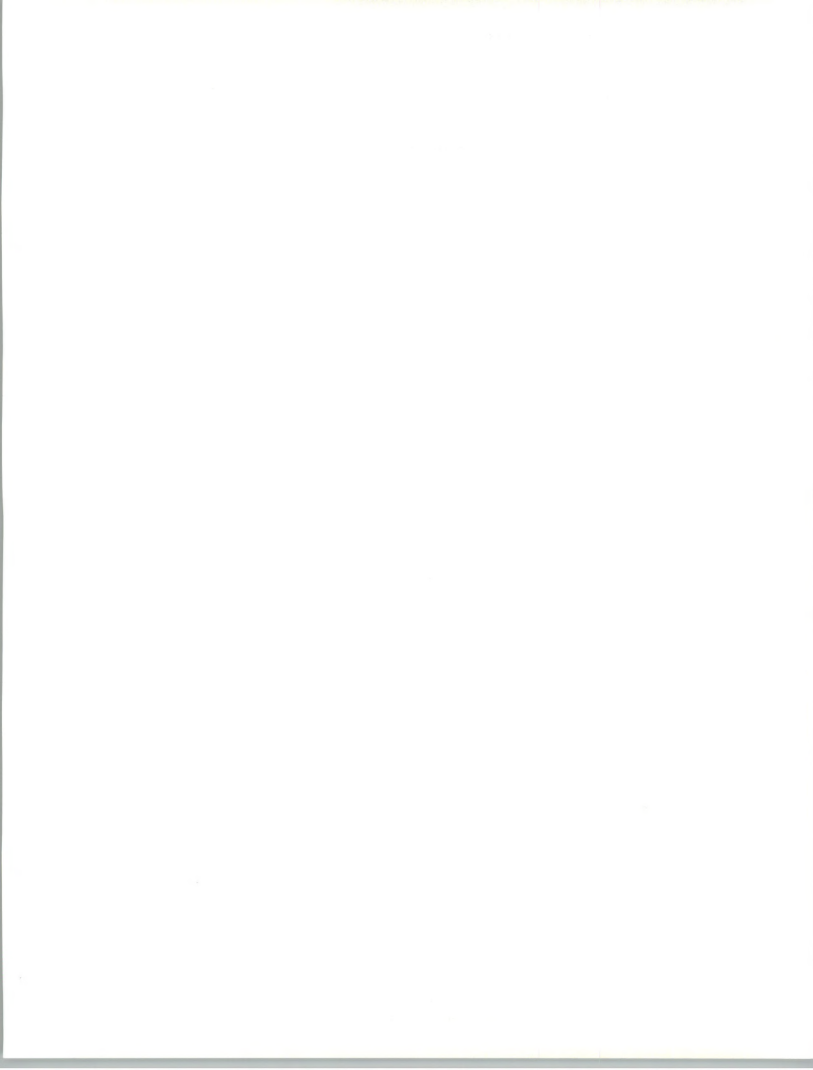
It will not be obvious which core values a given company may select. For example, there are many "manufacturing" companies for whom manufacturing is not a core value. Nike, for example, does very little of its own manufacturing: it is a product creation and marketing company. Cosmetic manufacturers are marketing companies. Apple Computer is primarily a software company.

So it may well be that a manufacturing company would outsource its manufacturing operations to a vendor with a high-level of skill in the integration of IS with manufacturing. A hospital owner would outsource the operation of a hospital to a company with a high-level of skill in the integration of IS and medical technology with hospital operations. An insurance company would outsource its whole claims processing function to a vendor that could integrate image processing with claims evaluation and payment.

In the case of the insurance industry. EDS has been outsourcing business operations for many years. It takes over the complete claims processing activity for Medicaid in a number of states; it employs clerical workers, doctors, and nurses as well as information systems staff. It manages the complete operation.

Of course, this move by IS outsourcing vendors into business or functional operations moves them into different competitive environments. The buyer values will be different. Fundamentally they are not interested in IS results or solutions; they are interested in business results and solutions. This is consistent with the IS/functional integration discussed previously.

The decision process will be particularly tricky for vendors servicing information-intensive industries such as banking and brokerage. At what stage do they get into competition with their clients and become banks or insurance companies? Already companies such as SEI and FPMC are skating on the edge of this conflict.



However, vendors will either have to move forward or backward from the SM position. The attraction of moving forward will be the expanded business opportunity inherent in business operations.

It is simply a question of potential market.

Typically an organization spends between 0.5% (for some process manufacturing companies) to 15% (for some financial institutions) of its costs on IS. But its operating expenses may be 50% to 70% of total costs, excluding sales, G&A, etc. Thus the potential market for business operations that are IS intensive may be 5 to 10 times the size of the IS market serving them.

Thus a company that may award a \$20 million SI contract may be able to award a \$200 million, 10-year SM contract or a \$500 million to \$1 billion business operations outsourcing contract.

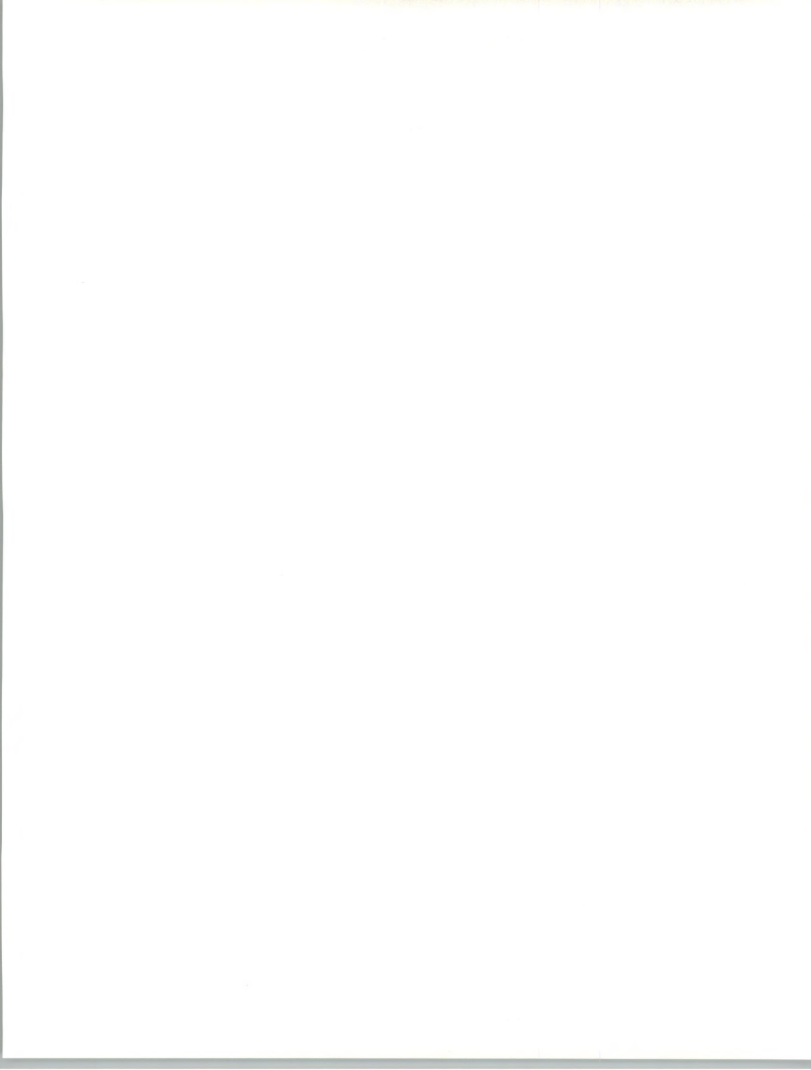
Business Operations Outsourcing in the Health Care Industry

It is commonplace for IS outsourcing vendors to look at their competitors and their activities in industries in which they compete. The purpose of this discussion is to show how IS outsourcing might be regarded in a broader context, at least within this industry sector.

1. IS Outsourcing in Health Care

The relative scale of IS outsourcing to the total industry is quite small: annual systems operations expenditures in the health services are under a billion dollars.

Yet, overall expenditures on health services in the U.S. were over \$670 billion in 1990 over 12% of the GNP in the U.S. They may reach as high as a third of GNP by 2000 if the trend continues.



Major factors affecting the growth of systems operations and other services in this market are listed in Exhibit 3. The most pervasive factor is the pressure to contain costs that is coming from government, business and the insurance industry. However, health care providers are resisting the pressure primarily because their customers are pushing them in the other direction.

EXHIBIT 3

**Health Services
Market Factors**

- Cost containment pressure
- Increasing outpatient services
- New services needed
- Equipment downsizing
- Limited in-house expertise
- Expanded use of services
 - People living longer
 - Better diagnostics
 - Social trends (addiction/AIDs)

One way the industry is adjusting is by the increased use of outpatient services. This trend is being fostered by technology change that makes it possible to provide many more treatments on an outpatient basis. It also has strong business drivers.

These are similar characteristics to those that drive IS outsourcing.



Costs are being driven up by the range of new services that are needed and being provided (AIDs treatment for example) and by increased use of existing treatments (drug addiction and geriatric care). People, after all, are living longer and machines need more maintenance and breakdown more frequently as they age!

In IT terms, downsizing is having an impact particularly in hospitals. However, there is very limited in-house expertise in hospitals to deal with either the old, established systems or the new, downsized systems.

2. Business Operations Outsourcing in Hospitals

These are already business operations contracts to hospitals and have been for some time. Of the nearly 7,000 hospitals in the U.S. some 550 are operated by contract management firms. About half of these are operated by HMC.

HMC provides its client hospitals with full-time support of hospital administrators and controllers as well as a comprehensive range of hospital systems and services, including information systems. Under the direction of a client hospital's governing authority, HMC assumes full responsibility for the hospital's day-to-day operations.

HMC also has a consulting group that works with hospitals that are not business operations clients. These consultants have areas of expertise that include reimbursement assistance, government relations, strategic planning, financing alternative and marketing.

Reasons for hospitals to contract with HMC are listed in Exhibit 4. HMC brings in quality managers to address these needs and supports them with services and staff to address the client's specific weaknesses. As economic pressures have increased, triggered by rapidly changing government regulation and market shifts, hospital boards of directors, generally made up of medical professionals, have found they are not prepared by experience or expertise to cope with these changes. They have also found it extremely difficult to recruit and retain the quality professional managers that even small hospitals now require.

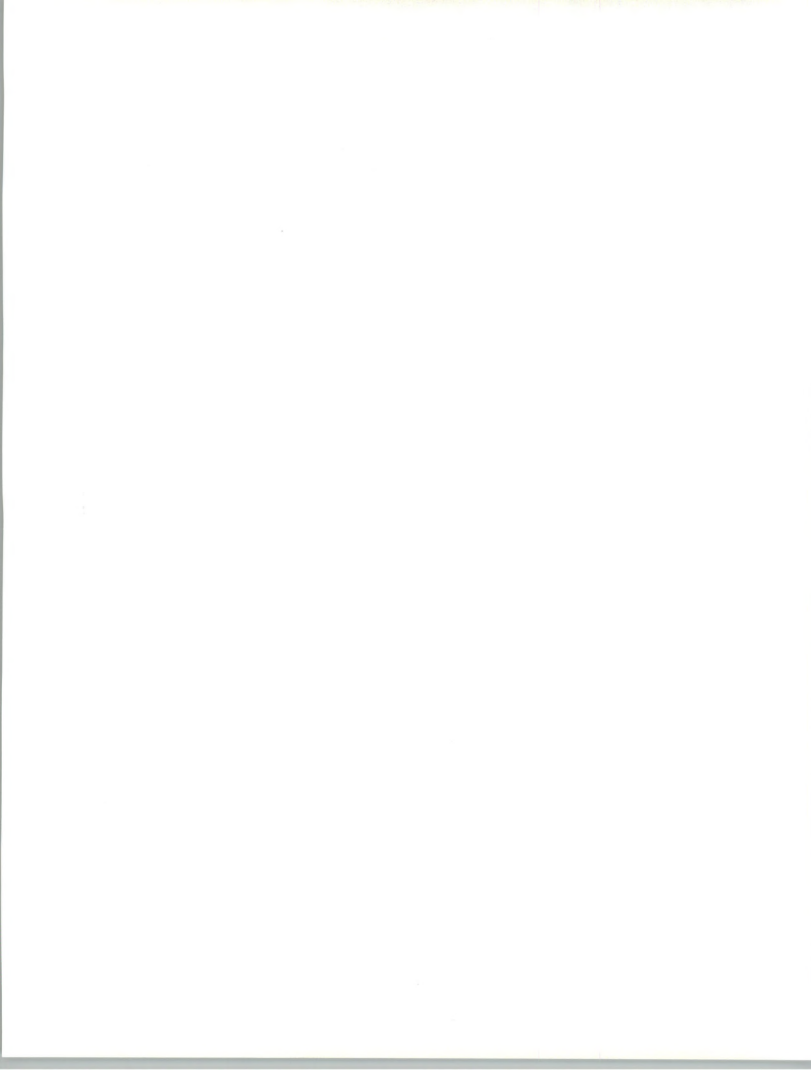


EXHIBIT 4

**Reasons for
Hospital Management Contracting**

- Gain management expertise
- Increase physician recruitment
- Replace administration
- Reduce expenses
- Environmental change

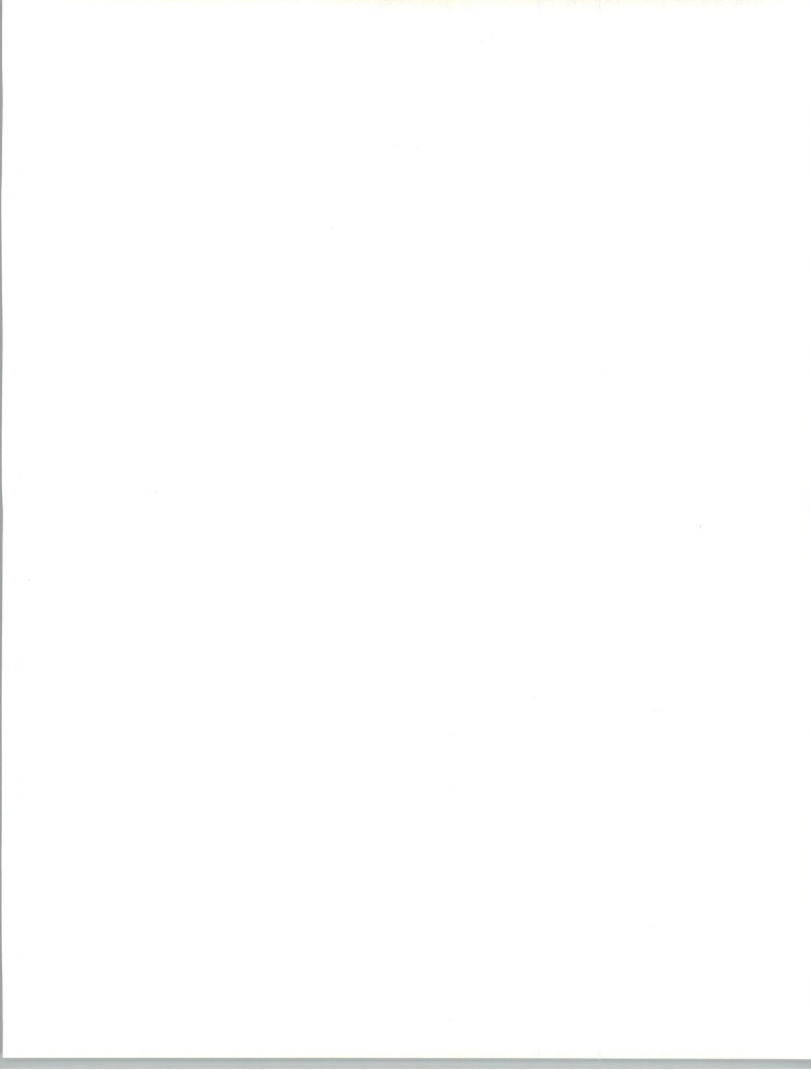
HMC charges a yearly fee for service and typically signs a contract for three to five years. It has a retention rate in excess of 90%. Revenues of the hospitals managed by HMC are over \$4 billion.

Another company that offers management services to acute care hospitals in the U.S. is Quorum Health Group, Inc. Quorum, which had final 1992 revenues of \$173 million, owns four hospitals, manages under contract about 250 hospitals, and provides management services to an additional 190 hospitals.

3. Diagnostic Imaging Outsourcing Services

Individual functions can be outsourced in this industry. One area is that of diagnostic imaging services.

Diagnostic imaging systems facilitate the identification of disease and disorders at an early stage, often minimizing the amount and cost of care needed to stabilize or cure the patient and frequently obviating the need for invasive diagnostic procedures, such as exploratory surgery. Diagnostic imaging systems are based on the ability of energy waves to penetrate human



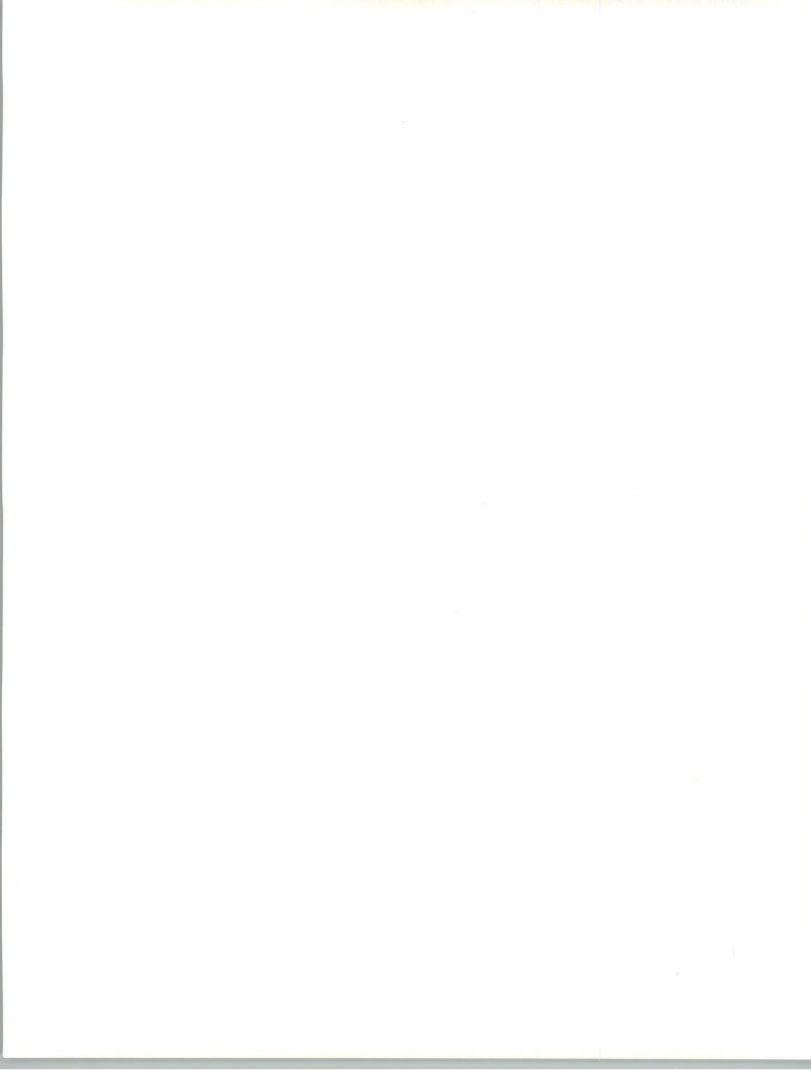
tissue and generate images of the body that can be displayed either on film or on a video monitor. Imaging systems have evolved from conventional x-rays to the advanced technologies of MRI, CT, echocardiography, nuclear medicine and ultrasound.

