

INPUT

STRATEGIC MARKET PERSPECTIVE

U.S. Equipment Services Market

1993-1998

U.S. Market Analysis Program

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U.S. EQUIPMENT SERVICES MARKETS

1993-1998

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Abstract

This report on the *U.S. Equipment Services Market, 1993-1998*, provides information on the size and challenges facing vendors of equipment services in the U.S. Growth estimates are provided for a five-year forecast period. The market is divided into two segments, manufacturer-supplied services and independent maintenance organization (IMO) services. Information on the size and growth of both are discussed.

The report provides information on the key issues, trends and user requirements driving the growth of equipment services and causing the significant changes taking place in this market in vendor services.

This report contains 60 pages and has 37 exhibits.

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U.S. Equipment Services Markets, 1993-1998

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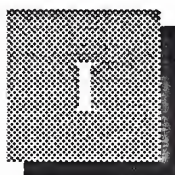
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Purpose and Organization

A

Purpose

The purpose of this report is to analyze and forecast the market in the U.S. for equipment services, including equipment maintenance and environmental services as well as independent maintenance organizations (IMOs) and depot or fourth-party maintenance. The market is analyzed from two perspectives: the type of service provider and the platform for which service is provided. For instance:

- Service providers are separated into computer manufacturers and independent maintenance organizations (IMOs), which may be information services firms or in totally separate industries.
- In the past, some manufacturers set up separate IMOs to handle maintenance of equipment other than their own. Other manufacturers are expanding the capabilities they offer in their regular maintenance service operations to include the equipment of other vendors.
- A group of IMOs and computer manufacturers now offers maintenance service (from depots) to other maintenance vendors or to the end users.

An overview of the performance of the equipment services market analyzed in this report is shown in Exhibit I-1. The growth of the overall market and IMO business is being constrained by the decreasing growth of the mainframe and midrange business from 1993 to 1998. However, workstation maintenance, environmental services and other non-equipment services delivered by maintenance vendors are growing at high rates.

EXHIBIT I-1

Equipment Services Market Growth

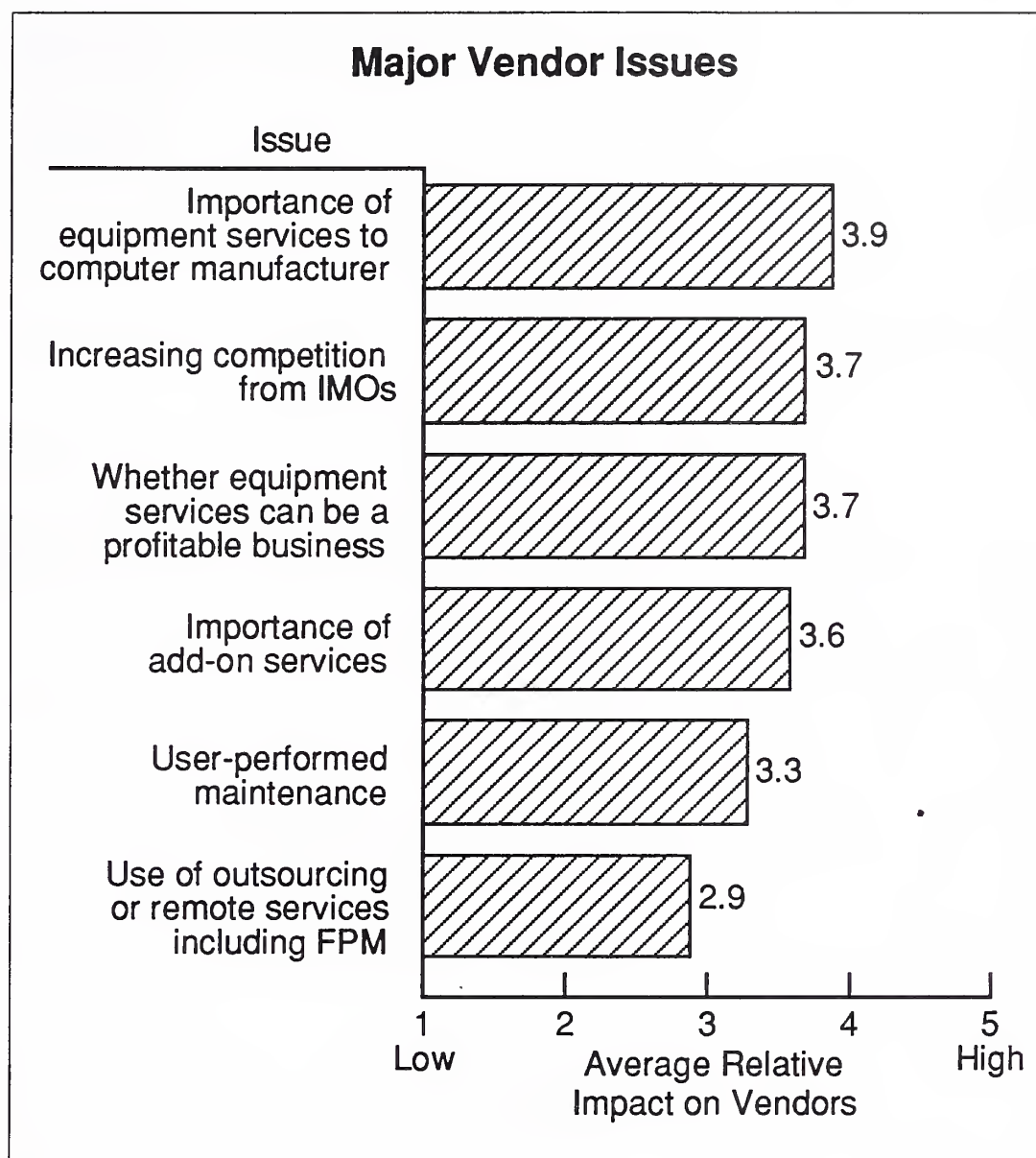
Growth of market in 1992	From \$15.1 to \$ 16.1 Billion
Projected growth of market, 1993 to 1998	From \$17.3 to \$21.8 Billion (5% CAGR)
Growth of IMOs, including on-site and depot or fourth-party maintenance (FPM)	6% CAGR
Growth of environmental services, 1993 to 1998	17% CAGR
Growth of other (non-equipment services) offerings, 1993 to 1998	18% CAGR

The growth of the IMO portion of the market is of increasing importance to computer manufacturers for several reasons:

- The perceived reliability of equipment (or predictability of operation) is having a stronger role in determining future equipment acquisitions. Computer manufacturers want to make sure that maintenance requirements and services will not detract from the image their equipment enjoys in the marketplace.
- Many computer manufacturers are also interested in obtaining incremental revenues by providing equipment services (including services for equipment other than their own) and would like to take business away from IMO vendors at sites where they have equipment.

The major vendor issues and trends considered in this report are shown in Exhibit I-2. In addition to discussing the effect these issues and trends have on the use or sale of equipment services and developing forecasts of user expenditures, the report also discusses the environmental and other services (non-equipment services) that are frequently bundled with equipment maintenance services. The non-equipment services sold by many vendors includes submodes of information services such as consulting, operational aid and disaster recovery.

EXHIBIT I-2



B Organization

The report is comprised of six chapters, including this introductory one.

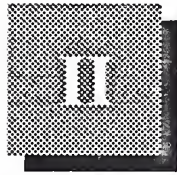
- The second chapter provides a segmentation of the 1992 market by platform and discusses factors affecting the growth of the market from 1992 to 1998.
- The third chapter considers factors affecting the growth of the market and provides a detailed forecast of the U.S. market, as well as forecasts of growth by platform and for the IMO portion of the market.
- The fourth chapter analyzes competition at the platform level and considers the effect of IMO vendors.

- Market issues and trends, discussed in Chapter V, focus on the factors that vendors and users feel are extremely important in serving this market.
- Chapter VI contains INPUT's findings and offers recommendations for vendors entering or already involved in the equipment services market.

C

Forecast Methodology

INPUT gathered information from 15 vendors and 35 users of equipment services. Data was also obtained from vendor reports and company press releases, as well as from articles in the trade press. In addition, INPUT obtained useful information from its database of ongoing research statistics gathered from more than 2,000 information systems users.



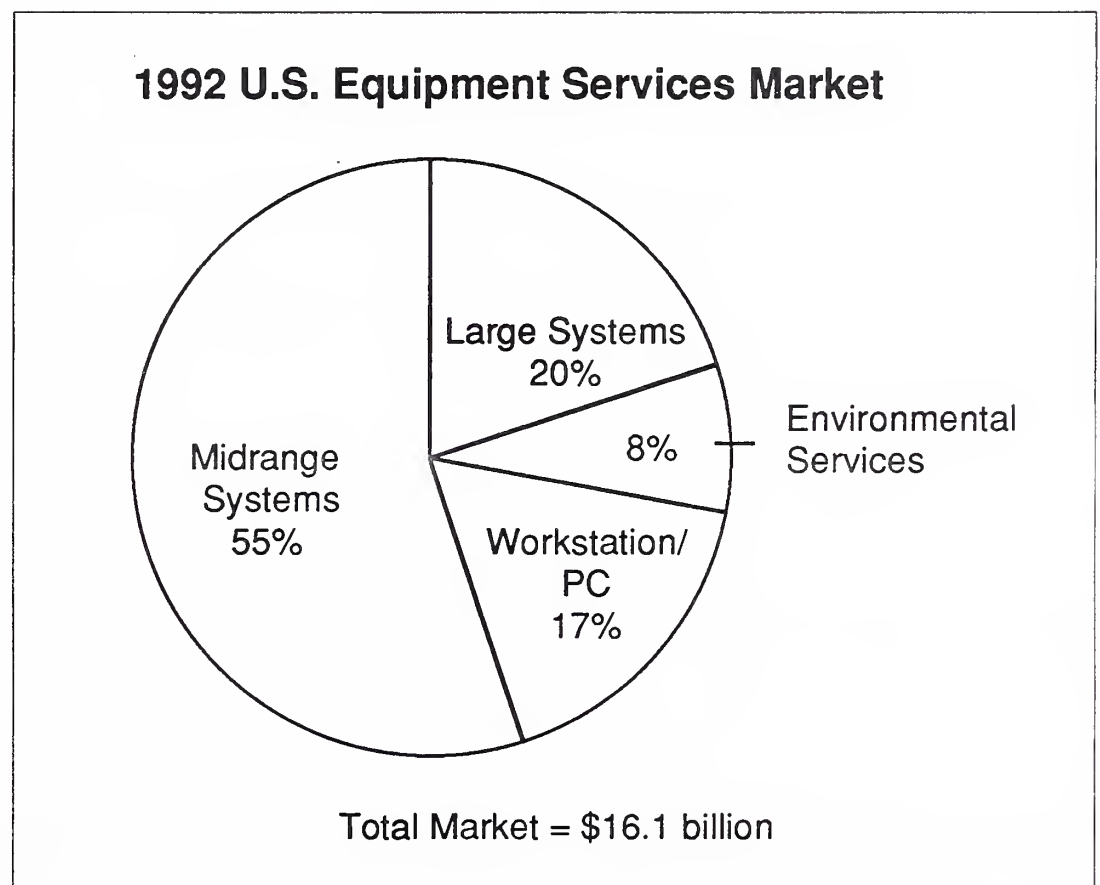
Equipment Services Market

A

Overview of 1992 Market

As shown in Exhibit II-1, the equipment services market can be divided into equipment maintenance for three platforms of equipment plus environmental services.

EXHIBIT II-1



Although it is difficult or almost impossible to divide the equipment maintenance submode between platforms when multiple systems of different platform sizes are connected by complex networks, expenditures for such systems, including those for the network components, are allocated between platforms in order to analyze the market.

There are a number of services other than environmental services—such as disaster recovery and operational aid—that are provided by equipment services vendors. As INPUT defines markets, these are part of other information services and not part of the equipment services market. However, they will be discussed further in the following chapters of the report because they are important to a number of the vendors in this market.

As shown in Exhibit II-1, the equipment services market in 1992 was dominated by expenditures for midrange systems:

- Expenditures for equipment maintenance for midrange systems were more than twice as large as expenditures for either large or workstation/PC-based systems.
- Expenditures for midrange systems actually stayed at the same percentage of total expenditures that they had reached during 1991, and those for workstation/PC systems climbed by 1%.

The total market for equipment services in the U.S. reached \$16.1 billion in the U.S. in 1992, almost 7% above the level reached in 1991:

- Expenditures for equipment maintenance for all platforms shown in Exhibit II-1, as well as expenditures for environmental services, rose in 1992.
- Expenditures for workstation/PC systems rose at the fastest rate between 1991 and 1992, followed by expenditures for environmental services.

