

U.S. EQUIPMENT SERVICES MARKET

1992 - 1997

INPUT

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**U.S. Information Services
Market Analysis Program**
(MAMAP)

U.S. Equipment Services Market, 1992-1997

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Abstract

This report on the *U.S. Equipment Services Market, 1992-1997*, provides information on the size and dramatic changes occurring in the current market for equipment services in the U.S. as well as growth estimates for a five-year forecast period. The market is divided into two segments, manufacturer-supplied services and independent maintenance organization (IMO) services, and provides information on the size and growth of both. The market and submarkets are also notable changes in business are occurring.

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

This report is 64 pages and has 39 exhibits.



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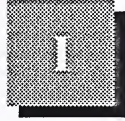
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Introduction

This report on the *U.S. Equipment Services Market, 1992-1997* provides information that had been provided in the past as one of the deliverables of the Customer Service Plus Program. Customer services will not be treated as a separate service area in the future. The equipment services portion of it will be recognized as one of the information services delivery modes in the 1993 INPUT reports and data base.

A

Scope

This report presents information on the size and the current market for equipment services in the U.S., growth estimates for a five-year forecast period, and the major issues and trends affecting the market over the forecast period.

In the report, the market is analyzed within two major service categories: manufacturer-supplied service and independent maintenance organization (IMO) service. Each of these submarkets is divided into product groupings: large systems (supercomputers and mainframes), midrange computers (superminicomputers and traditional minicomputers), and workstations/PCs (microcomputers, supermicrocomputers, and workstations used in business, education and government).

This report also provides information on and analyzes services sold together with equipment services that are classified as ancillary and other services. Ancillary services are those services such as preventive maintenance and installation that are part of equipment services, and other services are professional or other information services such as consulting, disaster recovery and operational aid that are sold together with equipment services.

Chapter II contains an Executive Overview, which reviews current and forecast user expenditures together with other findings and recommendations of the report.

Chapter III contains a market analysis, which presents detailed market size and five-year forecast information for the U.S., for both manufacturer-provided and IMO-provided service by products serviced. Rankings of the top vendors for large, midrange, and PC/workstation systems in terms of user expenditures, as well as rankings of the top IMO vendors, are also included in this chapter.

Chapter IV analyzes issues, trends and developments that are affecting or will affect service delivery and growth. Topics that are highlighted include pricing and revenue trends, the introduction of new services such as LAN or client/server support, and strategies being pursued by vendors in view of changing revenues.

Chapter V develops a set of findings in regard to the market at this time as well as recommendations for vendors that offer equipment and related services.

B

General Methodology

This report is based principally on data that INPUT has collected during its 1992 research program. The methodology for market analysis and forecasting that is employed is summarized in Exhibit I-1. As in past years, INPUT has continued the process of surveying information services vendors and users to determine user expenditures and outside services acquisition plans as described in this exhibit.

The information gathered during this year reviews the equipment services market as well as eight other delivery modes that constitute INPUT's definition of the information services industry. They are as follows:

1. Processing Services
2. Turnkey Systems
3. Applications Software Products
4. Systems Software Products
5. Professional Services
6. Network Services
7. Systems Integration
8. Systems Operations

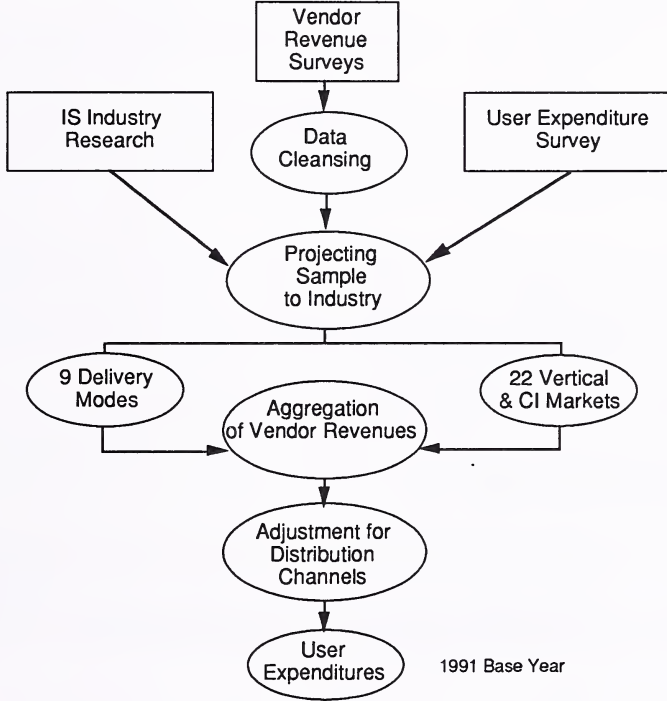
Expenditures for equipment services are included in the totals reported for other delivery modes in the 1992 INPUT Information Services data base.