The diagnostic imaging industry is a \$50 billion a year industry in the U.S.

Imaging systems are highly dependent on computers and sophisticated software to generate the images and enable diagnosticians to view and manipulate them.

During the past ten years, the diagnostic imaging industry has experienced substantial growth as well as a major shift from inpatient- to outpatient-based provision of services. The following trends have contributed to this growth:

- Advances in technology, particularly in the area of MRI and ultrasound applications, have widened the scope of available procedures. In addition, improvements in computer hardware and software, coupled with improvements in the basic MRI hardware, have cut MRI procedure times and have led to an increased capacity of MRI units.
- Cost containment pressures. As the cost of inpatient health care has escalated, both public and private payors have increasingly sought ways for services to be provided on a less expensive basis. Furthermore, changes in Medicare reimbursement policies have resulted in declining profit margins for many hospitals, thereby reducing capital available to purchase new and expensive equipment. Other changes have reduced the amount of capital cost reimbursement available to hospitals, thus reducing incentives to purchase or lease equipment and the ability to pass such costs through to Medicare.
- Growing acceptance of outpatient medical services. Outpatient care has gained increasing acceptance from physicians and patients over the last decade. Outpatient services have proven to be a convenient, cost-effective alternative to hospital care, while maintaining the same level of quality. The growth in the types and volume of outpatient services provided has heightened physician, patient and payor awareness of these services.



The outpatient diagnostic imaging services industry is highly fragmented, with no dominant national imaging services provider. There are an estimated 1,200 freestanding outpatient imaging center in the United States, of which approximately 700 are estimated to be owned by physicians or physician-affiliated entities.

One company in the business, ImageAmerica, provides diagnostic imaging services through 10 diagnostic imaging centers and over 190 other locations in physician's offices, hospitals and medical office buildings. In these latter locations, ImageAmerica is essentially providing outsourcing of certain diagnostic imaging services.

The company has grown, primarily through acquisition from \$13.5 million in revenues in 1989 to over \$52 million in 1991.

This type of computer-based, mission-related outsourcing will increase rapidly in the 1990s.

Outsourcing: Directions and Opportunities

Paper 4

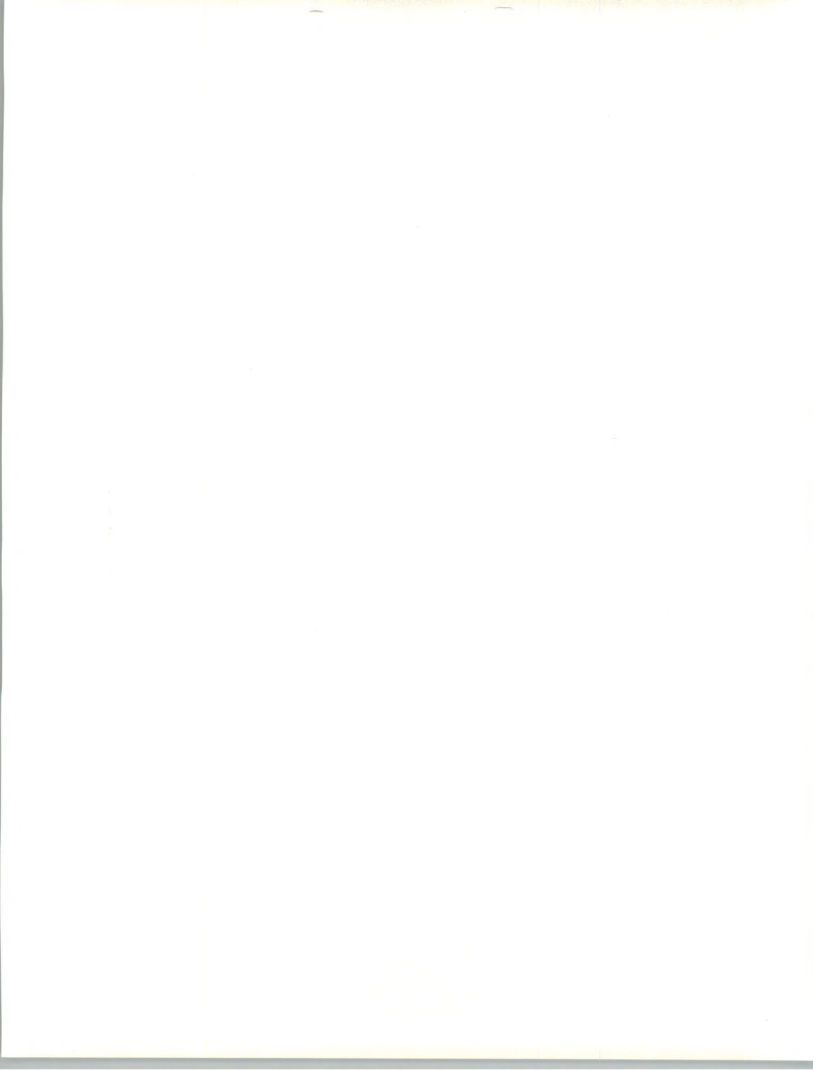
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- Outsourcing: Buyers' Perspectives
- Outsourcing: Contracting and Implementation
- Outsourcing: Vendor Characteristics

This series examines the rationale for IS outsourcing; the different types of IS outsourcing (it does not just apply to computer centers!); and the new opportunities in transition management, desktop services, and business operations outsourcing.



Outsourcing: Directions and Opportunities

Desktop Services Outsourcing

Although long-term business operations outsourcing may have the biggest impact, perhaps the most significant trend in outsourcing today is in desktop services (DTS).

EXHIBIT 1

Elements of Desktop Services

- Equipment and software product purchasing
- PC/workstation maintenance
- PC/workstation software management
- Client/server management
- LAN management
- LAN/WAN interface management
- Distributed database support
- "Help desk" functions
- User training and support



Open systems and downsizing are factors that have a considerable impact in this area. Downsizing is now the solution of choice to many information systems problems. Cost pressures and technological breakthroughs are making it attractive and practical to shift many applications from a large platform to a smaller one. That may mean from a mainframe to a minicomputer, a minicomputer to a microcomputer, or directly from a mainframe to a microcomputer.

Outsourcing vendors appear to have found at least one way to turn this phenomenon to their advantage. The major vendors are providing desktop services as part of their product offerings, together with, or separate from, their traditional outsourcing services.

The problem is that in "downsizing" and distributing a computer system through an organization, organizations actually may be increasing the total cost of information system. And this new environment has not been managed before, internally or externally. A combination of user computing (hitherto largely decentralized) and central systems skills are necessary, including

- Logistics support—"roll-in/roll-out" of hardware and software. Who has what systems in what configuration? This data needs to be available to a support organization that can assist the user.
- Help function—at the technical and application level on a continuing basis, includes databases of problem occurrence and solution.
- Implementation and conversion—including site preparation, cabling, power supply, ergonomic design, and other capabilities.
- Training and education in basic skills and customer-specific skills.



- Equipment, network, and software selection, purchase, and distribution. At this time much of this activity has either been centralized (from a standards and procurement viewpoint) or provided by a vendor (often local retailers working with the local unit). A key element has been testing and "burn-in" of components.
- Handling of systems upgrades; this is a very difficult process in most companies because of the variety of platforms used.

Organizations are attempting to connect the multiple systems they have in user hands. Often without sound justification, it must be said. This involves substantial investment. After all 10,000 PC's or workstations cost, fully configured, perhaps \$50 million, and by the time they are "rolled out" they are at different levels of "currency" (in technical features). It's like painting the Golden Gate Bridge: by the time you finish you have to start again.

Security is an additional feature of such a service. Organizations that are moving into the network world do not recognize adequately their exposure to viruses and other potential problems.

There is not an analog in human society for the type of structures we are building with these computer networks. The devices attached are not like TV sets, washing machines, or anything else because they have the power to feed back into the community and to change it. Furthermore, their use is not static—it is constantly evolving.

Certainly the IS organization, particularly user computing units, have some of the skills to support the new environment. However, they may not be the "vendor of choice" in the eyes of the user department. Also it is the area most fraught with potential for complaints and unpredictable demands. After all, who does a senior executive call when their computer won't work? The IS department!



This issue is critical. The user on a PC in a downsized environment is much less sophisticated than the technical people involved in mainframe applications. Yet their needs may be just as important. They are also, by definition, more diversified by geography, experience, age, knowledge, and interest.

Therefore many IS and user departments will be quite willing to use a third party with expertise. Users themselves are not enthralled by the prospects of setting up their own IS organizations to provide the support their downsized client/server systems need. But they are learning that there are significant responsibilities and needs entailed by the new IS environment.

As users attempt to integrate the heterogeneous collection of systems by age, platform type, and capability that exist in their organizations they should consider major service contracts.

The need for these services will grow rapidly both here and in Europe. Japan and other country markets will react more slowly. In future the largest suppliers of PC and LAN products to corporations may be DTS vendors. They will not just supply service but also equipment and software.

As they penetrate this market, the larger companies may, if they are not already, become PC "manufacturers." Since most PCs are based on standard components (motherboards, power supplies, disk drives, screens, controllers, chassis, etc.), it is a relatively simple matter for these organizations to have systems assembled to their and their customers' specifications, thus cutting out intervening distribution channels. Maintenance will be the same as for systems from standard computer suppliers. These DTS vendors do not need the manufacturers' support and help-desk functions; they provide them to clients. Also, they already have to test and burn-in software and accessories.



1. Examples of Desktop Services Contracts

Exhibit 2 lists several examples of outsourcing contracts for desktop services or with a large desktop service component.

EXHIBIT 2

Examples of Desktop Services Contracts

- Businessland (JWP)/Kodak
- DEC/Blockbuster
- EDS/GE
- EDS/Army (SMC)
- EDS/Atlantic Richfield
- ISSC/Zale
- P&P/ICI (U.K.)
- P&P/Unilever (U.K.)
- Raet (ICG)/Rabobank (Netherlands)

One of the first outsourcing contracts for desktop services was Businessland's agreement with Kodak to provide all PC needs for all of Kodak's locations nationwide. It was negotiated just after the IBM and DEC outsourcing contracts, so it has been in operation since late 1989. Reports are that the relationship has been successful for both parties.

DEC won a contract with Blockbuster Video in 1990 that gave DEC responsibility for all new installations and implementations, as the fast-growing video store chain expands its operations in the U.S. and Europe. DEC maintains the inventory of



equipment, and is responsible for the shipping, burn-in, help-desk support, and training of the store owners. This contract is an example of international outsourcing that requires a company with the international presence of DEC to execute.

EDS cut its teeth in desktop services with the large SMC contract with the U.S. Army. The high volumes and tight schedules required careful management of assets over a wide range of locations and operating environments. EDS has another much smaller contract to provide this type of service to Atlantic Richfield in the commercial arena. But it was the GE contract, announced in late December 1991, that turned heads and made other vendors take notice of the potential of this segment of the outsourcing market. The GE arrangement, involving up to 90,000 PCs, is estimated to be worth over \$500 million over the five-year term of the contract. It is an outsourcing contract solely for desktop services. It includes the setting of standards of PCs throughout GE, the central procurement function, user support, and equipment installation.

A significant benefit for EDS is that it already provides desktop services to GM, thus giving it a large base of skill, knowledge, and capability to support its market activities.

Desktop services are not always standalone outsourcing contracts, but can be part of a larger contract. Although not much noticed, ISSC is responsible for 16,000 PCs in the Zale Corp. contract. INPUT believes that this will be the evolving pattern; namely, that desktop services will be included as another service outsourcing vendors provide as part of a comprehensive contract.

P&P's contract with ICI (about \$20 million per year) involved the transfer of 90 staff. Two other contracts with Unilever and TSB (a large bank) involved the transfer of 12 and 23 people, respectively. P&P was originally a distributor of microcomputer products that established a dealership targeting the Times Top 100 companies in the U.K.



It has expanded from this base into the DTS market. One of its major strengths is its portfolio of 9,000 software and hardware products in the PC and UNIX environment, each of which it claims to have evaluated.

Raet is a member of the ICG Group which was founded as a joint venture among three PC dealers and has expanded its coverage to 10 European Countries. The ICG Group had 1990 revenues of \$1.6 billion. Several other group members have substantial DTS contracts.

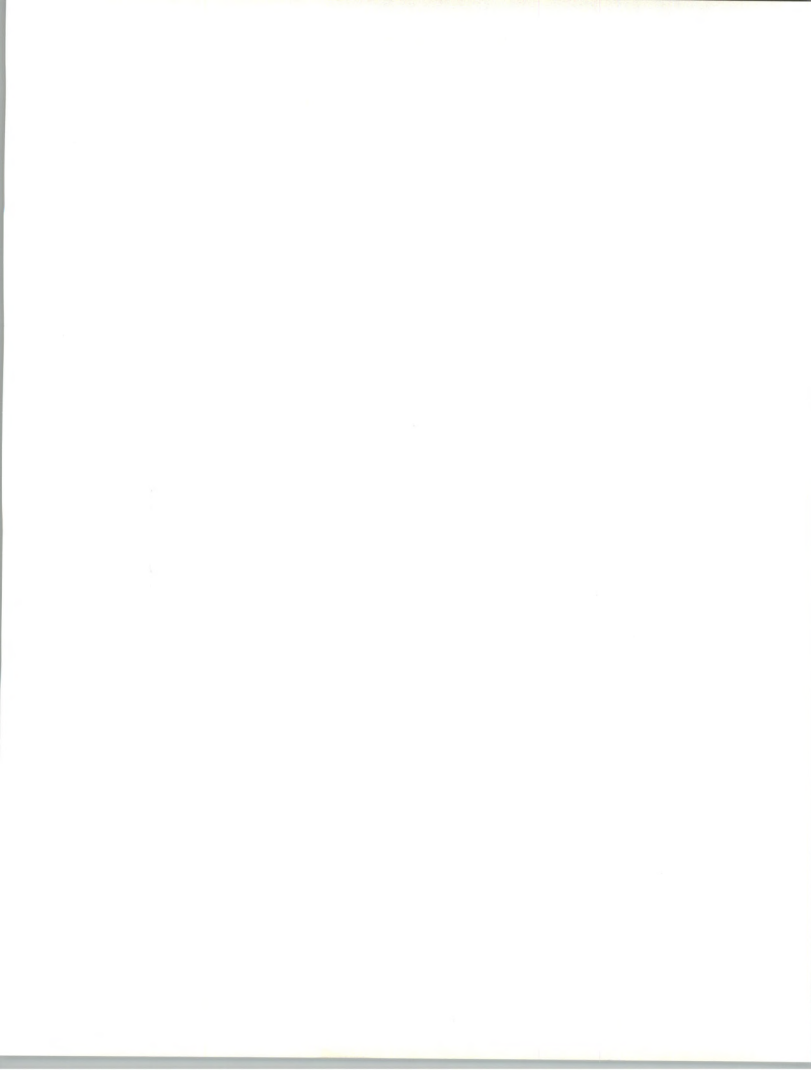
2. DTS Vendors

Some of the current outsourcing vendors are better prepared to provide desktop services than others. Obviously, EDS and DEC are demonstrating that they can do it now. ISSC certainly has the resources to operate in this market segment.

In its recent reorganization and restructuring, SHL Systemhouse has created a strong unit that can take advantage of the Computerland stores it owns in Canada and elsewhere to address the desktop services needs of its clients. Systemhouse is particularly well positioned to prosper in this market.

Bell Atlantic already has a strong reputation in the third-party maintenance and support market and can successfully leverage this into a number of outsourcing contracts. It has been looking at the outsourcing market in general for some time but has yet to penetrate any segment.

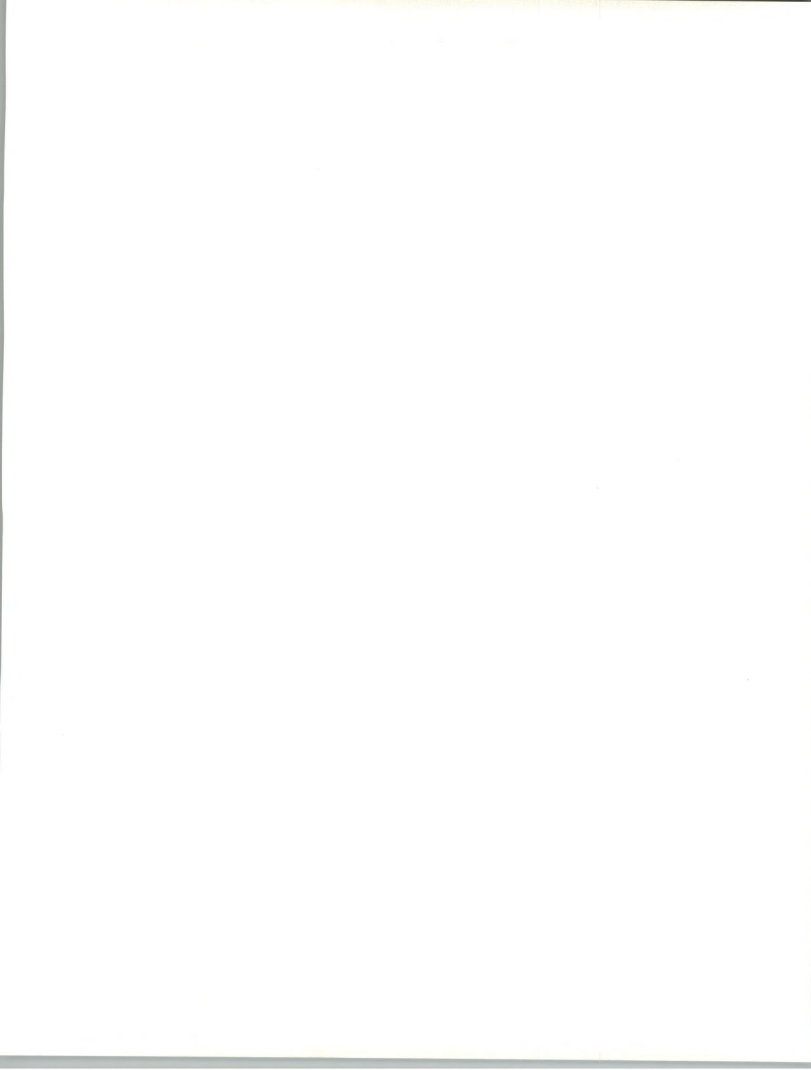
Integris has publicly stated that it is concentrating on the systems integration market exclusively, and its market strategies and recent contract awards reflect this orientation. Yet it has a wealth of resources and management skills from the hardware marketplace that could be productively applied to providing desktop services.



