USER ATTITUDES TO OUTSOURCING

WESTERN EUROPE 1991 - 1996

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INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
24, avenue du Recteur Poincaré
75016 Paris, France
Tel. (33-1) 46 47 65 65 Fax (33-1) 46 47 69 50

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114

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INPUT®

Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, UK +44 71 493 9335
24, avenue du Recteur Poincaré, 75016 Paris, France +33 1 46 47 65 65
Sudetenstrasse 9, D-6306 Langgöns-Niederkleen, Germany +49 6447 7229

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Piccadilly House, 33/37 Regent Street, London SW1Y 4NF, UK +44 71 493 9335
24, avenue du Recteur Poincaré, 75016 Paris, France +33 1 46 47 65 65
Sudetenstrasse 9, D-6306 Langgöns-Niederkleen, Germany +49 6447 7229

Researched and Published by
INPUT
Piccadilly House
33/37 Regent Street
London SW1Y 4NF
England

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Abstract

Despite the high levels of dissatisfaction shown by senior executives with their in-house IS departments' performance, systems operations remains a small part of the overall software and services market. This report evaluates the attitudes of both senior executives and IS Managers towards outsourcing in companies which have yet to use systems operations. In addition to considering attitudes to the various types of systems operations service, the report evaluates senior executives' expectations of in-house IS departments and software and services vendors, and endeavours to identify the most promising opportunities for systems operations vendors.

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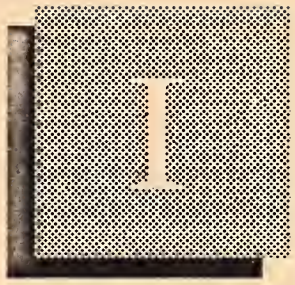


Introduction

I Introduction

A Objectives

This report analyses the attitudes of senior executives and IS managers towards outsourcing within organisations which have not adopted systems operations. Its objectives are:

- To identity senior executives' level of satisfaction with their IS departments and their current expectations from these organisations and software and services vendors.
- To identify senior executives' and IS managers' principal objections to systems operations services.
- To identify the types of systems operations service which are perceived to be most suitable by non-users.
- To identify the circumstances in which a switch to outsourcing would be considered by non-users.

B Scope and Methodology

Systems operations involves the operation and management of all or a significant part of the user's information systems functions under a long-term contract. These services can be provided in either of two distinct submodes:

- *Professional Services*: The vendor provides personnel to operate client-supplied equipment. Prior to 1990, this was a submode of the Professional Services delivery mode.
- *Processing Services:* The vendor provides personnel, equipment and (optionally) facilities. Prior to 1990, this was a submode of the Processing Services delivery mode.

Systems operations vendors now provide a wide variety of services in support of existing information systems. The vendor can plan, control, provide, operate, maintain and manage any or all components of the user's information systems (equipment, networks, systems and/or application software), either at the client's site or the vendor's site. Systems operations can also be referred to as "resource management" or "facilities management".

There are two general levels of systems operations:

- *Platform/network operations* - where the vendor operates the computer system and/or network without taking responsibility for the applications.

- *Application operations* - where the vendor takes responsibility for the complete system, including equipment, associated telecommunications networks, and applications software.

Interviews were carried out with thirty senior executives and sixty IS managers throughout Western Europe.

C
Report Structure

The remaining chapters of this report are structured in the following way:

- Chapter II is the Executive Overview of the entire report. It summarises the principal findings of the research.

- Chapter III considers the attitudes of senior executives and IS managers towards systems operations in detail. In particular it evaluates senior executives' and IS managers' objections to system operations, attempts to identify the circumstances in which the likelihood of a switch to outsourcing would increase, and discusses the service options available to systems operations vendors.

- Chapter IV provides a series of brief case studies illustrating the circumstances in which users have adopted varying types of systems operations.

II

Executive Overview

II Executive Overview

A
Network Management & Applications Maintenance - Key Outsourcing Opportunities

Senior executives in Western Europe continue to show high levels of dissatisfaction with their IS departments' performance. In a survey conducted by **INPUT**, 70% of senior executives were found to be dissatisfied with at least one major element of their IS departments' performance and over a third of executives were dissatisfied with the relationships between the IS department and its clients.

This level of dissatisfaction could be expected to lead to high levels of outsourcing. However, this has yet to materialise. The answer appears to lie in senior executives' perception that software and services vendors are still primarily IS technicians with an inadequate understanding of the business need.

The result is that, in large organisations at least, systems operations will only be adopted in circumstances where:

- the in-house IS department lacks the capability or resources
- the relationship between the IS department and senior executives has been severed
- IS management is prepared to adopt systems operations.

Accordingly, one area that is increasingly being considered for outsourcing is network management, where many IS departments lack in-depth technical skills. Many wide area networks which were initiated by in-house IS departments are now reaching a size and complexity which makes them "unmanageable" in the absence of a unit dedicated to this task. Rather than set up such units, IS managers are often prepared to consider the use of a systems operations vendor.

Another area which is being actively considered by IS managers is application maintenance management. The maintenance of applications which have been developed in house is unattractive to IS personnel and typically takes up a large proportion of the IS departments' resources. In times of recession, when the number of development staff and level of IS resources is being trimmed, one option open to IS departments is to focus all the in-house resources on new development and outsource the maintenance and support of existing applications. This is a comparatively recent type of service and it will need to be strongly marketed to convince potential users of its viability and cost-effectiveness.

The current economic climate and trend to decentralisation also favours other types of systems operations service.

Downsizing becomes especially appropriate as a means of both reducing IS costs and increasing organisational flexibility. Thirty percent of IS managers at mainframe sites in Western Europe now consider downsizing important for their organisation. This presents a considerable opportunity for transition management vendors, while in some cases senior executives will take the opportunity afforded by a change in technology and organisational structure to introduce much higher levels of outsourcing such as application operations.

There is a strong pressure on IS managers in Western Europe to reduce their expenditure while maintaining their service to clients, increasing the likelihood of the adoption of platform operations by those organisations such as the major financial institutions where downsizing is not perceived to be appropriate.

IS management is typically least prepared to outsource management of its IS strategy, development projects, and system specifications though advisory services will be purchased on occasion.

B
Senior Executives Dissatisfied with IS Performance

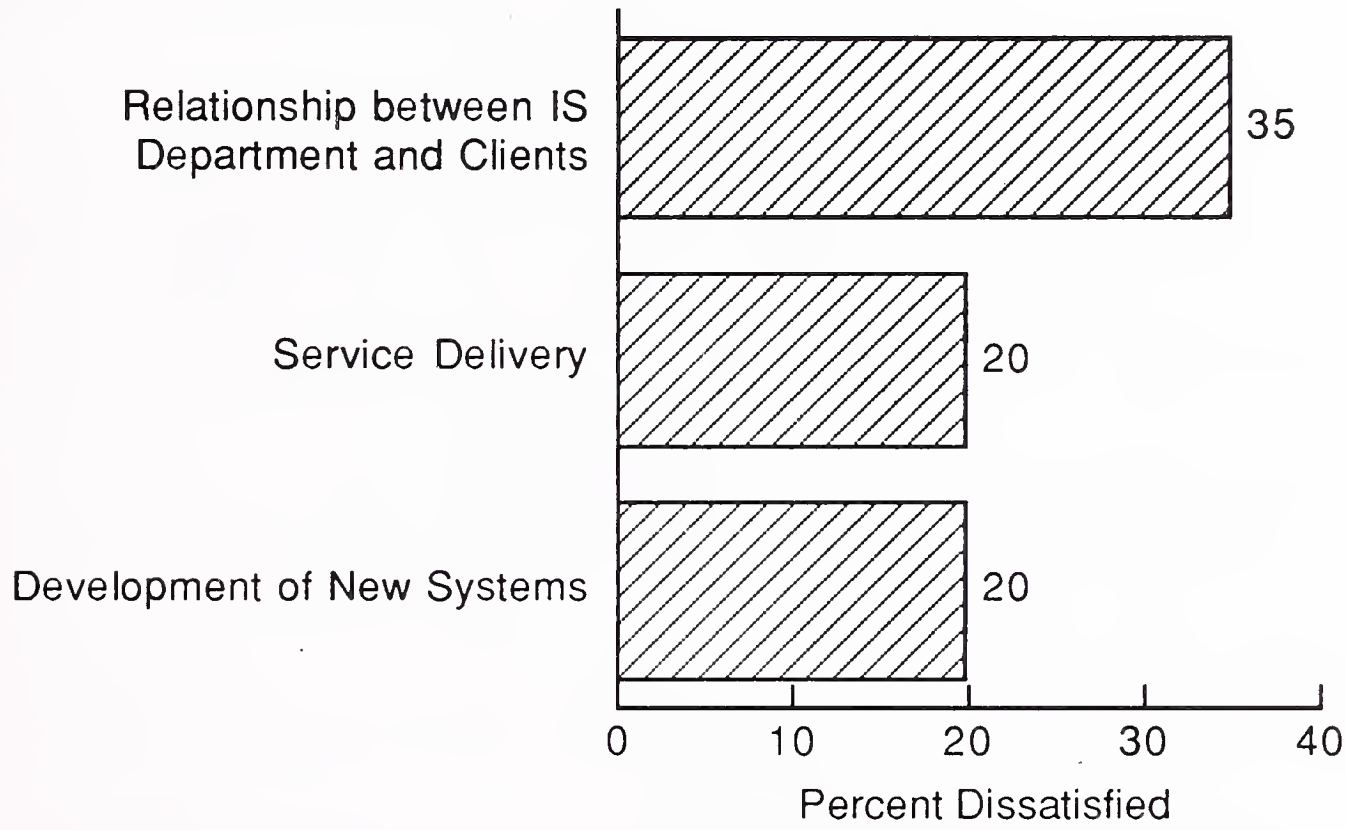
Despite their loyalty to their IS managers, or their lack of belief that systems operations vendors offer a viable alternative, senior executives do not typically hold their organisation's IS performance in high esteem. As shown in Exhibit II-1, senior executives in approximately one-fifth of organisations believe that the performance of their IS department has been poor in terms of service delivery. A similar proportion perceive a poor performance in the development of new systems. However, the area where IS departments were rated worst of all is in the management of the relationship between themselves and their end user clients. Here approximately one in three of senior executives were unimpressed by the performance of their in-house IS department.

These failings should be exploited by systems operations vendors since few organisations can survive in a climate of inadequate service and poor relationships with their clients.

However, the rate of take-up of systems operations has so far been much lower than would be expected in this climate. To investigate why, it is appropriate to examine the factors inhibiting the take-up of systems operations and vendors' level of expectation from external software and services vendors.

Exhibit II-1

Dissatisfaction Amongst Senior Executives Western Europe



Exhibits II-2 and II-3 indicate the major reasons given by both senior executives and IS managers, who had ruled out the possibility of adopting systems operations, for not adopting systems operations. The cost of systems operations was given as the major objection by both senior executives and IS management. This may be because software and services vendors are still perceived as being more costly than in-house IS departments for application development. However, systems operations vendors should generally be in a position to offer cost-competitive mainframe platform operations services compared to in-house IS departments, and in many instances application operations has been sold as a cost-reducing mechanism, particularly when it is combined with downsizing and decentralisation of computer facilities.

Loss of control is another major objection to systems operations cited by both senior executives and IS managers. However, the degree of control offered by in-house IS departments may be more illusory that real. Many managers in reality find it easier to direct and control an external vendor than an internal department. IS managers are generally most concerned about losing control of IS strategy, project management, and systems specifications. They are less concerned about loss of control of:

- equipment operations
- network operations
- non-strategic systems development.

Hence these areas may meet with less opposition to systems operations.

Corporate policy is another objection commonly raised. While IS managers may use this objection simply as a blocking device to systems operations vendors, it does appear that organisations take a formal stance at board-level on their attitude to use of systems operations, with many companies taking a risk-averse approach.

The presence of in-house IS expertise also acts as an inhibitor to systems operations. Many senior executives perceive that their in-house IS departments, in spite of their shortcomings, have built-up a level of understanding of the way the company carries out its business. External software and services vendors are perceived to lack this detailed knowledge which would have to be acquired by them at considerable expense.

Exhibit II-2

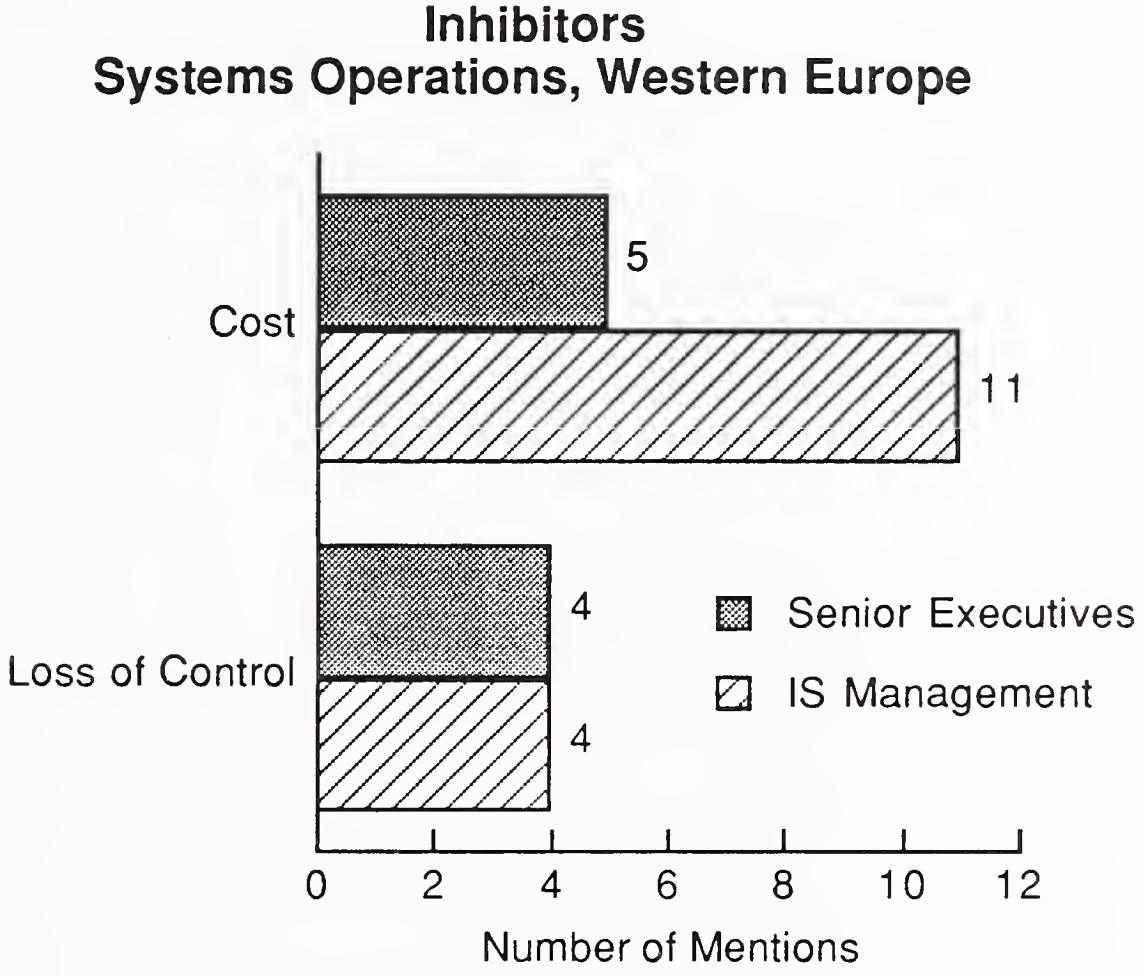
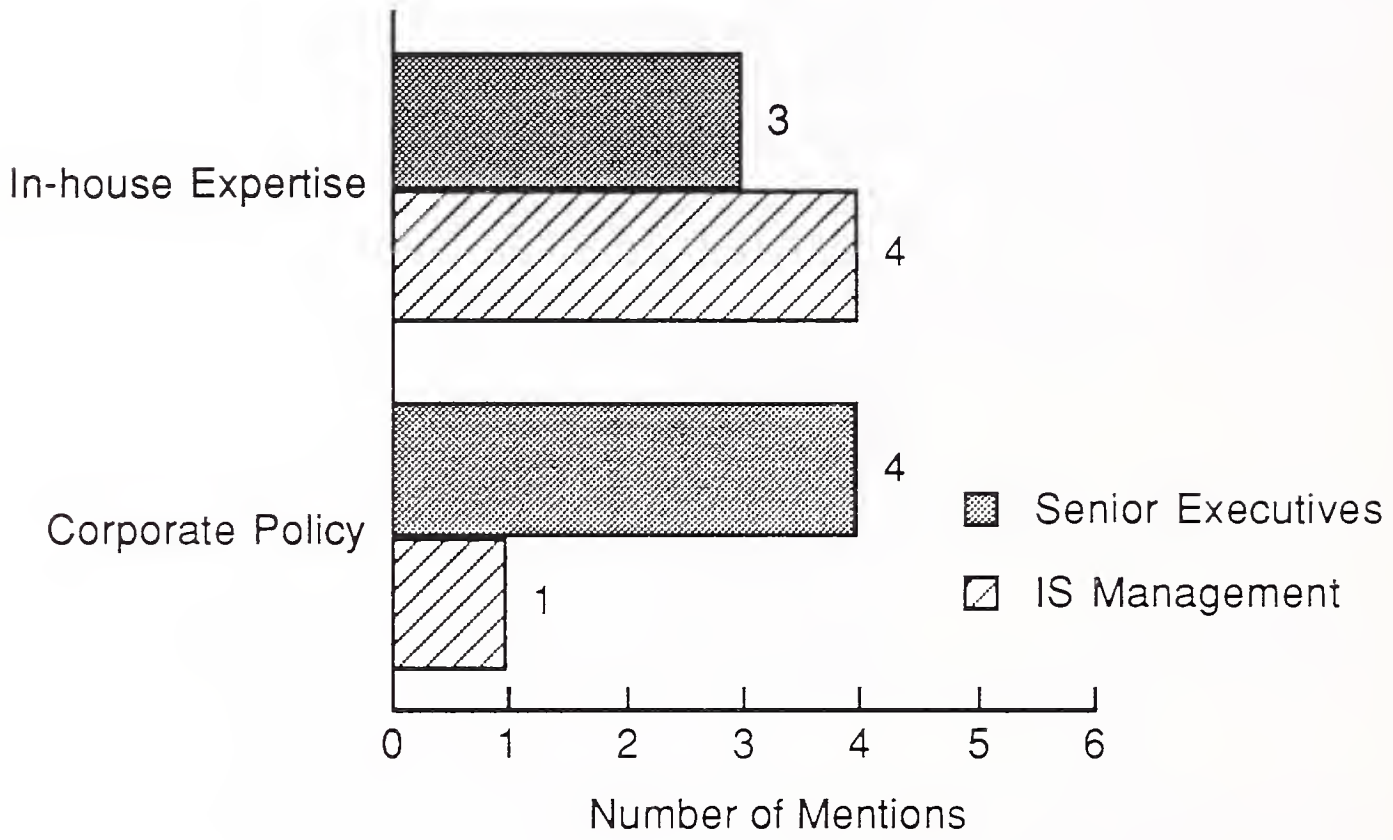


Exhibit II-3

Inhibitors
Systems Operations, Western Europe
(Continued)



C
Expectations from Vendors Remain Low

On the whole, senior executives' expectations of software and services vendors, listed in Exhibit II-4, remain comparatively limited. The principal role of software and services vendors is perceived to be the supply of industry-specific application software products to form the basis of the organisation's IS systems.