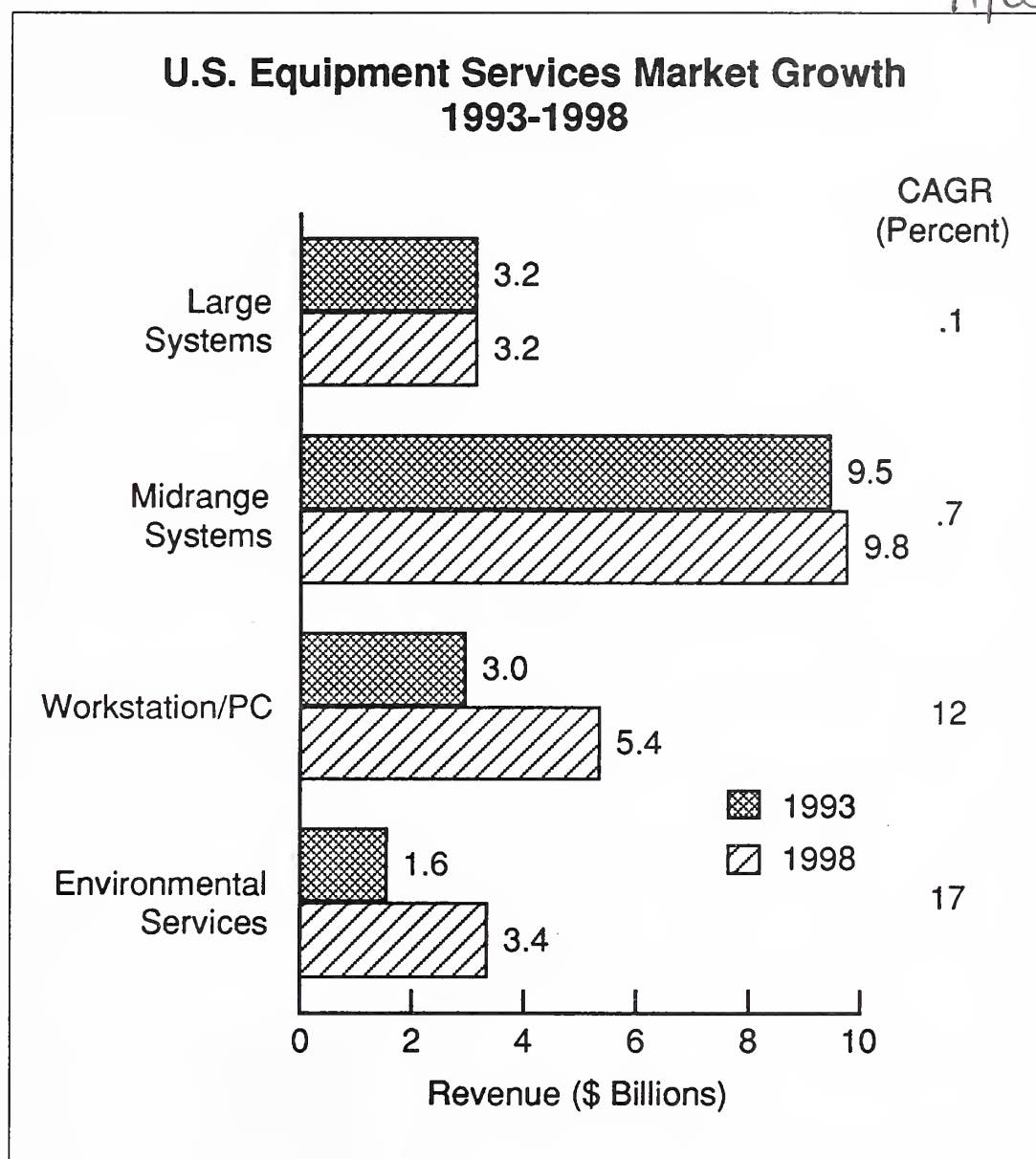
Expenditures for equipment maintenance for large or mainframe systems amounted to a slightly lower percentage of total expenditures in 1992 than in 1991, although they rose slightly in 1992.

B

Forecast Growth, 1993-1998

The growth rate for expenditures for mainframe systems will fall and turn negative by 1998, so that expenditures for mainframe systems will be at little more than the level that they are in 1993, as shown in Exhibit II-2:

EXHIBIT II-2



- The growth rate for mainframe equipment services between 1993 and 1998 will be about .1% CAGR.
- The growth rate for midrange systems will turn down during this period as well, reaching .7% CAGR for the period from 1993 to 1998. However, the contribution to revenue for midrange systems will still be very important in 1998, as illustrated in Exhibit II-2.

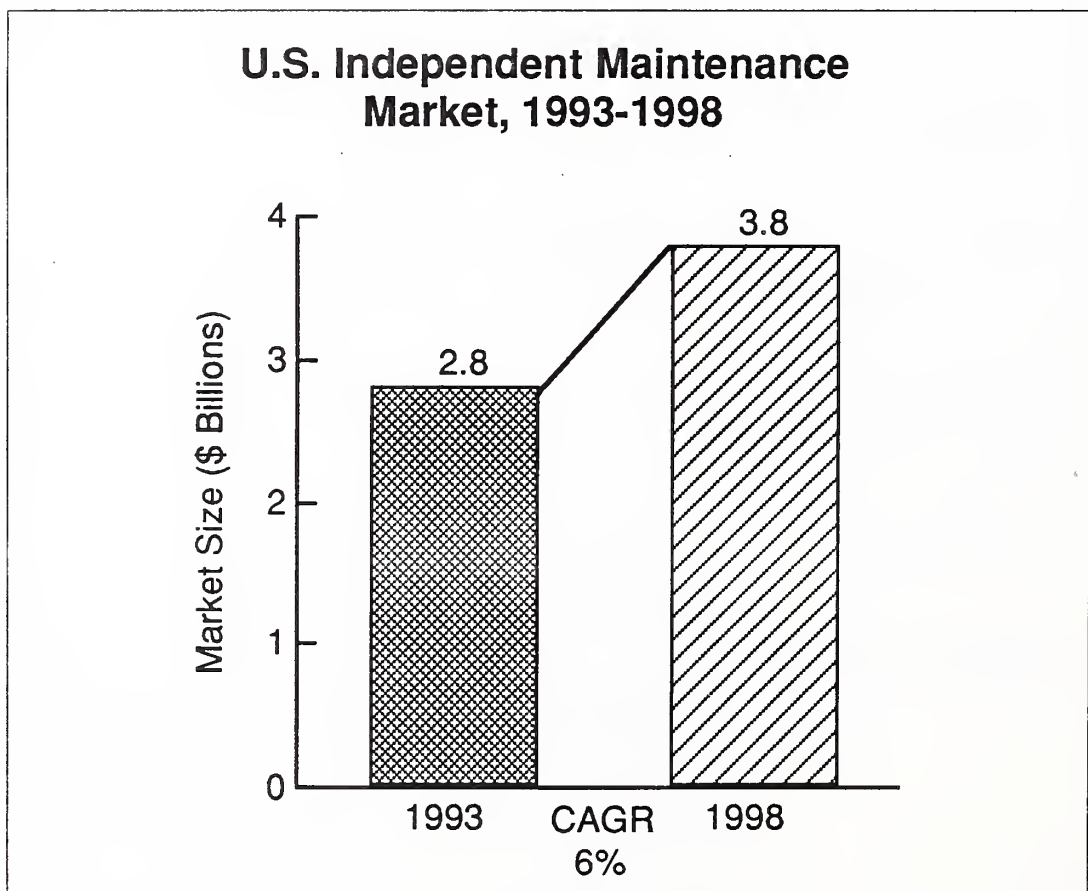
The successful growth of midrange systems (such as the AS/400 and DEC) equipment in the late 1980s and early 1990s that was due to product performance and serviceability will have an impact on the equipment services market through 1998. For instance:

- Although the growth rate and interest in client/server and workstation systems will dominate future planning, the equipment services business will depend more on revenues from midrange computers than from workstations over the next five years.
- There will, however, be a fall-off or loss of business annually for both midrange and mainframe computers by 1998, due to the growth in use of client/server technology and workstations.

The major sources of new business during the planning period will be the sale of services for workstation/PC equipment, environmental services, and other services not related to traditional maintenance business.

User expenditures for equipment services during the planning period will be for both services of computer manufacturers and independent maintenance organizations (IMOs). Exhibit II-3 indicates the growth of business that will occur for IMOs during the next five years.

EXHIBIT II-3

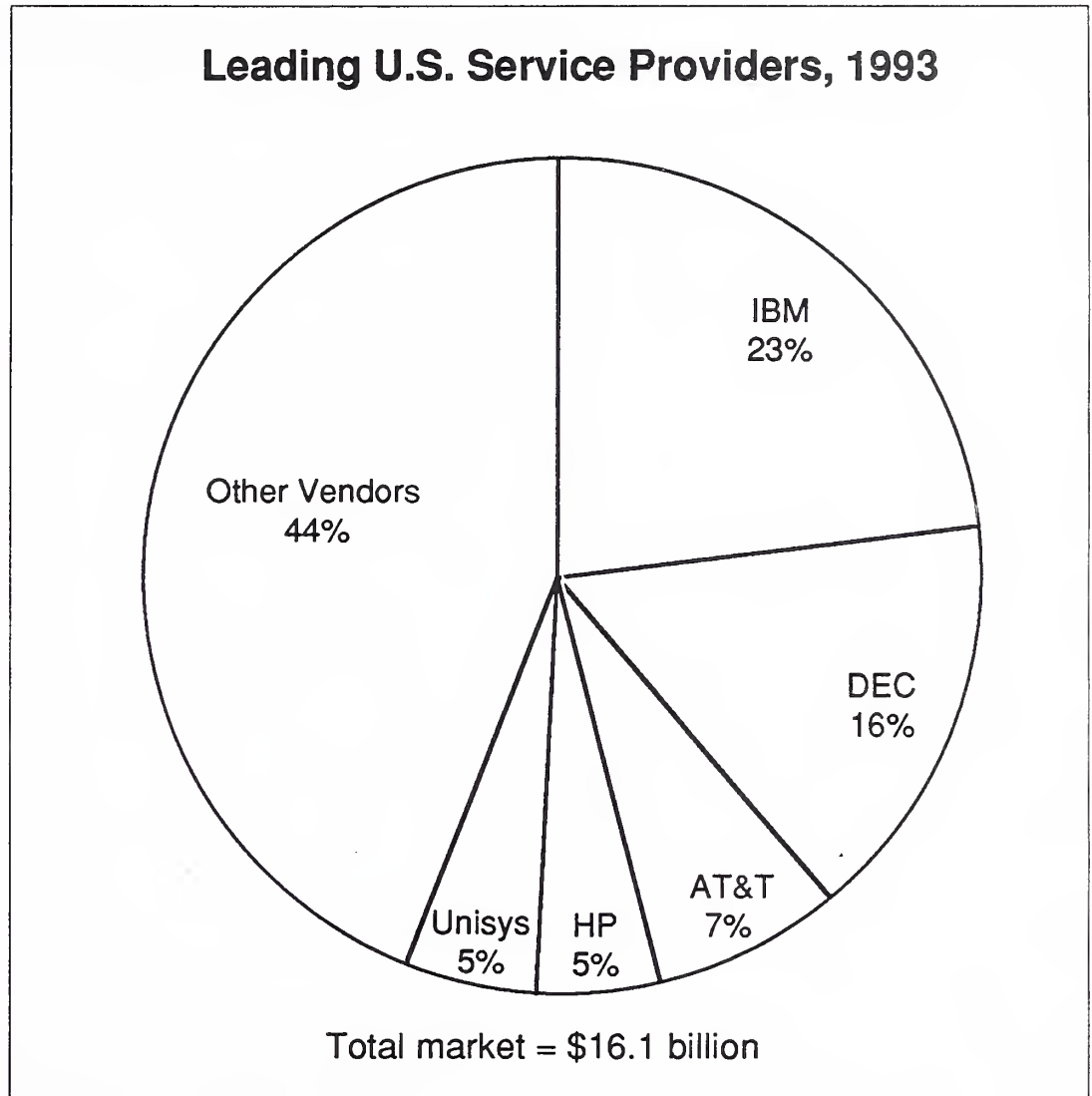


C

Leading Service Providers

Large computer manufacturers dominated the equipment services market in 1992, as shown in Exhibit II-4:

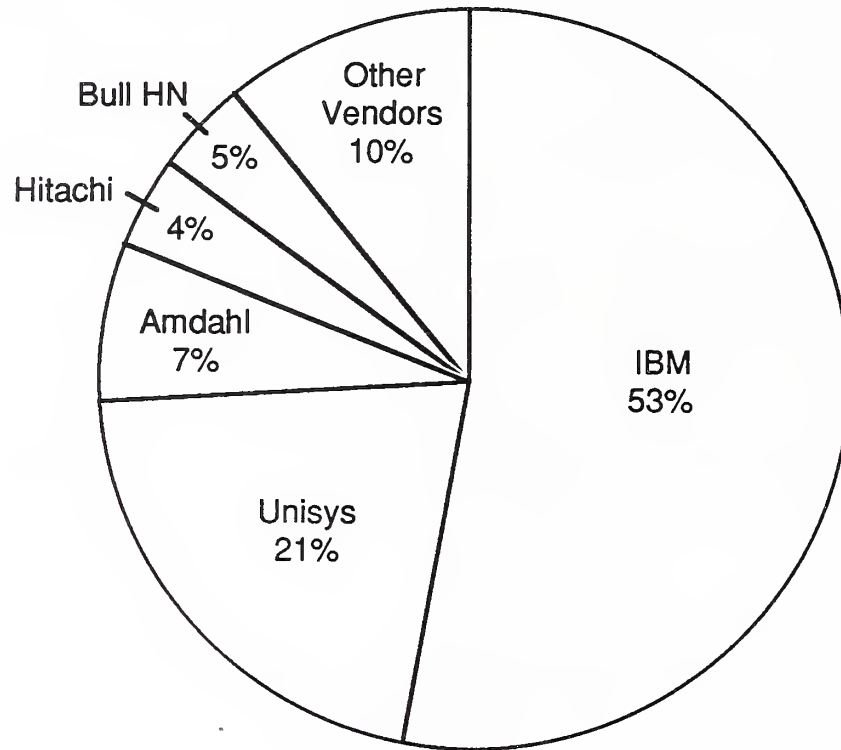
EXHIBIT II-4



- IBM and DEC continue to be the two largest vendors in this market, accounting for almost 40% of expenditures, and are followed in size by other large computer manufacturers.
- Vendors other than IBM, DEC, AT&T, Unisys and HP control less than one-half of the market.

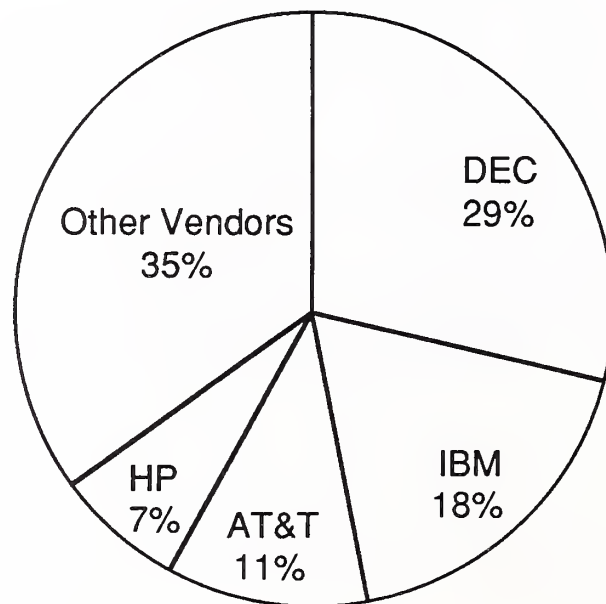
Only IBM is a major factor in delivering equipment services to all three platform markets, as shown in Exhibits II-5, II-6 and II-7. DEC and other vendors are major factors in only one or two markets.