In the U.S., the traditional systems operations vendors like EDS are having some success in the desktop services market. In Europe, the major contracts are currently being won by the large personal computer dealers such as P&P and members of the International Computer Group, like Raet and Comptacenter. These organizations offer users a breadth and depth of systems and applications software product support capability that other vendors have difficulty matching. In addition, if the user is also seeking a single source of product supply and support, the dealers have a significantly stronger product supply capability.

Indeed, the desktop services market will be a very competitive one, because in addition to the activities of the dealers and outsourcing services vendors, this opportunity will also be targeted by third-party maintenance organizations and equipment manufacturers such as Digital and Unisys.

The emergence of desktop services will lead to significant restructuring within the outsourcing market. The traditional outsourcing vendors with their mainframe and proprietary midrange capabilities need access to the personal computer and open systems capabilities of the dealers. Similarly, the dealers recognize that many major outsourcing contracts require both desktop and large system capabilities to provide full service to the client. Major desktop services contracts have been awarded separately from any mainframe or midrange contracts. However, there is clearly a major opportunity for vendors that can effectively combine these offerings.



3. Benefits of Desktop Services

The benefits of outsourcing desktop services perceived by users are shown in Exhibit 3.

EXHIBIT 3

Benefits of Desktop Services

- Clients regain control over PCs
- Management shifts to vendor
- Expenses are predictable
- Enhancements easier to implement
- Standards are a by-product

- A key benefit is that clients gain control over their IS infrastructure. By using a third party, clients avoid some of the "turf" conflicts between IS and users that have plagued the PC world.
- Management of the environment shifts to the vendor who has responsibility for forward planning and control as well as the day-to-day operations of the infrastructure. An important component of this process is the ability of the DTS vendor to
 - a) Evaluate the "upstream" flow of products so that DTS plans can be constructed accordingly; choosing the appropriate operating system environment is a good example of the importance of this activity.
 - b) Test products in a laboratory to determine performance characteristics before distributing to clients; particularly important in this regard is the interaction among products in the client's operating environment.



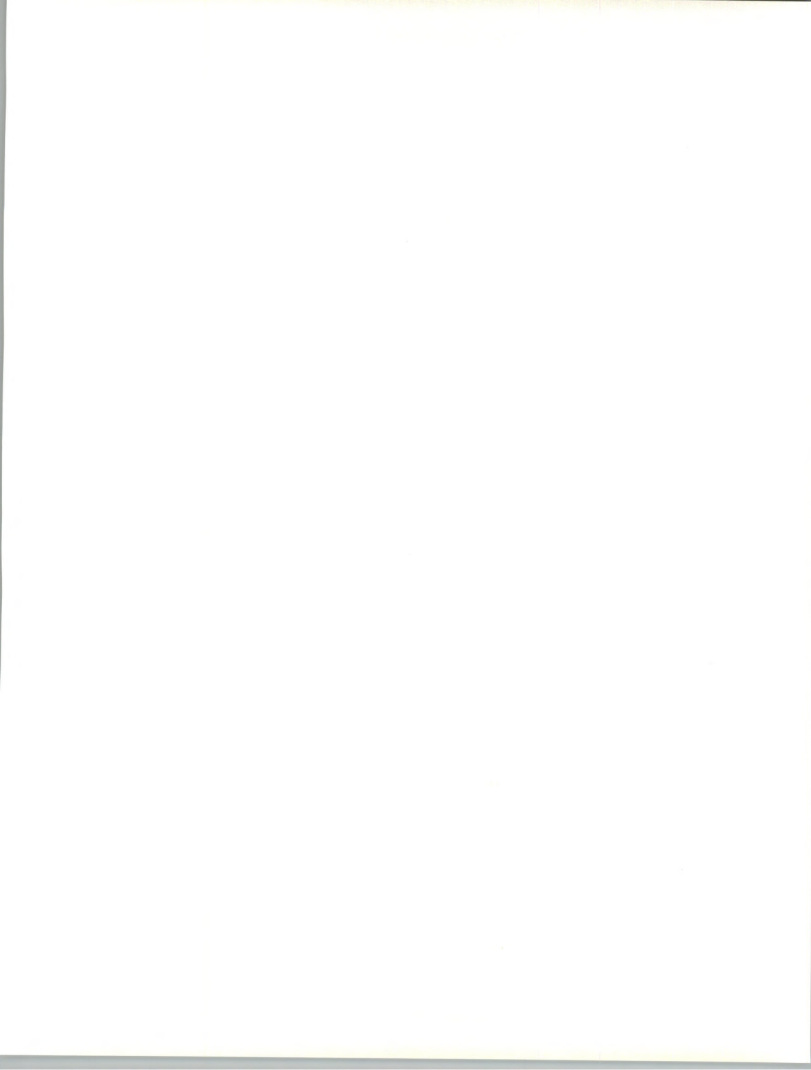
- Expenses associated with the desktop environment become controlled and predictable. Management processes are installed.
- As a consequence of the logistics management systems and disciplines put in place by the vendors, enhancements become easier to install and implement. Understanding the characteristics of target systems before starting a roll-out, substantially improves the probability of success.
- Standards for applications systems, software, and communications are a by-product of this process. Often this is the only way to ensure they are developed and followed.

Noteworthy by its omission is any reference to cost savings. This is very difficult to measure since there is very little data in organizations on actual costs of DTS. One of the tasks of many DTS vendors is to determine these costs.

4. Desktop Services Conclusions

In conclusion, desktop services is the newest and fastest growing trend in IS outsourcing.

- It has very high growth potential since for the following reasons:
 - a) There are more opportunities today in the downsized than in the mainframe world
 - b) Often neither IS units nor user departments want to set up the necessary resources and infrastructure to support the growth in user, client/server, downsized operations.
 - c) The potential for expansion is large since these systems actually operate in the user's environment.



- Downsizing is definitely driving the market and this revolution will continue. The technology trends all support continued dramatic, price-performance improvements in all aspects of desktop products. And the demand by users for control of their IS destiny will increase.
- Many of the technology changes in associated fields will become interfaced with computers at the desktop, not the mainframe, level. Developments in areas such as multimedia, video/ display integration, TV/display integration, image processing, optical storage, global positioning systems (GPS), cellular communications, natural language interfaces, object-oriented processing are all affecting the desktop and mobile systems. This is a very "high-tech" segment of the industry with rapid and important changes.

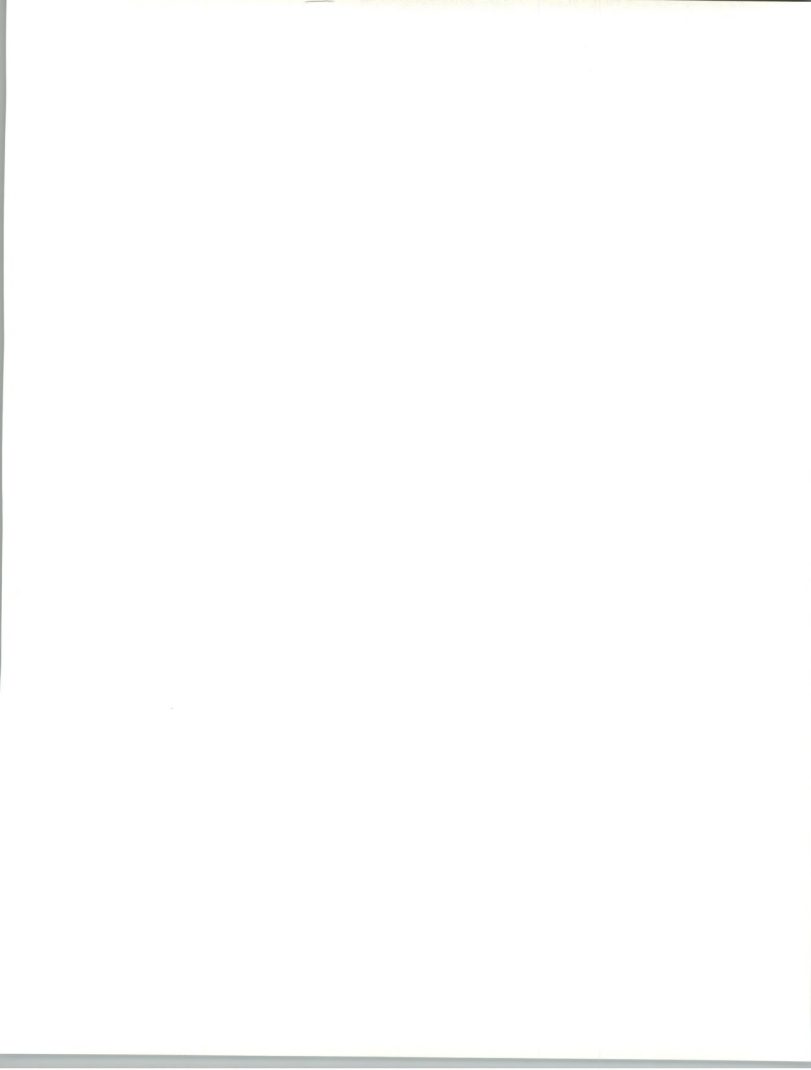
Exhibit 4 summarizes these aspects of DTS outsourcing.

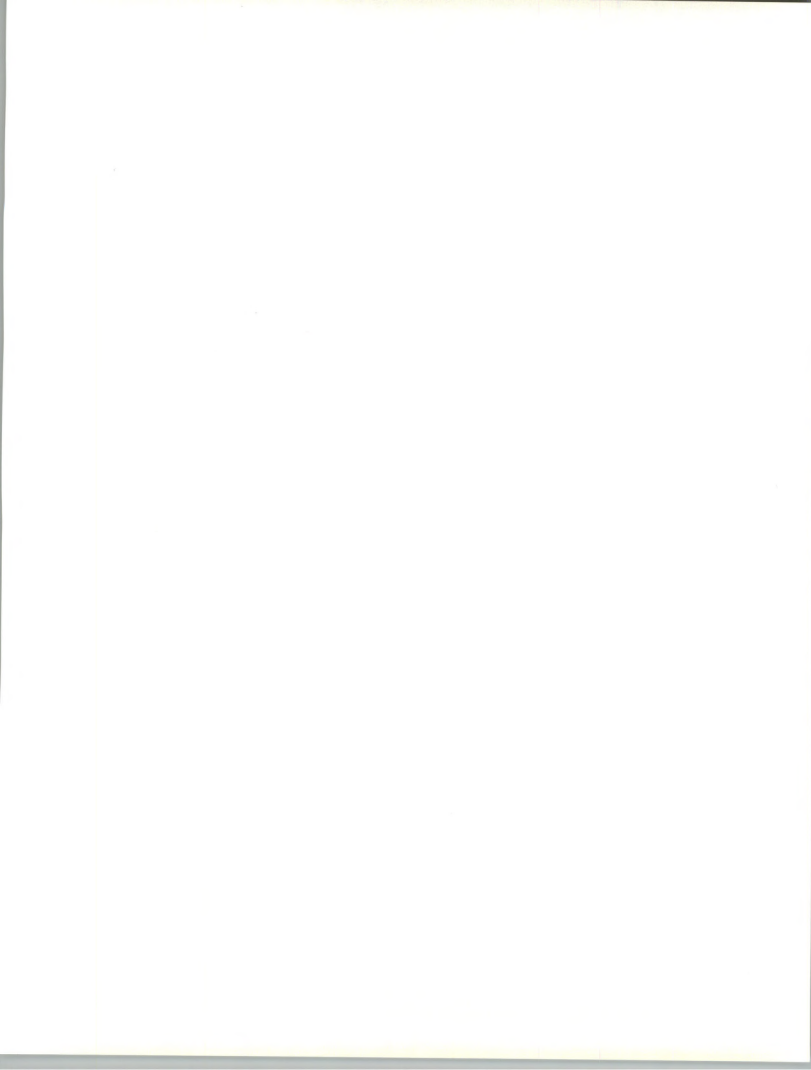
EXHIBIT 4

**Desktop Services
Conclusions**

- Newest phase of outsourcing market
- High growth potential
- Driven by downsizing pressure
- High technology content

The problem and the opportunity is the application of these technologies in effective, economic ways. Users should look for DTS vendors who can deal with their mainframe, network, and desktop needs.



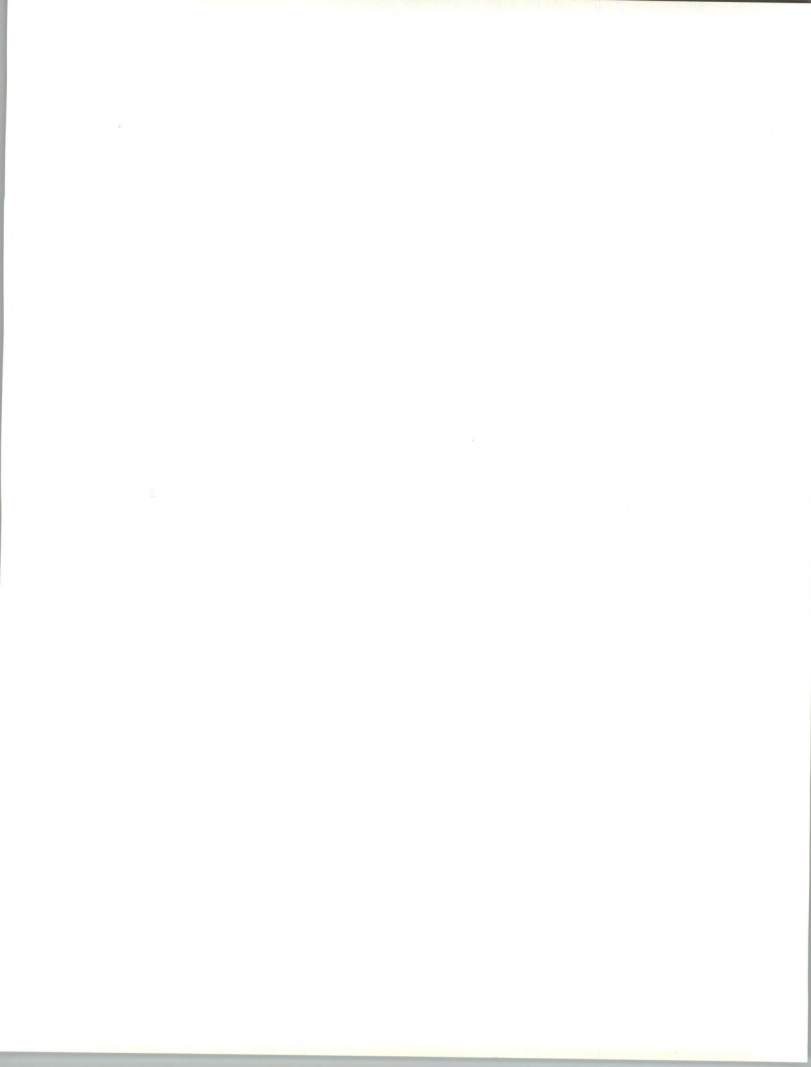


Outsourcing: Directions and Opportunities

Paper 5

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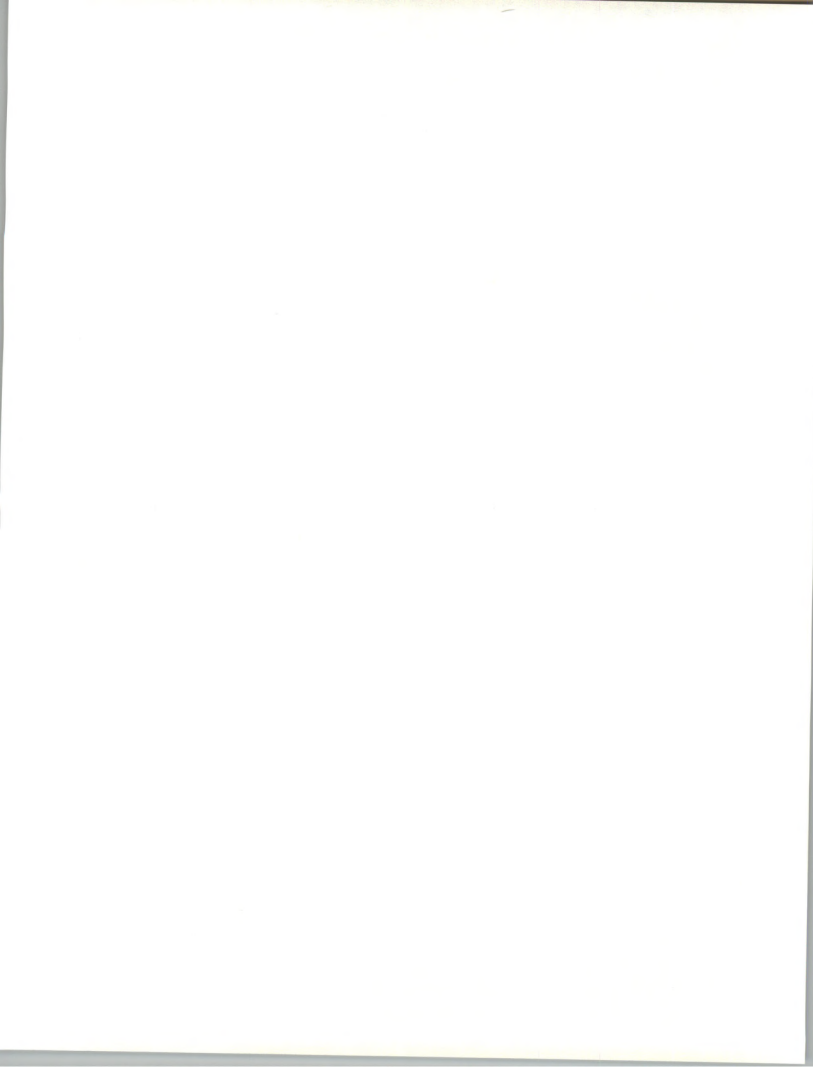
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Outsourcing: Directions and Opportunities

Transition Outsourcing

The changes in the IS unit and its relationship with its parent organization, will cause major restructuring of organizations, systems, and working processes. Essentially, organizations will have to transition from one state to another; they will have to re-engineer themselves—or be re-engineered!

In most cases organizations will not be able to make these transitions by themselves. Just as with many chemical reactions, an outside agent or catalyst will be needed. As depicted in Exhibit 1, this is the fundamental driver to transition outsourcing.