Typically senior executives do not perceive that software and services vendors are well placed to supply them with the precise IS services they require to support their business, and believe that software and services vendors need to take action to improve considerably their understanding of users' business needs. However, they would like their software and services vendors to be capable of assisting them in planning their IS approaches and providing objective advice.

Exhibit II-4

Expectations of Vendors
Senior Executives, Western Europe

- Supply application software products
- Understand users' business needs
- Planning/objective assistance

The circumstances in which senior executives and IS managers would be more likely to adopt systems operations are identified in Exhibit II-5 and II-6. The major circumstance identified by both senior executives and IS managers is the inability of the IS department to provide the services required whether due to a major work overload or loss of key IS staff. This highlights a number of potential opportunities for systems operations vendors since the ability of the in-house IS department to service its clients is diminished by:

- a change in business focus
- significant company restructuring
- acquisition of new subsidiaries
- downsizing or a dramatic change in technology
- change in IS management.

Many IS departments feel vulnerable to a change in company policy on outsourcing. Changes in senior management, particularly a new chief executive officer were perceived to be the most probable circumstance in which this would come about. Company acquisition is another event which could stimulate fresh thinking, the severance of existing relationships between senior executives and IS management, and a refocusing on the company's core business to the exclusion of IS activities.

Exhibit II-5

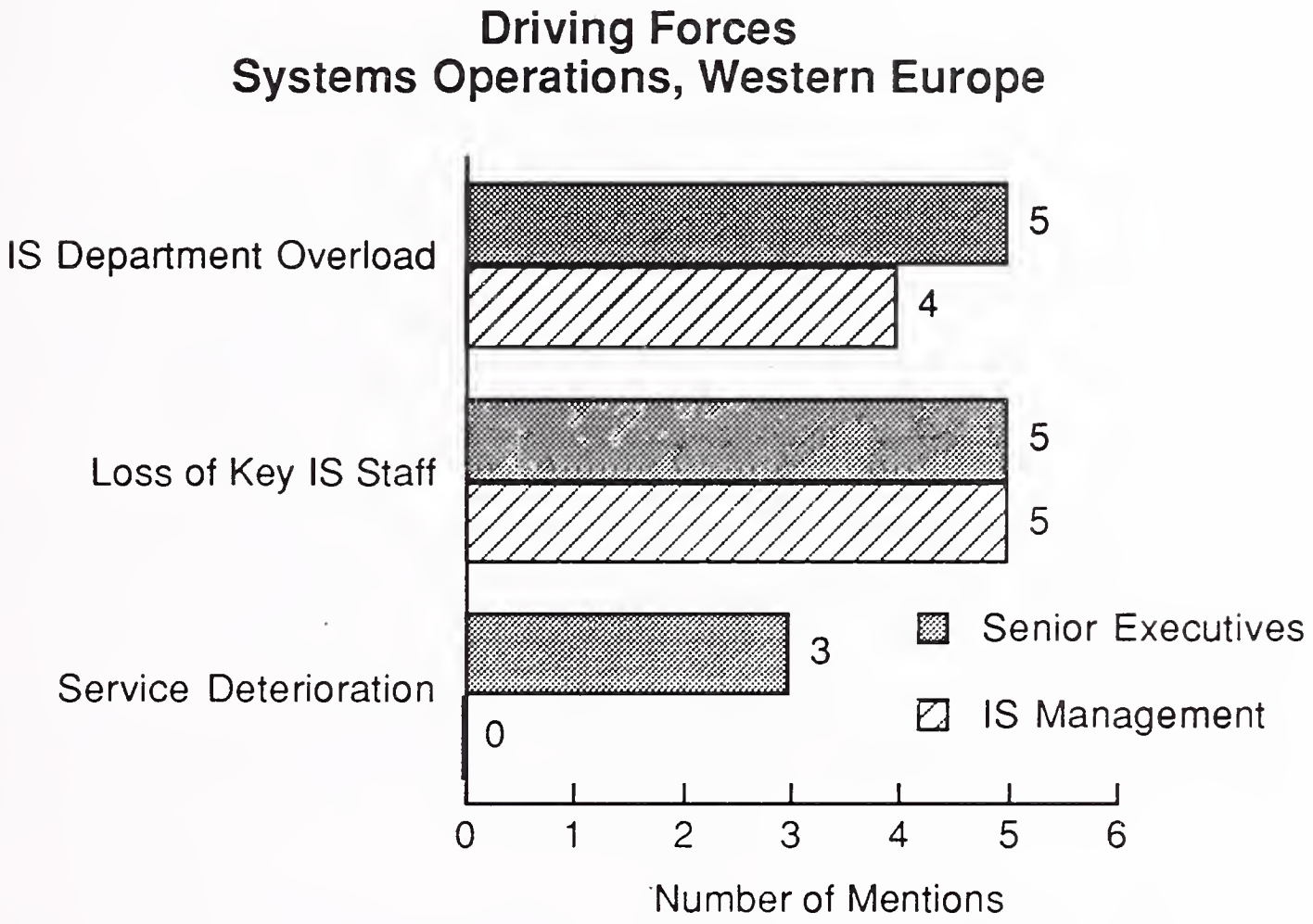
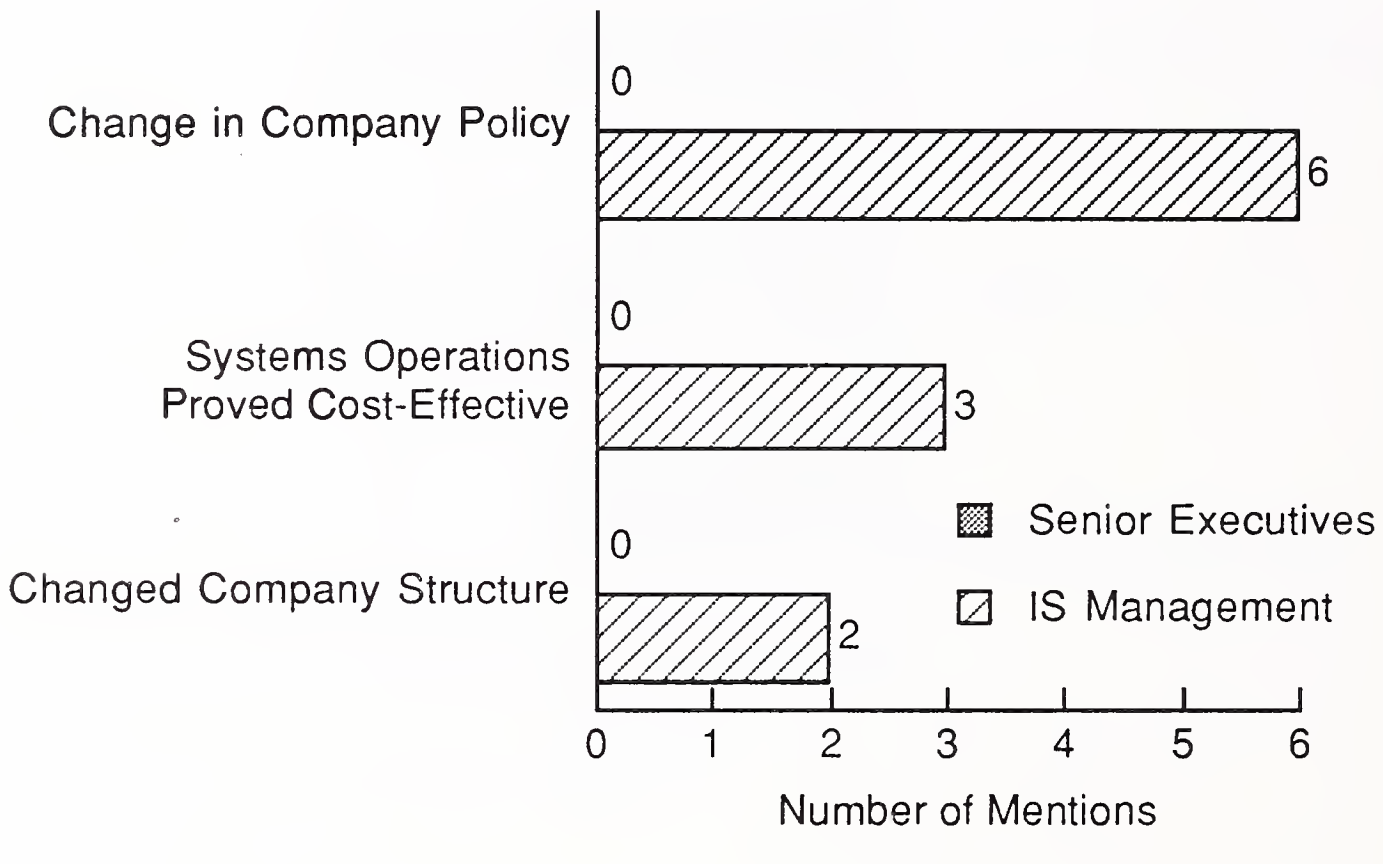


Exhibit II-6

Driving Forces
Systems Operations, Western Europe
(Continued)



D
Powerful Need to Reduce Costs

Both senior executives and IS managers agree that the major challenge facing in-house IS departments is the need to reduce IS costs. The major challenges facing their departments as perceived by IS managers at mainframe sites are indicated in Exhibit II-7. This scenario should favour systems operations vendors and especially platform operations vendors.

The problem is that IS managers typically believe that the way for them to reduce their costs is not by reducing the delivery costs of existing services but by reducing their development activity and, where necessary, reducing the number of development staff. To the extent that IS managers in mainframe sites recognise the need to reduce their service delivery costs, they favour options such as "lights out" processing and distributed processing over systems operations.

Nonetheless systems operations vendors potentially have a significant role to play in assisting mainframe users to maintain their services to end users while reducing IS costs via services such as platform operations and application maintenance management. Implementing new systems is not currently a major propriety for mainframe users.

However this could mean that many large IS departments will reduce their staffing during the recession, with the result being increased opportunity for software and services vendors when a business upturn occurs with an attendant increase in system development activity.

The perceived challenges facing mid-range users, as shown in Exhibit II-8, are significantly different from those found at larger sites. Although there is still considerable emphasis on the reduction of IS costs, the need to implement new applications and networks is also strongly apparent. This is creating opportunities for software and services vendors to assist mid-range users in application development, whether by application management or systems integration services.

Exhibit II-7

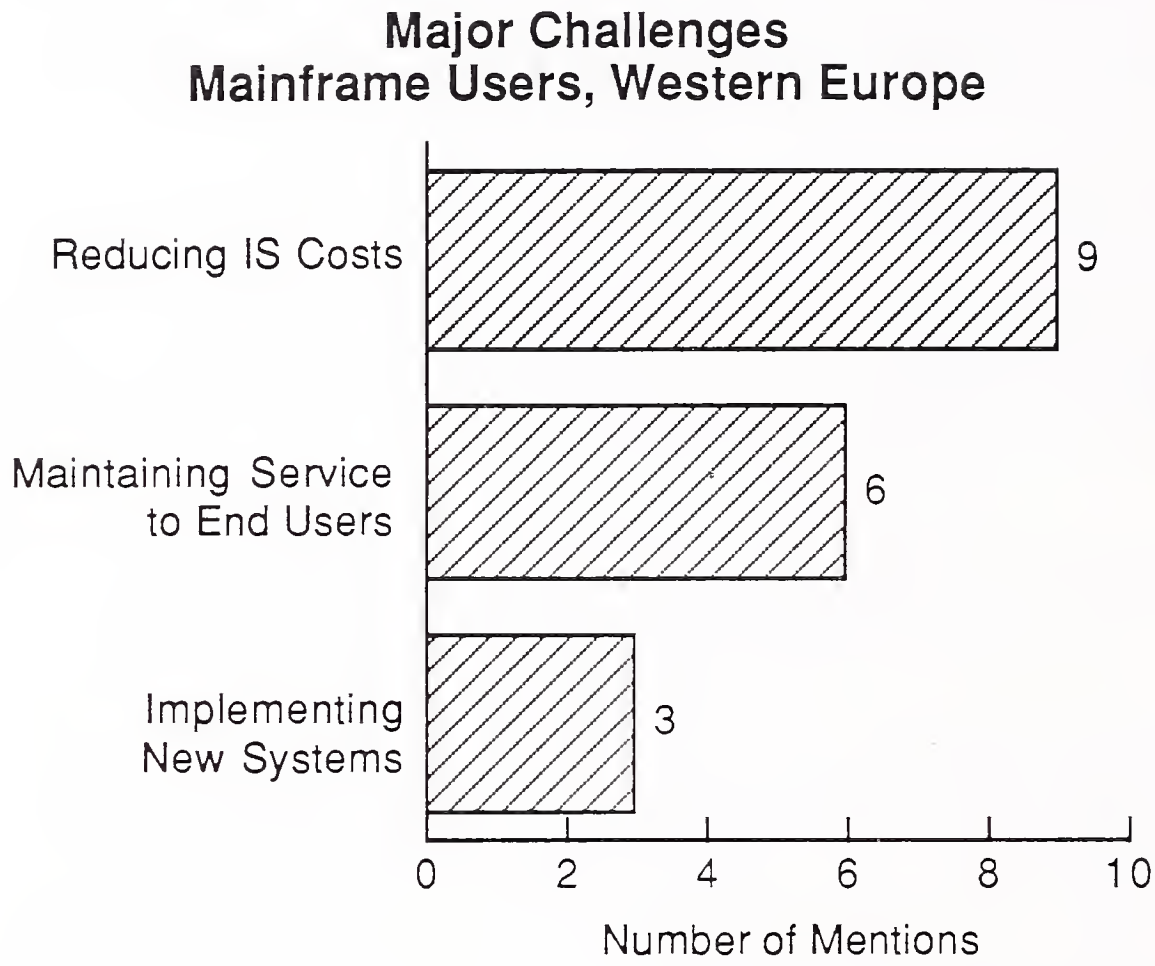
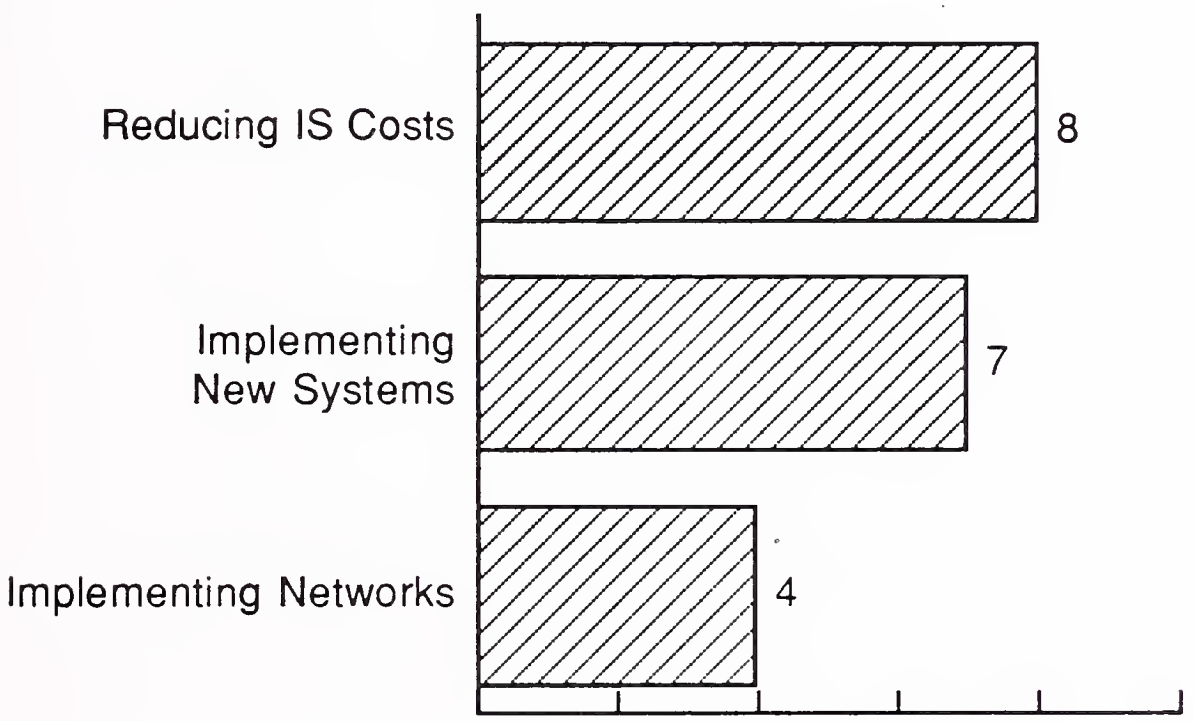