EXHIBIT II-5

Leading Large Systems Service Providers, 1992

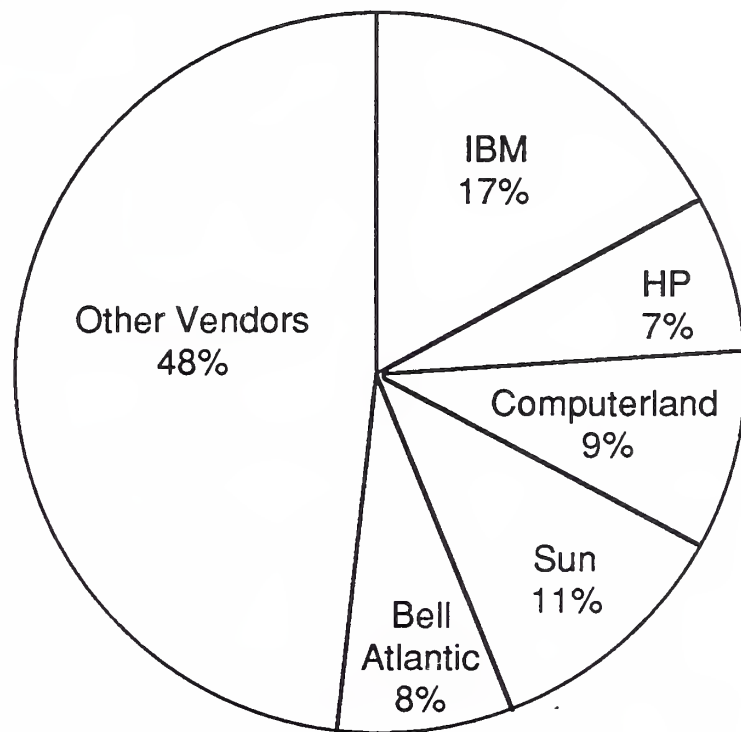
Total market = \$3.2 billion

EXHIBIT II-6

Leading Midrange Systems Service Providers, 1992

Total market = \$8.9 billion

EXHIBIT II-7

Leading Workstation/PC Service Providers, 1992

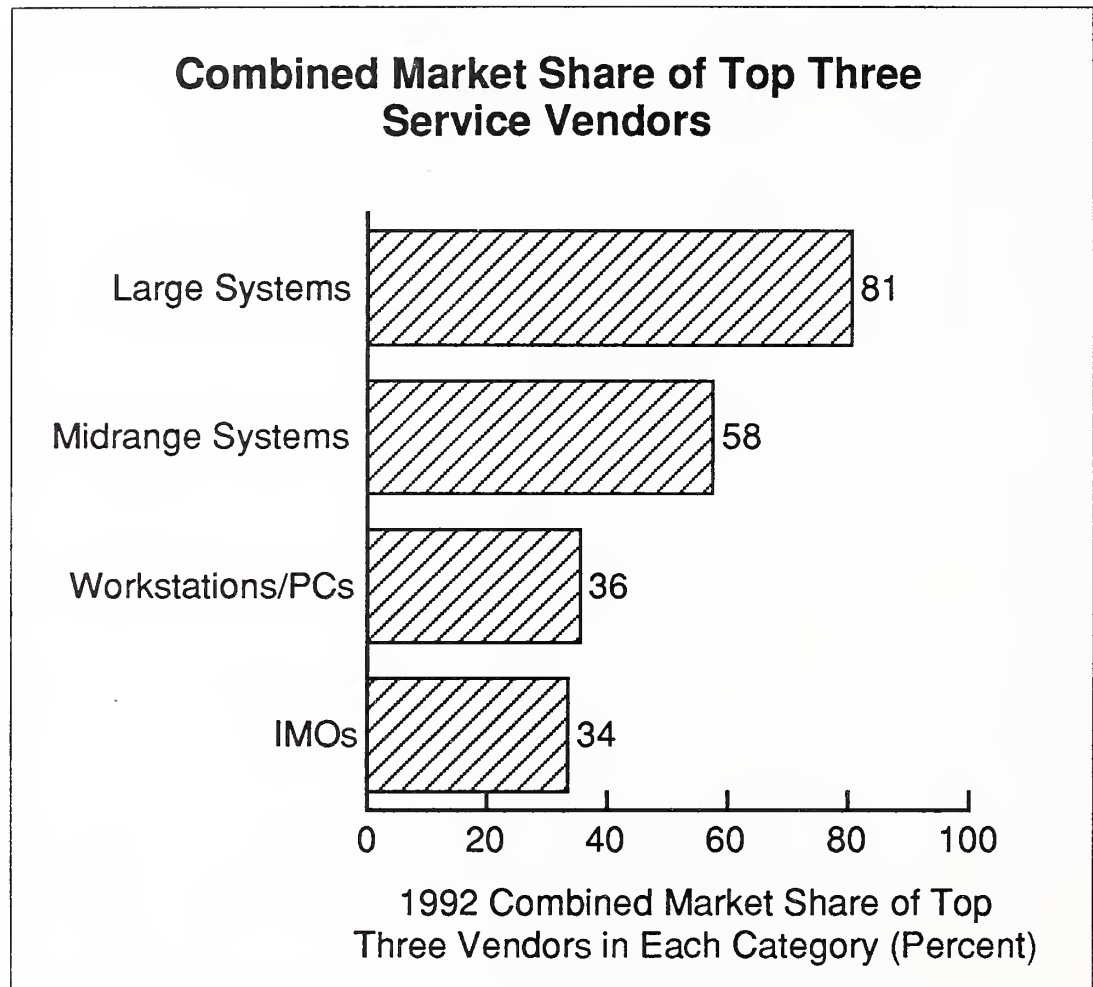
Total market = \$2.7 billion

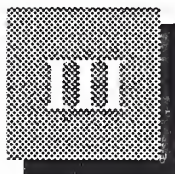
- Unisys is a major factor in the large or mainframe market and provides equipment services for midrange and workstation products as well.
- AT&T provides services in all three platform markets, although it is a major supplier in only the midrange market.

Only in the workstation market are there major suppliers other than manufacturers. Bell Atlantic, an RBOC, and Computerland, a retail computer chain, offer IMO services in this market.

As shown in Exhibit II-8, the dominance of leading vendors in a market is less for smaller platforms. The platform that is most open for new competitors is the workstation/PC equipment maintenance market. Exhibit II-8 also illustrates that the IMO market is more open than the market associated with specific platforms.

EXHIBIT II-8





Analysis of Equipment Services Market, 1993-1998

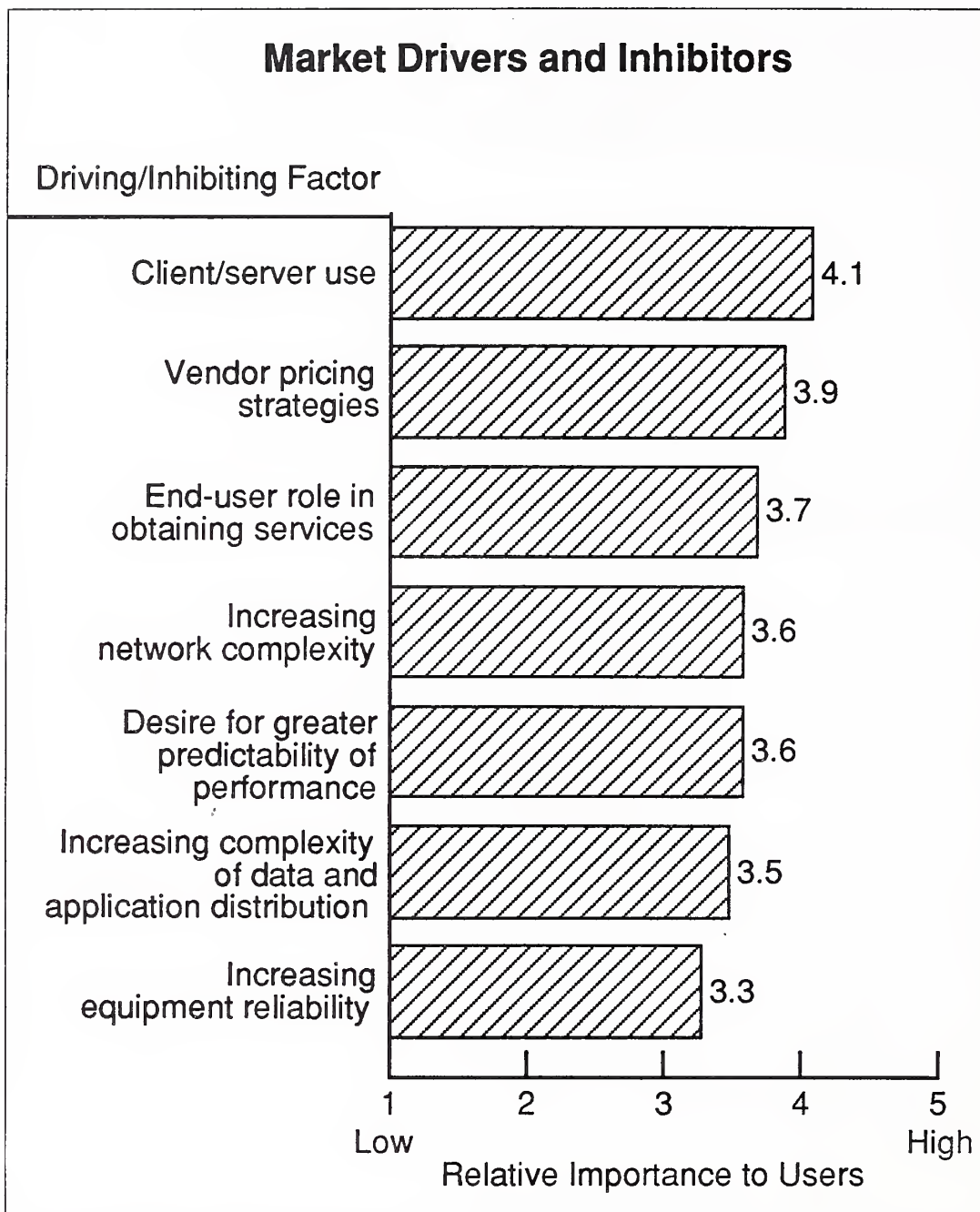
A

U.S. Equipment Services Market Forecast

1. Market Drivers and Inhibitors

This section examines the factors affecting the total equipment services market in the U.S., including maintenance and environmental services provided by computer manufacturers and IMO's. As Exhibit III-1 shows, responses to INPUT's survey of equipment services users indicated that the major factor affecting the equipment services market at this time is the spread of client/server technology.

EXHIBIT III-1



Vendors also feel that client/server technology will have an effect on the equipment services markets:

- Vendors feel that this technology will be more of a driver than an inhibitor, generating more demand for equipment services; but some vendors point out that its rapid acceptance is also leading to a reduction and consolidation of mainframe services.
- Some vendors report or anticipate reductions in midrange equipment service expenditures as a result of client/server utilization.

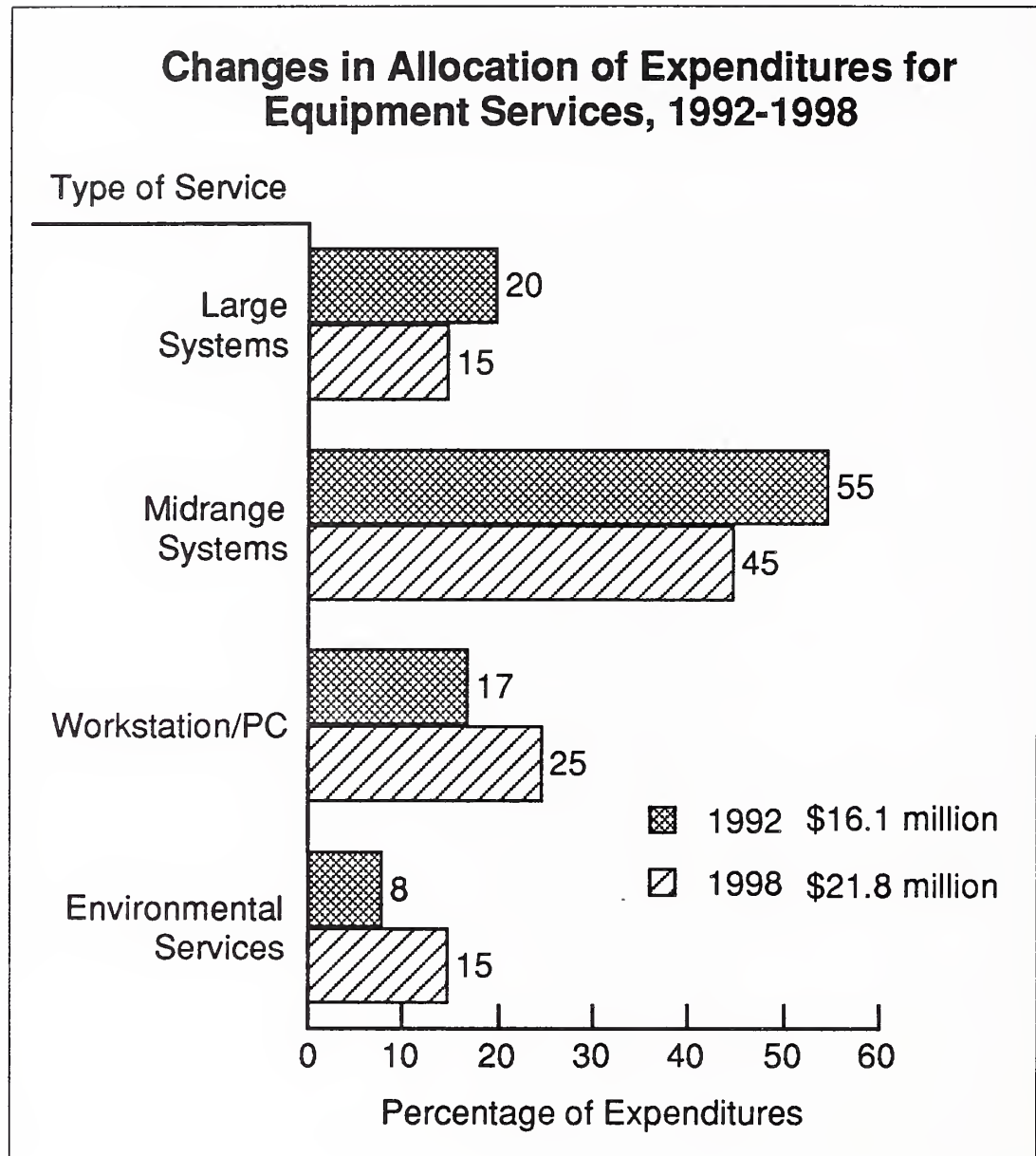
As the complexity of client/server systems grows and interconnections with networks and mainframe databases rise, vendors feel that the demand for equipment services, including aid with problem analysis, will also increase. For instance:

- Aid with problem analysis can be provided by outsourcing vendors who offer desktop services, according to maintenance vendors and users.
- Equipment services vendors are reporting definite increases in demand for maintenance and support services as a result of the growth of interconnection and complex client/server systems.