We use the terms “transition outsourcing,” transition management,” etc., rather than equivalent terms such as “change management” because changes can be minor as well as major. There can also be major changes within the same environment, for example, data center consolidation. “Transition” means change that is fundamental, moving from one state or phase to another through a boundary period. To use a physical analogy, cooling and heating water may be regarded as changes; converting it to ice or steam is a transition.

EXHIBIT 1

Transition Management

- Requires outsourcer as agent of change
- Transition difficult to accomplish
- Transition takes time
- Dual operational environments required

Both users and vendors understand that most organizations are not satisfied with their current systems state; they want to be somewhere else. Andersen Consulting's superb advertisement that had two points on a blank page, A and B, and said "we draw straight lines" addressed this issue very directly (Exhibit 2A).

The only problem with the advertisement, is that no one really knows where B is; it is a phase space rather than a point (Exhibit 2B). It is also moving. As the transition is made, so it must adapt to the change in target point: B is a moving target.

This is just one of the factors that makes transitions difficult to accomplish. And, of course, any alteration in target position increases uncertainty and risk.

This risk increases with the length of time a transition takes (Exhibit 2C). Therefore it is important to make a transition as rapidly as possible. The more rapid the transition, the fewer variables that can alter significantly, the smaller the changes in these variables, and the less the overall cost.

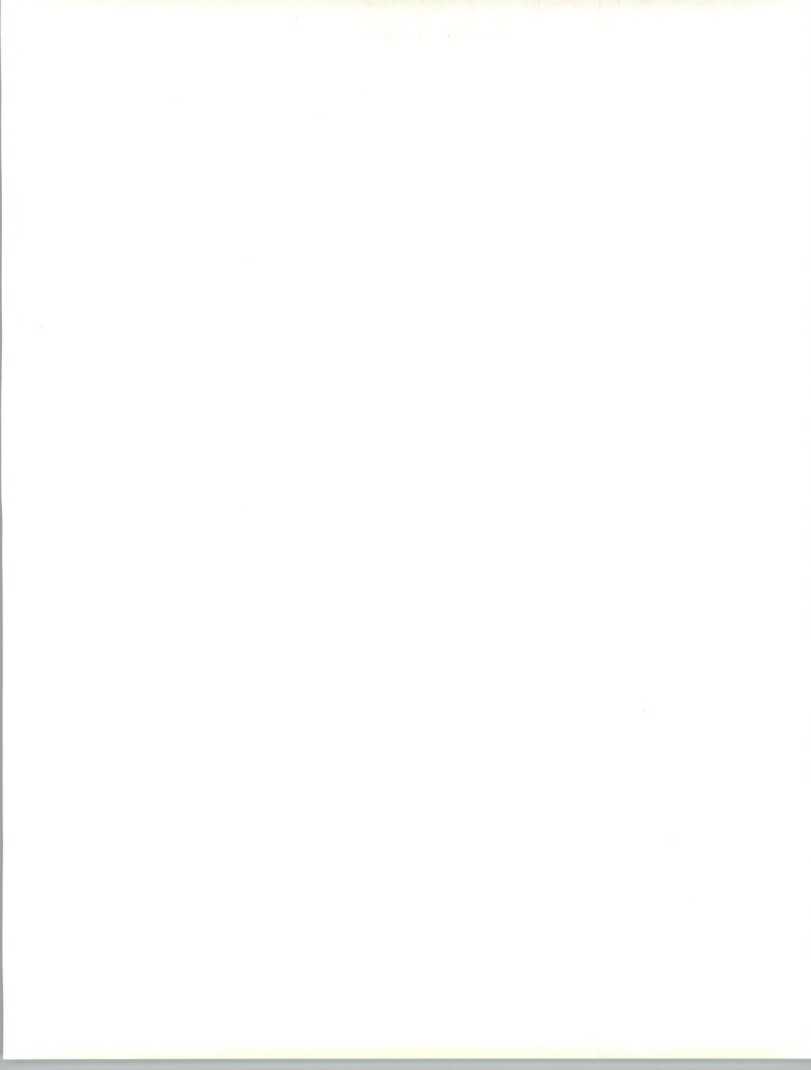
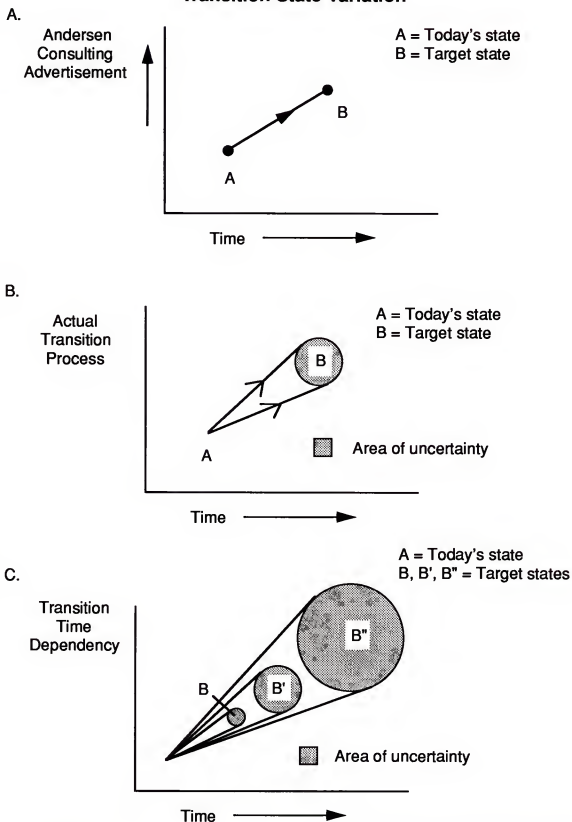
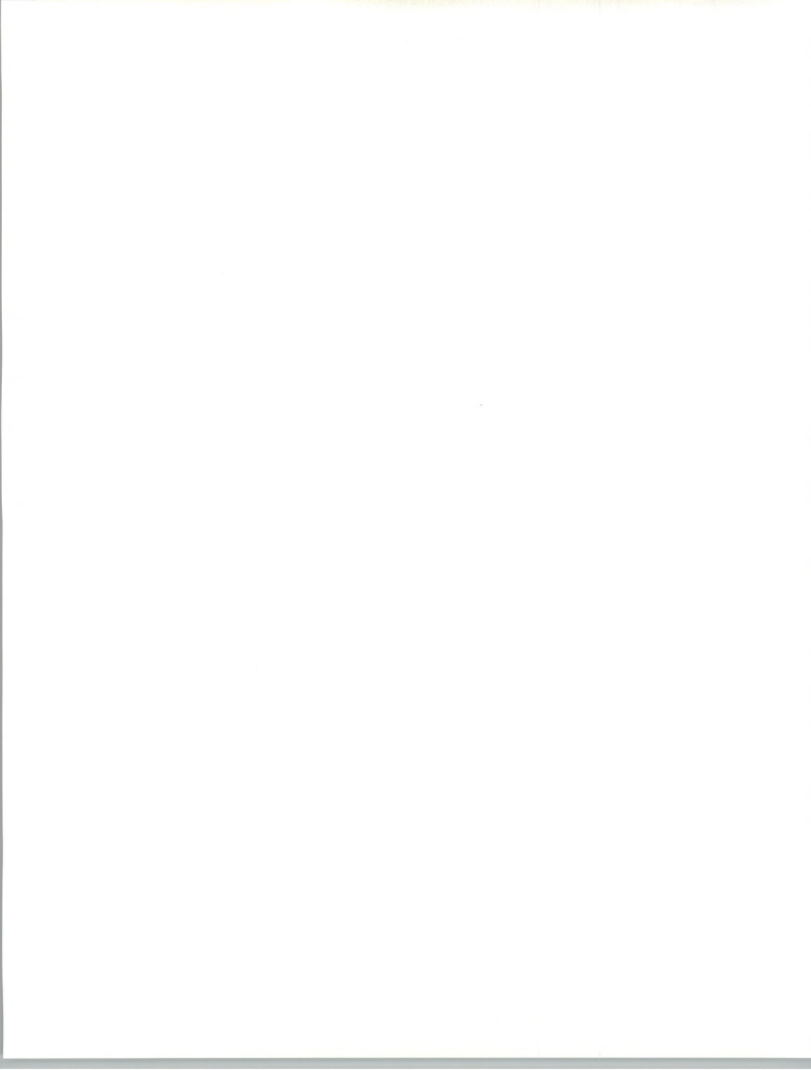


EXHIBIT 2

Transition State Variation





In order to accomplish a significant transition effectively and rapidly, dual operating environments are normally required for some time. Again this period should be minimized. As shown in Exhibit 3, the dual operating environments required today are often very different, not only in IS architecture but also in the nature and ownership of their operation.

EXHIBIT 3

Transition Outsourcing Environments

- IS architecture transition is from centralized mainframes to downsized client/server
- IS ownership from central IS unit to user organizations

Since any operation today is operating "flat-out" with minimal staff and resources, very few organizations have the resources to provide the additional effort needed to accomplish major transitions themselves. In many cases this results in transitions being deferred.

In other cases, organizations can use external resources of various kinds to help accomplish the task, as shown in Exhibit 4. Certainly re-engineering systems integration projects are generated by this phenomenon. In these cases the new development is largely done by a vendor. However, this does not address the dual operational environment issue nor the subsequent operation and support of the system. Thus, many organizations will prefer to outsource their existing operations while developing the new environment themselves.



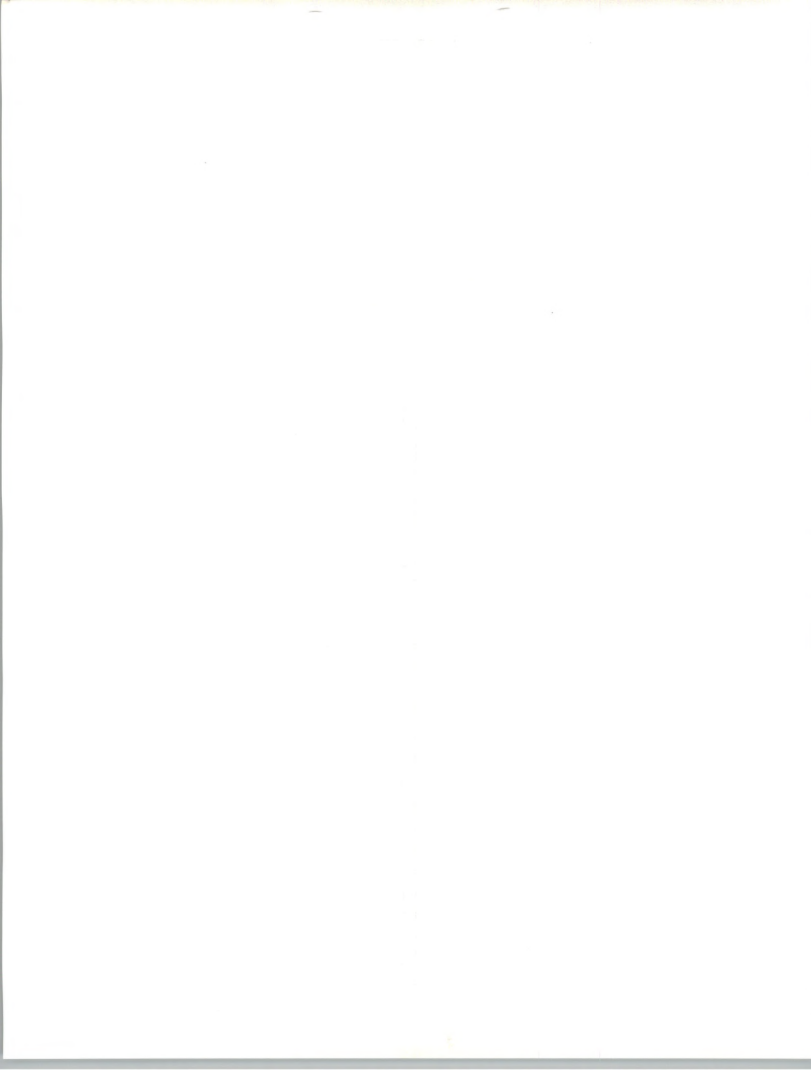
There is a case to be made for transition management itself, whereby a vendor takes responsibility for the whole transition process or consults on it. This can be performed by a company that does not provide the outsourcing or SI services itself but contracts or helps the customer contract for them. It may also be performed by an outsourcing vendor.

EXHIBIT 4

Transition Opportunities

- Systems integration
- Transition management
- Outsourcing old system
 - Platform operations
 - Applications maintenance
 - Network management
- Outsourcing "new" environment
 - Applications management
 - Applications operations
 - Network management
 - Desktop services

In the most common form of transition outsourcing today the vendor takes over the operations of the current systems, as depicted in Exhibit 5, while the client develops the new. The client then transitions to the new environment and the old operations are run down or closed.



The types of outsourcing that benefit most immediately from this approach are platform operations, network management, and application maintenance. Platform operations involves taking over the existing mainframe operations and systems and merging them with the vendor's infrastructure. By this means the customer avoids the problem of having to keep the almost full cost of a data center operations until the work is completely unloaded. After all, as long as any applications or organization units are using the mainframe, the whole infrastructure must be maintained. For this reason, this operation becomes increasingly expensive and inefficient without outsourcing.

EXHIBIT 5**Transition Outsourcing Process**

- Vendor manages current systems operations
- Client develops new systems
- Client transitions to new systems
- Phases out outsourcing services

This argument for the use of outside services is exactly the mirror image of that used in the 1960s and 1970s (Exhibit 6) when data centers were expanding their capacity. Some data centers continue to expand especially when there is consolidation.

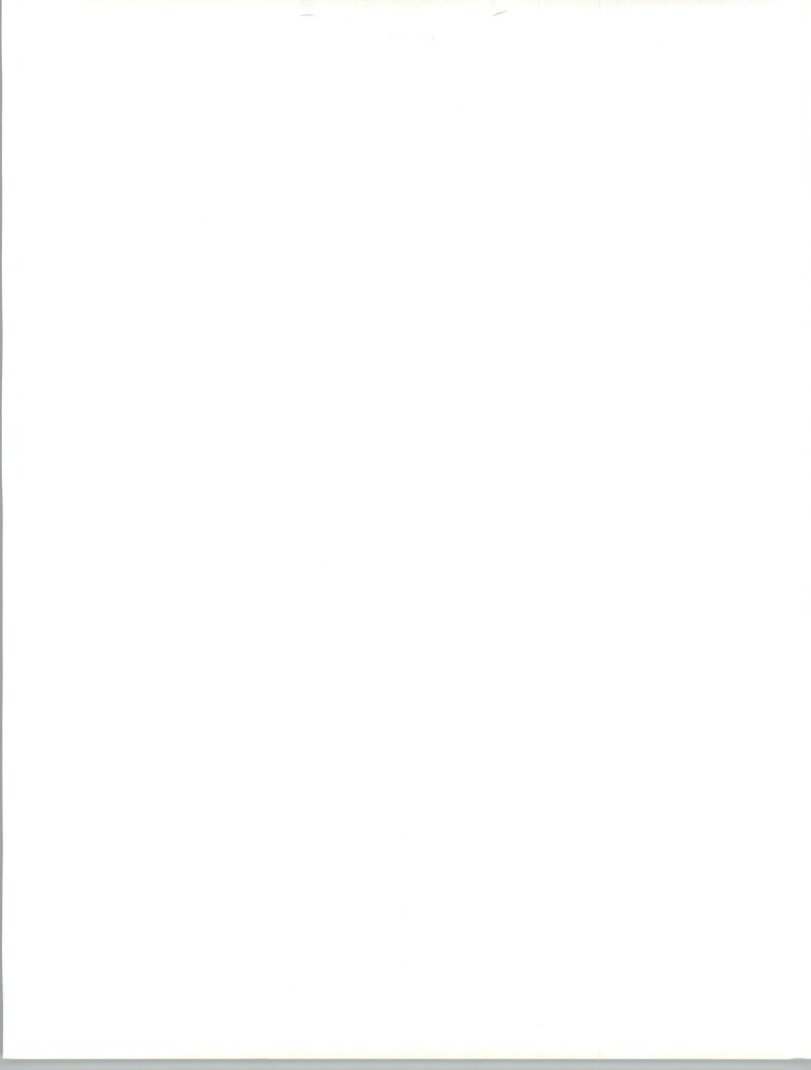
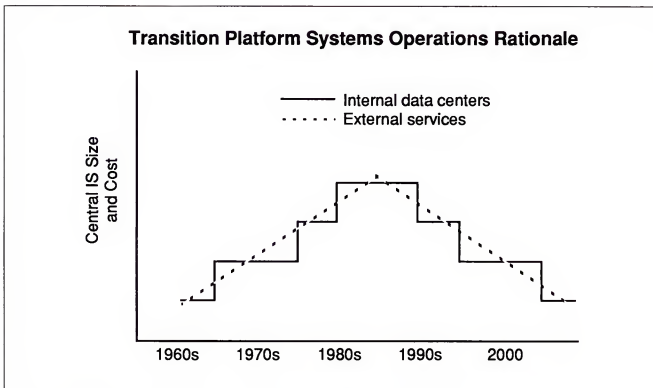
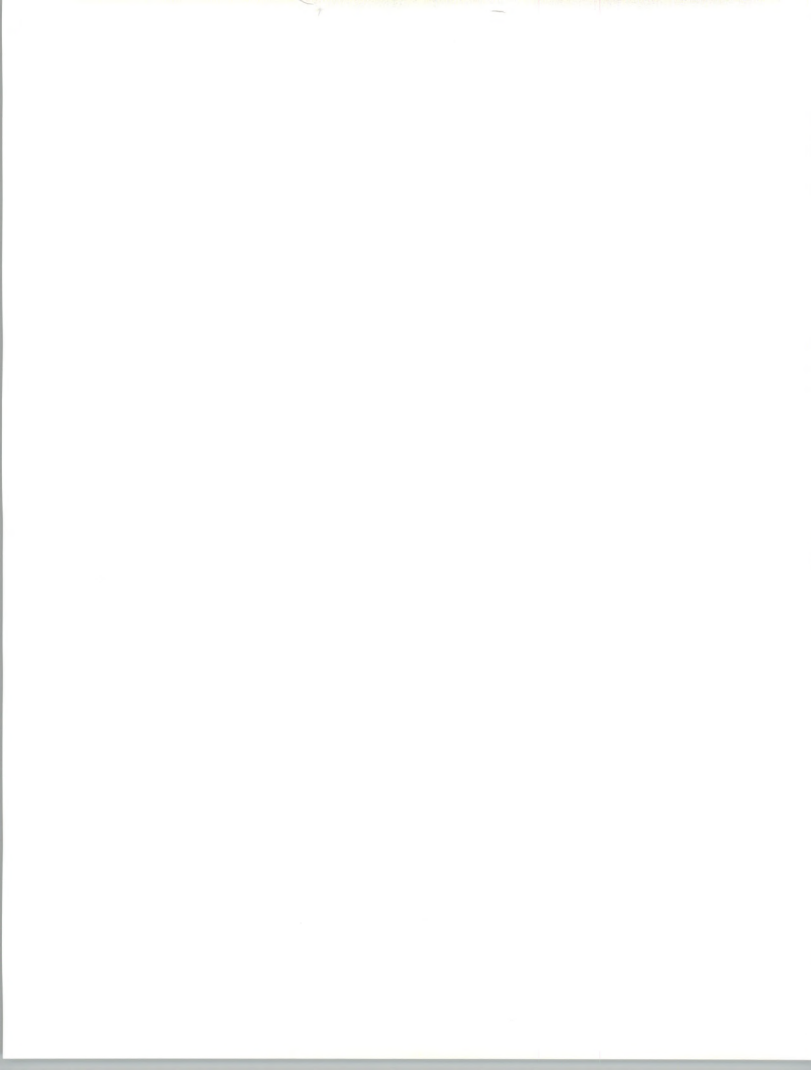


EXHIBIT 6



The argument also applies to outsourcing the network. Generally, management of the “old” network will go with the platform operations vendor. However, there will be circumstances where the customer chooses to manage both computer operating environments while outsourcing the old network.