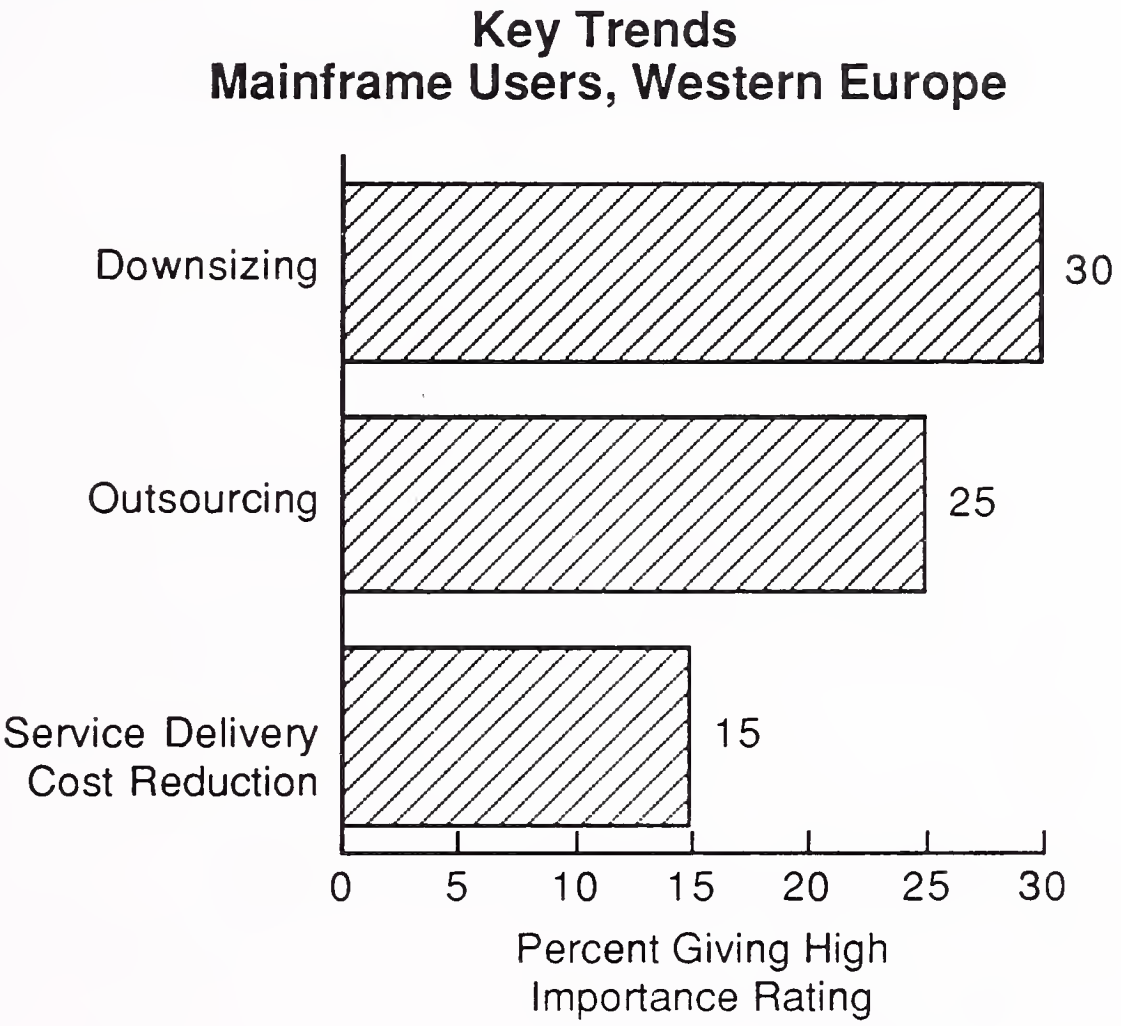
Exhibit II-8

Major Challenges
Midrange Users, Western Europe



As shown in Exhibit II-9, downsizing is considered an important issue for their organisation by IS managers at thirty percent of mainframe sites. This has several implications for systems operations vendors. Firstly it creates a large number of opportunities. At one level, downsizing creates transition management opportunities for systems operations vendors to manage the "old" systems while the in-house IS department concentrates all of its resources on the new systems. At another level, downsizing creates a discontinuity, and a need to retrain the IS department, which provides an opening for senior management to introduce an applications operations services and move to a more complete outsourcing arrangement.

Exhibit II-9



E
Network Management and Application Maintenance Management Set to Prosper

In large organisations, the rate of take-up of systems operations has been significantly reduced by opposition from IS managers, given the reluctance of most chief executive officers to impose its use. Accordingly the rate of take-up of differing types of systems operations service will, to a certain extent, reflect the level of resistance they meet in the IS community.

The types of service which are expected to meet the lower levels of resistance amongst IS managers in large companies are indicated in Exhibit II-10, while the types of systems operations service which typically meet high levels of opposition are listed in Exhibit II-11.

Exhibit II-10

Services Meeting Least Resistance
Systems Operations, Western Europe

Service	Level of Resistance
Transition Management	Low
Network Management	Low-Medium
Maintenance Management	Low-Medium

Transition management may even be positively welcomed by IS managers, since it removes their burden of running and maintaining "old" systems, allowing the organisation to concentrate on IS strategy and new systems development - its preferred activities. Furthermore transition management poses little long-term threat to the in-house IS department in most instances.

Network management and application maintenance management are expected to show strong growth over the next five years as users become more confident in outsourcing these activities.

Network management is an area where many IS departments lack depth of expertise, and as users' networks grow and become increasingly "unmanageable" so this activity will tend to be outsourced.

Application maintenance management, namely the outsourcing of the maintenance of applications which were initially developed in-house, is a recent market development still in its infancy. However, application maintenance frequently takes up a large proportion of IS departments' resources while being an unpopular activity with software development personnel. Furthermore the service provided to end users is frequently poor. Outsourcing of this activity can be cost-effective option for IS departments leading to improved end user service. The present economic climate provides the right environment for systems operations vendors to market the benefits of this service such as:

- low cost maintenance of existing services
- high utilisation of scarce in-house IS staff for new systems development
- higher satisfaction from end users.

However, there may be some reluctance amongst IS managers to openly admit to the problems they have in maintaining "old" systems which vendors will need to overcome. But, apart from the danger of embarrassment, maintenance management poses little long-term threat to IS managers.

Exhibit II-11

Services Meeting High Resistance
Systems Operations, Western Europe

Service	Level of Resistance
Application Operations	Very High
Application Management	High
Platform Operations	Medium

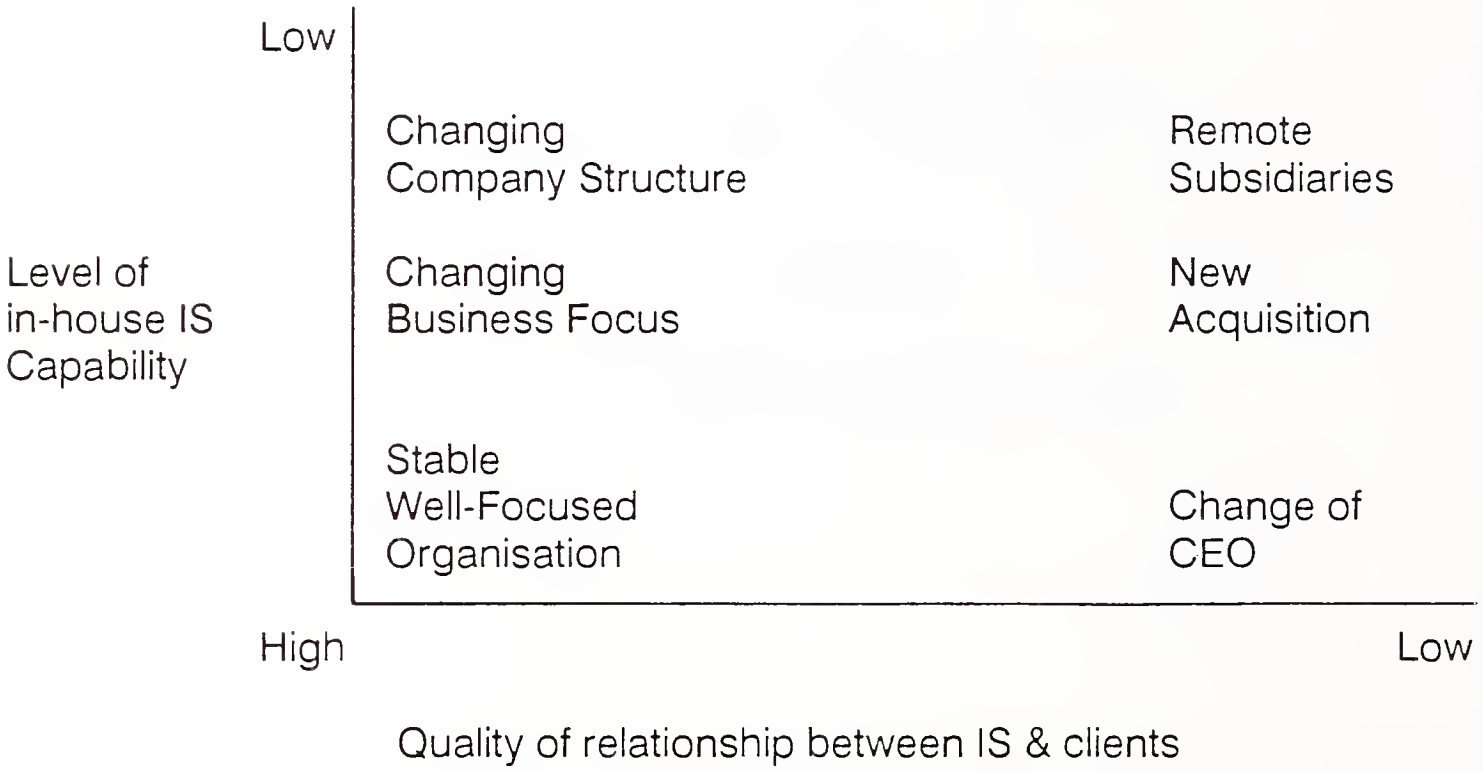
The present economic climate should also favour platform operations since IS managers now have a strong need to reduce their costs while maintaining services, which is the principal objective of mainframe platform operations. Platform operations is likely to meet with a moderate amount of resistance from IS management. However, many IS managers state that they will adopt systems operations if it can be proven to be cost-effective, and platform operations may well be the lesser evil when the financial director insists on cost savings from the IS department.

Both application management and application operations are expected to meet with very high levels of resistance from IS managers in large organisations. Indeed application operations is only likely if it is imposed by the chief executive officer of the company. Typically it will only occur in organisations undergoing dramatic transformations.

Exhibit II-12 indicates the likelihood of large organisations adopting systems operations. The organisation will be more likely to adopt systems operations the lower the in-house IS capability and the poorer the quality of the relationship between the IS department and its clients.

Exhibit II-12

Identification of Prospects
Systems Operations, Western Europe



The subsidiaries of large conglomerates are typically good systems operations prospects since a centralised IS department may have difficulty in fully understanding their needs, give them a low priority compared to the core business, and be too remote to maintain a good relationship with the subsidiary's senior executives. An example of a subsidiary of a major concern which has recently adopted application operations is ICI Agrichemicals. Another example is Imperial Tobacco, a member of the Hanson Group. Newly acquired companies are also good systems operations candidates.

A change of senior management can also lead to adoption of systems operations particularly if the new executive is know to favour outsourcing. Accordingly the appointment of Andy Barr (ex Rover Group) as executive chairman of BAe Aerostructures has led to a systems operations contract between the company and AT&T Istel.

Company re-organisations and refocusing also commonly lead to systems operations. Decentralisation often necessitates downsizing and a realignment of IS systems. Depending on the severity of the company's problems and the attitudes of senior executives this can mean either transition management or application operations are adopted.

Smaller organisations however will typically need more assistance with application development and show signs of lower levels of opposition to application management and application operations.

Accordingly they may present the best prospects for systems operations vendors emphasizing application operations. However, they may feel they are too small to finance systems operations vendors emphasising application operations. However, they may feel they are too small to finance systems operations and will need convincing that systems operations is a cost-effective option for the smaller organisation to adopt.

Non-User Attitudes to Outsourcing

III Non-User Attitudes to Outsourcing

A
The Challenge - Overcoming Objections to Outsourcing

Although increasingly widely promoted as a key business concept, systems operations or outsourcing still accounts for only 1% of Western European total software and services expenditure, taking into account both in-house spend and expenditure incurred with external software and services vendors.

This chapter considers non-users' attitudes to systems operations in order to analyse how vendors can approach this challenge. The viewpoints of both senior management and in-house IS management are discussed, since both are important in influencing the decision-making process. In both cases, the principal objections to the use of outsourcing are identified. For senior executives, other pointers which are taken into account include:

- their expectations from IS
- their attitudes towards the suitability of various types of systems operations service
- the circumstances in which systems operations would become a more attractive option.

Cost reduction is currently a major challenge facing many IS managers. This chapter considers the various options which IS management can adopt to meet this challenge and the relevance of systems operations to this need.

Finally this chapter considers approaches which vendors might adopt to overcome the principal objections exhibited by non-users of systems operations.

B
Senior Executives

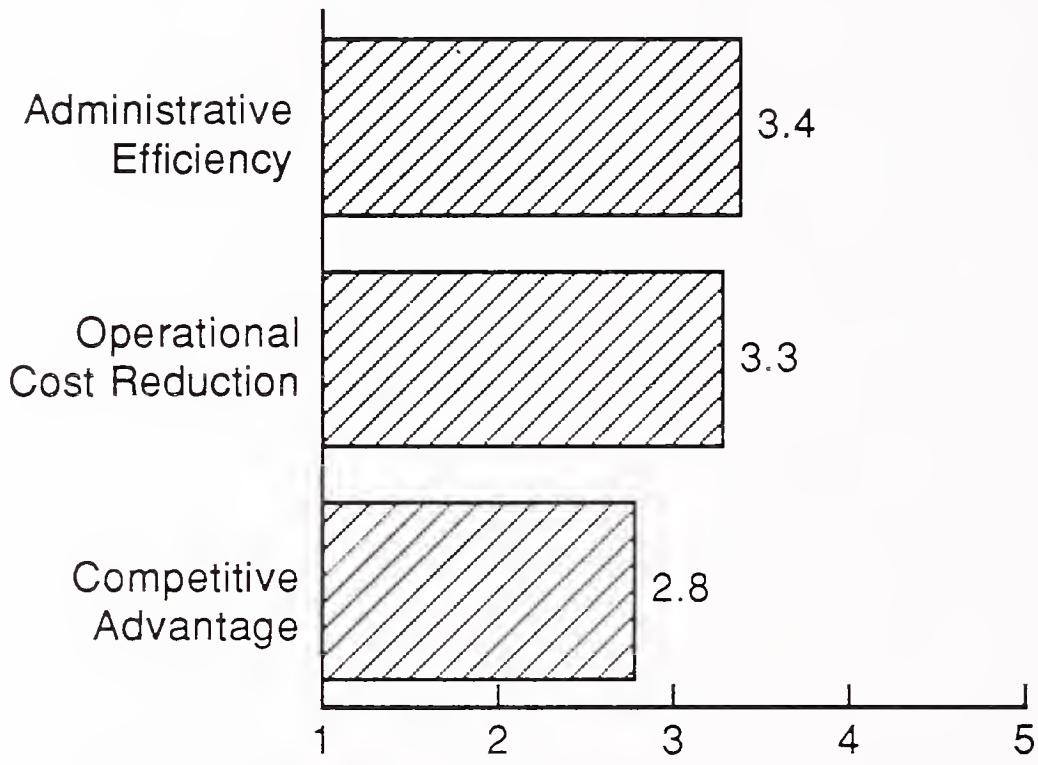
1. Many Dissatisfied with IS Performance

Key factors influencing senior executives when they consider the relevance of systems operations to their organisations include the perceived level of value for money derived from IS in the past and their current degree of satisfaction with the in-house IS department. Any management team which lacks faith in the effectiveness of its IS department in delivering appropriate business solutions will be much more susceptible to systems operations approaches.

Exhibit III-1 summarises the contributions which senior executives perceive IS to have made to their organisations during the 1980s.