The increased involvement of end users in the use of computing systems has resulted in increased demand for high levels of reliability and predictable performance. This is helping to drive the use of vendors, as indicated in Exhibit III-1. Other factors that are also driving the use of equipment services include pricing and service delivery strategies, as well as the supply of non-equipment services that can aid end users.

The demands and needs of end users will have their greatest effect on the use of two types of equipment services between 1992 and 1998—those applicable to workstation/PC platforms and those for environmental services, as noted in Exhibit III-2.

EXHIBIT III-2



Users responding to INPUT surveys noted that:

- The use of equipment services for workstations is forecast to increase by about 50% by 1998.
- Expenditures for environmental services is expected to almost double by 1998.
- The share of expenditures for mainframe/large and midrange systems will decrease by about 5% each by 1998.

2. Analysis of Expenditures by Platform, 1993-1998

The annual expenditures for equipment services are divided into equipment maintenance by platform and environmental services, as indicated in Exhibit III-3, equipment services market forecast for 1992-1998.

EXHIBIT III-3

Equipment Services Market Forecast, 1993-1998

Equipment Services	\$ Millions							93-98 CAGR (Percent)
Equipment Maintenance	1992	1993	1994	1995	1996	1997	1998	
Large Systems	3,180	3,225	3,260	3,270	3,255	3,248	3,240	0
Midrange Systems	8,905	9,488	10,078	10,090	10,070	9,940	9,820	1
PC/Workstation Systems	2,660	2,977	3,349	3,766	4,236	4,765	5,360	12
Environmental Services	1,335	1,561	1,824	2,133	2,493	2,914	3,407	17
Total	16,080	17,251	18,511	19,259	20,054	20,867	21,827	5

The exhibit shows that:

- Expenditures for mainframe and midrange systems are expected to plateau and then decrease in the mid-1990s.
- Expenditures for workstation/PC equipment services will exceed those for mainframe/large systems in 1994. The annual increase in services for workstation/PC systems, however, will be greater than the increase for mainframe/large systems in 1993.
- The annual increase in expenditures for equipment services for workstation/PC systems will not be larger than the annual increase for midrange expenditures until 1995. This illustrates the fact that midrange systems are still an important source of revenue for equipment services vendors.

B

Submodes of Equipment Services**1. Equipment Maintenance**

The equipment services delivery mode is composed of two submodes: equipment maintenance and environmental services. The first is concerned with the services provided to repair and diagnose problems and provide preventive maintenance, on-site and off-site, for computer equipment. Exhibit III-3 shows the expenditures for equipment maintenance by platform size.

2. Environmental and Other Services

Environmental services include equipment and data center-related special services such as cabling, air conditioning and equipment moves. As Exhibit III-3 indicates, expenditures for environmental services will grow faster than equipment maintenance during the next five years, making it an area of interest to many equipment services vendors.

There are also a number of services supplied by equipment services vendors that are not part of the equipment services delivery mode; services which many vendors think of as "other" services. There can be some confusion between these services and the environmental services, as shown in Exhibit III-4. For instance:

EXHIBIT III-4

Other Services Identified by Vendors

- Configuration Planning
- Capacity Planning
- Environmental Planning
- Software Support
- Maintenance-Related Training
- Depot Service
- Install/Deinstall/Moves
- Preventive Maintenance
- Consulting
- Network Planning
- Network Management
- Disaster Recovery
- Systems Operation
- Problem Management
- Applications Software Support
- Help Desk

- Some services, such as environmental planning, cabling, and install and deinstall moves, are part of environmental services.
- Disaster recovery, training and systems operations are part of information services modes other than equipment services.

In Exhibit III-5, forecasts of expenditures for both environmental and other services supplied by equipment services vendors are indicated. Both types are growing rapidly compared to equipment maintenance.

EXHIBIT III-5

Growth of Environmental and Other Services, 1993-1998

	Actual	\$ Millions						93-98 CAGR (Percent)
	1992	1993	1994	1995	1996	1997	1998	
Environmental Services	1,335	1,561	1,824	2,133	2,493	2,914	3,407	17
Other non-Equipment Services Offerings	534	634	750	888	1,052	1,246	1,476	18
Total Environmental and Other Services	1,869	2,195	2,574	3,021	3,545	4,160	4,883	17

- Equipment services vendors are interested in selling both environmental and other services because they offer opportunities for increasing revenues at customer sites.
- Environmental and other services can also lead to opportunities to sell other business, such as software products or network services.
- By 1998, the revenues from environmental plus other, non-equipment services will amount to about 27% of equipment maintenance services.

Only expenditures for environmental services and equipment maintenance are included in the total figure for equipment services because the non-equipment services are activities classified under other information services delivery modes, including professional and processing services.

C**Impact of Independent Maintenance Organizations**

Exhibit III-6 shows the expenditures for equipment services that are paid to IMO's rather than to computer manufacturers. These expenditures are a subset of the expenditures shown in Exhibit III-2.

EXHIBIT III-6

Independent Maintenance Organization Forecast, 1993-1998

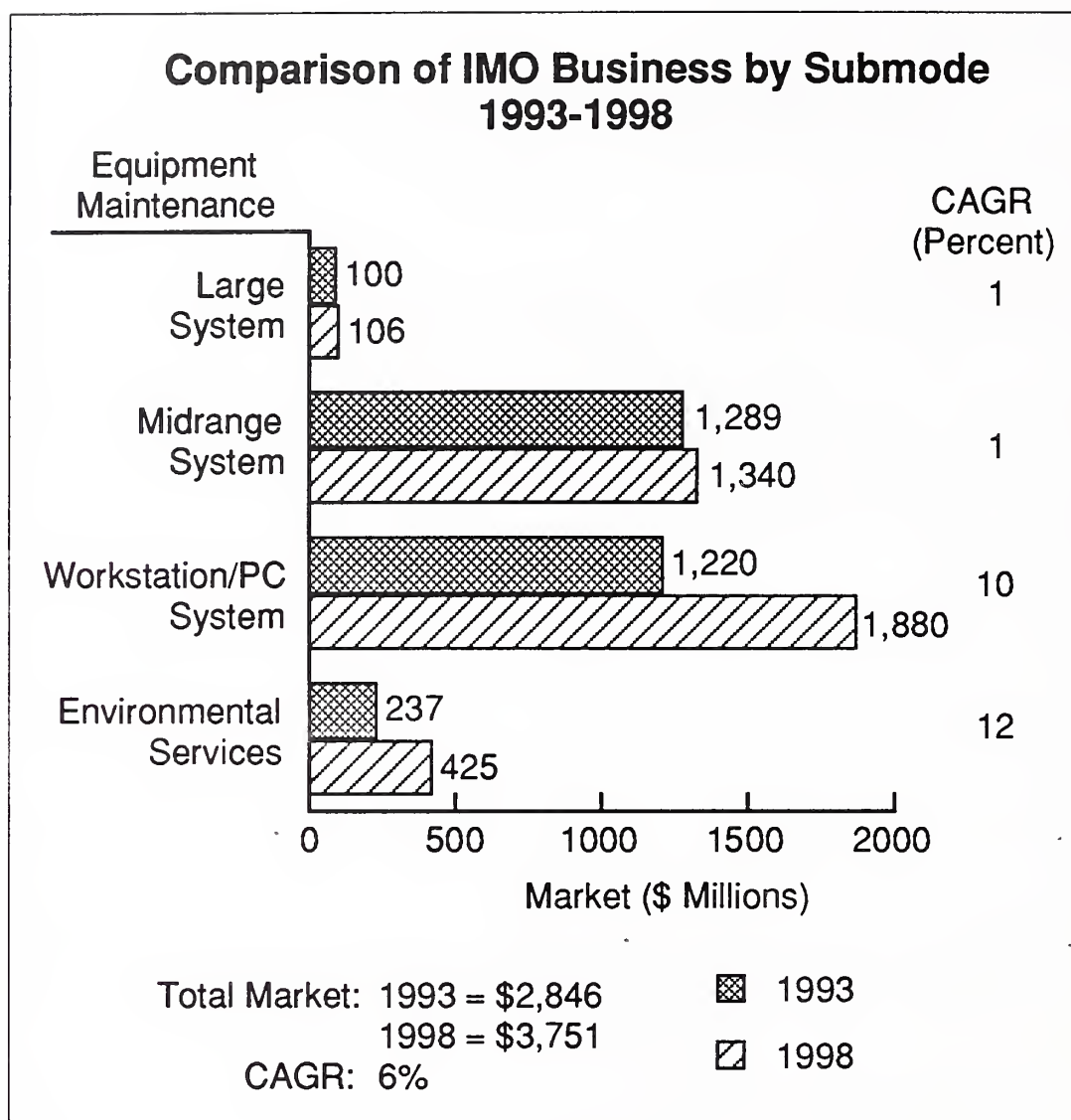
Equipment Maintenance	\$ Millions							93-98 CAGR (Percent)
	1992	1993	1994	1995	1996	1997	1998	
Large Systems	98	100	103	106	108	108	106	1
Midrange Systems	1,220	1,289	1,360	1,410	1,415	1,385	1,340	1
Workstation/PC	1,090	1,220	1,359	1,575	1,686	1,777	1,880	10
Environmental Services	213	237	267	300	338	382	425	12
Total	2,621	2,846	3,089	3,331	3,547	3,652	3,751	6

The IMOs (independent maintenance organizations) include companies involved in the computer business, such as Computerland, or in other industries, such as Bell Atlantic and Kodak, which supply equipment services.

- IMOs also include a number of small firms dedicated to equipment services, such as Intellogic Trace.
- Divisions (or separate operations) of a number of computer manufacturers have acquired or set up IMO types of operations devoted to lines of equipment other than their own, while other computer manufacturers have just added equipment of other manufacturers to their regular service business (e.g., multivendor options) rather than set up an IMO type of organization.

An examination of the expenditures in Exhibit III-7 indicates that expenditures for IMO services are more concentrated on workstation/PC and environmental services than on those for mainframe or midrange computers. The reasons for this are:

EXHIBIT III-7



- In general, IMOs are less able to diagnose problems with or provide aid in relation to systems software for large/mainframe or (in some cases) midrange computers than are manufacturers. This is one of the strongest reasons why some users remain with manufacturers for their equipment services, rather than seek lower cost alternatives.
- Also, users of large/mainframe computers are less price sensitive when considering IMO offers. They are less likely to switch vendors for changes in price, although many will review that decision as price advantages increase.
- IMOs tend to be opportunistic and provide services for the areas of the market that are growing most rapidly (such as workstation/PC equipment) or where they feel that their capabilities can be most profitably used.

In the past, IMOs did not expect much competition from manufacturers when they bid services for older or obsolete equipment, certain peripheral equipment, or workstations made by a vendor that did not have a service presence. Today:

- Computer manufacturers are now expanding their coverage to include equipment at multiple sites through multivendor contracts in order to gain additional revenue for what they hope will be relatively low additional cost.
- Some computer manufacturers will also bid on maintenance service in situations where they have only a minor presence.

IMOs gain business through low pricing and by providing service for low-cost items such as a PC or printer that a manufacturer might have neglected to include in service arrangements because they were made by other vendors. Today, however, manufacturers are more aggressive and apt to reduce their prices somewhat and bid on more equipment.

- IBM has introduced pricing arrangements (including prepayment) that provide very competitive pricing versus IMOs. DEC, HP and other vendors have also introduced competitive pricing.
- A number of manufacturers now offer or are considering multivendor support, which also reduces opportunities for IMOs.

Computer manufacturers are also interested in expanding their maintenance business in order to gain more presence and opportunities for business at a specific company, as well as to gain more revenues.

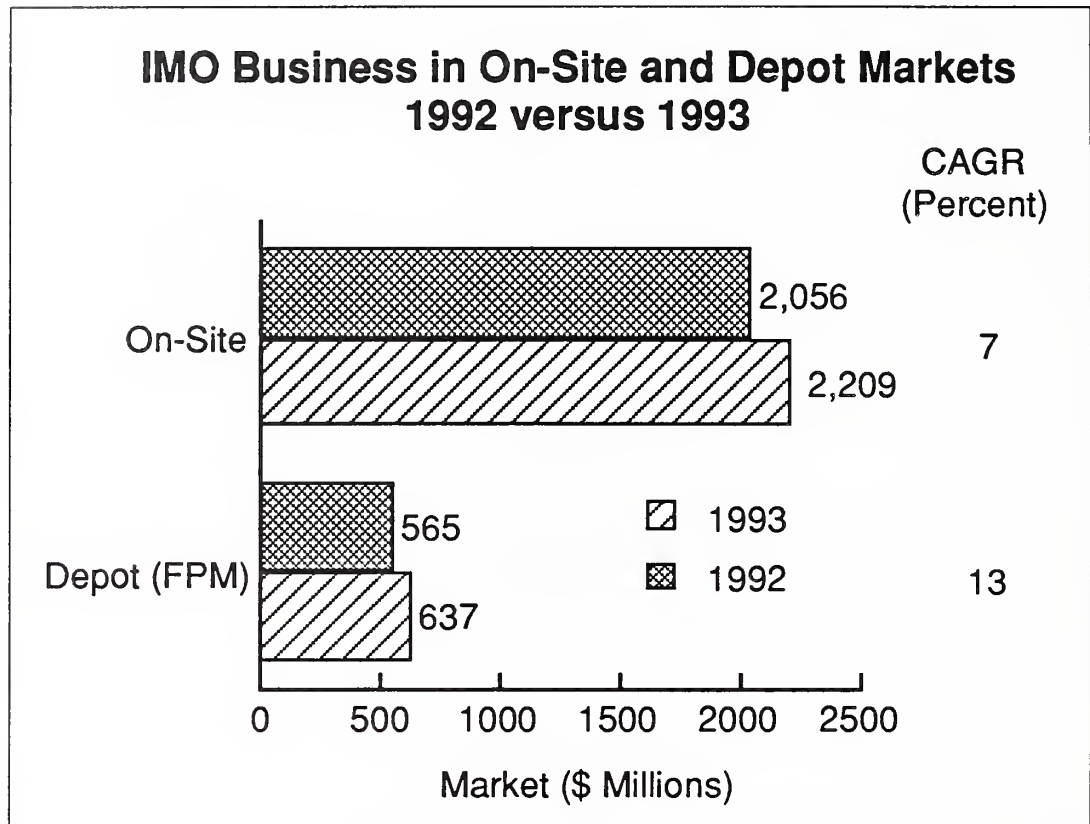
D

Depot or Fourth-Party Maintenance (FPM)

Some computer manufacturers report that they have developed greater strength in depot maintenance activities in order to compete with IMOs that offer that capability, as well as to improve their ability to service accounts. This has occurred because:

- On the average, IMOs are more apt to offer depot or fourth-party maintenance (which involves remanufacture, refurbishing of products, upgrades/downgrades and cleaning and cosmetic changes) through drop-off at a depot rather than by shipment to a manufacturer.
- The expenditure for the use of depots by IMOs, versus work on site, is illustrated in Exhibit III-8.