Applications maintenance is a natural result of transition outsourcing where the vendor takes over responsibility for maintenance and enhancement of the existing applications portfolio of an organization. Generally, this will include the transfer of some of the technical staff. The remainder of the customer’s technical staff then expends its efforts on the development of the new environment—a much more popular activity with the staff than maintenance.



However, this can only work when the quality and skills of the internal staff are such that they are capable of performing in the new environment. In most cases this will not be true. This lack of internal skill becomes the prime driver behind the outsourcing of the new environment activities. Typically these new activities will be much more applications oriented, starting with SI as mentioned above.

Applications management and applications operations contracts will generally involve both "old" and "new" development and operations functions. There may be unusual cases where the customer will keep all its old staff and systems in place while using the vendor to develop, install, and operate the new systems.

A similar situation will apply to network management; both "old" and "new" networks will be managed by the contractor. The new networks are much more complex, so the transition network outsourcing vendor will have to set up the internal infrastructure to handle this complexity as part of the contract.

In transition desktop services contracts, the main objective of the customer will be to establish the new environment in a controlled manner. Particularly important will be establishing the logistics management system and the user education and training function. However, the probability is that desktop services contracts will be permanent rather than transitional in nature.

Transition outsourcing provides substantial benefits to the customer as shown in Exhibit 7 modified.

- First of all it shifts the focus of IS to where the organization is going rather than where it has been. The benefits from IS come from substantial change—revolution rather than evolution. The outsourcing vendor(s) is (are) also focused on transition even if their part is operating current systems.



EXHIBIT 7

Transition Outsourcing—Client Benefits

- Shifts IS focus to new environment
- Shares risk
- Provides additional resources and management control of phase-out
- Shifts onus for closeout to vendor
- Provides basis for long-term relationship

- Transition outsourcing provides the resources necessary to accomplish the change. Since the customer is also moving into a new, and perhaps strange, environment, additional management help is necessary as well as the organizational resources. This is important in order to minimize risk.
- It is all very well for consultants like Hammer to promote the “obliteration of work” through re-engineering, but an organization only gets to do this once—if it fails it probably will be out of business or, at least, severely constrained. Hence risk reduction is a prime target and benefit of transition outsourcing.
- Transition outsourcing provides a controlled phase-out of existing processes and systems. It also provides for graceful people transitions. Those not required in the new environment may well find a new “home” in the outsourcing vendor.

In many instances the closing out of hardware, software, and people relationships is shifted from the customer to the vendor. This has many advantages. Usually the vendor is in a much stronger negotiating position with other vendors than the user. Relationships can be changed with the vendor playing the role of the “bad guy.”



- Transition outsourcing is less threatening to the organization, particularly to IS, than permanent outsourcing. Even if the ultimate objective may be a permanent relationship, transition outsourcing can be a graceful step in that direction that has less trauma attached to it.
- Through this process the buyer can decide if it wants to expand the scope of its relationship with the vendor on a long-term basis.

This, of course, leads to substantial benefits for vendors, as depicted in Exhibit 8.

EXHIBIT 8

What's in it for the Vendor?

- Develop client relationship
- Potential for "add-ons"
- Usually longer than planned
- Permanent outsourcing potential

- Transition outsourcing provides the ability for the vendor to become involved and to develop its client relationships. Since user satisfaction with existing systems is likely to be mediocre to poor, the vendor has the opportunity in such relationships to demonstrate its effectiveness and the ability to improve the situation.
- The potential for "add-ons" of all types is very large. This may include becoming involved with SI projects as the development process proceeds. The probability is that the in-house organization will need more help than it plans if it keeps responsibility for the development process.



- Also, transitions invariably take longer than planned. This provides an excellent opportunity for increased profit and revenues for vendors supporting the old systems. Typically the transition outsourcing contract is priced to make a profit over the course of the contract with initial losses due to conversion activity being made up later on. Hence, contract extensions are operating at the more profitable end of the process.
- The ultimate potential benefit, of course, is the opportunity to become a permanent outsourcing vendor. However, this may be more difficult than it seems because of the difference between the new and old environments. If the vendor does not demonstrate its expertise in the new environment it may find that it is associated too closely with the old environment and may lose to a vendor with a "more advanced" image. This has already happened.

Transition outsourcing, then, will be very important in the 1990s, particularly with regard to the continuing trend to downsizing.



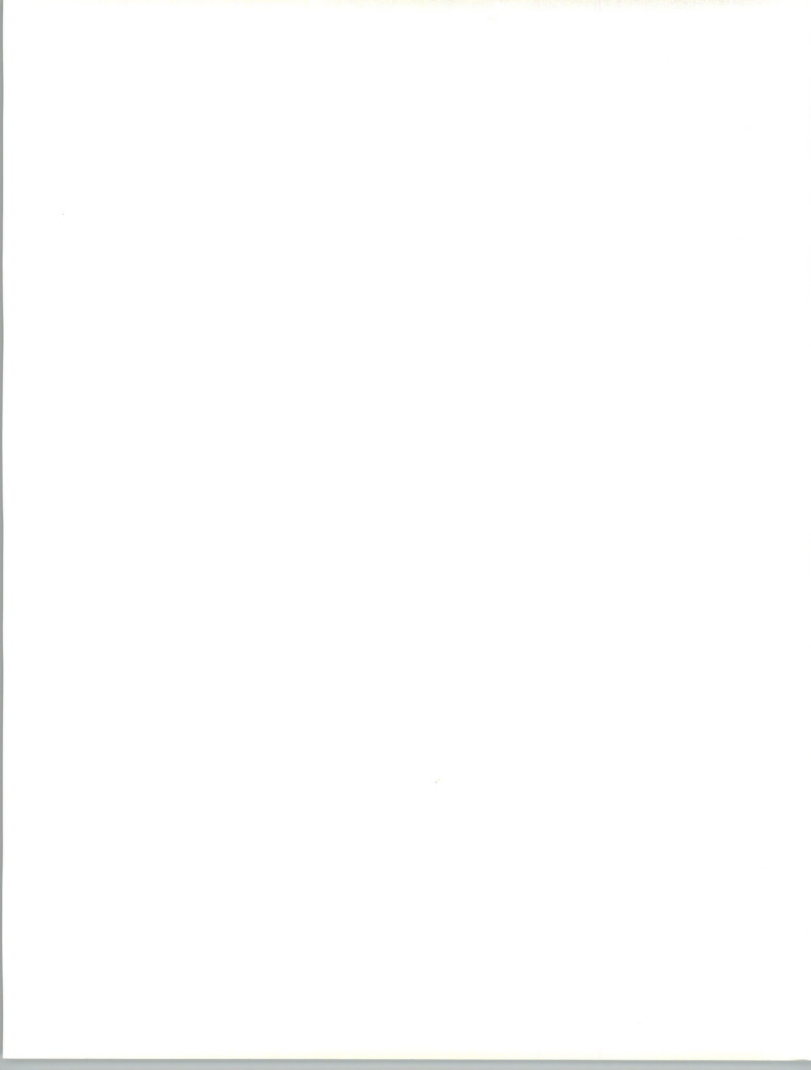


Outsourcing: Directions and Opportunities

Paper 6

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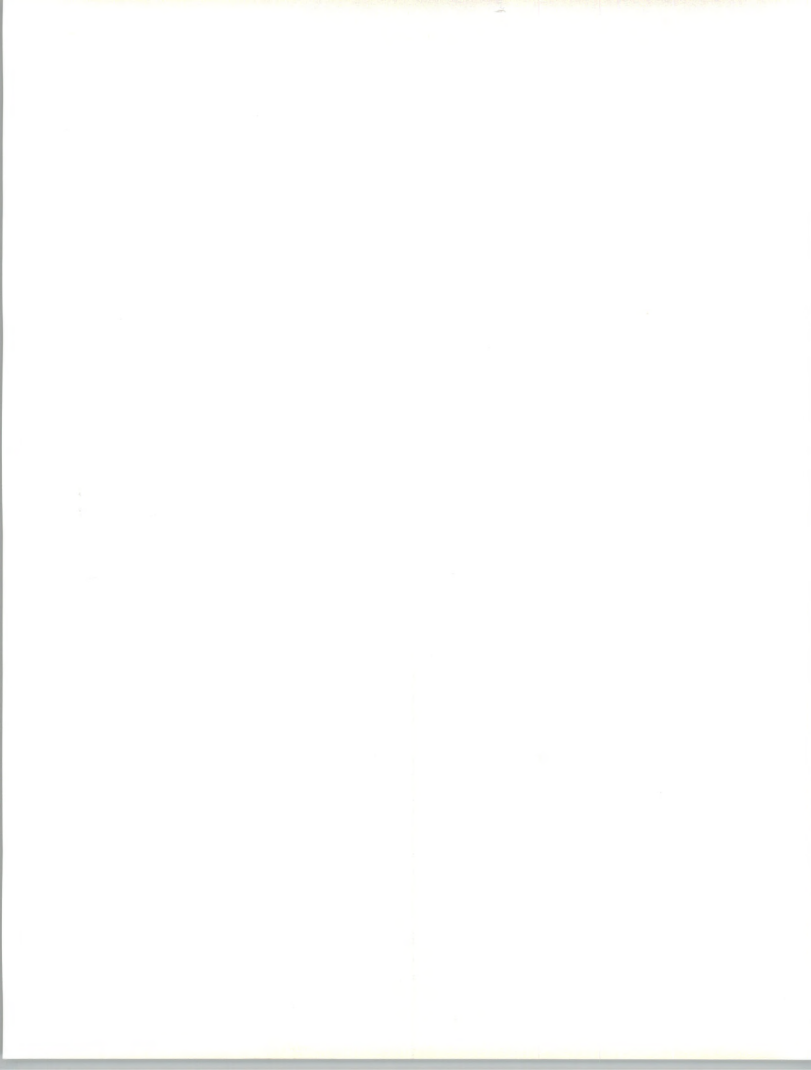
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Outsourcing: Directions and Opportunities

What follows provides a framework to position IS outsourcing. It defines outsourcing in terms that can be used to consider this ever more viable alternative, provides a short historical perspective, identifies what is different in the 1990s.

Historic Perspective

Outsourcing is one of the key *theme* words of the 1990s, widely used throughout the computer industry to reflect renewed interest in “buying” computer and communications services.

To no one's surprise, the concept is not new. In fact, the value of IS has always been based on acquiring and applying products and services from a unique set of vendors. At first, only hardware and systems software were acquired; now a complete set of products and supporting services, including management, can be acquired.

Outsourcing is a term that stirs up considerable skepticism on the part of both users and vendors. Many people believe that “handing over” wide-ranging management responsibility for the provision of information technology services is an admission of failure. Others believe it is the most cost-effective and trouble-free way to receive necessary IT support.



Does outsourcing have the potential to really become a mainstream information service over the next decade? An historical perspective of the computer industry over the last four decades (in effect, most of the life span to date of the modern computer industry) indicates that it does have that potential and that conservative practice and skeptical user attitudes will erode just as they have in many other sectors of the industry.

Throughout the development of the computer industry, users have been challenged by the "make versus buy" question. Just as in any other field of economic activity, three significant factors affect the answer to this question:

- The availability and complexity of the technology
- The definition of the application
- The economics

As Exhibit 1 illustrates, the threshold of "buy" rather than "make" has moved steadily higher in the hierarchy of information technology products and services as the industry has developed over the last four decades.

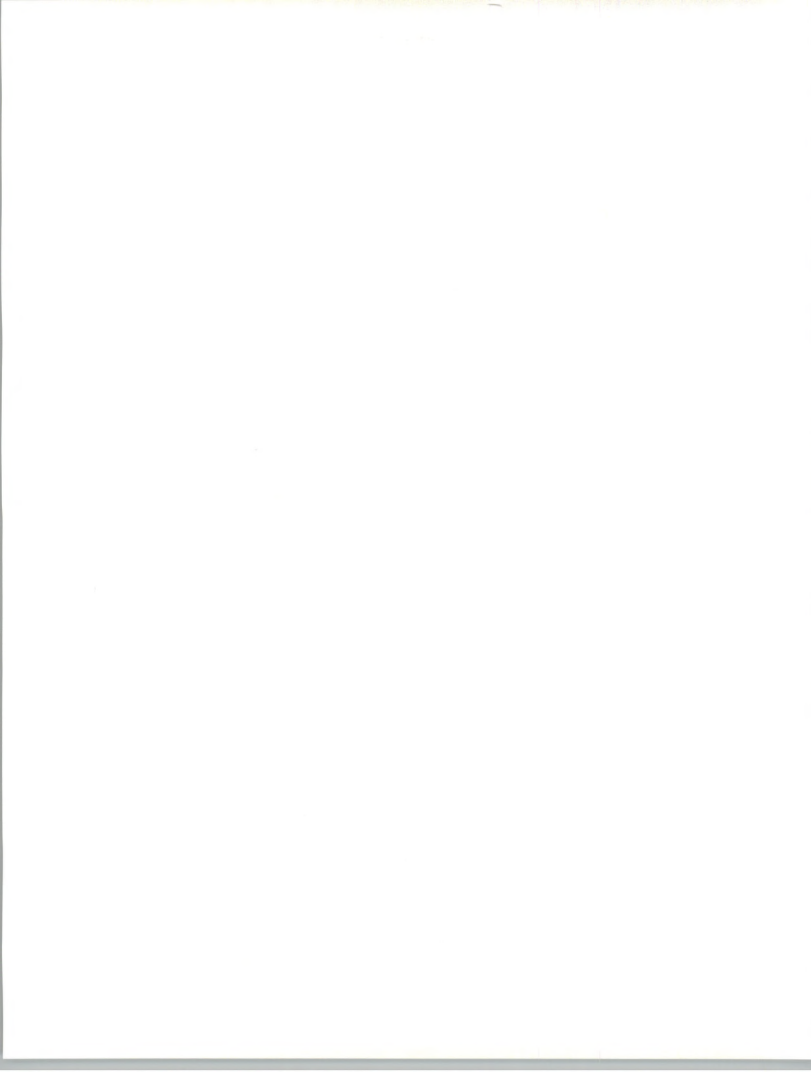
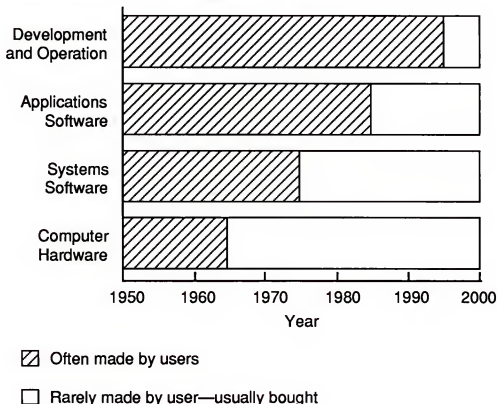


EXHIBIT 1

Historic Perspective on IS “Make or Buy”**The 1950s—The Era of Custom Hardware Systems**

During the 1950s and early 1960s, many major companies entered the market as suppliers of computer systems to form the computer manufacturing industry. Several of them were “users” rather than traditional business equipment suppliers.

Today, users generally don’t contemplate developing and producing their own customized equipment, except perhaps in some very specialized environments. The 1950s were characterized by the general use of customized hardware systems and, of course, custom specific software.



The 1960s—The Era of Custom System Software

During the 1960s and even well into the 1970s, computer users were developing their own systems software, although basic operating systems had become reasonably standardized. The “make versus buy” threshold had advanced. Products such as TSO (timesharing option) and IMS (information management system) came from user-initiated developments, which were then absorbed by the computer manufacturer—in these cases IBM.

The 1970s—The Era of Custom Applications Software

The 1970s brought the beginnings of the standard application package concept to the market and more standardization (albeit on a proprietary basis) to wider levels of systems software, e.g., database management systems (such as IMS) and communications monitors (e.g., CICS, TSO). Here users started to buy applications software and services.

The 1980s—The Era of Custom Systems Operations

The 1980s saw wide acceptance of the applications package concept to the extent that, by the end of the decade, categories of software (notably for personal computers) would rarely be considered for in-house production. Also during this period, a serious acceptance of systems operations (outsourcing of computer/network operations) as a viable way of obtaining information services, began to emerge.

The rapid decline of some processing services from the end of the 1970s can be seen in historical perspective as an early victim of technological downsizing. The arrival of low-cost versions of mini-computers and then PCs hit the processing services business (particularly remote computing services or timesharing) very hard at the beginning of the 1980s. This decline reflected the dynamic balance between the forces of technology, applications, and economics.



Generally, however, organizations continued in the 1980s to operate their computer/communications (or information systems) environments on a customized basis. They bought standard equipment, systems software, applications software, and communications and assembled these components into an infrastructure that was unique to each organization.

The 1990s—The Era of Standard Operations

The 1990s present the very real possibility that IS outsourcing can overcome user resistance and doubt and become accepted as a normal approach to delivering information systems.

An evaluation of the three factors identified above—the availability and complexity of the technology, the definition of the application, and the economics involved—indicates a trend to outsourcing IS services:

As *technology*, through the agents of downsizing and networking, reduces the hardware cost element as a proportion of total user expenditure, the increasing proportions spent on software development, systems maintenance, and other services is emphasized. The *economics* of the “make versus buy” argument are increasingly only concerned with these latter elements.

There is also evidence of a slowdown in new *applications* requirements caused by such factors as the inability to profit from increased data and information flows, and the consequent decreasing marginal benefits of new application areas. Thus, if there is not much that is new or of competitive differentiation in the use of IT, then companies might as well share, from an economic viewpoint! This dynamic again strongly affects the economics of information systems and services influencing cost saving and convenience.



Exhibit 2 traces the evolution of two IT services. Each has expanded from a commodity type of service through increased levels of added value and responsibility. In each case, the result has been multiple levels of service availability to the customer: in other words, you can still buy “computer time” and “people time.”