Exhibit III-1

IS Contribution During 1980s
Western Europe



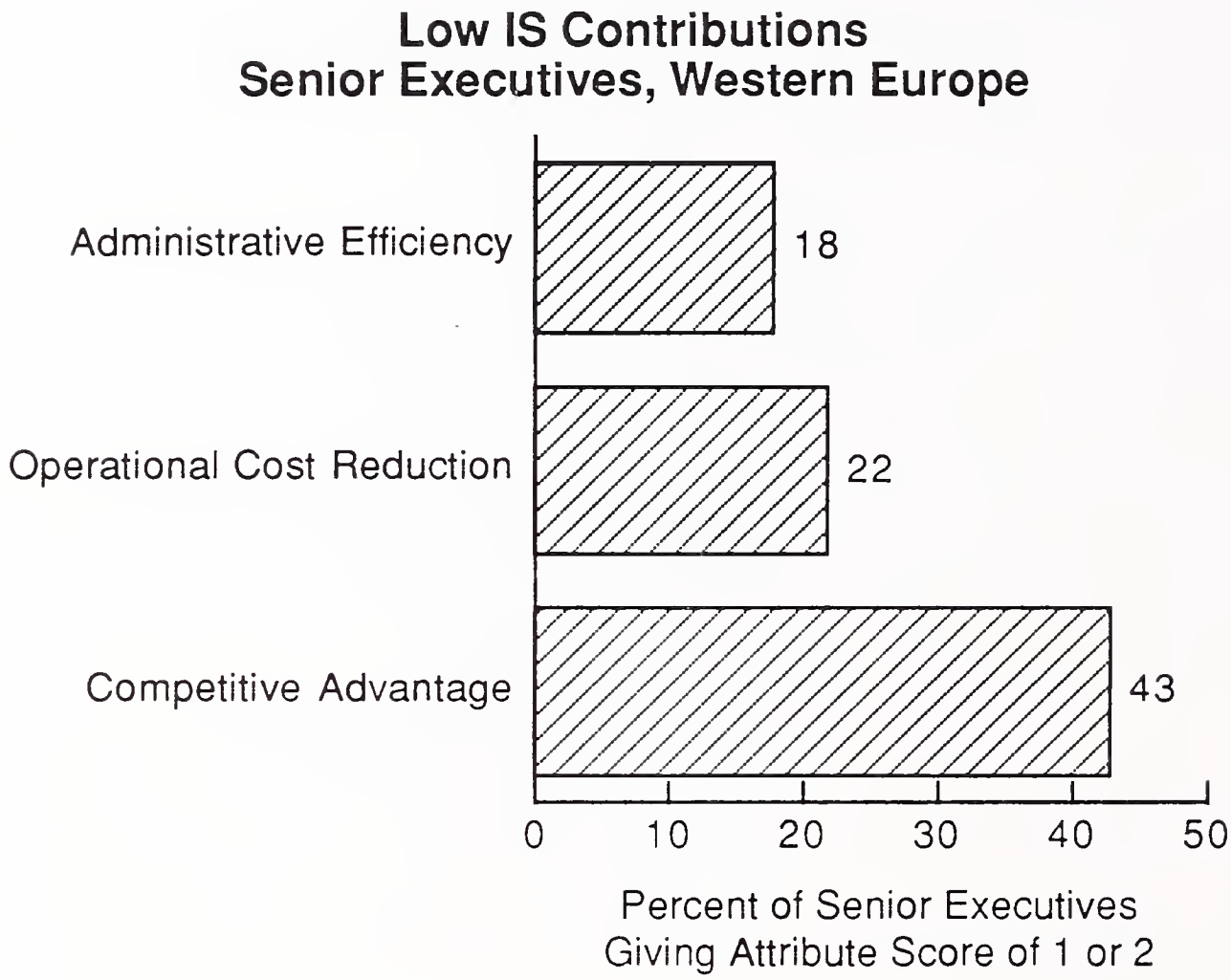
Reply to the question: "To what extent do you believe that IS contributed to each of the following during the 1980s?"

Standard Error = 0.2

Overall senior management feel that information systems have had the most significant impact in improving company efficiency and assisting in reducing business costs. Typical benefits claimed for information systems over the last decade include the reduction of paperwork and better management information leading to enhanced control of the business. Senior management also claim that their information systems have assisted them in improving overall company productivity and efficiency. While executives in the manufacturing sector claim improved inventory levels and manufacturing lead times, the claims for improved business productivity from information systems are most pronounced in the financial and business services sectors.

However the scores shown in Exhibit III-1 reflect only satisfactory levels of satisfaction with administrative efficiency and operational cost reduction rather than highly satisfied users. Another way of analysing the same data is shown in Exhibit III-2, which identifies the proportion of senior executives who could be considered to be dissatisfied with the contribution made by their information systems over the past decade. Obviously such users represent a target market for systems operations vendors, provided that the vendor can convince the user that external suppliers are better positioned to make a business contribution than the in-house IS department. At present, it is questionable whether senior executives regard software and services vendors as part of the problem rather than part of the solution.

Exhibit III-2



Senior executives' attitudes towards the performance of their in-house IS departments are shown in Exhibit III-3 and Exhibit III-4. Exhibit III-3 illustrates senior executives' average level of satisfaction with their IS department on each of the criteria, while Exhibit III-4 shows the proportion of senior executives who can be considered to be dissatisfied with the performance of the IS department according to the criteria listed.

Senior executives appear to be adequately, though not highly, satisfied with the performance of their in-house IS department in terms of:

- service delivery
- development of new systems
- return on investment.

However, a significant proportion of senior executives are dissatisfied and this represents an opportunity for systems operations vendors. Where senior executives are dissatisfied with current service delivery performance, this represents a potential opportunity for vendors to introduce platform operations. In cases where senior executives regard new systems development performance as poor this presents an opportunity for vendors offering:

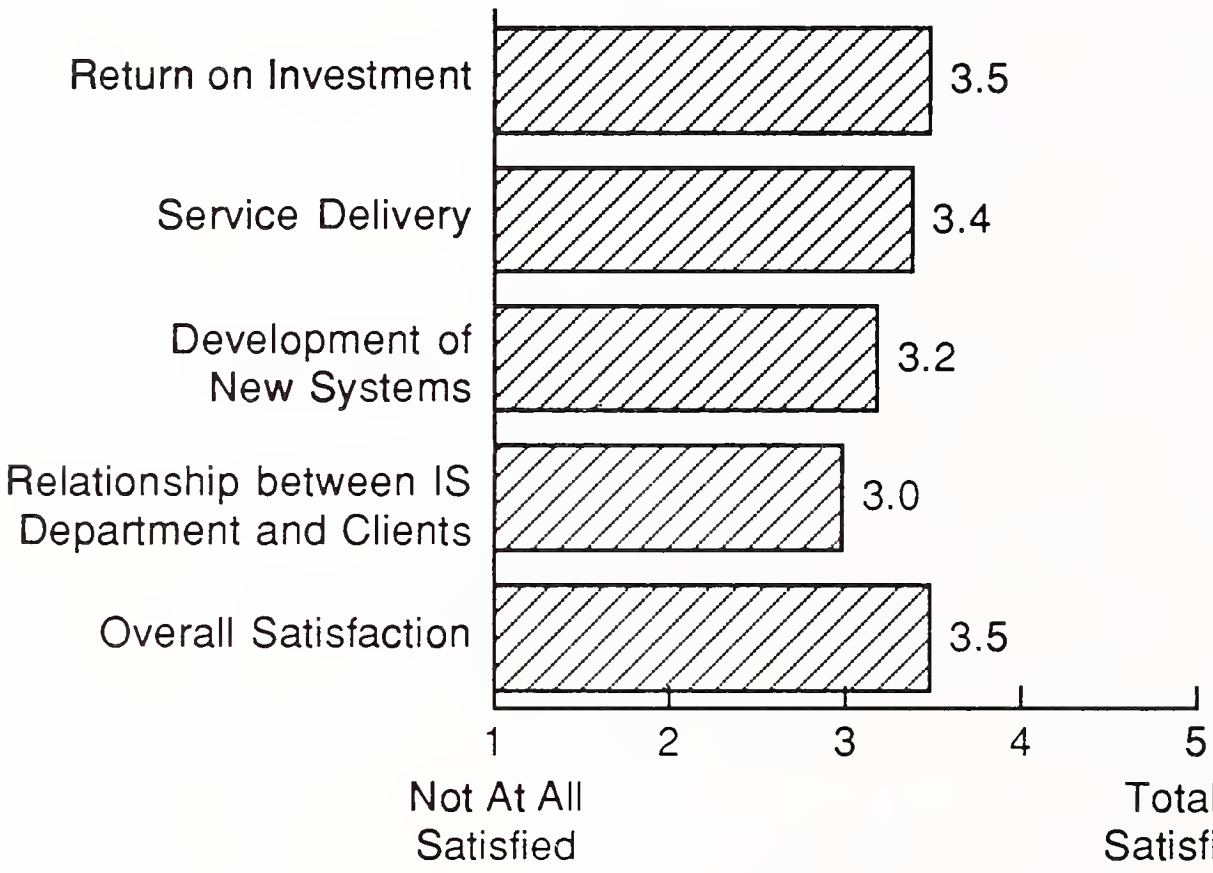
- application management
- application operations
- systems integration.

However the true Achilles heel of many in-house IS departments lies in the poor relationships established between themselves and their internal clients. Although many IS departments have been taking steps to manage this interface more professionally than previously, for example, by appointing account managers to liaise with clients, over a third of senior executives are still dissatisfied with the way client liaison is handled, and the in-house IS department's understanding of, and response to, business needs.

However, in spite of these high levels of dissatisfaction, and seventy percent of senior executives expressed dissatisfaction with the performance of their in-house IS department on at least one of these criteria, senior executives also exhibited a high degree of loyalty towards their in-house IS department. Not one senior executive gave the IS department a low overall rating, even though some of them gave a low rating to two or three of the four individual criteria discussed. This obviously presents a major barrier for systems operations vendors to overcome.

Exhibit III-3

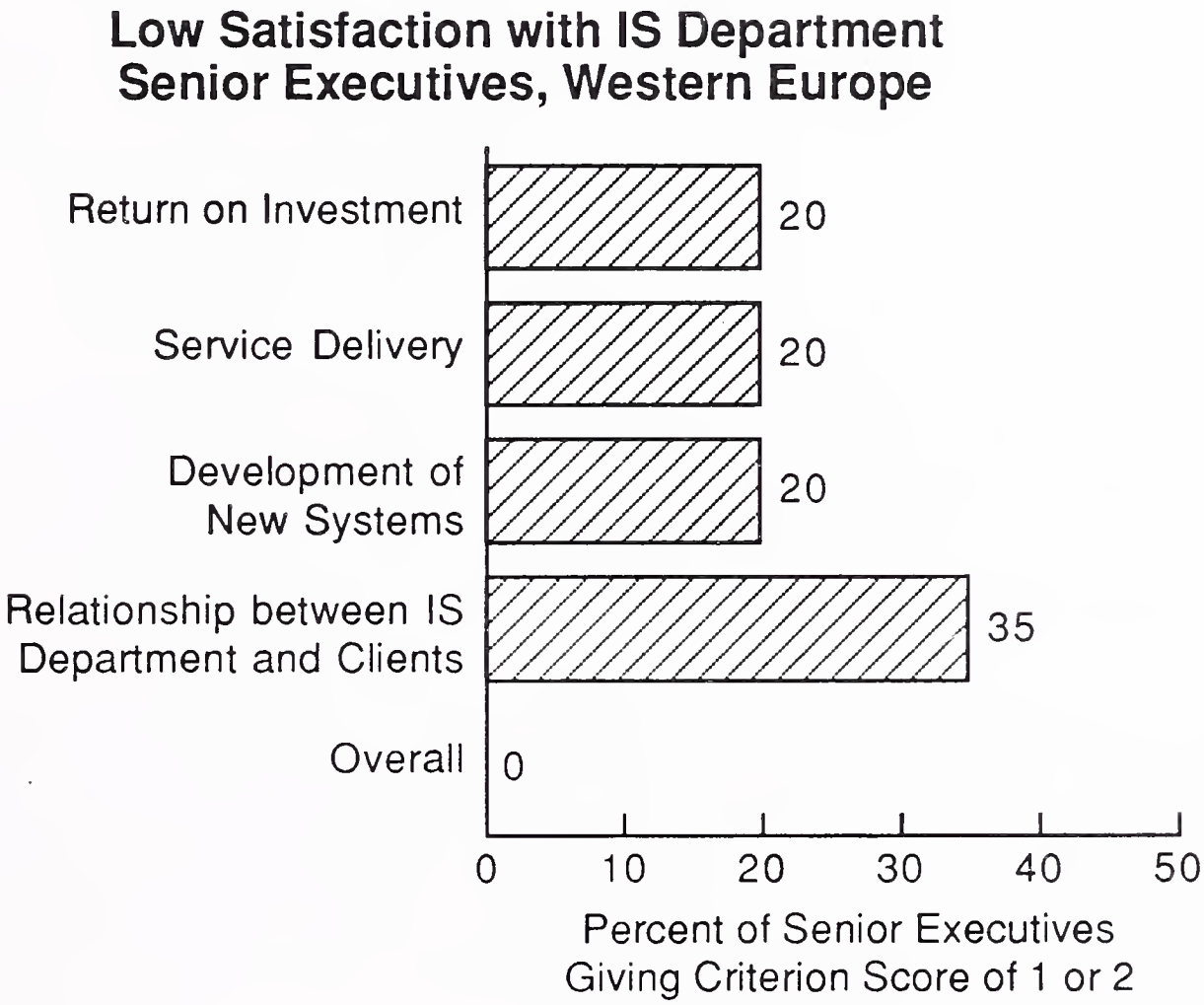
Satisfaction with IS Department
Senior Executives, Western Europe



Reply to the question: "How satisfied are you with the following aspects of your in-house IS department?"

Standard Error = 0.2

Exhibit III-4



2. Need to Reduce IS Costs

So far, this analysis only measures attitudes towards the past performance of in-house IS departments. However senior executives were also asked to identify the major challenges now facing the IS department. The principal challenges mentioned include:

- the need to reduce IS costs
- the need to reduce business costs through use of IS
- the need to provide better management information and business support
- the need to assist the business in developing closer links with its clients.

The recession in Western Europe is now making a major impact on senior executives' attitudes towards IS spending particularly in the United Kingdom and, to a lesser extent, in France. Many new development projects have been postponed and even potentially cost-saving projects such as major equipment downsizing exercises have been cancelled because of the initial high levels of investment required.

IS has always been seen by senior executives as a key tool for reducing business costs and improving productivity, and the recession is leading to increased emphasis on this role. However, as indicated in Exhibit III-5, the IS department is also now expected to make its own contribution towards overall cost savings. The principal challenge, according to senior executives, in many companies is for the IS department to maintain or improve its service to clients while simultaneously reducing its own costs. The response of IS management to this challenge is discussed in more detail in section B of this chapter.

The financial services sector, including the banking and insurance sectors, is looking for the most innovative use of IS. Many senior executives in this sector want IS to assist them in providing new services to clients and to assist the business in developing closer relationships with its clients by providing the latter with easy access to information and services.

Exhibit III-5

Impact of Recession on IS Spend
Western Europe

	Company Affected by Recession		
IS Expenditure Impacted	Yes	No	Total
Yes	7	-	7
No	5	16	21
Total	12	16	28

3. Perceive Vendors to Lack Business Understanding

It is clear from the above that senior executives are, on average, only moderately satisfied with the performances of their IS departments. Many senior executives are dissatisfied with either the delivery of existing services or the development of new systems, and over a third of senior executives are dissatisfied with the relationship between the in-house IS department and its clients. Now introduced into this scenario is the fact that many senior executives would like to reduce their IS spending. This appears to be an ideal situation for systems operations vendors, yet the take-up of systems operations clearly does not reflect the level of dissatisfaction with in-house services.

This section attempts to investigate the factors leading to this situation.

Firstly, senior executives were asked, "Have you ever decided against systems operations?" The results are shown in Exhibit III-6. Clearly a high proportion of companies with more than five hundred employees have already considered the option of systems operations with the majority claiming that it is not a suitable option for their organisation. The smaller organisations show a much lower level of prejudice against systems operations and are much less likely to have considered systems operations in-depth.

Exhibit III-6

Prior Decision Against Systems Operations
Senior Executives, Western Europe

Total Decided Against SO	Company Size	< 500 employees	> 500 employees
No	6	6	12
Yes	2	8	10
Total	8	14	22

The principal objections raised by those organisations which had rejected systems operations as a viable alternative are identified in Exhibit III-7. The most mentioned objection was the high cost of systems operations compared to in-house services. This perception should concern systems operations vendors. The principle of platform operations is its ability to guarantee service delivery costs for a period of years and at levels equal to or below those which can be achieved by an in-house operation. So vendors should always be cost-competitive compared to in-house services when offering platform operations.

Application development is an area where software and services vendors are commonly perceived as being an expensive alternative to use of in-house personnel. However taking into account the total employment costs for in-house staff, as opposed to the marginal costs of a development project, is this really true?

Loss of control is another major reason given by senior executives for avoiding systems operations. This obviously depends on the attitude of the individual executive. There is a strong argument that it is actually easier to control external vendors than in-house staff due to the contractual nature of the agreement. However, executives may be nervous about awarding open-ended development contracts rather than sub-contracting a single project at a time.

Another common reason why senior executives did not believe systems operations to be appropriate for their organisation was the existence of in-house IS expertise.

Exhibit III-7

Some vendors target systems operations around in-house IS competences by identifying:

- the core applications of strategic importance to each company
- the remaining non-core supporting applications
- those applications where there is strong in-house expertise
- those application areas where in-house expertise is weak.

The vendor will then typically recommend that the in-house IS department continues to develop and support those core applications where there is strong in-house expertise, with all the remaining application areas being outsourced.

However, many senior executives perceive that their own in-house IS department have a much better understanding of their organisation's business than do software and services vendors.

The objection that the company is too small to use systems operations achieved a low ranking in Exhibit III-7. This is because Exhibit III-7 only includes mentions from companies which claimed to have already decided against systems operations. This weighted that exhibit strongly in favour of organisations with five hundred or more employees. However, it is clear that many of the smaller organisation with less than five hundred personnel do perceive that they are too small for systems operations to be cost-effectively applied to their activities.

Exhibits III-8 and III-9 address senior executives' perceptions of the services they expect to require from external vendors and the key roles they perceive for external vendors. Overall it is clear that senior executives perceive the principal roles of external vendors to be in the supply of equipment and suitable application software products in support of their in-house IS departments. There is a strong feeling among senior executives that software and services vendors still need to make considerable progress in understanding their business needs. Software and services vendors are still perceived primarily as IS technicians.