EXHIBIT III-8

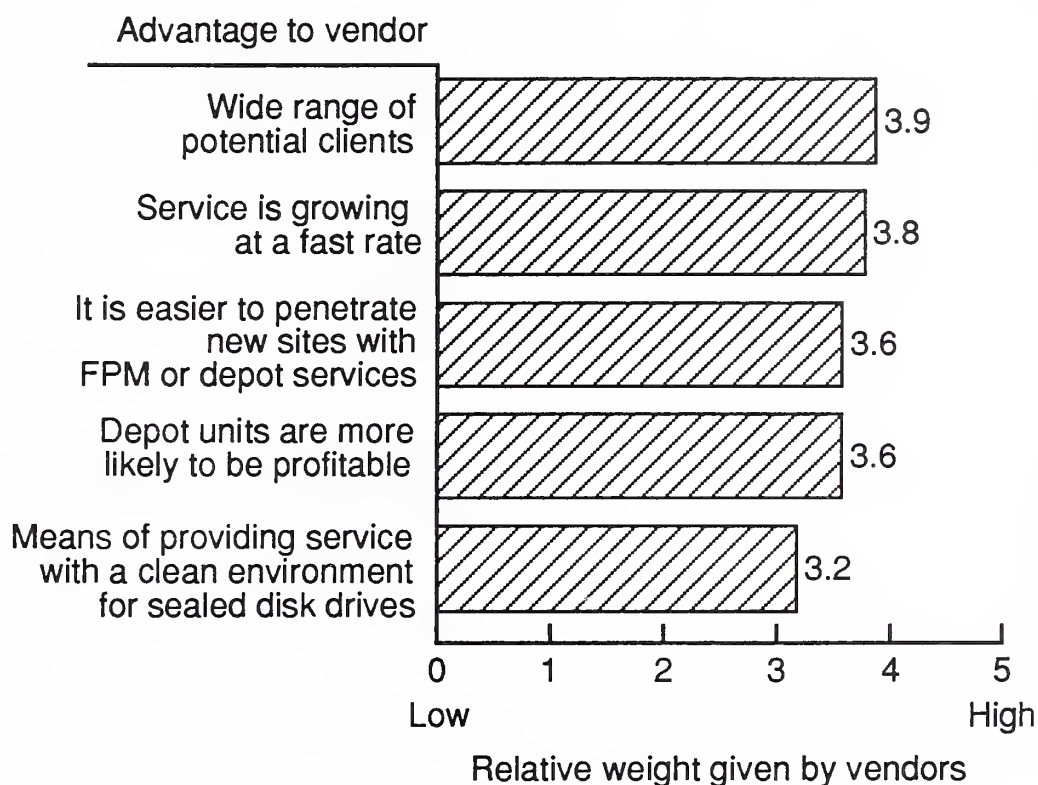


A number of users, particularly large users, now handle some of their own maintenance by dropping work off at depots. Users report that depots also contact them to seek business.

An analysis of the advantages to equipment services vendors of providing depots clearly supports consideration of increased use of depot maintenance, as shown in Exhibit III-9. Response to INPUT's survey noted that:

EXHIBIT III-9

Advantages of Depot(or Fourth-Party) Maintenance Business to Vendors

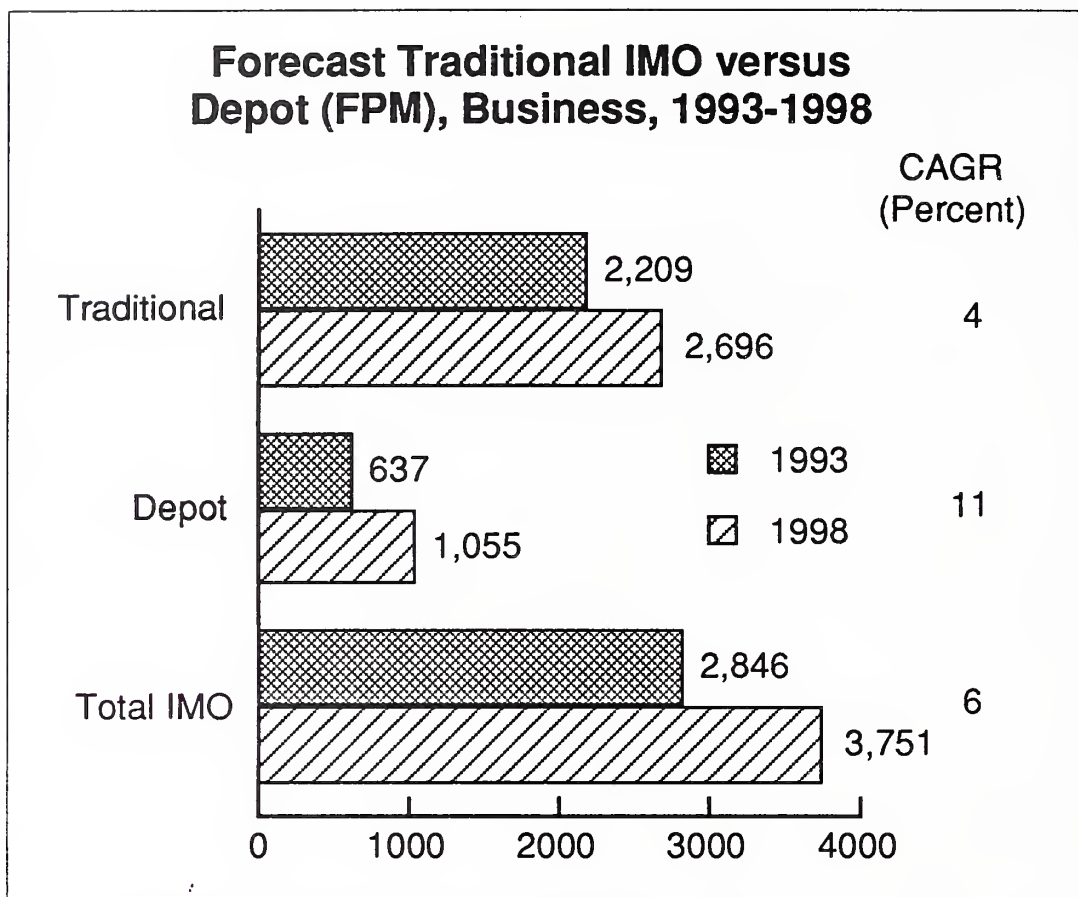


- Depots provide more opportunity to invade new accounts. End users as well as the staff of IS may want to bring in a printer, PC, portable disk drive or other unit not covered by a maintenance contract.
- Depot or FPM service is growing at a fast rate and appears to be a profitable undertaking at a number of companies.

Vendors do state that the establishment of a depot or depots must be planned carefully in terms of the locations of potential users and the other services that will be offered by the depot or FPM provider.

Forecasts of the depot (or fourth-party) market and the traditional equipment services work of IMO vendors are compared in Exhibit III-10, which assumes that depot work can all be classified as IMO business even if performed by manufacturers.

EXHIBIT III-10

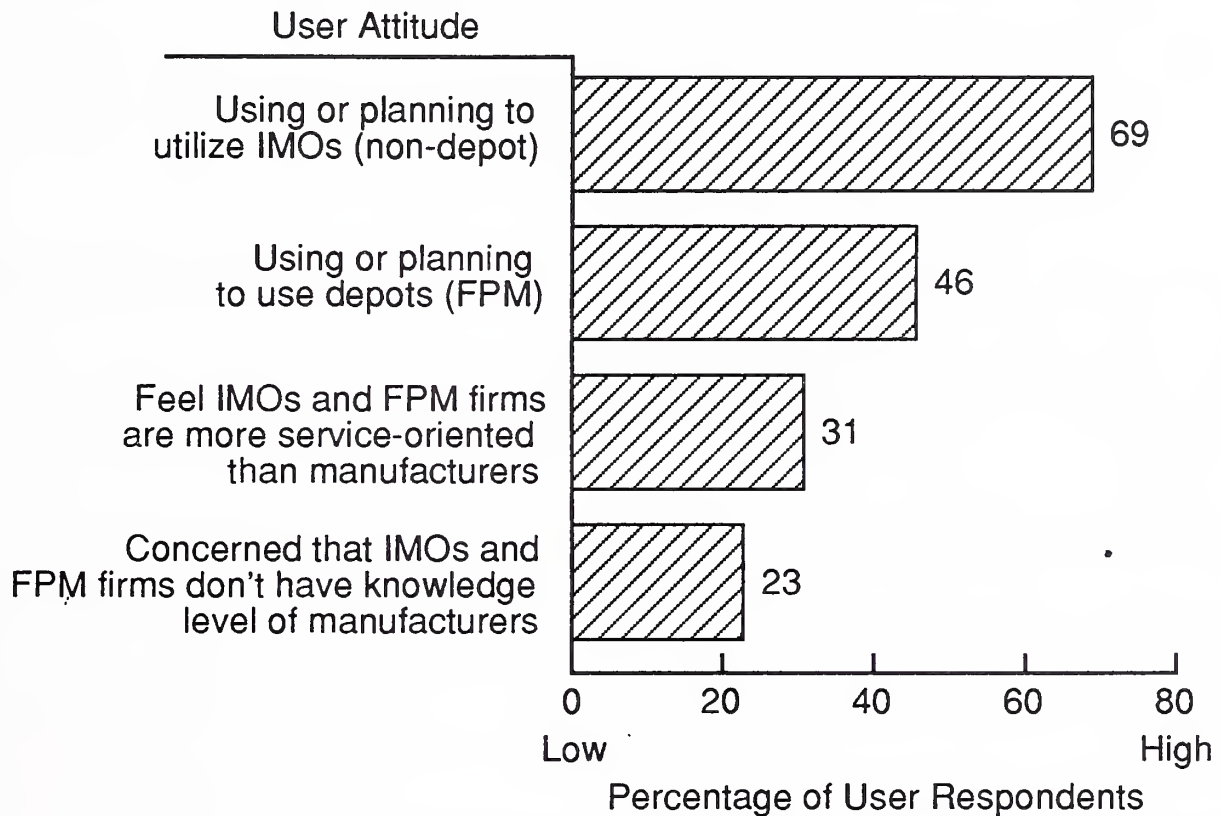


Additional analysis of this data shows that:

- Depot business is growing faster than the rest of the IMO market, due partially to the fact that the use of workstation/PC computers is growing rapidly in comparison to other platforms, and a greater percentage of maintenance for workstation/PC computers is done at depots.
- There will still be a greater volume of work done by traditional IMO firms during the period from 1993 to 1998. As Exhibit III-11 indicates, the percentage of users who are utilizing or planning to utilize depots is definitely less than the number for IMOs.

EXHIBIT III-11

User Attitudes Regarding Use of Traditional IMO's and Depots (FPM)



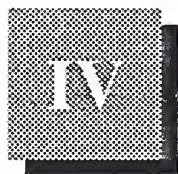
Note: Percentages are based upon users responding, not users queried.

In addition, both depots and other IMO's are not perceived as knowledgeable or as service oriented as are other categories of equipment services, as yet. As a result:

- These images should be improved to help gain business.
- Sufficient knowledge must be gained of equipment to be serviced. This might require continuing instruction for people assigned to certain accounts.
- A service orientation (or providing a high level of customer attention and service) should be provided through training programs conducted throughout an equipment services organization. Service, obviously, is one of the critical decision factors in selecting service organizations today.

An analysis of the business of depot or fourth-party firms reveals that many of them do not have a wide range of the new services that users are interested in, such as configuration planning or disaster recovery. As a result:

- There may be a loss of business to competition or a loss of opportunities for selling additional services.
- The vendors involved in this market sector must consider offering environmental and other, non-equipment services to users, since such services have high growth rates and offer an opportunity to gain additional revenue from existing clients.



A Competitive Environment

A

Top Service Providers by Platform

The list of top service providers in Exhibit IV-1 is almost entirely made up of computer manufacturers, demonstrating that they dominate the equipment services business.

EXHIBIT IV-1

Top Equipment Services Vendors (U.S.)

Company	Rank	1992 U.S. Revenue (\$ Millions)	Market Share (Percent)
IBM	1	3,736	23
DEC	2	2,650	16
AT&T	3	1,139	7
HP	4	815	5
Unisys	5	786	5
Bull HN	6	480	3
Bell Atlantic Business Systems Services	7	455	3
Sun	8	280	2
Total Top Vendors		10,341	64
Other Vendors		5,739	36
Total Market		16,080	100

- The top three manufacturers have almost 50% of the business.
- Vendors at the top of the list tend to provide maintenance for two or more platforms of their own equipment.

The total market share for overall equipment services business of the top 10 vendors is about 67%. For large systems vendors, the market share of the top firms is much larger, as shown in Exhibit IV-2.