EXHIBIT 2

Evolution of IT Services

	1960s	1970s	1980s	1990s
Professional Services	People Time	Applications Projects	Systems Integration	Applications/Syst. Management
Processing Services	Computer Time Applications Proc.	Facilities Management	Systems Operations	Business Operations

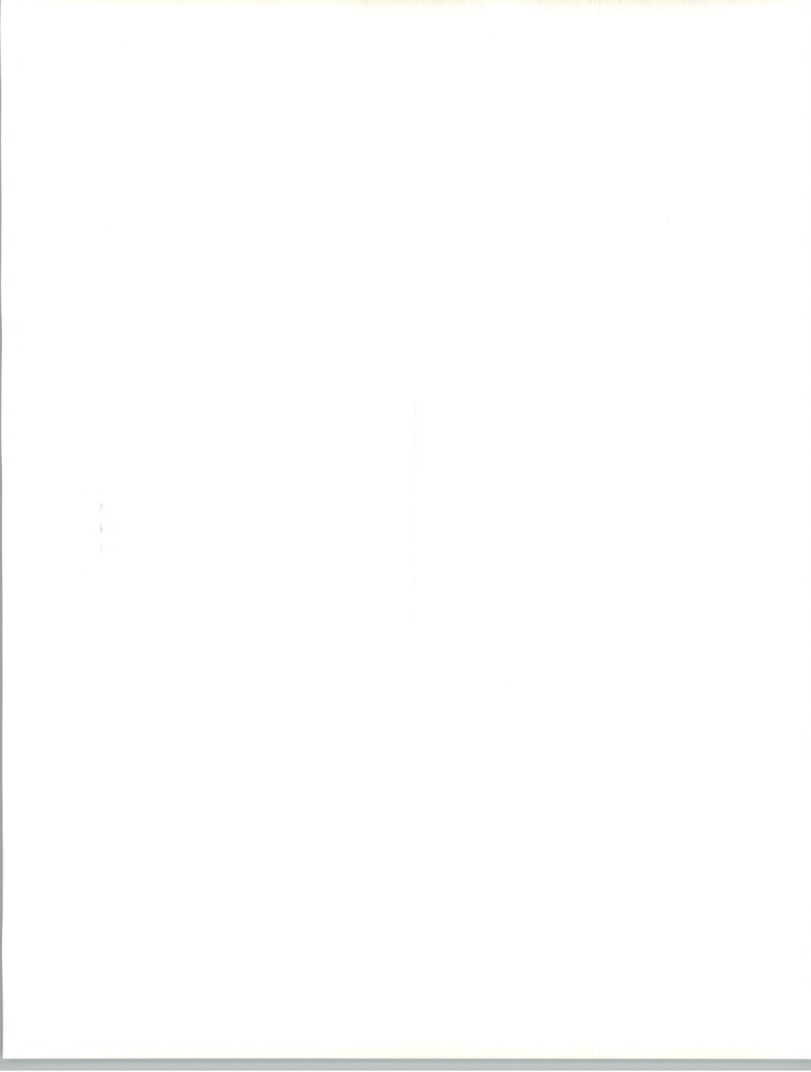
- The professional services vendor started by selling planning and requirements specifications or by being a programming contractor—somewhat of a “jack of all trades.” The next step was to merge these two services and develop the entire application on a project basis. Then professional services firms became systems integrators, whereby they took responsibility for the selection and implementation of the systems platforms as well as the applications development and installation. Now they are offering to be responsible for the whole applications development, maintenance, and enhancement process for a customer, including all the new and existing applications.
- Processing services began by providing either access to basic computer hardware and software or very specific individual services, e.g., payroll. These expanded in numerous directions, including network services and contracting for the operation of data centers—facilities management (FM). FM became too limiting a term as the vendor increasingly became responsible for not just the “facility” but also the network, remote locations, user interfaces, etc. Thus, FM became systems operations.



- The focus, formerly only on computer operations, now includes planning, control, operations, and often networks and some elements of development.
- To a growing degree, the focus is on the dismantling of data centers with the client turning to vendors to provide services from the vendor's data centers—a processing utility.
- Systems operations is in turn being expanded to include non-IS activities (clerical, operational, professional and management), thus moving into business or functional operations.

None of these changes occurred overnight, but they have occurred at a reasonably fast pace over the last two decades. Where organizations hesitated to go outside and usually only did so on a subcontractor basis for “bits and pieces,” now they are looking at the entire requirement and buying more comprehensive services from a single vendor.



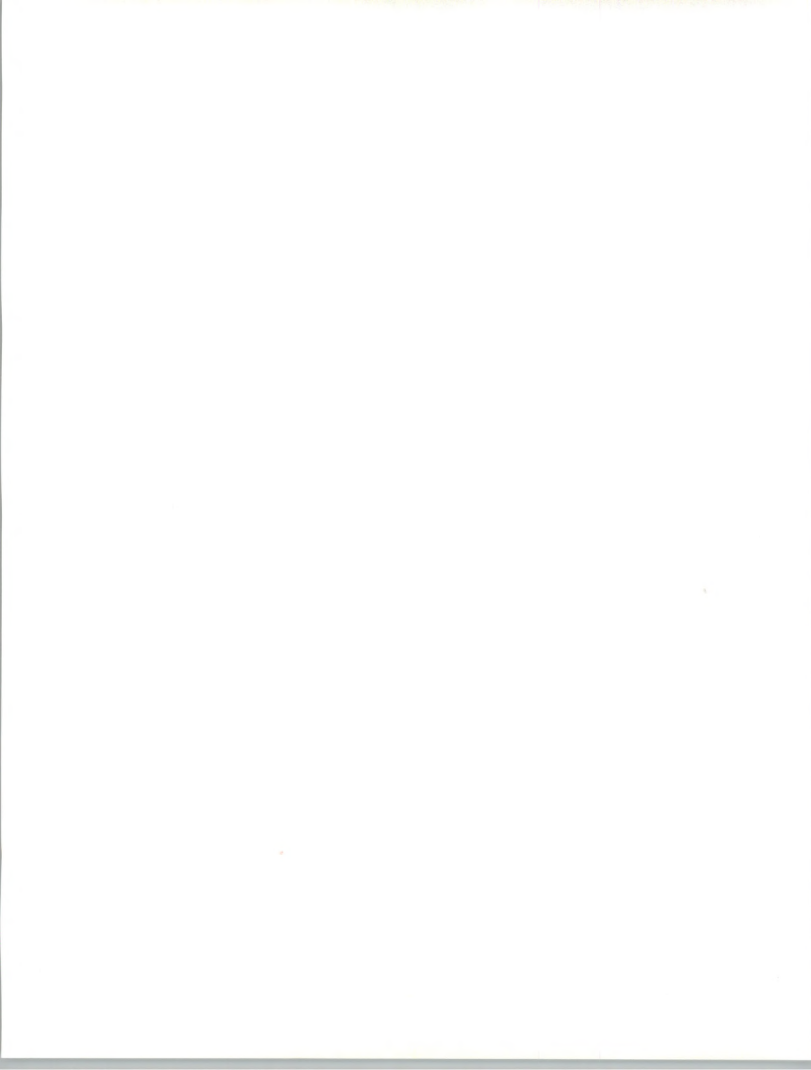


Outsourcing: Directions and Opportunities

Paper 7

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Outsourcing: Directions and Opportunities

Drivers to Outsourcing

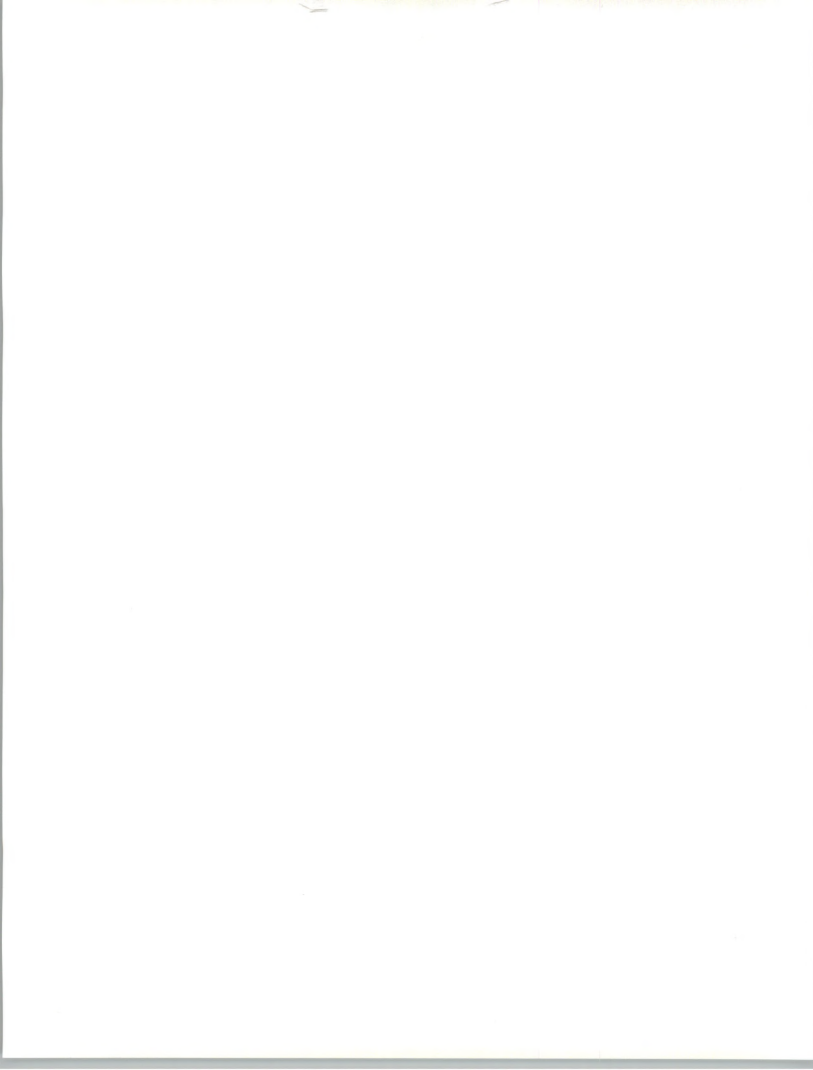
As has been consistently demonstrated by research, the most important driver to outsourcing is economic or financial, as shown in Exhibit 1. Buyers want to

1. Reduce operating costs, or at least avoid growth in operating costs
2. Reduce the need for capital whether directly or indirectly

EXHIBIT 1

Drivers to IS Outsourcing

- Economics
- Risk reduction
- Simplification/single source
- Focus on core-competency
- Transitions in IT architecture
- Organized restructuring



According to a *Fortune* magazine article published on September 23, 1991, clients can save up to 40% by outsourcing. INPUT's experience in analyzing outsourcing contracts is that savings are usually much less. In fact, there is often very little change in direct operating costs when an IS outsourcing contract is implemented.

There is certainly a reduction in capital requirements or lease liabilities from outsourcing. Historically this was most important in dealing with large computer mainframes and their software. Recently, however, avoidance of the capital or lease requirements for desktop systems has become a driver to desktop services.

Risk reduction is another factor in choosing outsourcing. Making significant changes in operations, for example consolidating and changing operating environments, is fraught with risk. These can be ameliorated by outsourcing to a vendor with the experience and capability to achieve the objective.

In a time of increased complexity in all levels of business and technology, organizations wish to simplify their decision-making process. To the extent possible they wish to go to a single source for a specific service. This is the essence of partnership. Outsourcing shifts many of the more detailed decision processes from the customer to the vendor. The customer uses the vendor to evaluate the myriad technical and architectural choices.

An article in the *Harvard Business Review* ("Beyond Products: Service-Based Strategy"—HBR March/April 1990) put the theoretical basis for IS outsourcing very well. It stated that organizations should focus on their core competencies and outsource other activities. Outsourcing builds flexibility. For most organizations IS is not a core competency although it is an essential component of almost all business functions.



Increasingly, outsourcing is an agent of change. It is particularly effective as organizations try to re-engineer their IS architectures. Transitions from centralized, mainframe-oriented architectures to downsized, client/server, networked structures are almost impossible to achieve without external assistance. Outsourcing of the traditional IS operations can help in this process.

Outsourcing is also driven by changes in the organizational structure of the buyer. Acquisition and divestiture of units or whole businesses often require dramatic change in IS beyond the scope of internal organizations. In some cases, environmental change leads to fundamental organization change that in turn leads to outsourcing. The reduction in Department of Defense expenditures is dramatically hurting aerospace contractors resulting in requirements for radical organization change. Consequently, companies such as General Dynamics and United Technologies are led to outsource IS activities.

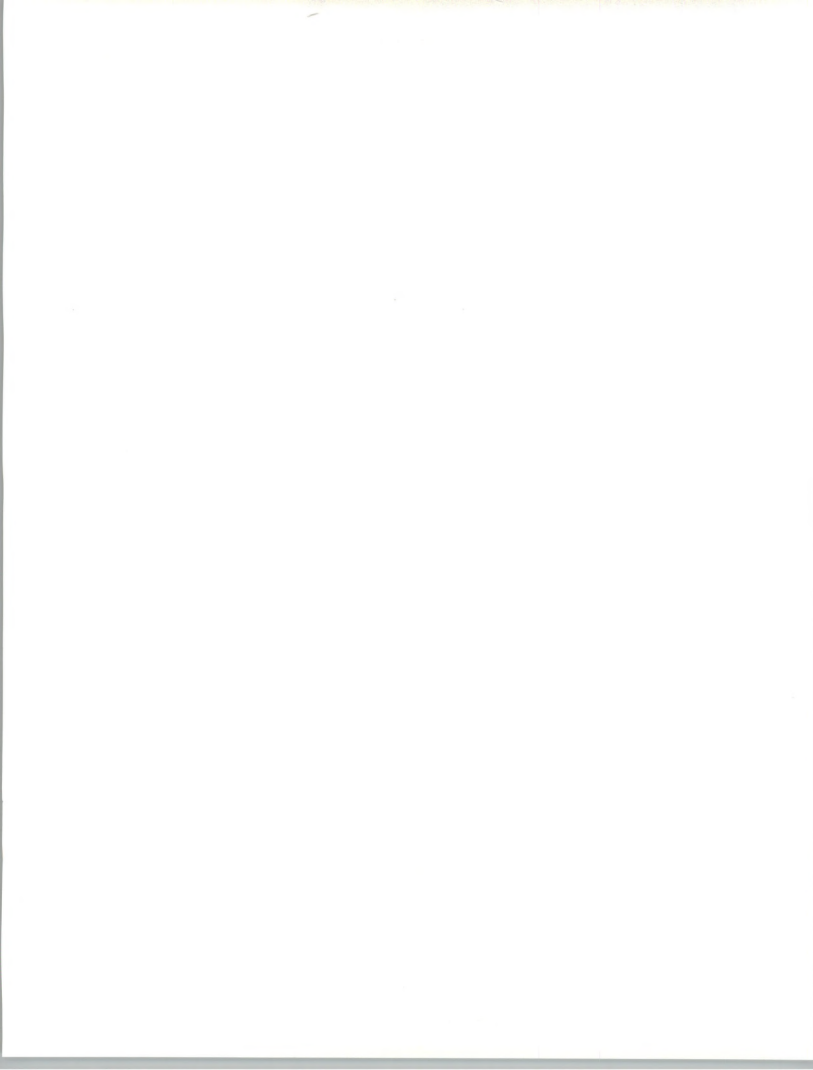
Business re-engineering to achieve economies and improved customer service also drives organization towards outsourcing.

However, there are reverse sides to many of these drivers which act as inhibitors to the move to outsourcing, as listed in Exhibit 2.

EXHIBIT 2

Inhibitors to IS Outsourcing

- Economics
- Poor bidding
- Fear of loss of control
- Integration of IS and business operations
- IS as a competitive differentiator
- Consultants



Many organizations question the real savings to be gained by outsourcing. The analysis is often biased by not fully costing internal IS operations. However, by now, corporate executives are wise to this bias and take steps to ensure that it is not as exaggerated as it has been.

Vendors do not help their cause by underestimating the potential for price decreases over the life of a contract due to technology improvement. In a recent series of proposals reviewed by INPUT one large and significant outsourcing vendor had the temerity to suggest that storage costs would increase with inflation over a seven-year contract period. Another suggested that the cost per gigabyte would only decrease by 32% in total over the seven-year period. In fact, there are storage cost reductions averaging over 20% per year.

These circumstances lead many potential buyers to fear being "locked-in" to expensive, obsolete technologies by outsourcing vendors. They fear losing control of their destiny and not being able to take advantage of IS changes.

After all, almost everyone is now aware of the financial characteristics of outsourcing contracts where typically a vendor loses money in the first year of a contract (due to start-up and conversion costs), breaks even in the second year, and starts to make money in the third. If the environment changes, the vendor has not got a vested interest in changing with it, at least according to companies that have rejected outsourcing.

There are also questions related to changing of the role of IS. If IS is going to become more integrated with the business functions and lose its separability, how can IS functions be outsourced? This, of course, is a key argument for IS outsourcing vendors to move into functional or business outsourcing.

There are still many companies hanging onto the myth that having in-house IS will provide competitive advantage. It certainly can do so for a very limited set of companies. But any such advantage can only come for a relatively brief period and at great cost. It only comes from a limited applications set. Never-



theless, many companies want to perceive of themselves as being at the leading edge in the application of technology to their business; they feel that outsourcing will put them into the same condition as everyone else.

Consultants play on this fear. In general, consultants do not want to encourage an outsourcer onto an IS organization. They perceive they will probably lose a customer if they do so. Several consultants have built a lucrative business by comparing in-house IS operations with outsourcing vendors and then selling major projects to attempt to bring these in-house operations to the same standards as those of the vendors.