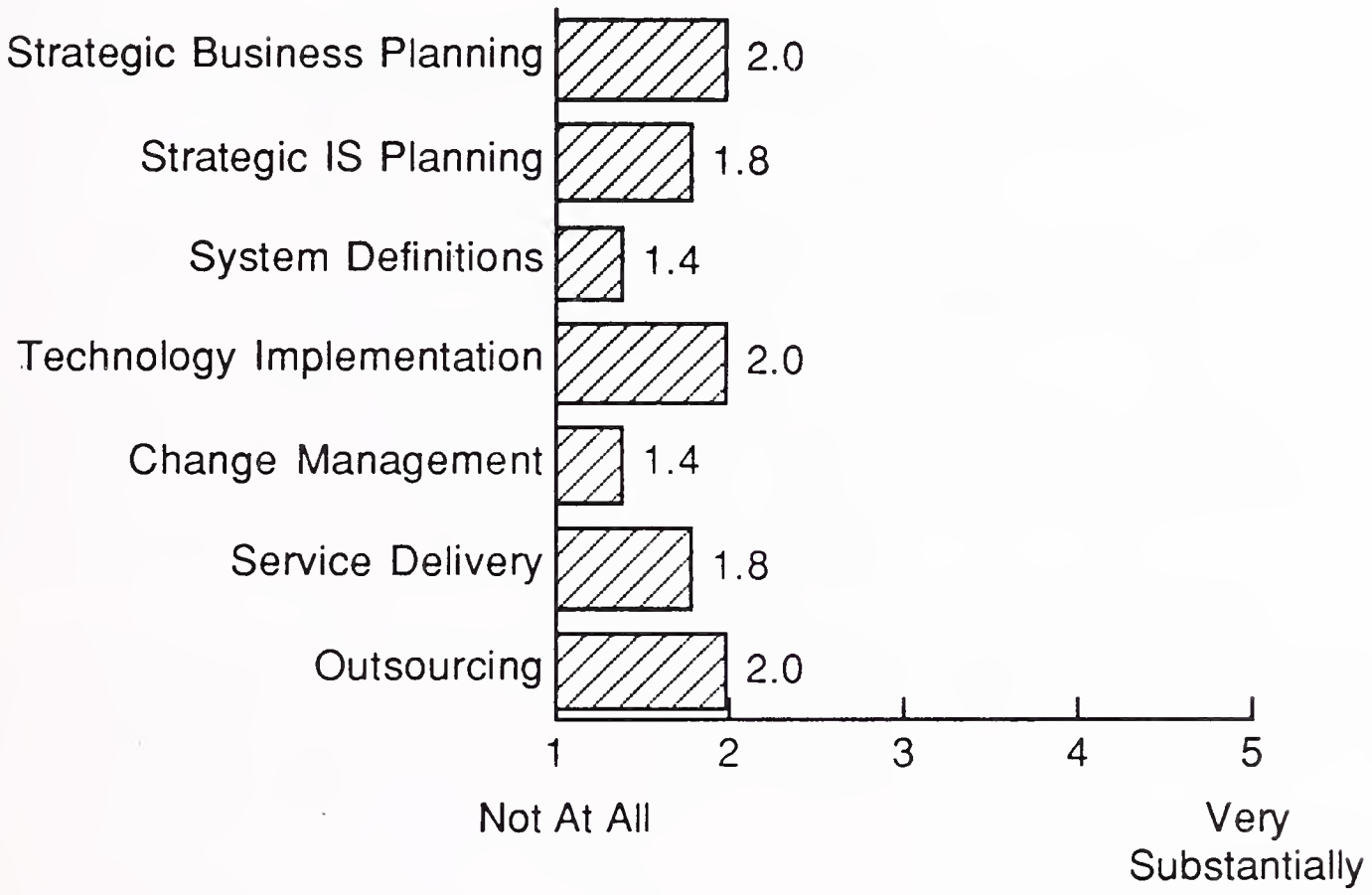
However, it is also evident that many senior executives would like software and services vendors to assist them in planning how technology could be applied in support of their business goals.

The areas where senior management shows least enthusiasm for external assistance are:

- change management
- production of system specifications.

Exhibit III-8

Service Requirements
Senior Executives, Western Europe

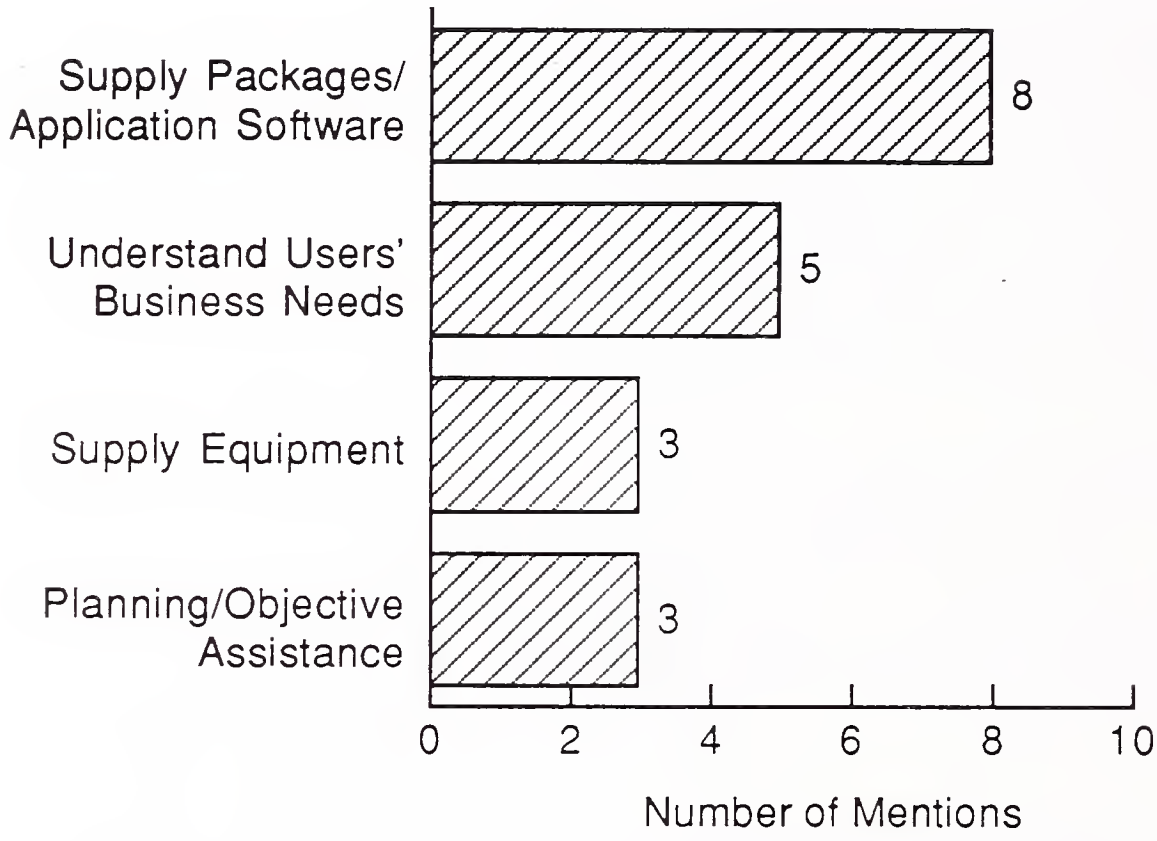


Responses to the question: "To what extent do you expect to use external vendors for each of the following activities over the next few years?"

Standard Error = 0.2

Exhibit III-9

Key Roles of External Vendors
Senior Executives, Western Europe



Senior executives were then asked to identify those circumstances which would cause them to consider contracting for system operations. The principal circumstances mentioned are listed in Exhibit III-10. Overall these tend to reflect circumstances in which the in-house IS department would have difficulty in maintaining a service to users, rather than a positive attitude towards the skills of external systems operations vendors.

The loss of key staff is seen as a principal driver for consideration of systems operations, by making it difficult for the in-house IS department to function as effectively as previously. This suggests that senior staff leaving the IS department, for example for new positions elsewhere, may present an opening for systems operations vendors to introduce their offerings to senior executives at a time when they may be feeling more vulnerable in terms of the ability of their in-house IS departments to support their needs. At such a time vendors could emphasise their ability to deliver continuity of services and the wide range of skills available to their clients.

The need to increase substantially the systems development workload whether brought about by business expansion or changing business goals was identified as another reason for possible adoption of systems operations. However, it is debatable in these instances whether the workload would be outsourced more often using a systems integration service rather than a systems operations approach.

Service deterioration was the other major driving force likely to lead to consideration of systems operations by senior executives. However, it was observed in Exhibit III-4 that senior executives already display quite high levels of dissatisfaction with aspects of the services currently supplied by in-house IS departments.

This presents opportunities for systems operations vendors to demonstrate their capabilities in:

- improving the relationship between service providers and clients
- improving service delivery
- more effective development of new systems.

Exhibit III-10

Circumstances for Use
Systems Operations, Western Europe

4. Small Companies Favour Application Management

Exhibits III-11 and III-12 summarise senior executives' responses to the question, "How favourably disposed are you to adopting systems operations for each of the following IS activities?"

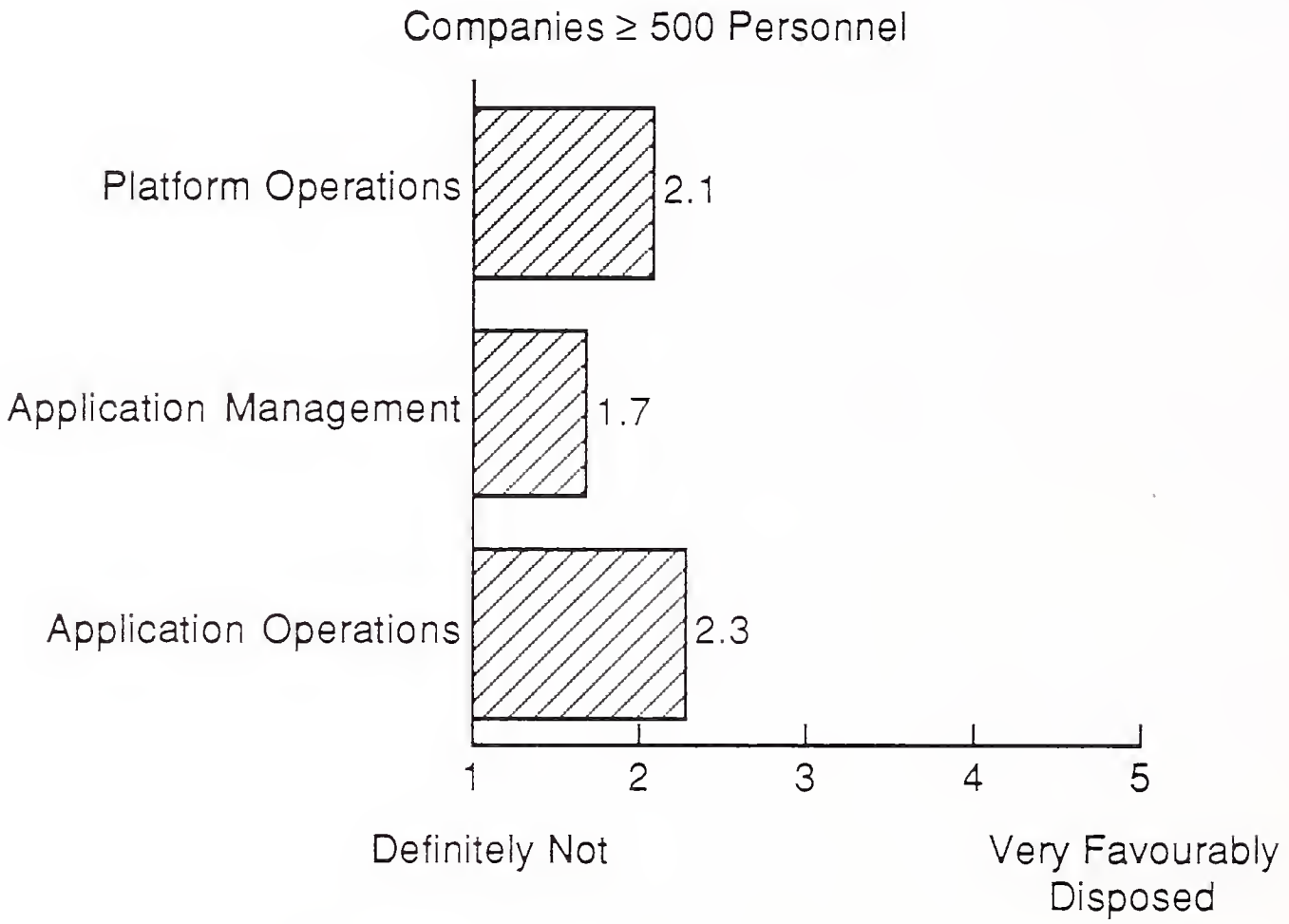
Exhibit III-11 summarises the response from senior executives in organisations with more than five hundred personnel, and indicates a preference for either application operations or platform operations over application management.

Exhibit III-12 indicates that smaller organisations show the opposite preference with a comparatively strong need for application management and a lesser need for platform operations and application operations.

As indicated by Exhibit III-13, the professional services vendors are perceived to be the type of vendor best suited to providing companies with a systems operations service. However, this reflects the marked preference among senior executives in the smaller companies for professional services vendors. Senior executives in the larger companies show no clear preference for either equipment vendors, consultancies, or professional services vendors.

Exhibit III-11

Large Company Service Preferences
Systems Operations, Western Europe



Responses to the question: "How favourably disposed are you to adopting systems operations for each of the following IS activities?"

Standard Error = 0.2

Exhibit III-12

Small Company Service Preferences Systems Operations, Western Europe

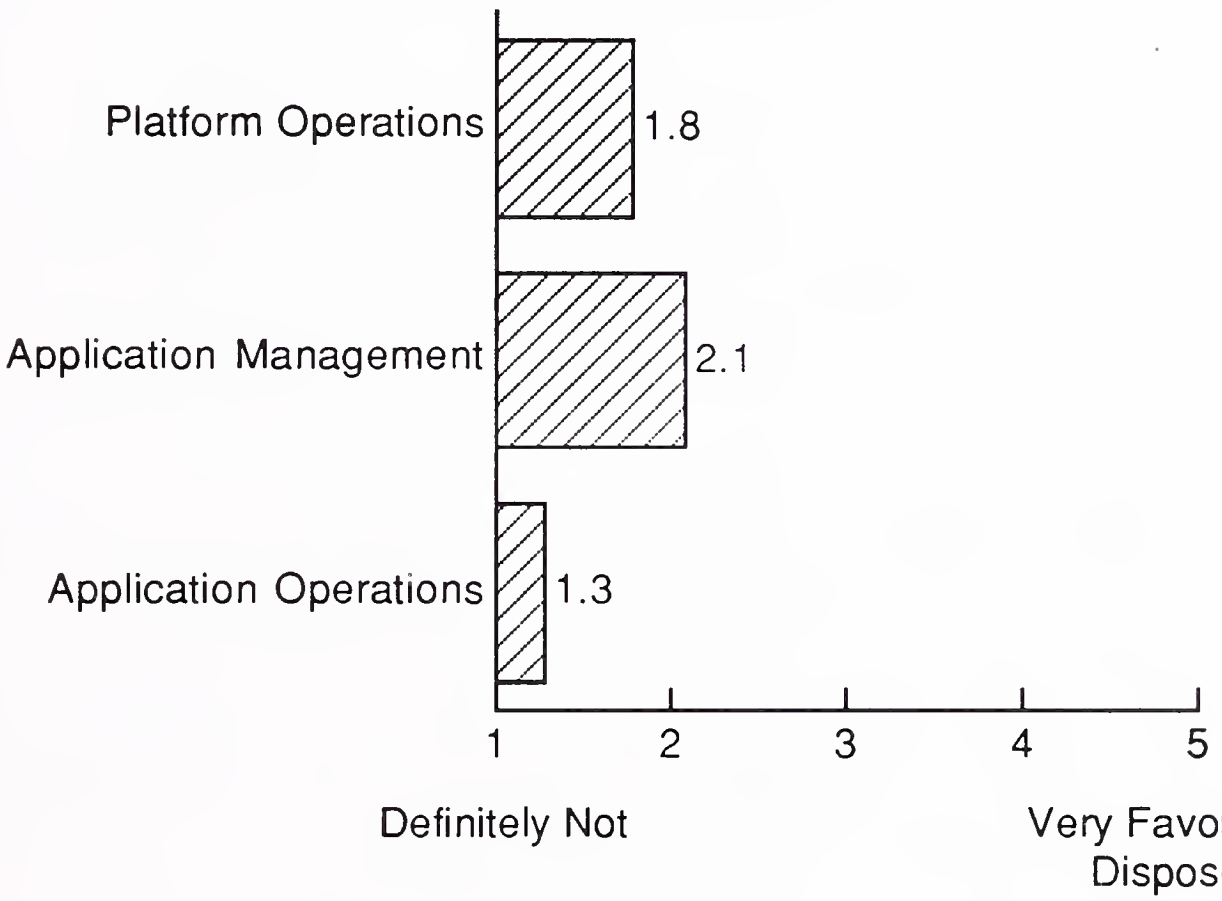
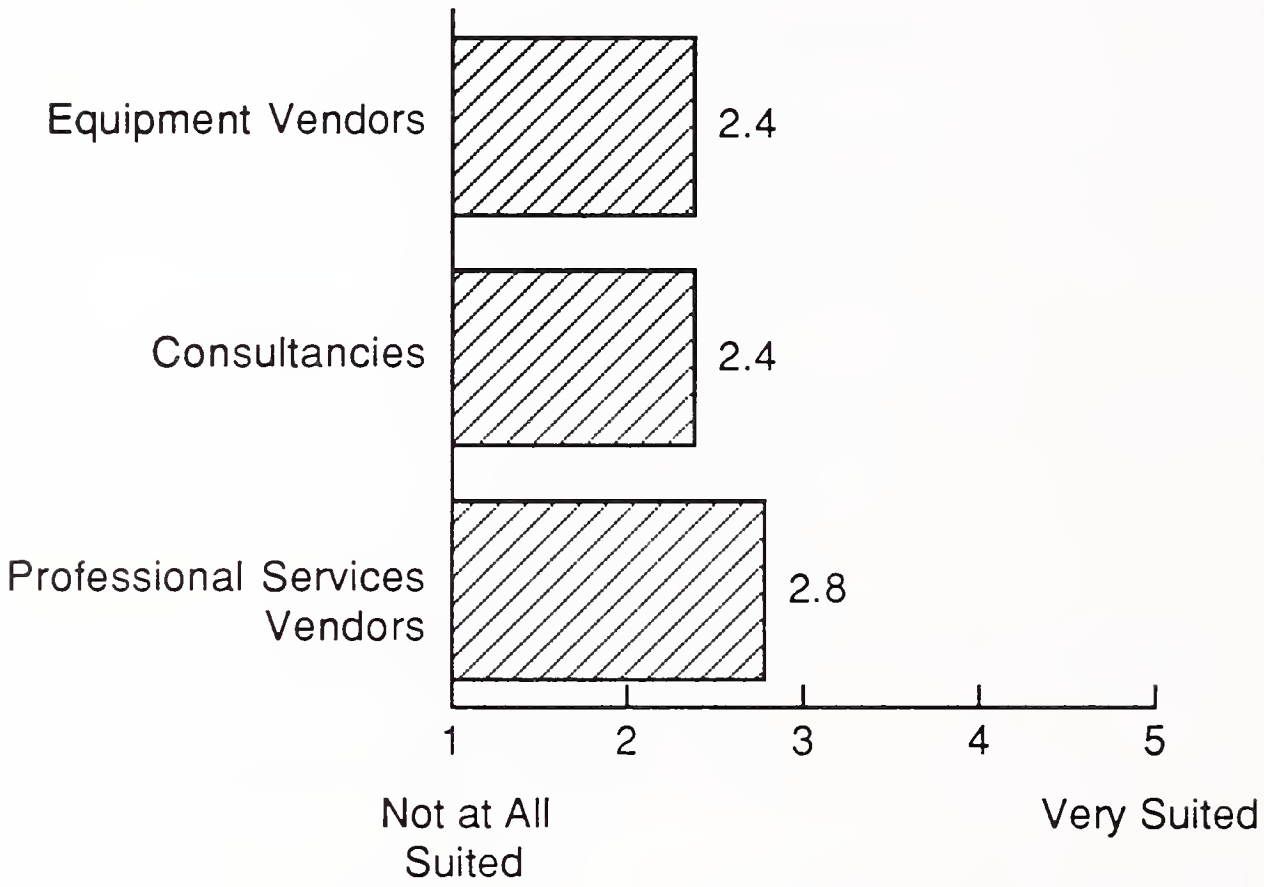


Exhibit III-13

Suitability by Vendor Category
Systems Operations, Western Europe



Responses to the question: "To what extent do you consider each of the following types of vendor as suited to providing your organisation with a systems operations service?"