EXHIBIT IV-2

Top Large Systems Equipment Services Vendors

Company	Rank	1992 U.S. Revenue (\$ Millions)	Market Share (Percent)
IBM	1	1,682	53
Unisys	2	667	21
Amdahl	3	225	7
Bull HN	4	165	5
Hitachi	5	112	4
CDC	6	90	3
Cray	7	82	3
AT&T	8	68	2
Total Top Vendors		3,091	97 *
Other Vendors		89	3
Total Market		3,180	100

* Does not add up due to rounding of market share

- Eight firms have about 97% of the business.
- The manufacturers that dominate sales of large computers also dominate equipment services for that platform.

The top eight vendors of midrange equipment services have a combined market share of over 75%, as noted in Exhibit IV-3. There is less concentration of services in this market than in the market for vendors of large computer maintenance.

EXHIBIT IV-3

Top Midrange Systems Equipment Services Vendors

Company	Rank	1992 U.S. Revenue (\$ Millions)	Market Share (Percent)
DEC	1	2,555	29
IBM	2	1,610	18
AT&T	3	1,020	11
HP	4	620	7
Bull HN	5	285	3
Bell Atlantic	6	225	3
Tandem	7	217	2
Data General	8	180	2
Total Top Vendors		6,712	75
Other Vendors		2,193	25
Total Market		8,905	100

There is even less concentration in the equipment services market for workstation/PC systems, where the top eight vendors control only about 63% of the market share (see Exhibit IV-4).

EXHIBIT IV-4

Top Workstation/PC Systems Equipment Services Vendors

Company	Rank	1992 Revenue (\$ Millions)	Market Share (Percent)
IBM	1	444	17
Sun	2	280	11
Computerland	3	240	9
Bell Atlantic	4	220	8
Computervision	5	110	4
HP	5	195	7
JWP	6	105	4
Tandy	8	90	3
Total Top Vendors		1,684	63
Other Vendors		976	37
Total Market		2,660	100

There is also a greater number of firms that are not computer manufacturers noted in Exhibit IV-4 than in the list of top service providers for large and midrange systems. The workstation/PC market offers more opportunities for new vendors.

B**IMO Service Providers**

The vendors providing IMO equipment services are listed in Exhibit IV-5. The list contains a mix of companies by size and by industry.

EXHIBIT IV-5

**Top Independent
Maintenance Organizations (U.S.)**

Company	Rank	1992 U.S. Revenue (\$ Millions)	Market Share (Percent)
Bell Atlantic Business Systems Services	1	455	17
Computerland **	2	240	9
GECS	3	210	8
AT&T	4	150	6
Dataserv	5	100	4
Intellogic Trace	6	98	4
Decision Data	7	70	3
JWP	8	105	4
Total Top Vendors		1,418	54 *
Other Vendors		1,203	46
Total Market		2,621	100

* Does not add up due to rounding of market share

** Absorbed TRW equipment services as of 7/1/92

Commonalities and differences include:

- Bell Atlantic and GE are very large corporations; Dataserv and Decision Data are relatively small.
- Bell Atlantic is an RBOC, GE is an electrical manufacturer, and Computerland runs retail computer stores.

IMOs have evaluated the potential for the equipment services market from various perspectives and made a decision to enter it. IMOs that were contacted during the course of this study report that the equipment services market has the potential for increasing revenue, but several report that changing technology and competition have made it very difficult to reach their goals.

C

Selected Acquisition and Alliance Activity

The equipment services business has expanded or evolved to a great extent through acquisition. For example, the following actions have taken place:

- Since 1990, Control Data's third-party or IMO service business has been acquired by Sorbus, which was in turn acquired by Bell Atlantic; Computerland acquired the service business of TRW, and Data General acquired the service business of HBO.
- In 1993, Novadyne and National Customer Engineering formed an alliance to jointly offer on-site and depot computer maintenance.
- In 1993, Computerland formed an alliance with Connectivity Inc. to supply services for network implementation for Computerland customers nationwide.

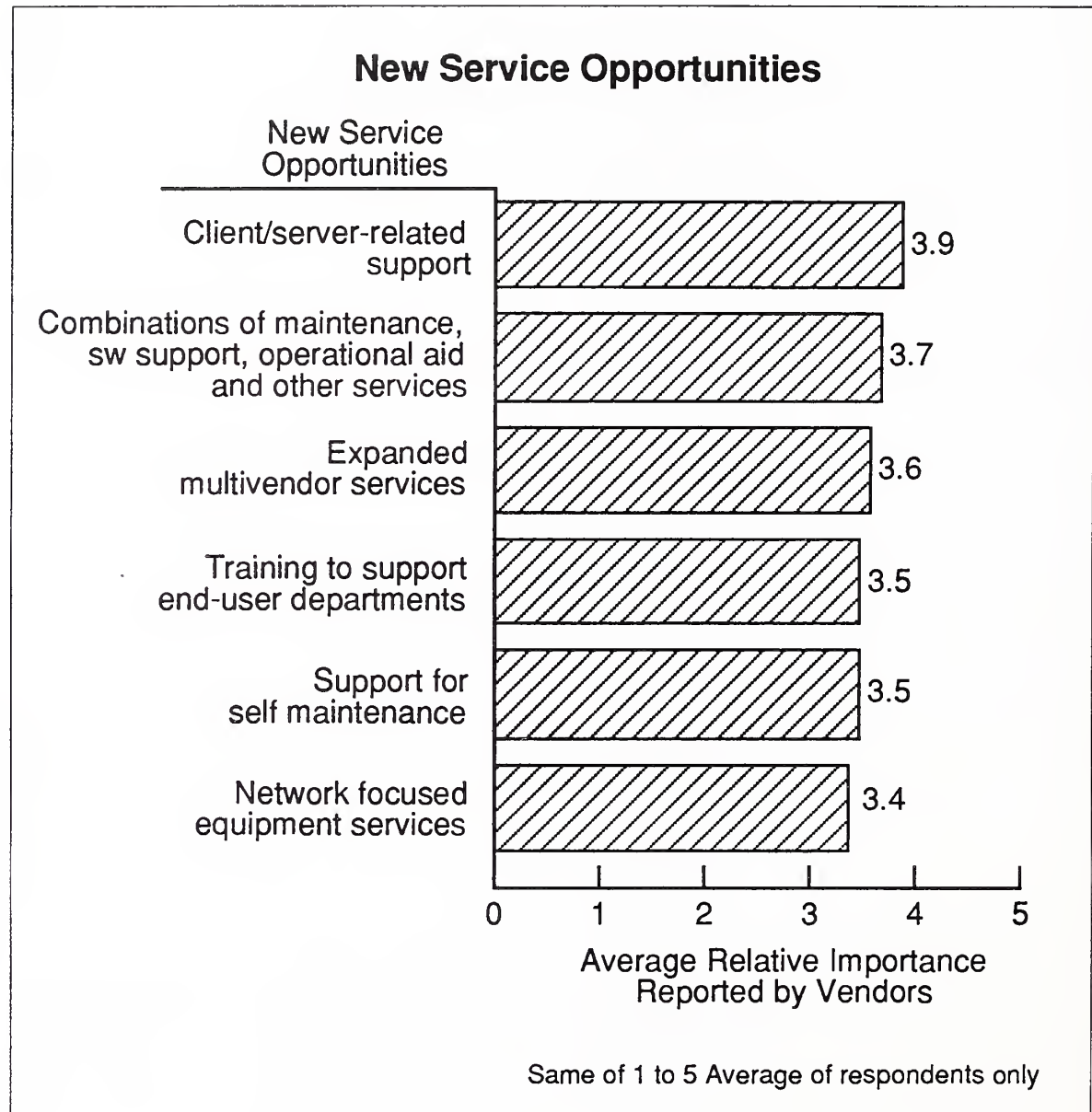
The variety of alliances and mergers in the equipment services market shows that all firms in this market—other than the largest providers—can suddenly be faced with stronger competition offering new services or lower prices.

D

New Service Opportunities

New service opportunities mentioned by vendors included client/server-related support, additional nonmaintenance services and support of self maintenance, as shown in Exhibit IV-6.

EXHIBIT IV-6

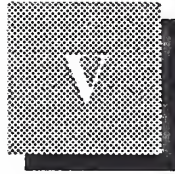


- Vendors reported that they feel end users have a high level of interest in combinations of equipment services support, such as a help desk and desktop services to aid in the use of client/server systems. Several vendors mentioned that offering too large a combination of services can result in areas of weakness, where services are spread thin.

- Additional nonmaintenance services, including training, disaster recovery and operational support, are being considered by a number of vendors.
- Support for self maintenance is being offered as a means of invading accounts as well as adding business.

An annual self-maintenance conference is now held, sponsored by the vendor Dataserv. It targets workstation/PC users and supplies helpful information as well as providing information on vendor services.

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Equipment Services Market Issues and Trends

A

User Needs and Issues

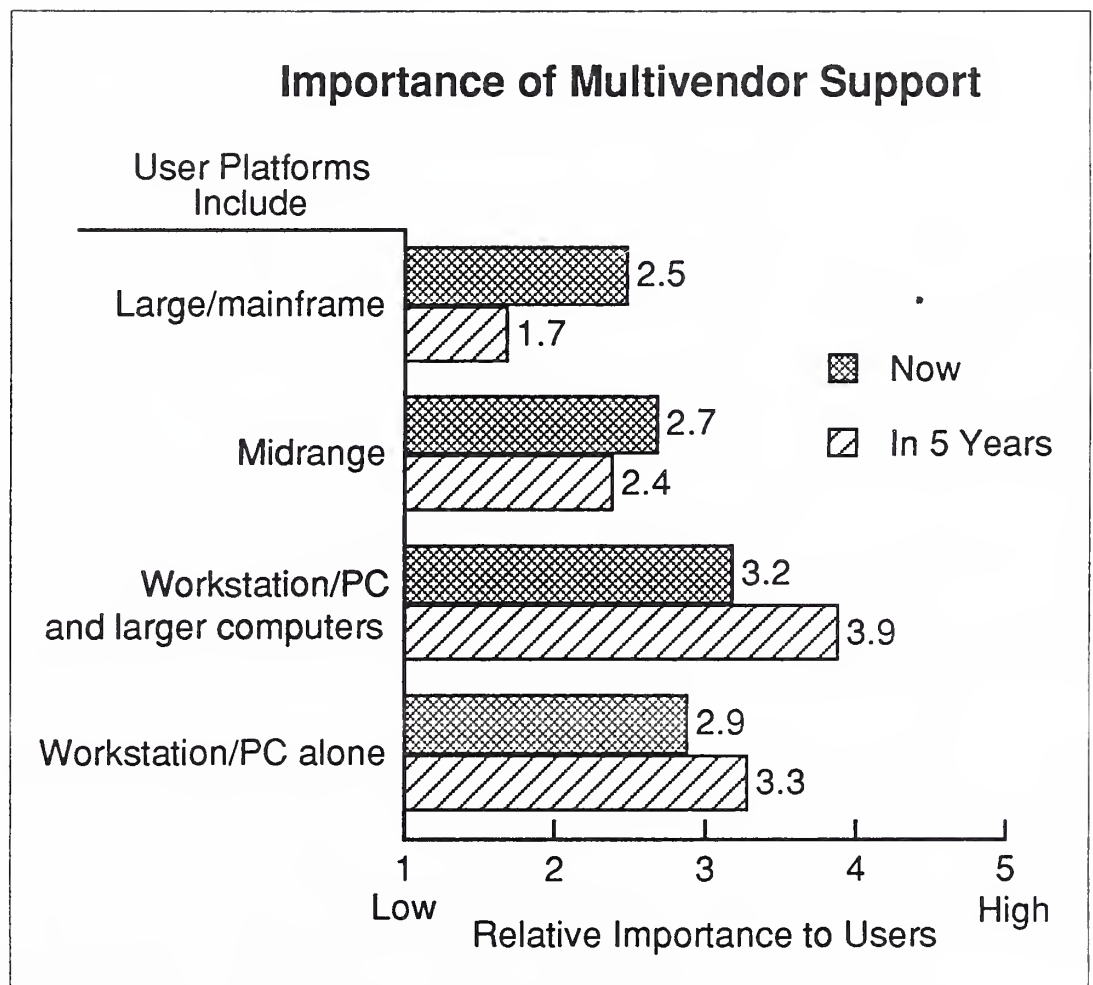
The increasing use of client/server technology is having an impact on the equipment services market, as indicated in Exhibit V-1, which summarizes responses to an INPUT survey of equipment services users.