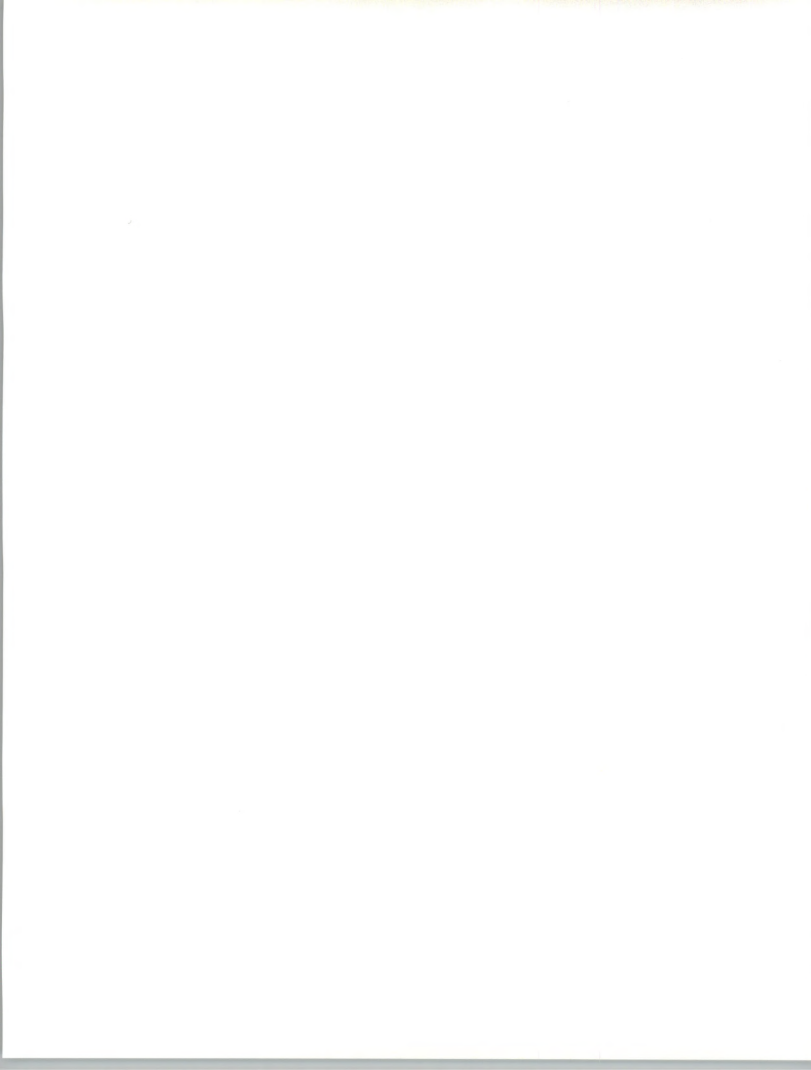


Outsourcing: Directions and Opportunities

Paper 8

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Outsourcing: Directions and Opportunities

What Is Different in Outsourcing Today?

There are a number of significant elements within the information systems arena, involving users as well as vendors, that are quite different from just five years ago.

1. Information Systems Users

Listed in Exhibit 1 are the key issues in IS from the users' perspective. They add up to a greater complexity of information technology and to the measurement of the value of information technology being tied more directly to the success of the business.

EXHIBIT 1

Information Systems Issues of the 1990s

- Variety of information technology alternatives
- Size of existing information technology investment
- Size and complexity of solutions
- Organizational skills required
- Requirement for flexibility and rapid response
- Business measurement of information systems
- Shift in the location of the IT payback



- The simple fact is that there are too many ways to use information technology within an organization. Developers have always created information technology faster than users could apply it. However, since the last half of the 1980s, the rate of development has exploded, outstripping an already burdened IS function. There is no way that most IS organizations can know about—let alone understand and select from—all that is available for use.
- A key restriction on the IS function is the size of the existing information technology investment. After two to three decades of development, most IS functions carry along an incredible amount of valuable, but at times restrictive, baggage. The maintenance drag of these “legacy” systems is well documented. Whether it is trying to re-engineer the older applications, interface them to newer technology, or just support them, the resources required for maintenance restrict what is available for new applications and technology.
 - Older information technology investments may need to be written off just like old machinery. Unfortunately, these investments aren’t “on the books” or valued like old machinery. IS departments have trouble gaining agreement to write them off.
 - One benefit from a more active involvement in information systems by senior operating management is that they can decide to write off older IS investments.
- For a number of reasons, the systems that have been developed in the last few years are larger and more complex than before. They address larger segments of an organization’s operations, affect more people, and cause more change. Yet the time between identification of need and implementation has shortened. The internal IS function often finds it does not have the necessary knowledge and skills to create today’s complex solutions.
 - However, there is now a strong counter current to this trend. Organizations are reverting to smaller, simpler systems and are changing development methods.



- This change is fostered by the shift of responsibility for systems from the IS department to the user departments. This shift has numerous consequences; among them
 - Users do not try to address all the possible ramifications of a system. They want an 80% system now—and as we all know, it is the remaining 20% of the system that takes 80% to 95% of the development time and effort.
 - Users look at their own needs primarily and do not try to solve other organizational units' problems. They optimize their systems.
- The development methods used in downsizing environments are parallel process oriented, as opposed to serial process oriented. Thus, there are no separate phases of requirements, design, coding, testing, and implementation.
- Almost every organization is trying to do more today with less staff. There is very little ability to respond to unexpected staff requirements or to evaluate the expanded set of information technology capabilities.
 - The available pool of information systems professionals has not kept up with the technology. As a result, the majority of the “inventories” of systems professionals are of declining value.
 - IS vendors have been able to attract a larger proportion of valuable IS professionals by providing more expansive career opportunities, further impacting the recruiting efforts of traditional IS departments.
- The pace of business change is significantly faster than it was a few years ago. However, strapped with an existing, often obsolete, information technology structure and an explosion in IT capabilities, the typical IS function struggles just to keep up with daily requirements, let alone respond quickly to the unplanned.



- A major result of the increased involvement of the user in information technology is a change in the way the IS function is measured and evaluated. Today the measurements are commonly tied to the success of the business, which is permitting and driving different types of IS decisions.
- A recent result of the information technology explosion is a shift in emphasis within the information network. Although the mainframe will not go away, the payback is now tied to workstations, LANs, and networks. The data center is becoming a utility in the true sense of the word. Once its value is viewed in this fashion, alternatives become easier to consider.

The 1990s find IS a more integrated and better understood function, facing the same business challenges as the rest of the organization. It also faces a fundamental question of its future existence as a separate organizational unit, as depicted in Exhibit 2.

EXHIBIT 2**Fundamental IS Organization Issues**

- Will the IS organization become extinct?
- If not, what will it do?
- If it does, how will its functions be handled?

An IS organization is often reduced to being a "bare bones" organization when the outsourcing vendor assumes responsibility for the processing, the application, and the staff. Yet, the IS strategy must still be controlled by the user organization. Most CIOs who have undergone this radical change have found themselves with more time for technology evaluation and IS strategy development—the fundamental reason for their job to begin



with. The functions of IS strategy development and technology impact assessment must stay with the user organization if the client does not want to be overly dependent on the vendor. This issue will be explored at length in Chapter IV.

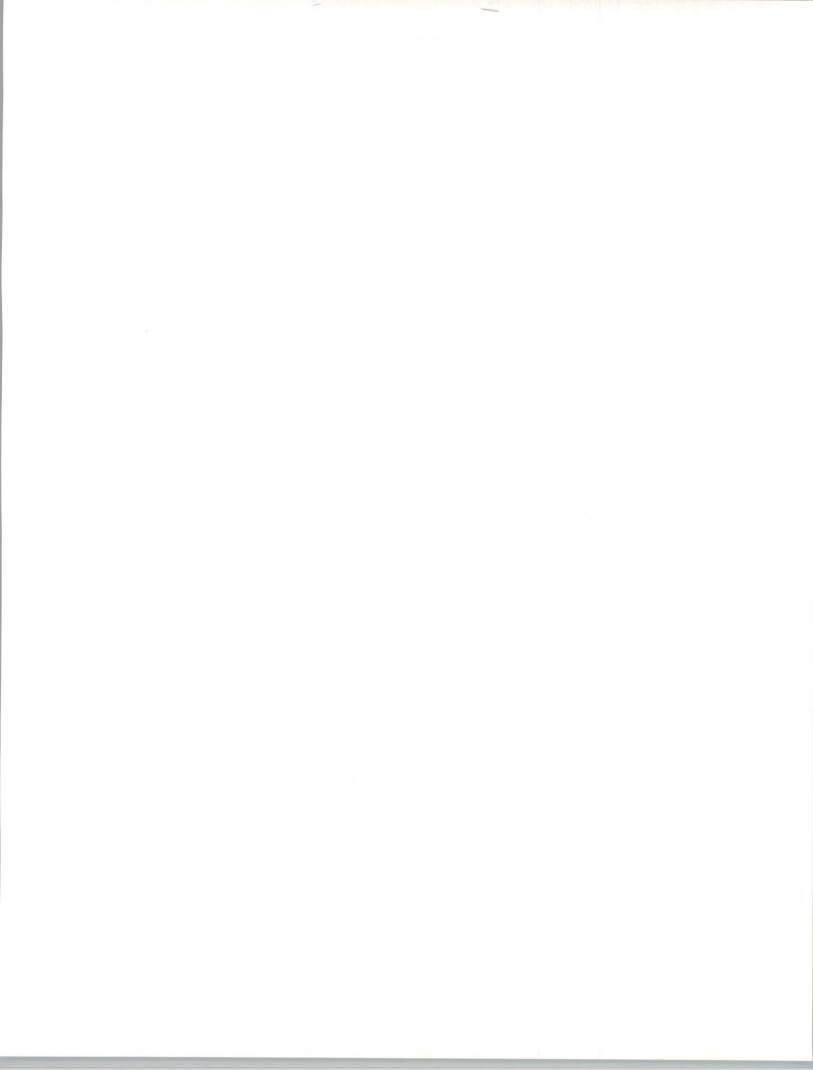
2. Information Systems Vendors

Listed in Exhibit 3 are the key information systems vendor capabilities. They add up to a stronger and more proven resource with an emphasis on services first and products second.

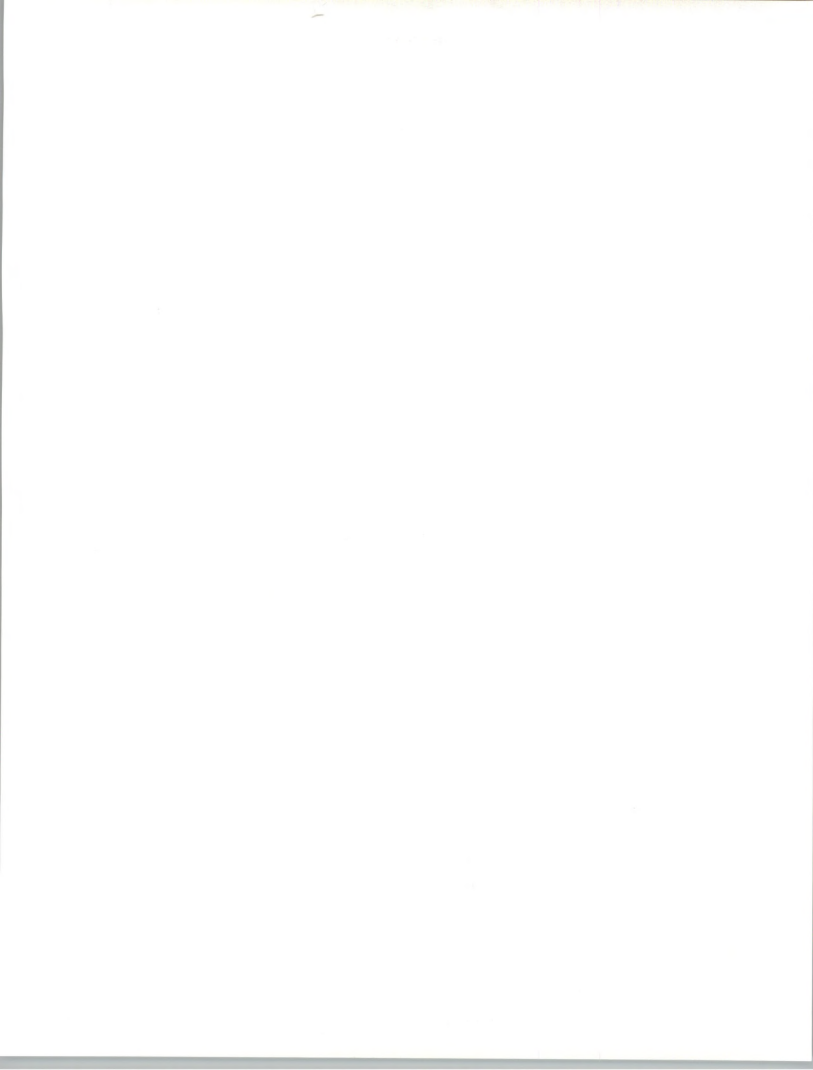
EXHIBIT 3

Information Services Vendor Capabilities in the 1990s

- Variety and power of information technologies
 - Size and skills of information services vendors
 - Maturity of information services vendors
 - Experience and knowledge
 - Ability to take risk
 - Recognition of business role of information systems
 - Ability to market directly to operating management
- The very rapid changes in information technologies are a burden for the IS user and the vendor, but also represent an opportunity for the IS vendor. The ability to select segments of information technology in which to specialize, apply new technology faster than the user community, and attract skilled personnel enables vendors to grow by offering solutions in a timely manner. However, vendors have an increasing R&D requirement to understand and evaluate technologies and their implementation.



- Where a large information services vendor in the 1970s was a \$100 million company, today many vendors that did not exist ten years ago are approaching \$1 billion. The largest professional services firms are capable of investing in and developing their own products. The larger software product firms are building professional services organizations and the already large equipment firms are shifting to software and services. Processing and network services companies offer solutions on a global basis. Today, it is possible to find a strong, viable vendor to do almost anything with information technology and often do it better than most internal IS staffs.
- Along with skills and size has come maturity. Many vendors now have seasoned management that is willing and prefers to establish long-term client relationships.
- Vendors have built a pool of knowledge and experience on the use of IT within like organizations. This is rarely equaled by in-house staff whose experience is perforce limited to one or two organizations. As a result, vendors can quickly evaluate and apply new technology effectively.
- Their size, along with seasoned management, makes it viable for many vendors to assume significant risk. In the past, as a programming subcontractor, the vendor sought short-term, time-and-material contracts, and the applications software products vendor sold, but did not install, its product. Today the vendor will accept a reduced return in the short term if the relationship has a long-term basis. Fixed-price contracts are the standard for systems operations agreements.
- The increased importance placed on the use of information technology by operating management has also benefited the vendor. Since operating management is more likely to describe the problem in a larger context, more complex ideas and solutions result. Many vendors are now more effective than the internal IS staff at describing how information technology can benefit the business.



- The result is the opportunity for the vendor to market directly to operating management. This permits more information technology alternatives to be considered and newer technology to be considered more quickly.

The 1990s are starting with stronger, larger vendors capable of attacking large, complex requirements and managing the total process.

Fundamentally the differences between buying information services and outsourcing are depicted in Exhibits 4 and 5.

EXHIBIT 4

Outsourcing vs. Buying Services

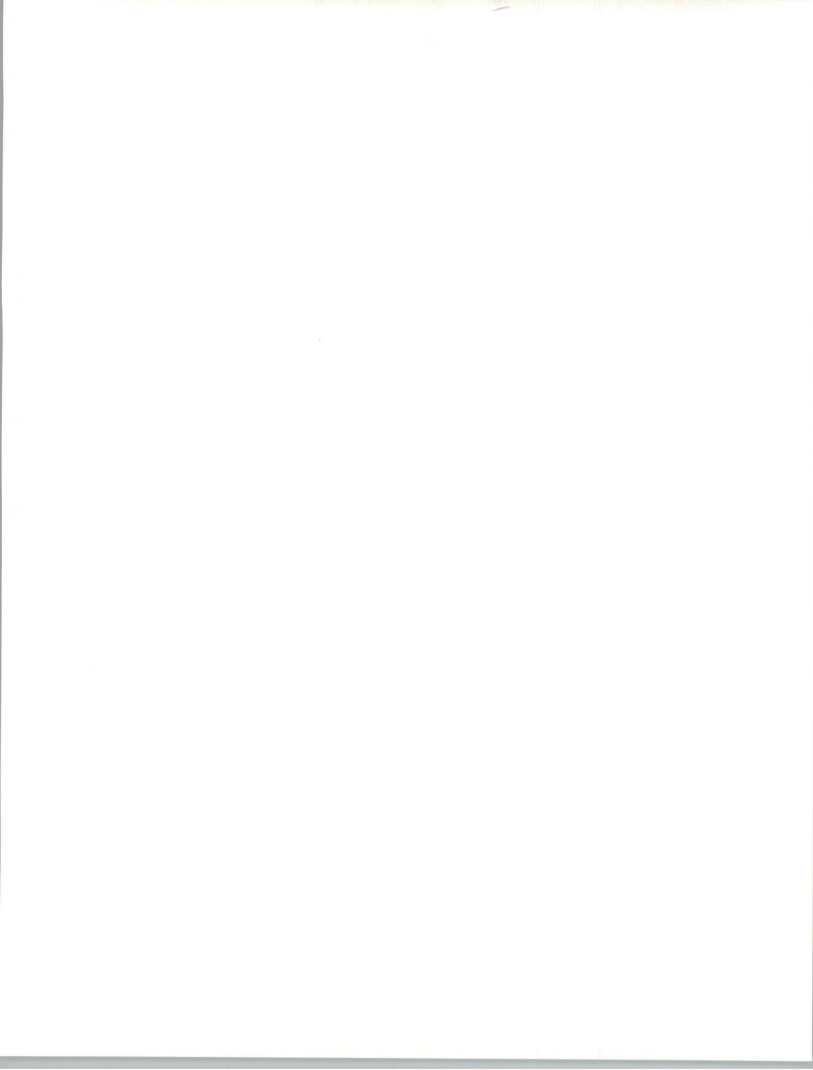
- 1980s: Services achieved recognition
- 1990s: Overcome prejudice against buying management services

EXHIBIT 5

Outsourcing Relationship Characteristics

- Greater commitment on part of buyer
- "Partnership"
- Responsibility/risk for vendors

- On the one hand, information services as a viable alternative to in-house IS activities became credible at all sizes and types of organization in the 1980s. The information services industry grew to over \$100 billion a year in 1991 in the U.S.



- But buyers were generally still prejudiced against “turning over” their IS functions completely to a vendor. This prejudice against buying the management of IS will disappear in the 1990s.
- Also, in the 1980s the supply side was not strong enough to meet the demands of the larger, more sophisticated IS user. With the increase in size of many independent vendors such as Andersen Consulting, CSC, and EDS and the entry of the large system suppliers like IBM and Digital, this credibility problem has largely disappeared.

The nature of the relationship changes in outsourcing versus just buying services.

- Firstly, there is a greater commitment by the buyer. These are long-term relationships not the contracting relationship that can be turned off relatively easily.
- Also the outsourcing relationship is not simply turning over responsibility to a vendor. It is a partnership in the IS management process. Both parties are involved in planning, organizing, communicating, and controlling the IS direction for their outsourcing partnership.
- This entails much more responsibility and risk for the vendor. The seller of a software package or a facilitating service can still blame the buyer for not using it properly, just as with a computer; in an outsourcing relationship that opportunity goes away. The vendor promises results and has to deliver by contract.





Outsourcing: Directions and Opportunities

Paper 9

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Outsourcing: Directions and Opportunities

IS Outsourcing Characteristics

So far this chapter has characterized outsourcing as a trend, summarized the evolution of IS outsourcing services, and described the issues of information technology use from the vendor and user points of view. In this section, outsourcing is described in terms of the underlying characteristics of the outsourcing decision and the types of outsourcing opportunities that are or will become common.