Standard Error = 0.2

C
IS Managers

1. Need to Maintain Service at Reduced Cost

Exhibit III-14 identifies the major challenges facing the IS department as perceived by IS managers in companies with mainframe equipment. The top priority in many companies is the need to maintain the service to end-users while reducing IS costs to the organisation. One way of achieving this in the medium-term is by downsizing from the mainframe. Some companies in the survey had already downsized and others were in the process of doing so.

The perceived importance of downsizing, and other industry trends, to IS managers is summarised in Exhibit III-15. However, the comparatively low score achieved by each of these trends tends to disguise their importance to a significant proportion of users. Exhibit III-16 attempts to reconcile this by showing the proportion of IS managers who gave each trend a high score in terms of its importance to their organisation. Open systems and downsizing are clearly felt to be relevant by around 30% of IS managers running mainframe equipment at present.

The proportion of IS managers considering downsizing is clearly a major issue for systems operations vendors. On the one hand, downsizing is an alternative means of cost reduction to systems operations and threatens to decrease markedly the market potential for vendors offering platform operations. On the other hand, a large population of mainframe users changing their equipment platforms offers considerable scope to systems operations vendors offering transition management services. In transition management, the vendor typically manages and runs the mainframe systems for the client while the new equipment and systems are being implemented by the in-house IS department.

Exhibit III-14

Principal Challenges Facing IS Departments Mainframe Users, Western Europe

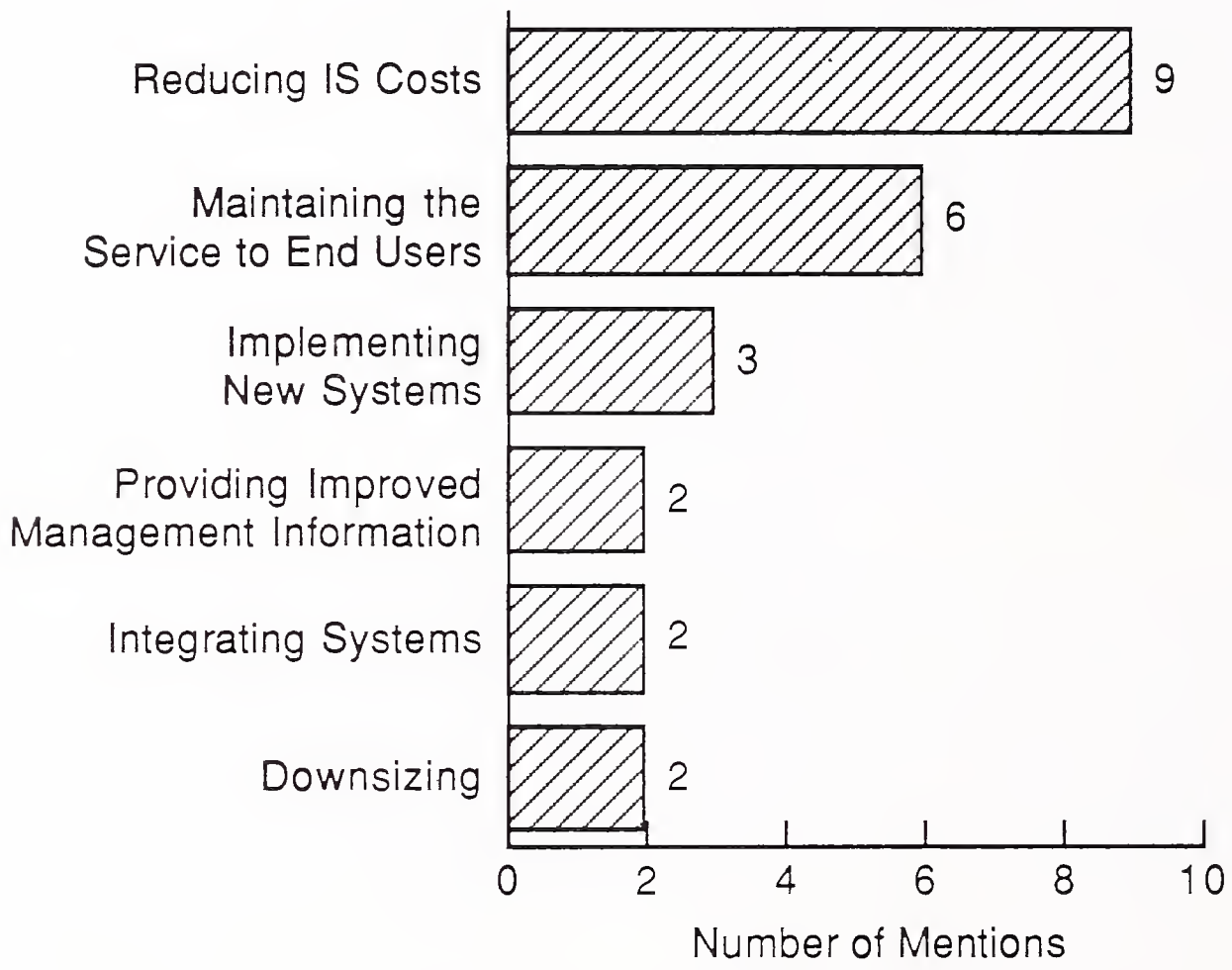
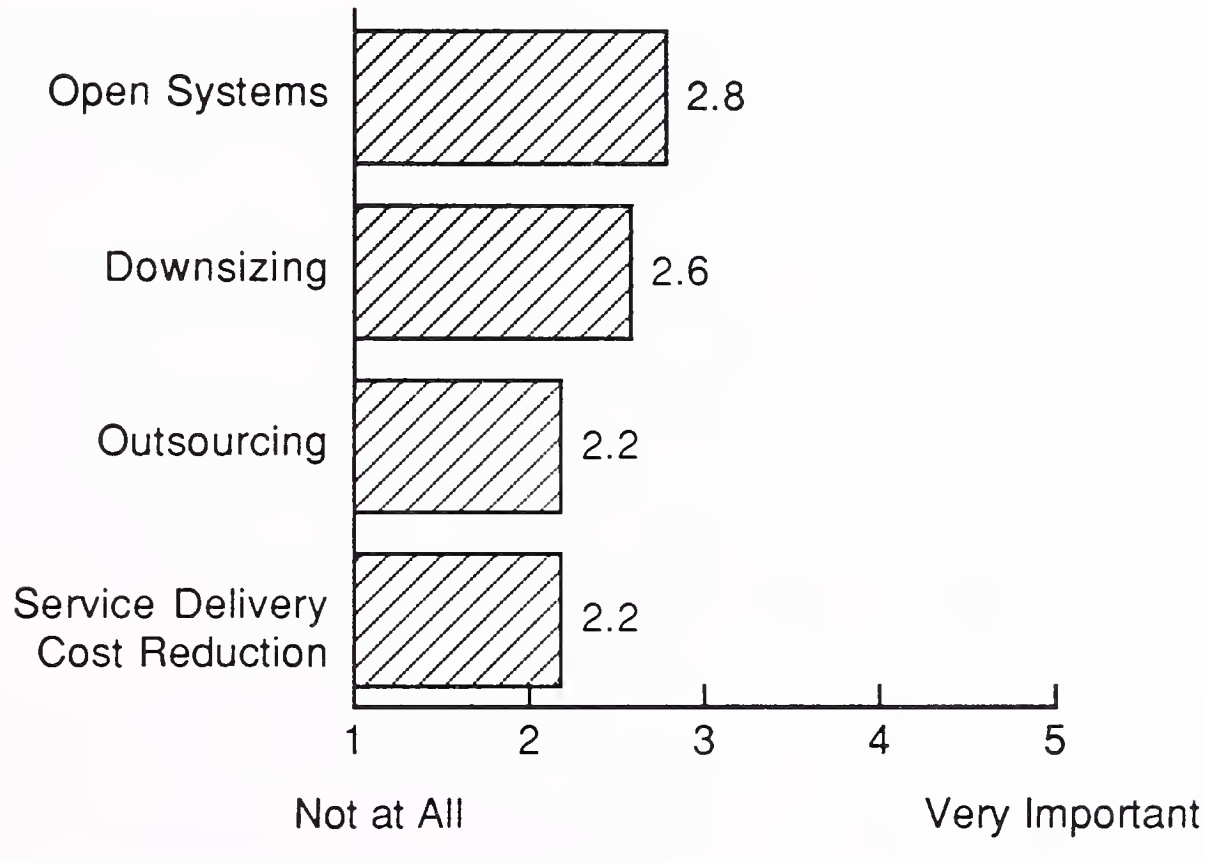


Exhibit III-15

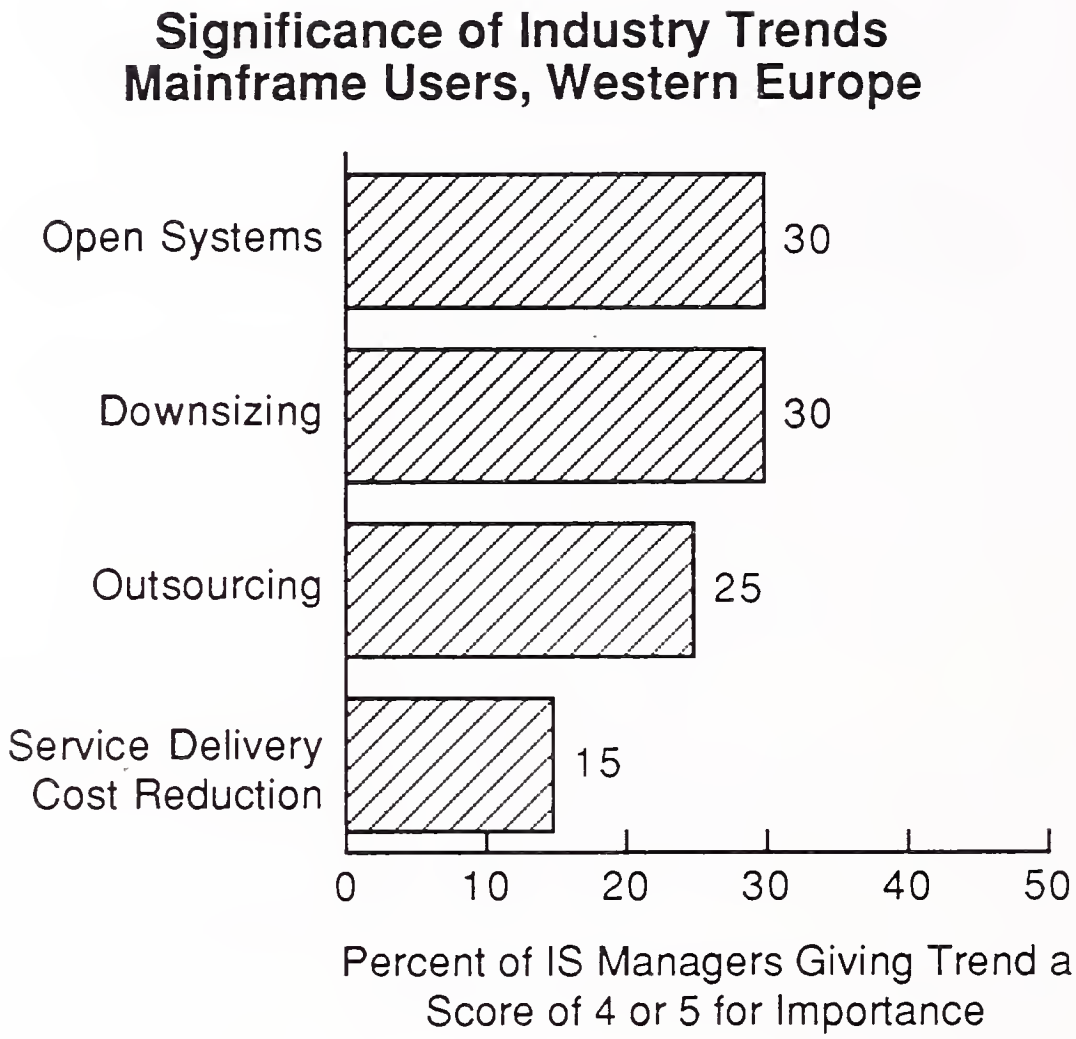
Importance of Industry Trends
Mainframe Users, Western Europe



Responses to the question: "How significant are each of the following potential issues to your organisation?"

Standard Error = 0.2

Exhibit III-16



A comparatively low proportion of IS managers showed concern for the need to reduce service delivery costs, which is surprising given their overall acknowledgement of the need to reduce IS costs as a whole. Many IS managers appear to view reduced system development, and a corresponding reduction in the head count of the IS department, as the most effective approach to reducing IS costs. However, this may create a huge upsurge in activity for software and services vendors and possibly for application management vendors once the recession eases and the level of major development project activity starts to increase.

At the present time there remains pressure on IS departments to reduce their service delivery costs and platform operations is one option by which this can be achieved. The attractiveness of systems operations as a means of reducing service delivery costs is compared with that of other options available to IS managers in Exhibit III-17.

Essentially it can be seen that systems operations is the least preferred option for IS managers running mainframes given a choice between systems operations, "lights out" operations, or distributed processing. Indeed if a score of 4 or 5 is taken to represent attractiveness to the IS manager, then as a means of reducing service delivery costs, "lights out" operations is attractive to fifty percent of IS managers with mainframes and distributed processing is attractive to twenty five percent of these IS managers. Systems operations was not regarded as an attractive means of achieving service delivery cost reduction by any of the IS managers in the sample of respondents.

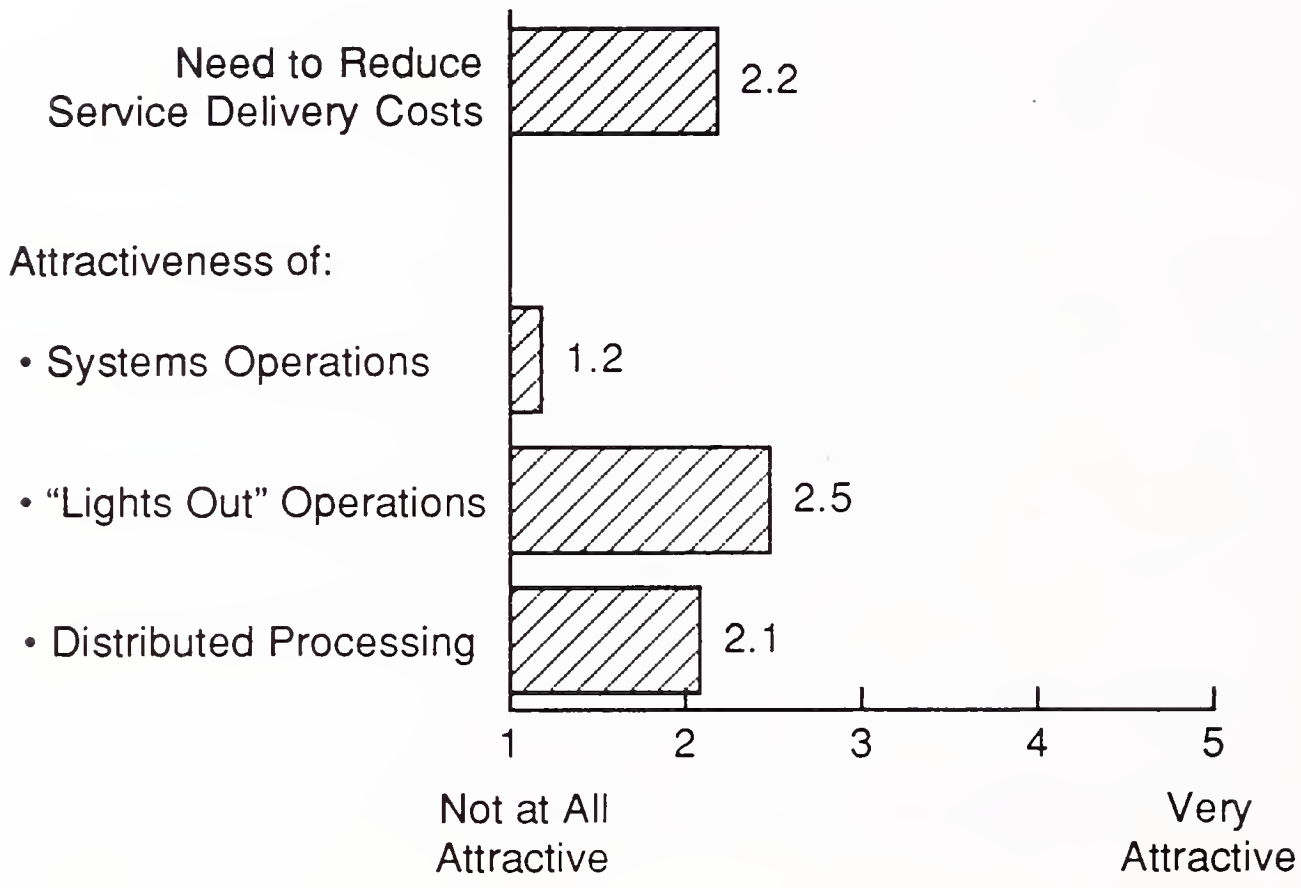
2. Will Adopt Cost-Effective Services

Exhibit III-18 lists the principal objections to systems operations given by IS managers in Western Europe, and they show a very high level of correspondence with the attitudes of senior executives discussed earlier.