V-2

Users also are concerned with the usual set of equipment services issues, including pricing, quality of service and the technical knowledge of services personnel. One of the continuing issues involves multivendor support. For example:

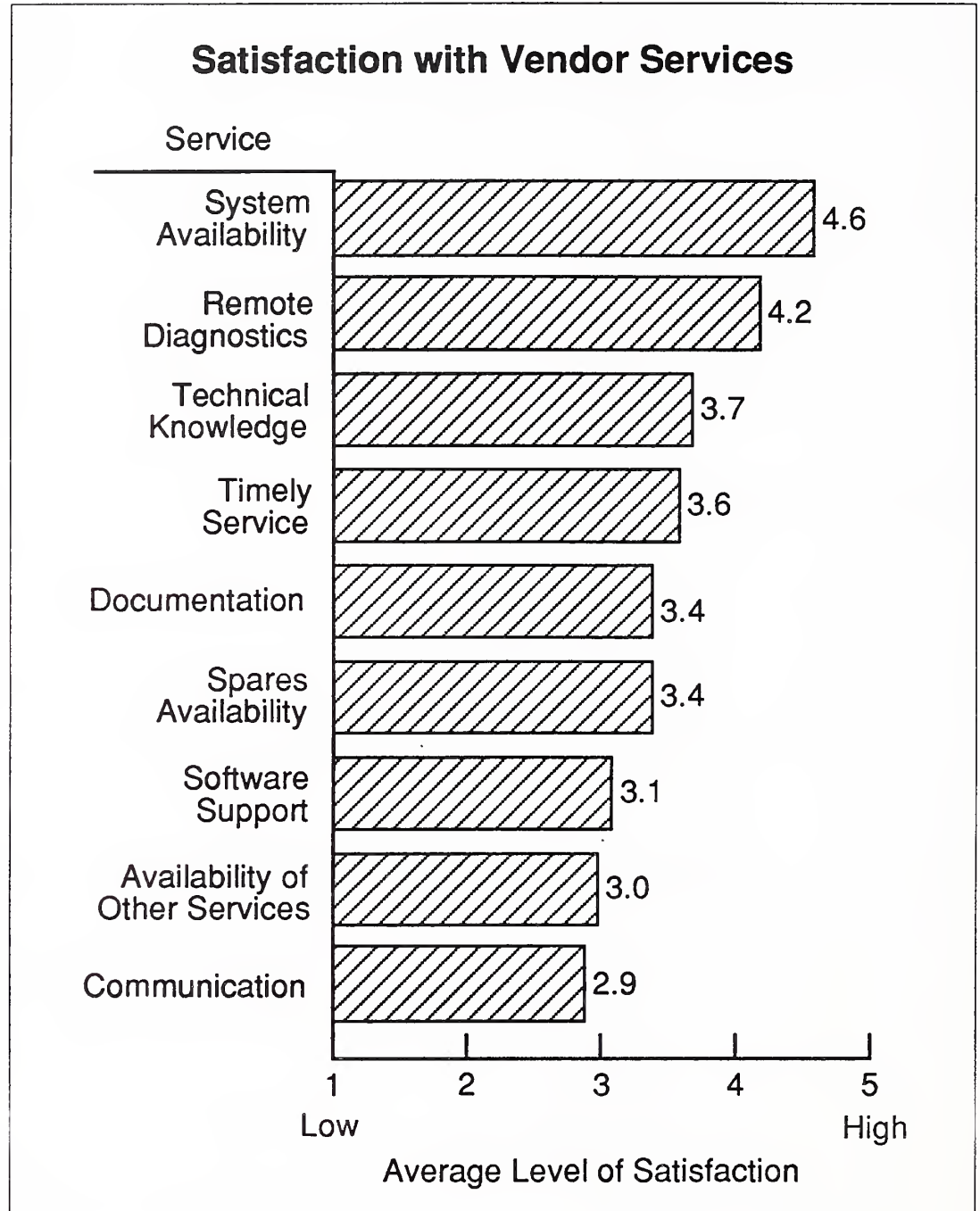
- A number of users would like one of the vendors that they utilize to take care of all the equipment at a site or possibly at all company sites.
- As Exhibit V-2 illustrates, the importance of multivendor maintenance is felt most at sites using workstations or client/servers as well as larger computers, and the importance of this capability will increase in the future.

EXHIBIT V-2



Of the broad spectrum of equipment-related services now available to clients, the services that have earned the highest levels of satisfaction from users queried in INPUT's survey include system availability, remote diagnostics and technical knowledge. The relative importance assigned to the various equipment services are shown in Exhibit V-3.

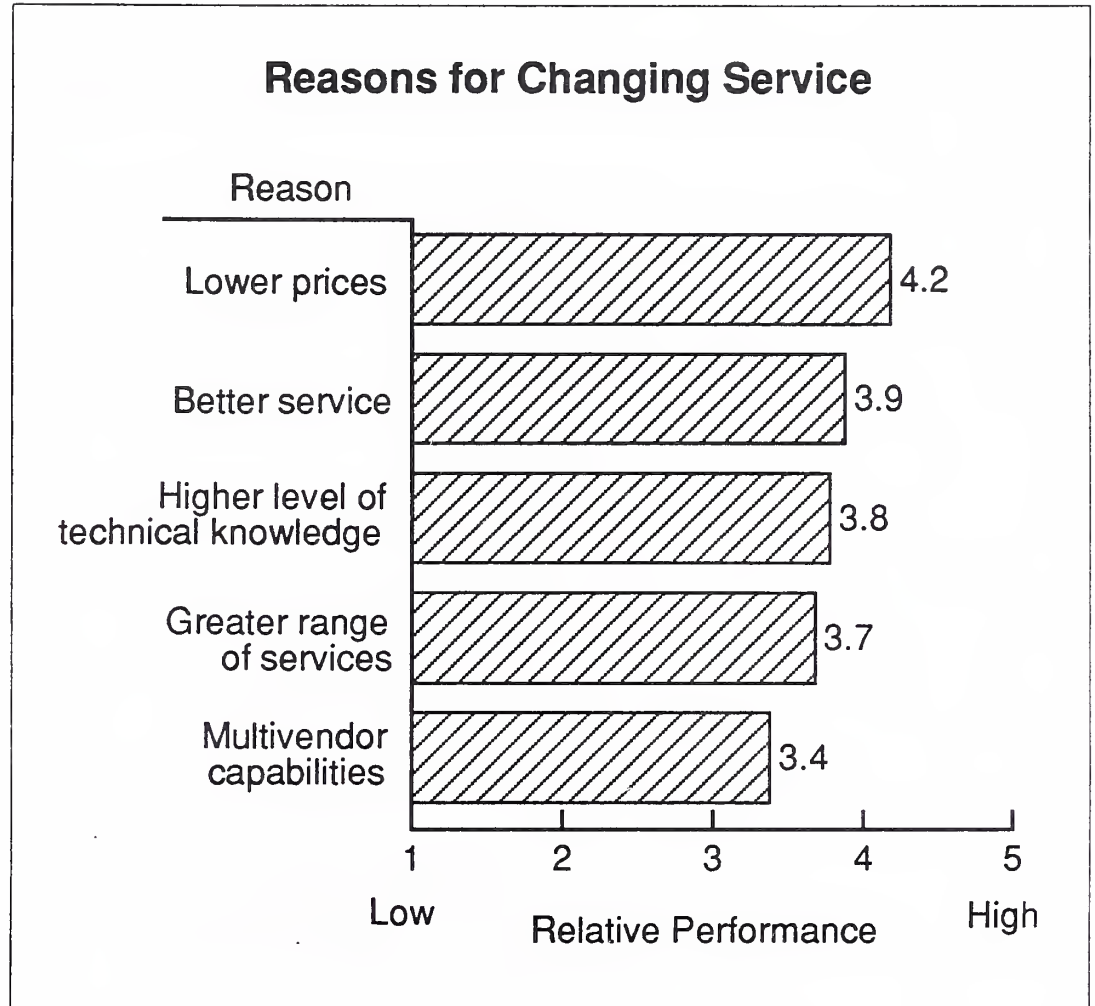
EXHIBIT V-3



- Availability of other services, such as multivendor support and 'one point of responsibility' for service, elicit lower levels of satisfaction.
- Communication between users and vendors continues to rank low, although it has improved slightly since last year.

Communication and 'one point of responsibility' are not critical enough by themselves to make many users consider a change in vendors. The factors that generally lead users to consider another vendor are shown in Exhibit V-4.

EXHIBIT V-4

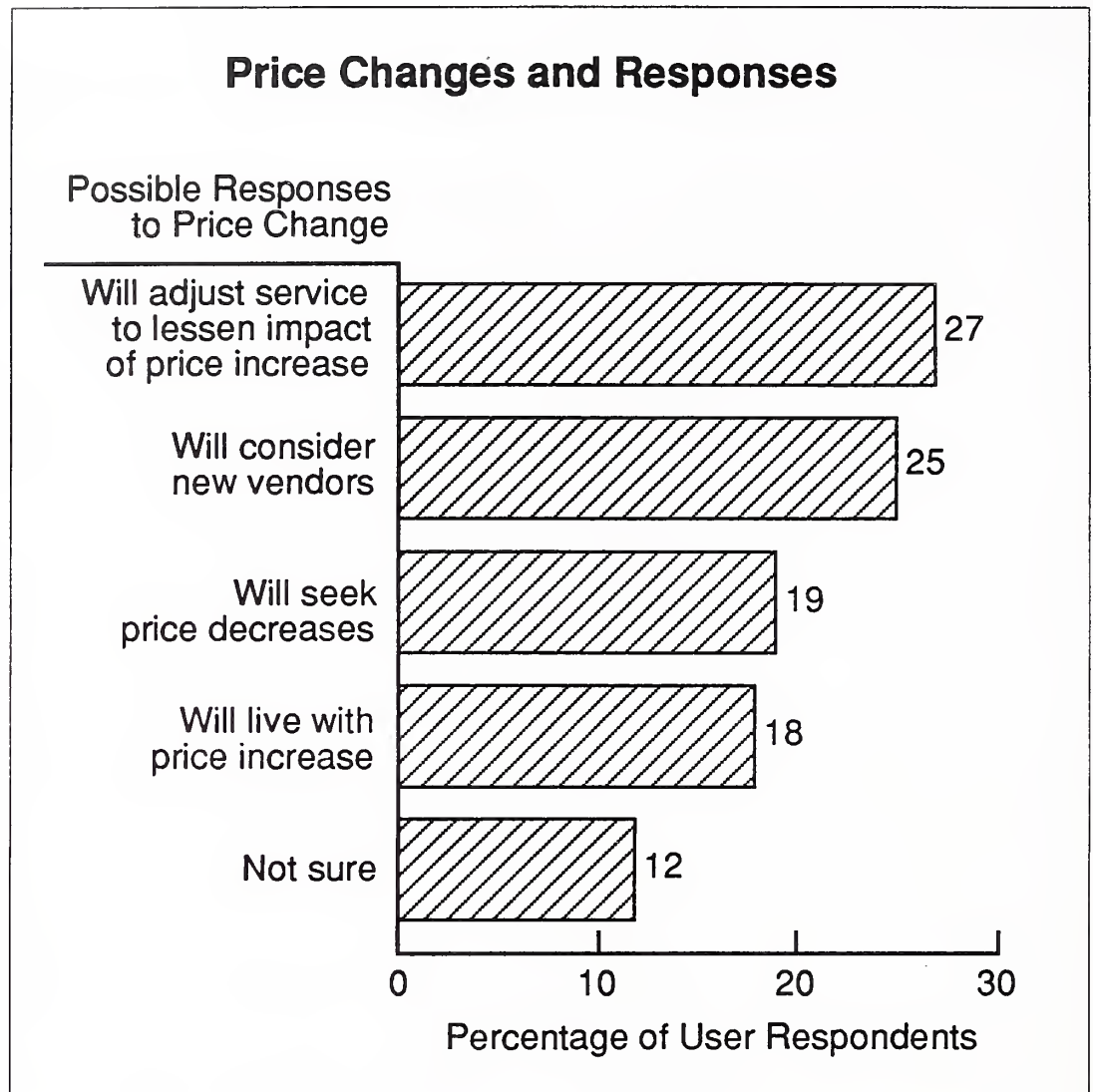


Many factors can contribute to change:

- Lower pricing is the leading reason for change, although better services and a higher level of knowledge about equipment and software rank high as well.
- Users emphasized that a change is usually made for a number of reasons, even if it seems that price, for example, is the only consideration. Poor communication, delayed responses to problems and/or lack of necessary parts over a period of time can make a user ready to change vendors for a small change in price.

Users are concerned over the possibility of increases in price for equipment services, although they realize that changes are likely to be made over time. The responses that users are likely to make to increases are indicated in Exhibit V-5.

EXHIBIT V-5



- Over 70% will fight increases by adjusting their use of services or demanding a reduction in prices.
- Only 18% will offer no resistance and live with price increases.

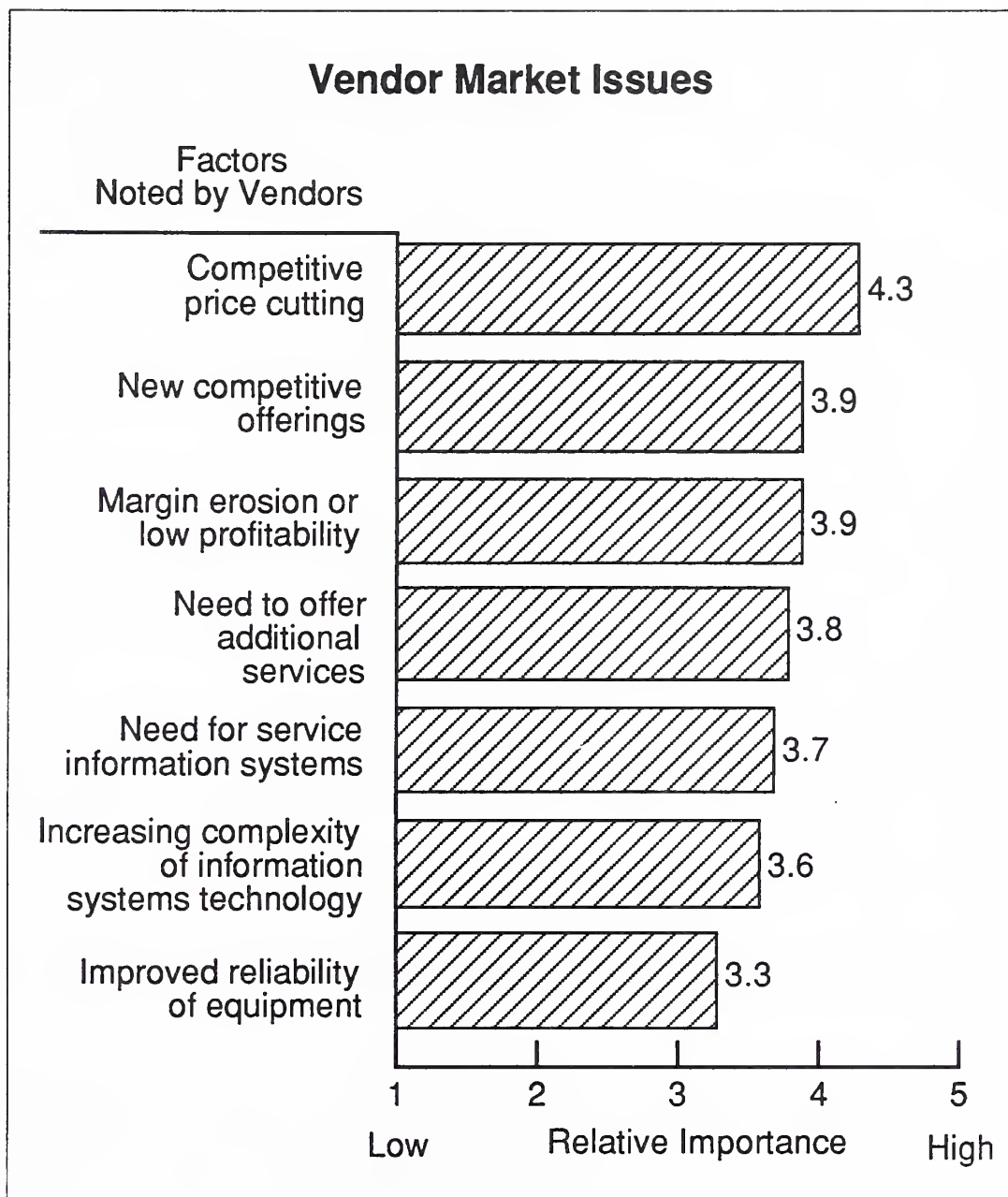
Since almost two-thirds of vendors report that they will consider price reductions to hold on to or gain business, vendors must plan or package price increases carefully.