INPUT views *outsourcing* as the opposite of *insourcing*. Anything that IS has considered feasible to insource (data center operations, applications development, applications maintenance, network management, training, etc.) and has traditionally done itself should now be viewed as a candidate for outsourcing.

The momentum behind outsourcing is reflected in the recent trends in systems integration and systems operations.

Systems integration reflects the recognition by the buyer that the thing to be purchased is the *solution* rather than *components*. Just as a company would contract to have a new plant built, now it also contracts for all facets of the factory control systems for that plant. Instead of buying the hardware, software, and integration effort in pieces from a number of vendors, it turns to a single vendor.



IS traditionally has run its own data center for control and economic reasons. Today that rationale is no longer viable for many organizations; thus, the recent expansion of the systems operations market sector.

- The challenge of running a data center is demanding more financial, personnel and technical resources, which is changing the economic equation.
- Many large organizations are consolidating data centers into very large processing utilities to take advantage of data center automation and to meet the demands of network integration, yet they find the challenge outstrips the skills of their staffs.
- Meeting the demands for processing services is diverting IS management from the real priorities of solving operating problems and fulfilling information needs. By contracting the processing utility outside, attention can be focused on new applications and solutions.

These demand-driven characteristics are matched by supply-side characteristics. Many buyers are finding that vendors are now equipped to provide broad-based information systems implementation and management as or more effectively than internal units—that is, at a lower cost and with better performance over time.

In addition, major vendors use asset acquisition and capital assistance as powerful marketing tools to win large contracts. These vendors “acquire” systems operations contracts rather than just “sell” them. “Deals” often include the transfer of the buyer’s staff, the purchase of data centers, assumption of leases and software licenses, and even stock purchases. Vendors to the banking community have made large deposits in client banks.

The characteristics of today’s vendor/client relationships are, as noted in Exhibit 1, quite different from those of a few years ago.



EXHIBIT 1

Outsourcing Characteristics for the 1990s

- Size, nature, and length of commitment
- Breadth of responsibility assumed by vendor
- Partnership versus supplier/subcontractor
- Technology enhancements mandated
- Agent of change/transition outsourcing
- Professional services extensions
- Management extension

- The size of SO contracts has increased as larger organizations have turned to outsourcing. In the past facilities management contracts were typically awarded by medium-sized organizations, so a \$100 million contract used to be a very large contract. Today outsourcing contracts are awarded by even the very largest companies, such as Kodak, General Dynamics, United Technologies, etc. In addition, organizations such as General Motors and IBM have their own "captive" outsourcer. So now \$100 million contracts are much more common and \$1 billion contracts are being considered and awarded.
- However, INPUT research in 1992 has identified a major change in the length of contracts. In the 1980s there was a trend to longer contracts reaching from 10 to 15 years in some cases. Now contracts are getting shorter. Prospects believe they can get more leverage with the vendor through shorter contracts. Many users also recognize that the rates of business and technology change are making the initial contract obsolete in a few years.



As noted above, the nature of the contract is also changing. It is much more often like the purchase or acquisition of a company than the sale of a contract. The "company" in this case being an operation with staff, assets, and a revenue stream, albeit one that is usually only from a single customer.

- The breadth of responsibility assumed by the vendor is increasing. Historically, vendors focused on the data center in outsourcing contracts. In some industry sectors (banking and insurance), they also took responsibility for applications, but in most cases this was the operation of their own "packaged" service rather than the customers' unique software. And almost always these were transaction processing services. Today vendors have expanded their scope of service to include the data and voice telecommunications networks, the management of the "legacy" applications, new and packaged software, user systems, analytical and professional systems, etc. They also participate more intensively in the IS and business planning activities with the client.
- The relationship between client and vendor is better characterized by the term partnership than by buyer/supplier. The buyer is contracting for a set of services that are of strategic as well as operational value, and expects to have a relationship marked by a high level of communication, performance, flexibility, and integrity—a relationship similar to the type it has with its other business partners for the products and services it markets.

One consequence of this changed relationship is that the structure of the actual contract is evolving. In the 1980s, contracts were extremely detailed and rigid. Both sides attempted to cover all eventualities. This is proving virtually impossible. So, in the 1990s, there is more flexibility built into contracts and more room for contract or relationship evolution.

On the other hand, some aspects of the contracts being negotiated by today's more knowledgeable buyers are tighter. Contracts now include significant non-performance penalties and technology refreshment clauses.



- Though cost reduction continues to be the prime motivator identified by users for outsourcing, more attention is being given to the value of technology enhancement that follows as part of the outsourcing arrangement. There is growing recognition on the part of users that it is in the vendors' best financial and business interests to regularly enhance the way they deliver services to the user.

One of the issues that vendors face as clients want closer relationships is how far to go in terms of a specific relationship: if a vendor gets too close to a particular customer or starts offering services in competition with its potential customers it could have a negative impact on the market.

- In the 1970s and 1980s outsourcing contracts were very much a change in operations rather than a change in architecture or strategy. At the most, changes involved the consolidation of like computer operations or perhaps the migration to a new equipment vendor or software package.

Today, IS outsourcing is regarded as a major agent of change in organizations. Frequently, companies that wish to restructure their IS activities (perhaps to downsize; move systems to functional, geographic or product units; or both) have no way to move from point A to point B using internal resources only. They must outsource some activities in order to be able to make the change. As well as resources, the outsourcing agent provides the will and knowledge to accomplish the change. Often the need to accomplish such basic change is driven by the need to integrate IS with the minute-by-minute operation of the business and to do so at lower cost. The result is a changing market need and a business opportunity for transition outsourcing.

- The shift in the makeup of what is bought from information services vendors to include an ever-growing professional services component is another significant difference. These professional services include not only traditional system design and programming, but "upstream" (e.g., business consulting) and "downstream" (e.g., user support or customer services) services. The buyer is turning to a single vendor for the complete package of products and services.

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- The result of these differences is that the vendor is now providing a more significant management element in the contract. The vendor interface is at the top of the client organization and includes operational, tactical, and strategic elements. The vendor is involved in planning, communicating, organizing, and controlling more than just the computer operations.

One consequence of the trends to include more management of IS and to provide a broader scope of service is that other software, services, and system vendors are seriously impacted by the outsourcing decision. The buyer is looking to reduce complexity and have one vendor to deal with. Once a decision to outsource is made, a single vendor is selected to provide all the required services (the ability to do so is, in fact, a primary qualification for consideration). Whether or not the vendor subsequently intends to use subcontractors is of little importance to the buyer.

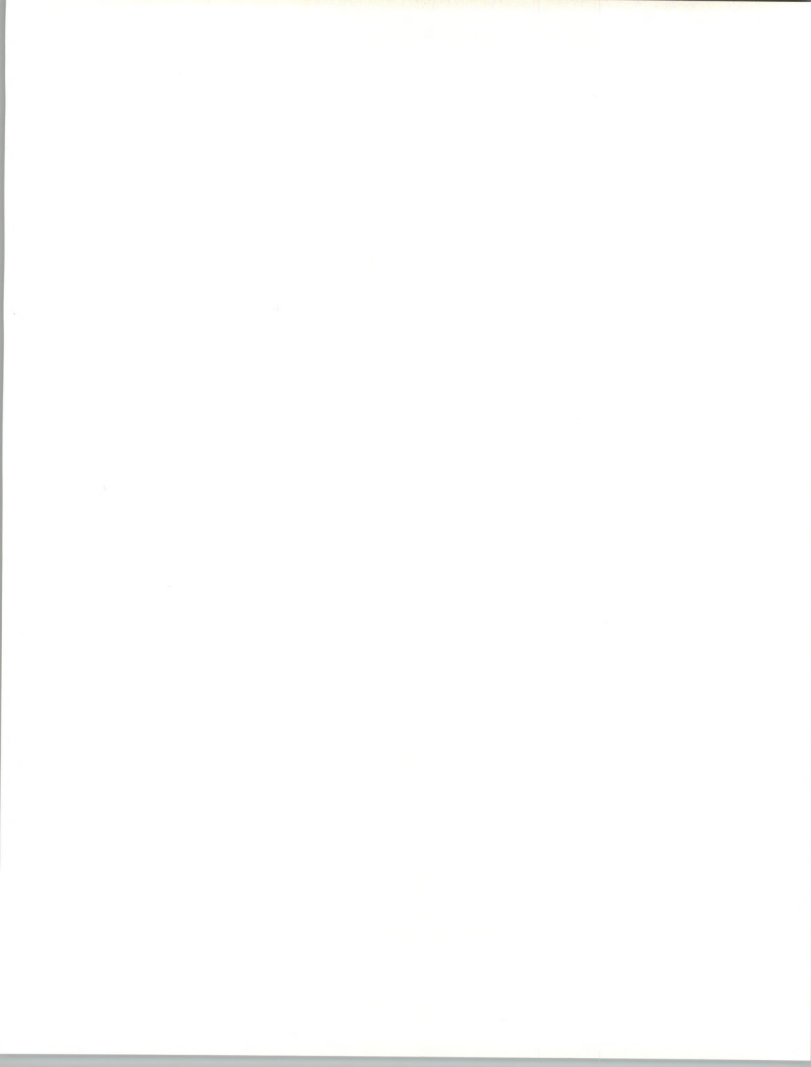
A good example of what can happen to other vendors was the impact on professional services vendors in Detroit of General Motors acquisition of EDS. All their contracts were initially canceled or frozen.

IS Outsourcing Relationships

To help characterize the outsourcing trend, Exhibit 2 draws relationships among the information services industry components and the types of outsourcing relationships that are becoming common between clients and vendors.

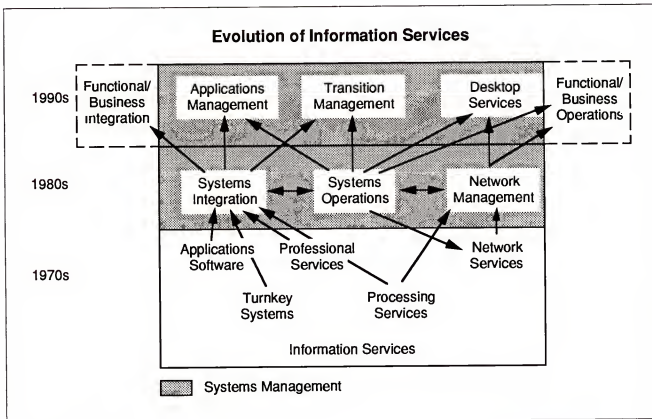
The services in the systems management box include the partnership commitment between vendors and users. Professional services, processing services and other services can be subcomponents of outsourcing relationships. Systems management relationships are still primarily focused on the IS functions.

- Applications management is the outsourcing of the applications development and/or maintenance/ enhancement function. The maintenance of the vast installed base of "legacy" systems is one of the greatest inhibitors to the ability of information



systems to progress. Outsourcing can focus on maintenance particularly if system re-engineering is required, thus freeing up internal staff for new development. Or it can focus on the new initiatives, particularly when major change over a long period is required.

EXHIBIT 2



- Desktop services is a fast-growing opportunity that derives from the trends to downsize applications and to move them to the functional units. It is also driven by the increasing requirement for user support as the complexity at the desktop increases dramatically. Networks make desktop services both necessary and possible.
- Transition management is an emerging opportunity, as described above. Information systems departments are shifting technology, adjusting to mergers and acquisitions, consolidating data centers, and more. These shifts often take three to



five years and offer the basis for a partnership with the vendor either managing the old systems, serving as a systems integrator to install the new systems, or both. Essentially, the vendor becomes the "agent of change."

- Systems integration is the combination of IS products and services to fulfill an IS project requirement.
- Systems operations is the operation of computer centers, related networks and, in some cases, applications management.
- Network management is the operation of the data communications network separate from computer center operations. It may include voice, text, and image with data. Voice-only network management contracts can exist but are outside the scope of IS outsourcing.

The two other relationships are focused more on the business than IS, although IS is a significant, perhaps dominant component.

- Functional or business integration (see Exhibit 3) is the natural extension of system integration. Since there is little benefit to information systems changes without business or organizational change, it becomes necessary for vendors and IS organizations to deal with both sets of changes seamlessly. Project teams must deal with organization changes in policies, procedures, pay-scales, job qualifications and functions, employment levels, facilities, supervision, and management at the same time as information systems changes. At the extreme, construction and initial operation of a new factory would fit this definition.

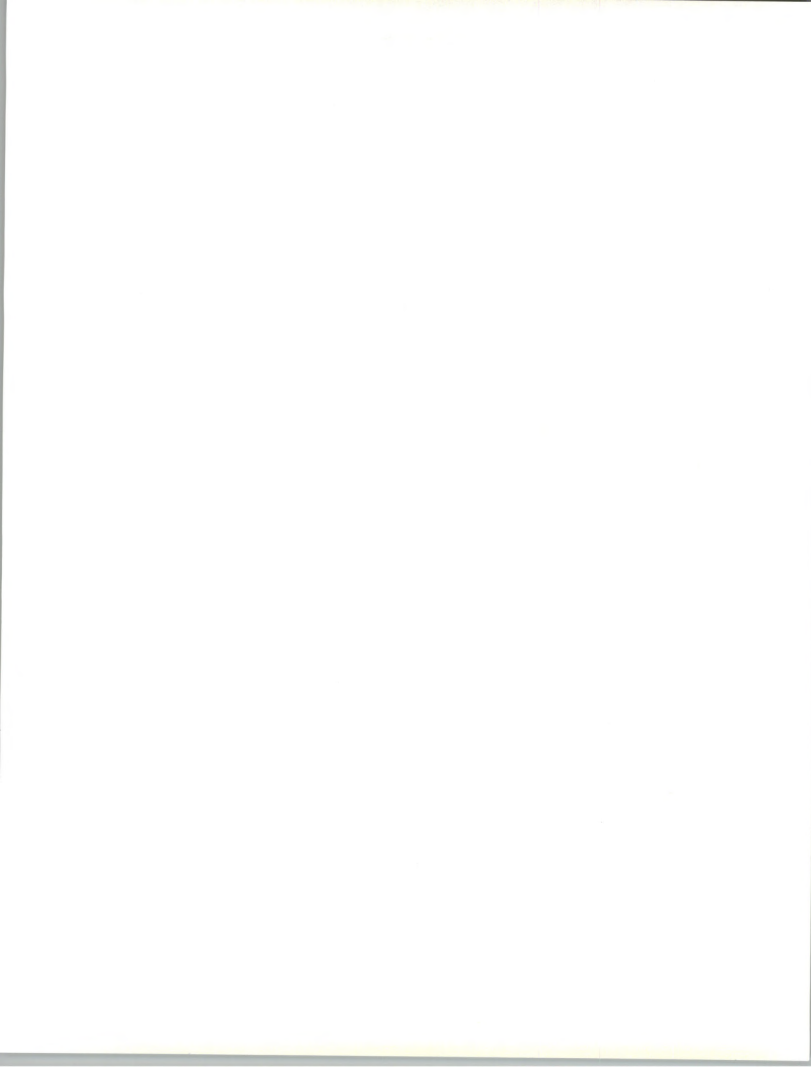


EXHIBIT 3

Components of Functional/Business Integration

- **Personnel** Policies, procedures, pay-scales, employment levels, job qualifications, job functions, etc.
- **Organization** Facilities design and acquisition, funding planning, staffing, equipment and services (non-IS) planning, selection and acquisition, etc.
- **IS activities**

- **Functional or business operations** (see Exhibit 4) similarly includes all aspects of the operation of the function, including all employee facilities and infrastructure processes. Again, at the extreme, operation of a factory or bank would fit this definition.

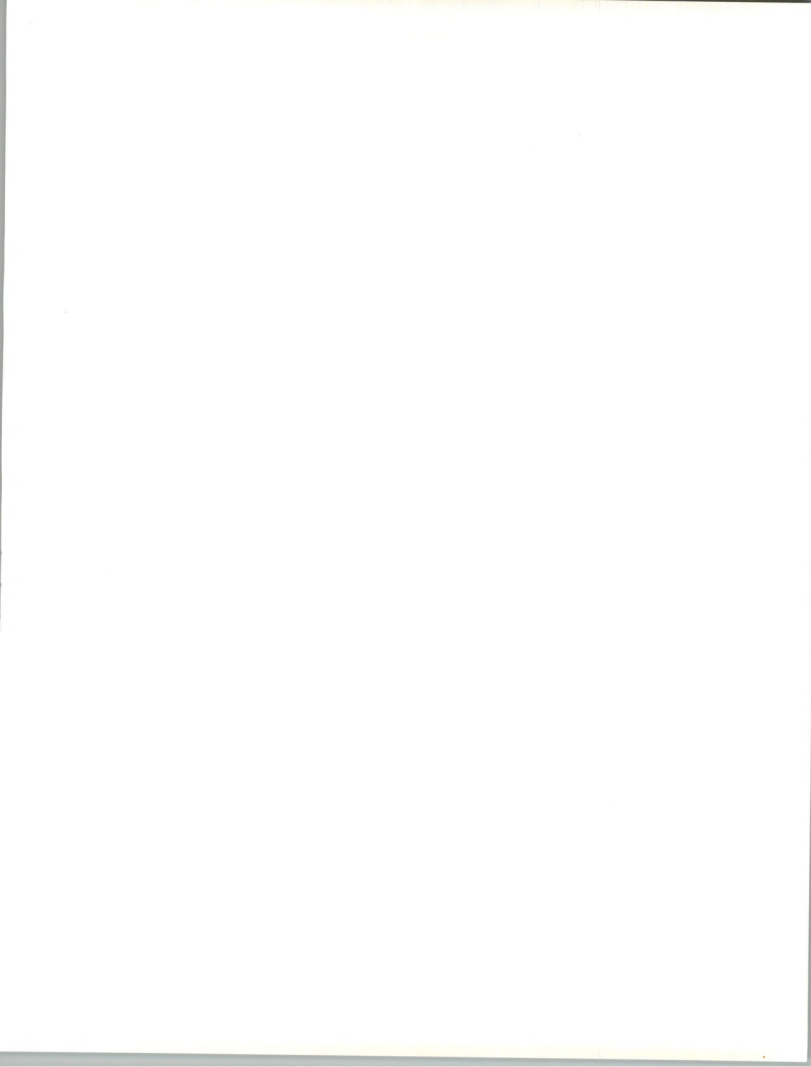


EXHIBIT 4

Components of Functional/Business Operations

- Personnel—operating staff procedures, hiring and firing, training
- Organization—funds collection and/or disbursement, facilities operations, non-IS equipment and services management
- Communication—client reporting, government reporting, staff reporting, customer/vendor reporting
- Control—quality control, financial and operational control
- Planning—functional/business planning
- IS activities

Outsourcing is a relationship structure, not a specific mode of service delivery. It impacts traditional services as well as creating the opportunities for new and expanded services.