Cost is the major objection raised and, again, this argument should be especially susceptible to systems operations vendors offering platform operations or application maintenance services where the vendor should be in a position to demonstrate clear savings.

Exhibit III-17

Service Cost Reduction
Mainframe Sites

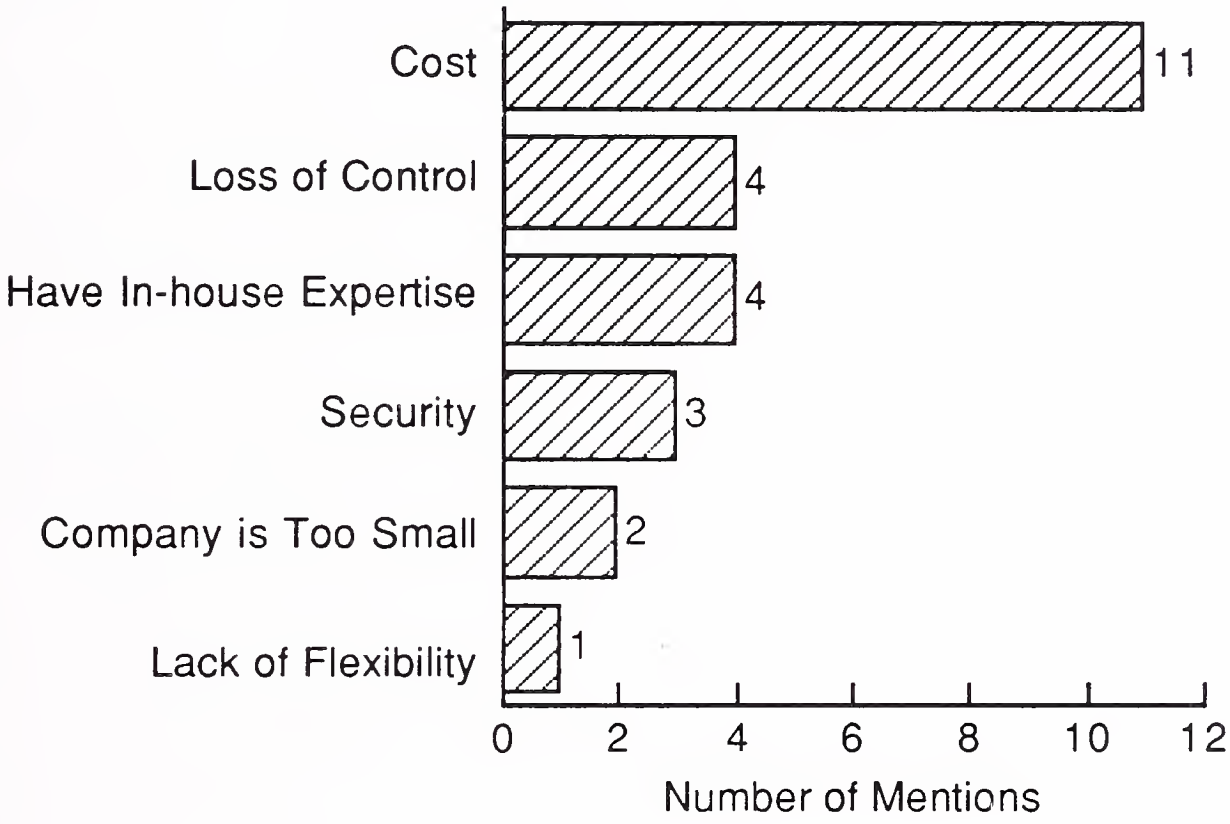


Responses to the question: "Please rate the attractiveness of the following alternatives for reduction of your service delivery costs."

Standard Error = 0.2

Exhibit III-18

Principal Objections to Systems Operations
IS Managers, Western Europe



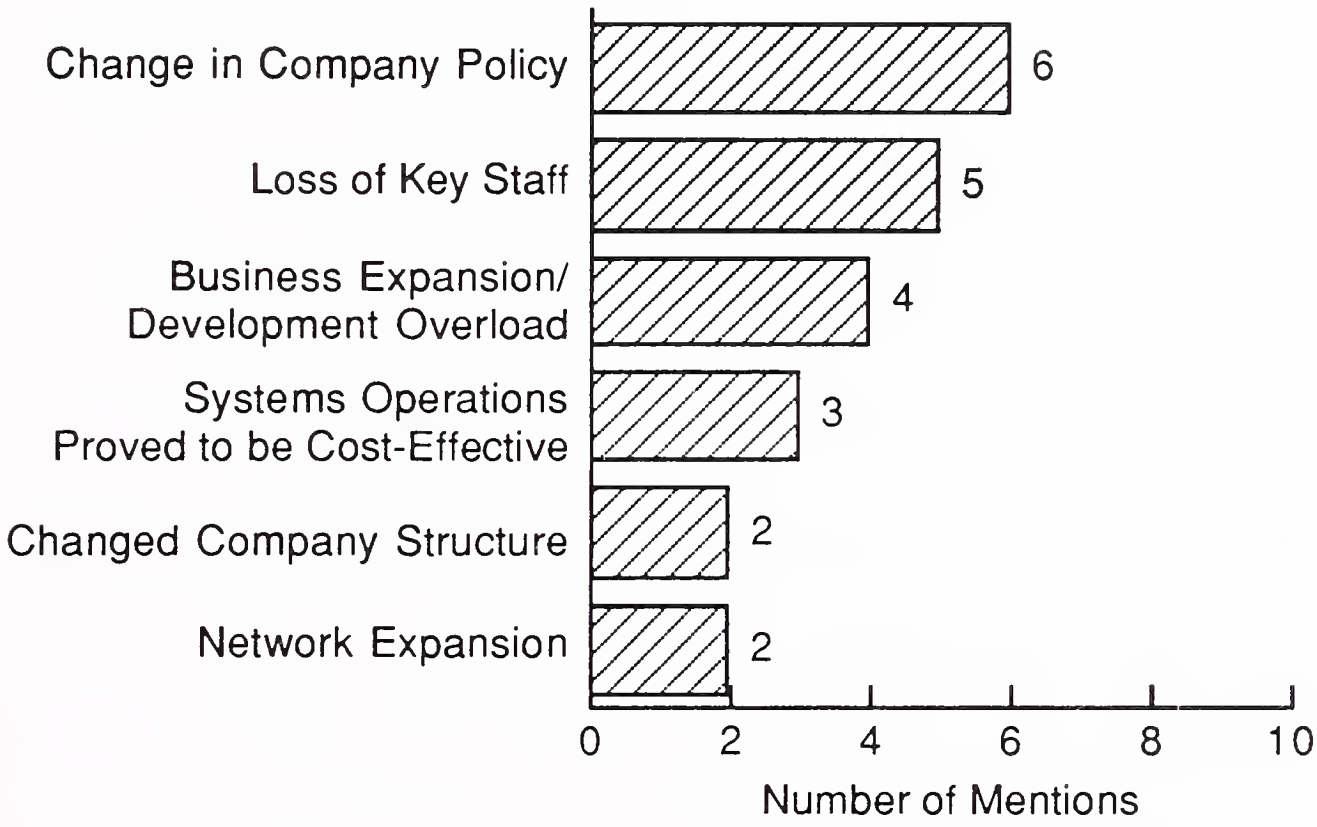
One encouraging sign for systems operations vendors, shown in Exhibit III-19, is that a number of IS managers stated that they would adopt systems operations if it could be demonstrated to be cost-effective. Other IS managers stated that there was a possibility of their adopting network management if their networks continued to expand and became too complex for them to readily manage in-house.

However, many IS managers used company policy as their defence, and stated that they would only adopt systems operations once this became company policy. To some extent this reflects the understandable reluctance of IS managers to adopt systems operations and the importance of senior non-IS executives in the decision process. Some IS managers noted that a change in company chief executive might lead to the introduction of someone who viewed systems operations in a positive light. Again this suggests that a change in senior company management, particularly the chief executive, would be an appropriate time for systems operations vendors to make an approach to the company. Similarly a radical restructuring of a company may present a window of opportunity for systems operations vendors.

Other circumstances in which companies may become more susceptible to systems operations, which were also cited by senior executives, include loss of key IS staff and periods of system development overload on the IS department.

Exhibit III-19

Circumstances for Adoption of Systems Operations IS Managers, Western Europe



3. Favour Maintenance Management

Exhibits III-20 and III-21 illustrate the attitudes of IS managers using mainframes towards possible types of systems operations service.

This suggests that platform operations and application maintenance management are among the services which will be most favourably received. Both running mainframe services and maintaining applications are areas that absorb large proportions of in-house resource and yet provide little kudos to the IS manager.

The main pressures encouraging clients to outsource operationally software support include:

- dependence on aging application systems
- resource management difficulties
- software staff discontent
- new business demands on staff
- holding action during transition
- user discontent with quality of service.

They are all primarily management issues, some resulting from technical difficulties:

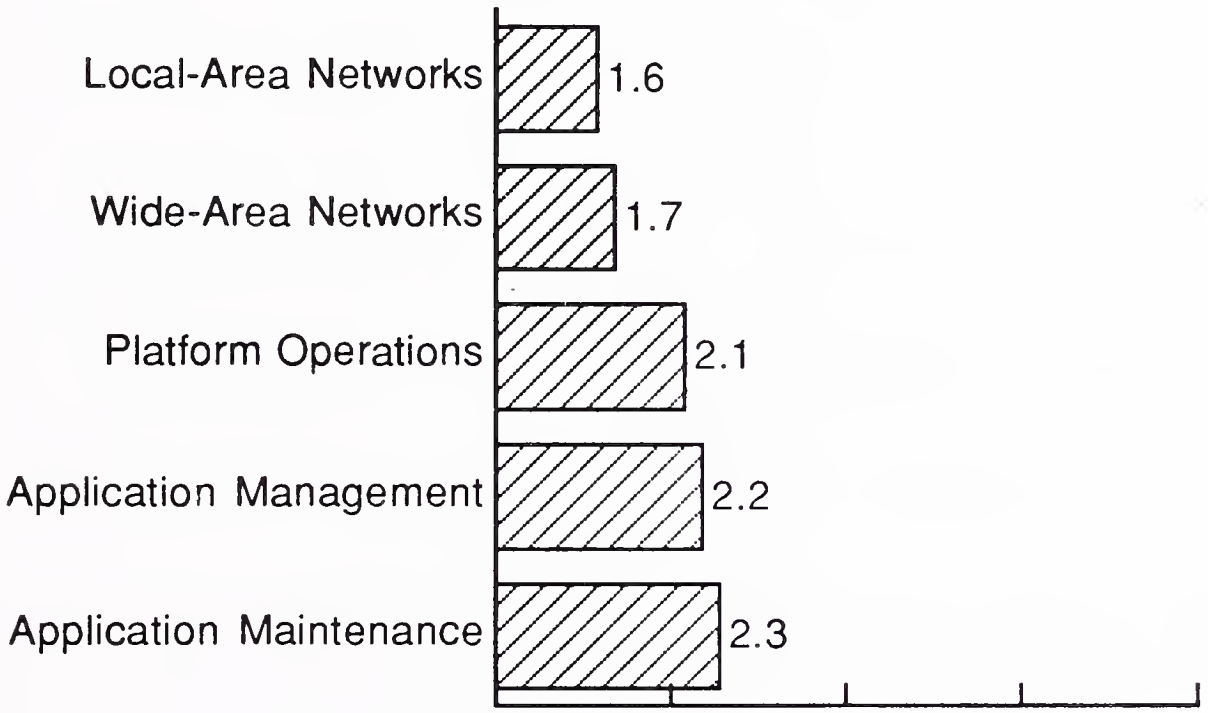
- *Software* - Applications are becoming difficult to maintain because they are aging, skills have been lost, or languages and other systems software have become out-of-date. Managing the housekeeping of such software environments is a skill many IS departments lack.

- *Staff* - Retaining and motivating staff on "maintenance" projects can be hard as it doesn't have the glamourous image of new development projects. Outsourcing makes this someone else's problem, and frees staff to work on new business projects.

- *End-users* - If the quality of service provided to end-users has declined unacceptably, the hassle resulting from their discontent, often resulting in new systems, can equally well result in outsourcing the support of existing applications. Giving end-users sufficient ownership and control over applications service stands out as a key factor in the success of any outsourcing service project.

Exhibit III-20

Attitude to Service Types—Mainframe Users Systems Operations, Western Europe

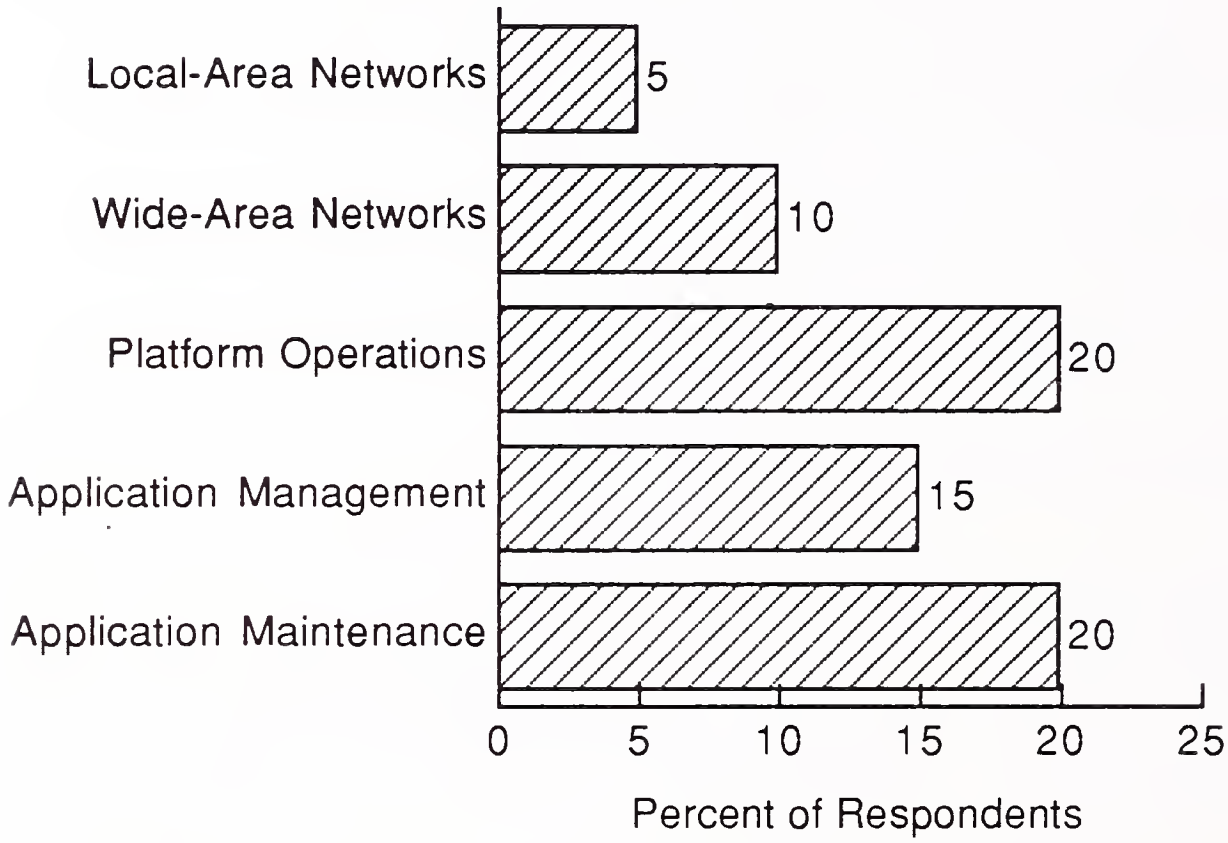


Responses to the question: "How favourably disposed are you to adopting systems operations for each of the following IS activities?"

Standard Error = 0.2

Exhibit III-21

Systems Operations Services Favoured IS Managers, Mainframe Users



Proportion of IS managers responding with a score of 4 or 5 to the question, "How favourably disposed are you to adopting systems operations for each of the following IS activities? Please rate on a scale of 1 to 5 where 1 is 'definitely not' and 5 is 'very favourably disposed'."

Mainframes, with their complex operating systems, are particularly expensive for users to manage. For example, it has been estimated that Cambridgeshire County Council will save $1.5 million, over the five year period of its systems operations contract from platform operations alone.

Platform operations also takes away all the uncertainty of operating costs and replaces these with a fixed annual budget.

There can be considerable uncertainty in operating large computer systems caused by factory such as:

- performance worries and the consequent need for equipment upgrades
- new versions of the operating systems
- the need to change operating systems, possibly imposed by the equipment vendor
- recruitment, training and retention of systems software specialists
- overtime payments.

As well as assisting in cost control, outsourcing of computer operations removes all the day-to-day management problems, such as operators being off work and users complaining that their reports have not been delivered on time.