B

Vendor Service Issues

Price competition is the major issue of concern to vendors, as noted in Exhibit V-6.

EXHIBIT V-6



Vendor strategies in reaction to the issues noted include:

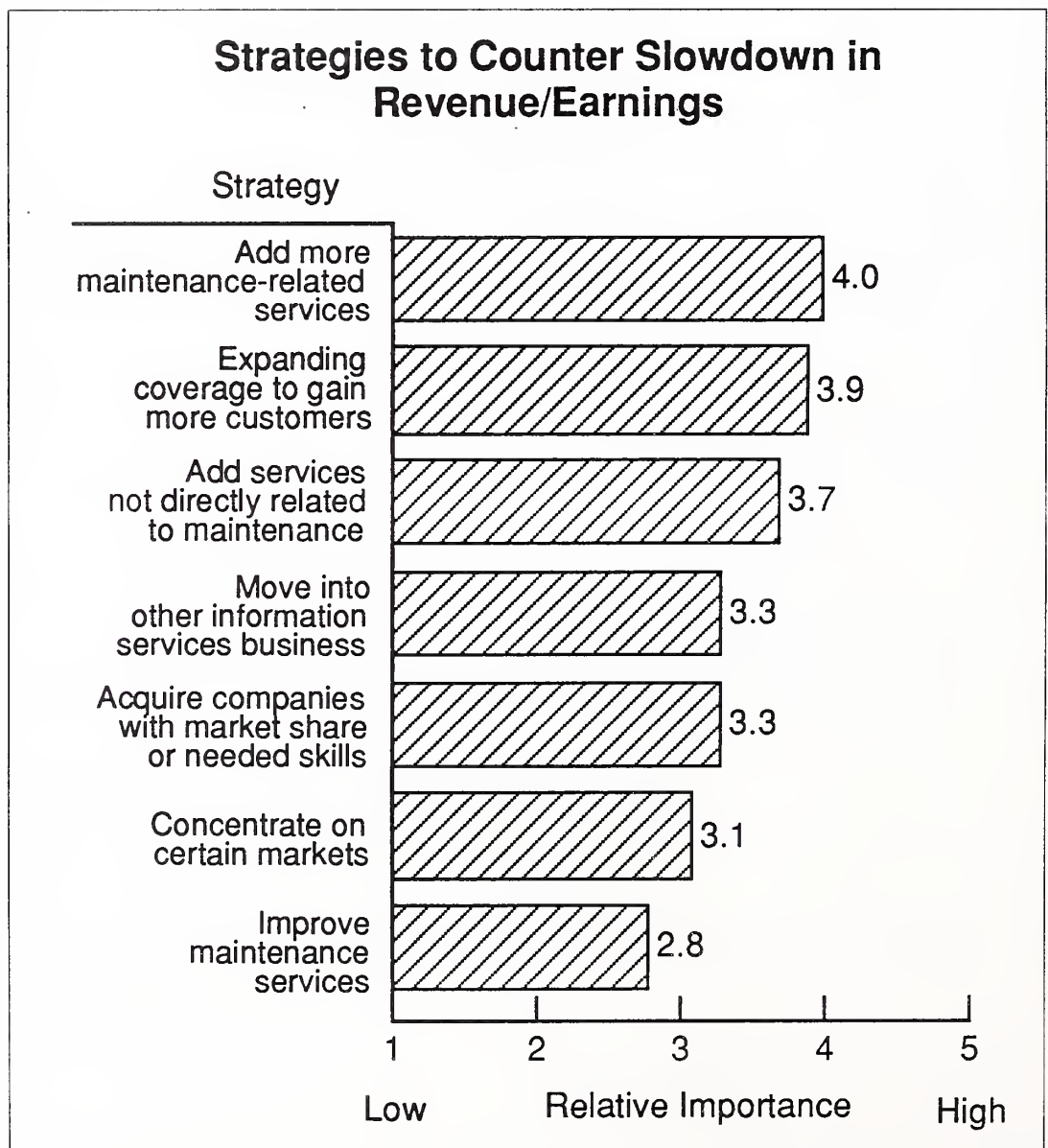
- Competitors often use pricing to enter a new segment of the market or to win back customers.
- Some competitors, particularly large ones, set up new pricing, prepayment or discount arrangements that can be aimed at certain sets of customers.

The increasing complexity of information technology is also identified as an issue because it is forcing vendors to invest more in personnel and in maintenance-related equipment and techniques. The increasing reliability of equipment may also be a significant factor because it can reduce the need for maintenance. These factors can result in a slowdown of revenue or earnings because they involve more competition, increasing costs and possible decreases in revenue.

Strategies that vendors are following to counteract the market factors discussed above include adding new services and expanding coverage. Vendors also attempt to acquire companies that can add market share or needed skills.

In addition to worrying about price cutting and the erosion of margins, vendors also feel the need to offer additional services and systems to help them improve their business and increase revenues, as indicated in Exhibit V-7. They feel that these moves can help to hold on to business as well as to provide opportunities to gain additional revenue.

EXHIBIT V-7



Equipment services vendors feel a need to improve services in view of the competition that they encounter. One of the services that has been offered or expanded to accomplish this is a field service information system. The benefits that these systems offer vendors include improvements in delivering service and reduction in cost, as shown in Exhibit V-8.

EXHIBIT V-8**Benefits of Field Service Information Systems
to Vendors**

- Faster service response
- Increased productivity
- Lowered MTTR
- Aid in problem resolution
- Improved tracking of performance
- Better parts management
- Aid in planning equipment services for users
- Centralized control
- Higher level of customer satisfaction

Of greatest importance, these field service information systems improve availability, predictive information and remote diagnosis and repair for customers. They also allow for:

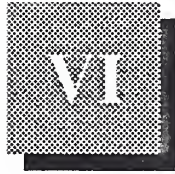
- Improved management of maintenance and parts to help reduce costs
- Improved dispatching and centralized control, which also helps vendors to reduce costs

C

Impact of New Technologies

Although new technology is improving the reliability of equipment, there are many factors that are increasing the complexity of information technology use and providing opportunities for vendors of equipment services.

- The growing interconnection of equipment on LANs, WANs and networks has added to user maintenance problems.
- The use of complex networks and interconnections between networks has become an issue at many large companies.
- The introduction of superservers and interactive networks handling video or multimedia has added significantly to the maintenance work in some companies and will be a growing problem in the future.



Conclusions and Recommendations

A

Conclusions

Expenditures for large and midrange equipment will slow down significantly and will begin to shrink during the planning period.

As a result, as noted in the conclusions shown in Exhibit VI-1, the equipment services business is becoming more competitive. In addition:

EXHIBIT VI-1

Conclusions

- Segments of the equipment services business will shrink between 1993 and 1998.
- Competition is steadily increasing.
- Pricing is being used as a major competitive weapon.
- A group of vendors is suffering from competition. Several are in danger of failing in the near future.
- Vendors must be able to invest in serving new technology.
- Vendors must improve and augment services to increase or maintain revenue.

- Vendors must be prepared to meet pricing and service competition.
- Vendors must be able to afford to invest in new technology.

In order to maintain profitability in such a situation, vendors must evaluate strategies that can increase revenues, including adding market share or adding services that go beyond equipment maintenance and environmental services.

B

Recommendations

Vendors in the equipment services business must evaluate their future viability in this business using the criteria noted in Exhibit VI-2. Some vendors contacted during this study, however, were not sure that they could remain profitable.

EXHIBIT VI-2

Recommendations

- Evaluate future reliability of business
- Analyze opportunities to lower costs
- Analyze customer needs in all possible areas of service
- Expand services where possible to increase revenues
- Be prepared to repackage and reprice services, but analyze competitive need to do so
- Analyze/improve quality of services on a regular basis

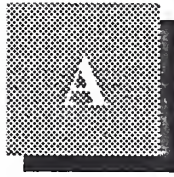
Key vendor considerations should include the following:

- Pricing and costs of their operations and of the operations of competitors should be examined carefully. Vendors should try to determine whether competitors have situations that are more conducive to survival or profitable operations.

- Vendors must also analyze their customers' needs and develop means of meeting all uncovered needs that can be addressed, such as supply of equipment, backup and recovery services, aid with systems software planning and use, or operational aid (when that can be done profitably).

Additional services must be sought to provide profit opportunities and cover the costs of staying in the maintenance business. If vendors expect to stay in the equipment services business, they must also invest in keeping up to date with new technology and improving their services—including training for employees, developing a field service information system, and using new technology or techniques that can aid maintenance.

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Vendor Questionnaire

Hello, my name is _____. I'm with INPUT in the _____ office. We are updating some of our files on the major firms in the equipment services arena; would you have about ten minutes right now to update the information on your company? (if not, schedule for another time)

First, I'd like to get some background information on your company.

I. General Profile

1. What is your total number of service centers? _____ .

a. Locations: _____

2. What is the total number of employees in your company? _____

	<u>Current</u>	<u>% Chg. from 1992</u>
a. Total number of maintenance employees?	_____	_____
b. Number of field engineers?	_____	_____
c. Number of bench engineers?	_____	_____
d. Number in field support?	_____	_____
e. Number of maintenance sales staff?	_____	_____

3. What equipment do you maintain, by OEM vendor? (Circle all that apply)

a. Mainframes

b. Midrange

c. PCs

d. Workstations

e. Peripherals

f. Other

g. Has this changed in 1993? Yes _____ No _____

Have you added or deleted any vendors? Yes _____ No _____

4. What were the total revenues of your company in 1992, and what do you expect them to be in 1993?

	<u>1992</u>	<u>1993</u>
Total	_____	_____
U.S.	_____	_____
International	_____	_____
U.S. Maintenance	_____	_____
IMO	_____	_____
OEM	_____	_____
Other	_____	_____

5. What percent of your maintenance revenue would you say is from software support as opposed to the delivery of hardware maintenance?

_____ %

6. Approximately what percent of your hardware maintenance revenue is derived from the following types of equipment? What percent would you say is from software support?

	<u>% HW</u>	<u>% SW</u>
a. Mainframe	_____ %	_____ %
b. Midrange	_____ %	_____ %
c. PC/Workstation	_____ %	_____ %
d. Peripheral	_____ %	_____ %
e. Other _____	_____ %	_____ %
f. Other _____	_____ %	_____ %

7. Approximately what percentage of your maintenance revenue is derived from maintaining the following manufacturers' equipment?

	<u>Current</u>	<u>% Chg. from 1992</u>
a. IBM	_____ %	_____ %
b. DEC	_____ %	_____ %
c. Bull	_____ %	_____ %
d. Unisys	_____ %	_____ %
e. HP/Apollo	_____ %	_____ %
f. Wang	_____ %	_____ %
g. Data General	_____ %	_____ %
h. Convergent Technology	_____ %	_____ %
i. Altos	_____ %	_____ %
j. MAI	_____ %	_____ %
k. Apple	_____ %	_____ %
l. Prime	_____ %	_____ %
m. Sun	_____ %	_____ %
n. Compaq	_____ %	_____ %

	<u>Current</u>	<u>% Chg. from 1992</u>
o. Other _____	_____ %	_____ %
p. Other _____	_____ %	_____ %
q. Other _____	_____ %	_____ %
r. Other _____	_____ %	_____ %
s. Other _____	_____ %	_____ %

8. Could you identify the percent of your maintenance revenue derived from the following industry sectors?

a. Manufacturing	_____ %
b. Banking/Finance	_____ %
c. Distribution	_____ %
d. Medical	_____ %
e. Education	_____ %
f. Insurance	_____ %
g. Transportation	_____ %
h. Telecommunications	_____ %
i. Business Services	_____ %
j. Utilities	_____ %
k. State/Local Government	_____ %
l. Federal Government	_____ %
m. Other _____	_____ %

9. Has your company been involved in any mergers and/or acquisitions over the last year?

II. Current Services

10. What other services does your company currently offer, or plan to offer in the near future?

	<u>Current</u>	<u>Future</u>	<u>(if current)</u> <u>% of Rev</u>
Planning	_____	_____	_____
Installation	_____	_____	_____
Disaster Recovery	_____	_____	_____
Consulting	_____	_____	_____
Preventive Maintenance	_____	_____	_____
System SW Support	_____	_____	_____
Application Support	_____	_____	_____
Installation/Deinstallation	_____	_____	_____
Configuration Planning	_____	_____	_____
Help Desk Mgmt.	_____	_____	_____
Network Support	_____	_____	_____
Other_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

11. How fast are these areas growing? _____%

12. Does your company provide any multivendor or single-point-of-contact services?

13. From your company's perspective, are price levels increasing or decreasing?

_____ Increasing _____ Decreasing

14. Do you believe that the revenues in the maintenance services market will grow at the current rate, or slow down, or grow at an increasing rate? (Circle one)

Current rate / Slow down / Increasing rate

15. What is the primary strategy of your company for the next five years?

- a. Concentrate on maintenance

Yes _____ No _____

- b. Diversify into other services ancillary to the maintenance function

Yes _____ No _____

- c. Diversify into other sectors

Yes _____ No _____

- d. Grow by acquisition

Yes _____ No _____

- e. Grow through increased services or expanded customer base

Yes _____ No _____

- f. Concentrate on specific...

Industry sectors—which ones?

Yes _____ No _____

Niche markets—which ones?

Yes _____ No _____

- g. Other strategies

16. What impact have new technologies in the maintenance services market had on your company?

17. Has your firm implemented any level of a field service information system (FSIS)?

Yes _____ No _____

18. What functions does your FSIS support?

_____ Call handling and dispatch

_____ Inventory control

_____ Customer information file/data base

_____ Service billing

_____ Remote hardware diagnostics

_____ Remote software diagnostics/repair

_____ Other functions _____

19. What hard benefits has your company realized from this system?

20. What soft or perceptual benefits has your company received from the implementation of the FSIS?

21. What do you feel are the most critical issues facing the maintenance industry today?

22. What would you say are the most critical issues facing your company at this time?

Thank you for your time; we really appreciate your cooperation.

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