There is much more resistance among IS managers towards abdicating responsibility for system development, particularly application planning and system specifications. Nonetheless there are signs that IS management is becomingly increasingly prepared to adopt application software products, and to subcontract specific development projects to software and services vendors. This provides increasing scope for vendors offering application management services.

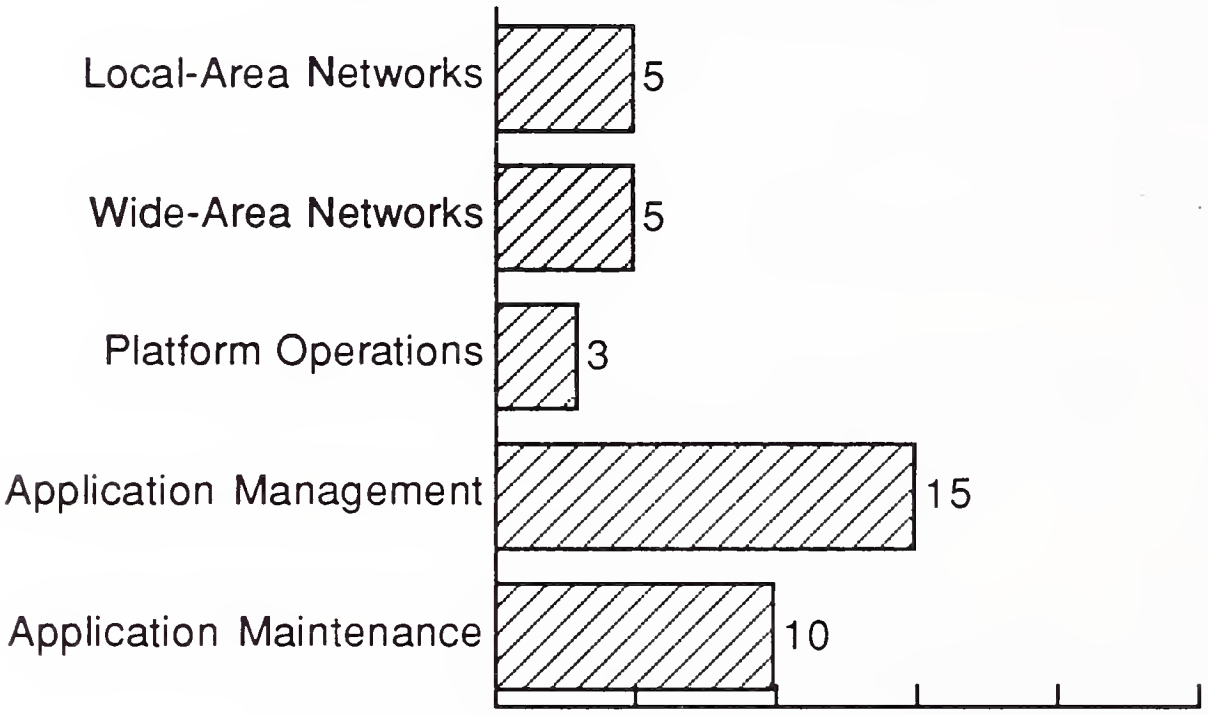
The profile of services most favoured by IS managers with mid-range systems, shown in Exhibit III-22 shows differences, as expected, from the profile exhibited by IS managers running mainframes.

IS managers at mid-range sites typically manage fewer development staff than their counterparts at mainframe sites. Accordingly they are less able to handle in-house any requests for major new applications, and are potentially more dependent on external software and services vendors for assistance.

Clearly, platform operations becomes a much less critical issue at mid-range equipment sites, where the operations of much of the equipment is commonly carried out by end-users. The emphasis for outsourcing at mid-range sites is primarily on new system development and maintenance rather than reducing the running costs of existing systems.

Exhibit III-22

Systems Operations Services Favoured IS Managers, Midrange Users



Proportion of IS managers responding with a score of 4 or 5 to the question, "How favourably disposed are you to adopting systems operations for each of the following IS activities? Please rate on a scale of 1 to 5 where 1 is 'definitely not' and 5 is 'very favourably disposed'."

D
Vendor Opportunities

Senior executives in approximately one-fifth of organisations perceive the performance of their IS department to be poor in at least one of the following areas:

- service delivery
- new systems development
- return on investment.

Over a third of senior executives are dissatisfied with the relationship between their IS department and its in-house clients.

At the same time, the major challenge for IS is perceived to be the need to reduce IS costs while maintaining the service to internal clients.

This appears to be an ideal scenario for systems operations vendors. However, in spite of the problems, senior executives show a high level of loyalty to their in-house IS departments and systems operations vendors need to overcome the beliefs of senior executives that:

- systems operations is more expensive than in-house services
- systems operations leads to loss of control
- external software and services vendors are IS technicians and do not understand their company's business
- systems operations is only appropriate where companies lack in-house expertise.

The areas where there is likely to be least resistance to systems operations are those where companies lack in-house expertise. In principle, this skill deficit can be created by any major discontinuity either organisational or technological. Accordingly companies undergoing major internal re-organisations, such as decentralisation, or refocusing their business will generate a major need for new systems which the internal IS department may not be able to meet because of a lack of business understanding or simply lack of capacity. Similarly a major technological transition such as downsizing may render obsolete many of the existing skills within the in-house IS department. Companies undergoing these types of transition are correspondingly good prospects for systems operations vendors.

Another type of change which increases companies' susceptibility to systems operations is the loss of key IS staff.

It is also possible to rank the major types of systems operations services in terms of their general level of competition with in-house IS services, as shown in Exhibit III-23.

Transition management, where an external vendor manages existing services while the in-house IS department develops new systems, poses little threat to the IS department. The main purpose of this type of contract is to free in-house IS staff from routine duties so that new systems can be developed on-time. Hence it overcomes two of the three principal objections to systems operations: loss of control, and presence of in-house expertise. It also enables the systems operations vendor to demonstrate the quality of service which can be achieved using platform operations.

Network management is growing in importance as a systems operations service, as wide area networking becomes a key component of many large organisations' IS infrastructures. It is an area where many organisations, compared to for example application development, lack expertise and, as the complexity of their networks increase, many companies are considering outsourcing their day-to-day network management.

Exhibit III-23

Level of Competition with IS Department
Systems Operations, Western Europe

Service	Level of Competition
Application Operations	Very High
Application Management	High
Platform Operations	Medium-High
Maintenance Management	Low-Medium
Network Management	Low-Medium
Transition Management	Low

Another area of comparatively low competition with in-house IS departments is maintenance management, that is the maintenance and enhancement of applications which were originally developed in-house. The maintenance of applications has always been an unpopular activity with in-house staff, often being assigned the least experienced and least competent systems development personnel. Accordingly there is some attraction to IS managers in outsourcing this workload, provided the vendor can demonstrate cost savings combined with a high level of service. Although this is a comparatively recent systems operations offering, it has the potential to rapidly become one of the major segments of the systems operations market.

The three services discussed so far - transition management, network management, and maintenance management - are clearly the ones which are likely to prove most acceptable to IS managers, and are services which a significant proportion of IS managers will adopt without pressure being imposed by senior executives.

On the other hand, application operations, application management, and platform operations are all likely to meet higher levels of resistance. However, the present recession in Western Europe presents an excellent window of opportunity, since there is considerable pressure on IS managers to maintain service delivery at reduced cost.

However, platform operations will need to be marketed to senior executives rather than the in-house IS department. While IS managers recognise their need to reduce costs, they perceive the savings being made mainly by reducing development expenditure rather than by reducing service delivery costs. To the extent that they perceive service delivery cost reduction to be an issue, they are much more in favour of moves towards "lights out" operations and distributed computing than adoption of platform operations.

Systems operations vendors can expect most resistance from IS managers for application management and application operations. While IS managers are increasingly prepared to use applications software products and to subcontract the development of software elements under their control, they are keen to retain control of applications strategy and project management.

The best approach for vendors marketing such services might be to target the small to medium-sized companies who lack substantial in-house development capabilities, and which are more receptive to the concept of application management. However, such companies will need to be convinced that the systems operations vendor can provide a cost-effective service.

IV

Service Types

IV Service Types

This section considers brief case studies covering the main types of systems operations service identified earlier to assist vendors in identifying user motivations and reactions.

Examples are provided for:

- transition management
- application maintenance management
- platform operations
- application operations.

A
Transition Management

1. Case Study A

This example illustrates a very typical use of transition management. The company which is the subject of Exhibit IV-1 is a major retailing organisation, whose senior executives perceived that the IS systems in use were no longer well aligned with changing business needs. Accordingly it was decided to develop new systems and to phase out the mainframe and its existing systems.

New systems were to be developed by the internal IS department, which retained a high level of credibility with senior executives of the company. However to assist in refocusing the IS department in the new developments, it was felt desirable to free IS personnel from maintenance and support activities on the "old" systems and to free space for locating the new equipment.

As a result, a transition management contract was negotiated with a systems operations vendor whereby the mainframe was relocated in the vendor's data centre and the vendor took over responsibility for operating the equipment and maintaining some of the applications for a period of two years.

Exhibit IV-1

Case Study A: Transition Management

Reasons for Adoption	Free personnel to develop new systems
Vendor Selection Criteria	Technological capability Cost Location
Length of Contract	2 Years
Level of Satisfaction	Good
Likes	Efficiency of operations
Dislikes	Minor operational problems

It is intended that the contract will terminate at the end of the two year period when the "old" systems are no longer required.

Overall the users have been very satisfied with the service levels provided by vendor, the only problem being minor operational problems caused by misunderstandings between the users and the operators at the data centre.

2. Case Study B

Case Study B, as summarised in Exhibit IV-2, concerns a regional computing centre of a health authority in the United Kingdom.

The regional computing centre was responsible for the provision of processing services, software development, evaluation and acquisition, and network management covering each of the district health authorities within the region. As well as political pressure to outsource, regional computing facilities were becoming inappropriate with decision-making, and correspondingly information systems, being increasingly devolved to the district and hospital levels. In addition it was difficult to recruit and retain good staff, and the regions capital budgets were inadequate to maintain IS investment.

As a result it was decided that the existing regional operation should be taken over by a systems operation vendor who was prepared to guarantee:

- service levels to the district health authorities
- price protection to the district health authorities.

Even though the entire operation was transferred to the systems operations vendor, this contract bears more similarity to a long-term transition management deal than an application operations deal. This is because, while the districts are guaranteed support for up to five years, they are also free to run their own local systems or enter into agreements with the vendors of their choice.

Exhibit IV-2

Case Study B: Long-term Transition Management

Reasons for Adoption	Not a core activity. Trend away from Regional Computing Centres
Vendor Selection Criteria	SLA Price Staff ballot
Length of Contract	5 years
Level of Satisfaction	Good
Likes	Improved network management
Dislikes	Would like more pro-active stance

The systems operations vendor looking after the regional systems is guaranteed the right to be invited to tender for new business or applications, but will have to win the business in competition with other software and services vendors. There is no guarantee that the vendor will receive any IS development business.

So far the users have been very satisfied with the service provided, with improvements in the help desk facilities and the eradication of operating problems in the wide area network being the most obvious manifestations of the improvements made. However, the user would also like to receive a more pro-active stance from the systems operations vendor and faster progress towards the implementation of up-to-date IS systems.

B
Applications Maintenance Management

Case study C is outlined in Exhibit IV-3. It concerns a large IS group where there is tremendous pressure for new applications which reflect a more customer-facing business stance. Freeing up IS staff with valuable internal business knowledge was the main objective.

The application was a major inventory and warehouse management system implemented at several locations for regional operations. The five-year-old systems had been treated like most heavily used applications - speedy fixing of problems had taken precedence over elegantly engineering solutions.

Because of the speed, and lack of discipline, with which "faults" had been "corrected", the system was particularly fragile and end users perceived that a 24-hour emergency service was required. The system was also providing end users with very poor response times, at one point response times had reached twenty minutes. As a result, it was perceived that the system would need to be replaced as soon as a suitable application software product on which to base its successor could be found.

With 23 people employed in supporting the applications, it was an excellent test case on which to judge the promises of the service vendor.

In this case the knowledge transfer required to release 19 of the in-house support and development staff took six months. There was also considerable spin-off in knowledge transfer from the vendor to the computer operations staff, as the improved working practices were applied to establishing a more stable and reliable software environment.

This led to response times of less that one second being achieved. In addition, the original high level of end-user complaint has given way to silent satisfaction and the original 24-hour emergency service level has been reduced to a normal working hours service. Many of the new working practices introduced by the vendor have been adopted by the IS client management.

The net result was the continued use of the application - it was no longer felt necessary to replace the system at considerable expense.

Exhibit IV-3

Case Study C: Application Maintenance Management

Reasons for Adoption	Need to free-up staff and improve user service
Level of Satisfaction	High
Likes	Much improved user service
Dislikes	None

As with other types of systems operations or facilities management service, the major benefit seen by client management is having a defined and costed service level as the primary objective of the service contract.

This measurability of course is the key to the success of such projects, Most IS departments have not acquired the tools or management techniques to clearly define and regularly measure the performance criteria by which both end-users and IS management can judge the success of an application. They are more normally trapped in a fire-fighting mode.

When end-users have more than just response times by which to measure the service they receive and can assess the cost-benefits of changes they would like, then they can make informed decisions and become involved in reducing running costs with clear ownership of their own application requirements.

However, in spite of the considerable success achieved by this project, no other applications have been outsourced under application maintenance management agreements by the user.

C
Platform Operations

1. Case Study D

The company that is the subject of Exhibit IV-1 is a large manufacturing company running applications such as accounting and production management on IBM mainframe equipment.

Like many discrete manufacturing companies in Western Europe, the company operates in highly competitive markets and faces constant pressure to reduce costs.

Accordingly the company decided that while control of the information available to management is a critical success factor, running computer platforms is not. The company outsourced its mainframe operations which were transferred to the system operations vendor's data centre, but retained in-house all application development.

The major benefits perceived by the user included:

- fixed annual costs
- no overtime payments to operations personnel
- no involvement in equipment upgrades
- freedom from concerns over evolving operating systems.

The combination of service levels and cost was the major basis for the choice of vendor, but the vendor's proven technical expertise was also an important consideration.

Exhibit IV-4

Case Study D: Platform Operations

Reasons for Adoption	Mainframe operations not a core business
Vendor Selection Criteria	Cost Service levels
Length of Contract	5 years
Level of Satisfaction	Good
Likes	Improved level of service
Dislikes	Adjustment to new working relationships

The users perceived that service levels improved as a result of the new commercial arrangement, and their major concern was the length of time it took the in-house development personnel to adjust to the new commercial working relationships with their former colleagues operating the equipment.

2. Case Study E

Case Study D reflects the traditional role of platform operations in providing a fixed cost service on mainframe equipment. Case Study E illustrates a different role for systems operations in a mid-range platform environment.

The company which is the subject of Exhibit IV-5 is a manufacturing company which had decentralised into a number of business units. As a result centralised IS services run from a common mainframe were no longer felt to be appropriate and the business units had adopted minicomputer-based solutions.

However, this had caused problems with the Financial Director becoming involved in disputes over operational problems on a daily basis. The user felt that the vendor which had supplied the solution had underestimated the complexity of equipment operation. Accordingly a platform operations contract was entered into with a systems operations vendor, which relocated the minicomputer to its own data centre.

The user perceived the transition to be very well managed and is very satisfied with the invisibility of the new service, in spite of some initial confusion over the use of the vendor's hotline service. However the contract is only short-term to enable the user to gain experience of systems operations and review its needs accordingly.

Exhibit IV-5

Case Study E: Platform Operations

Reasons for Adoption	Underestimated problems in operating mid-range systems
Vendor Selection Criteria	Established relationship
Length of Contract	18 months
Level of Satisfaction	Very high
Likes	Invisibility of service
Dislikes	Teething problems

D
Application Operations

1. Case Study F

Case Study F, illustrated in Exhibit IV-6, also concerns a company in the manufacturing sector which was faced with declining markets.

The company had been acquired by a conglomerate, and subsequently been re-organised into a series of decentralised business units. Prior to this re-organisation, the company had a large in-house IS department supporting mainframe-based systems. As a result of the re-organisation, centralised mainframe-based systems were no longer felt to be appropriate and there was a strong need to realign the IS systems with the new business need. There was also a belief that the in-house IS department was extremely costly.

Consequently the in-house IS department was abolished, and the mainframe-based systems relocated to the vendor's data centre. However this was only a transitional arrangement with the systems operations vendor also being given responsibility for the development of new mid-range based systems to meet the new requirements of the business.

The company was pleased with the software development and support capabilities of the systems operations vendor, although some problems in liaising with the operators in the vendor's data centre had arisen.

Exhibit IV-6

Case Study F: Application Operations

Reasons for Adoption	Move to decentralised business units Cost reduction
Length of Contract	3 years
Level of Satisfaction	High
Likes	Software development capabilities
Dislikes	Lack of consistency in operating procedures

2. Case Study G

While Case Study F is a typical example of a defensive move to systems operations being undertaken by a company facing considerable financial pressure, Case Study G, as illustrated in Exhibit IV-7, reflects a more forward-looking approach to systems operations.

The company concerned is a comparatively small insurance company, which recognised the need to develop comprehensive new IS systems to support its business but perceived the cost of investing in mainframe equipment and bespoke software development to be prohibitive for a company of its size.

So the company found a systems operations vendor which would enable them to share the use of a mainframe and which would develop the systems required. This has proved to be a satisfactory arrangement. However, the user regularly estimates the equivalent cost of providing the service in-house to ensure that the company is receiving good value from the systems operations vendor.

This is clearly so while the service is based on a mainframe platform, but the user has now turned his attention to downsizing and Unix-based systems. It is probable that the company will at some point in the future transfer the systems in-house on Unix-based equipment. The company believes that platform operating will be considerably simplified in this environment.

Exhibit IV-7

Case Study G: Application Operations

Reasons for Adoption	Cost of developing new system
Vendor Selection Criteria	Very few suppliers
Length of Contract	3 year rolling cycle
Level of Satisfaction	Satisfactory
Likes	Application development Systems programming
Dislikes	High turnover of operations personnel