Equipment services and its components, equipment maintenance and environmental services, will be reported by vertical markets in the 1993 data base.

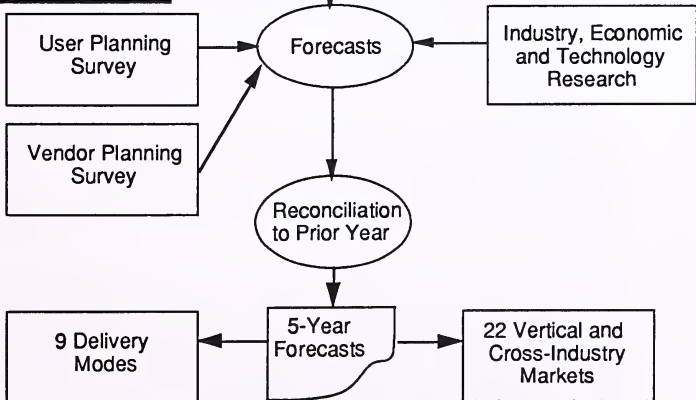
EXHIBIT I-1

INPUT Research Methodology

I. Base Year



II. Market Forecasts



In addition to the user and vendor research described above that was used to develop user expenditures and forecasts, INPUT surveyed 35 leading vendors of equipment services in order to further analyze the trends, issues and developments that are having an impact on the equipment services industry.

In addition to the combination of primary research effort on the equipment services market, INPUT tracks hundreds of manufacturer-based and independent maintenance organizations, and collects annual reports, Form 10Ks, press releases, marketing literature, and news articles from leading service journals. The information obtained is organized in vendor files at INPUT's Information Center and used, as necessary, to supplement primary research conducted during the year.

Interview results, as well as other information collected from vendors, allowed INPUT to estimate 1992 user expenditures and revenues for a set of vendors as well as the future service growth expectations presented in this report. Vendor research accounted for over half of the U.S. revenues for the 1992 base year.

C

Research Forecast Methodology

Information that was collected by INPUT on user expenditures for equipment services in 1992 was crosschecked by comparing it against revenue information on the leading manufacturer-based and independent maintenance service organizations gathered from direct surveys, annual reports, Form 10Ks and various other sources.

- When necessary, INPUT made estimates of the revenues of privately held equipment services organizations that declined to reveal their service revenues.
- This process was limited to the U.S. market.

This information became the base for the 1991 service market, which provided each forecast with a base year of user expenditures. The 1992 information, which forms the starting point of the five-year forecast, was derived from interpretation of survey information regarding growth expectations.

INPUT can use its proprietary forecast model to examine past service revenue growth trends as affected by product, service delivery, pricing and user trends. In addition, assumptions regarding future product population growth and releases, technological trends, pricing trends and other factors can be formulated and applied to growth rates.

The resulting forecast for U.S. equipment services expenditures was broken down by product serviced (large, midrange, and workstations/PCs). Then, companies were analyzed in terms of the service provided and placed in appropriate service markets.

- Companies that address more than one product market were assessed and divided into their component markets. Separate estimates were made for ancillary/other services.
- An attempt was made to eliminate most of the information services expenditures—such as consulting, training, operational aid and software support—from ancillary/other forecasts, although provided by equipment services organizations, since it is addressed in another delivery mode.

The process outlined above was used to estimate expenditures for manufacturer-provided as well as independent maintenance organization (IMO) service. Forecasts of product breakdowns are estimated from user research reflecting the use of and willingness to use IMO service, as well as assumptions based on anticipated manufacturer service pricing, policy changes and changes in technology such as the rapid movement to workstation systems.

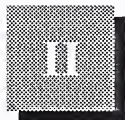
D

Related Reports

INPUT reports for 1992 that will be useful in relation to the equipment service market include the following:

Putting Downsizing in Perspective
Case Studies in Downsizing
U.S. Professional Services Market, 1992-1997
Pricing and Marketing Professional Services

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Executive Overview

A summary of the information developed in this report, including the key findings and recommendations, is presented in this chapter. These findings indicate The U.S. equipment services market is in a period of change in which the sales of equipment services are not growing as rapidly as in the past, and vendors are changing their services in order to improve or maintain revenues.

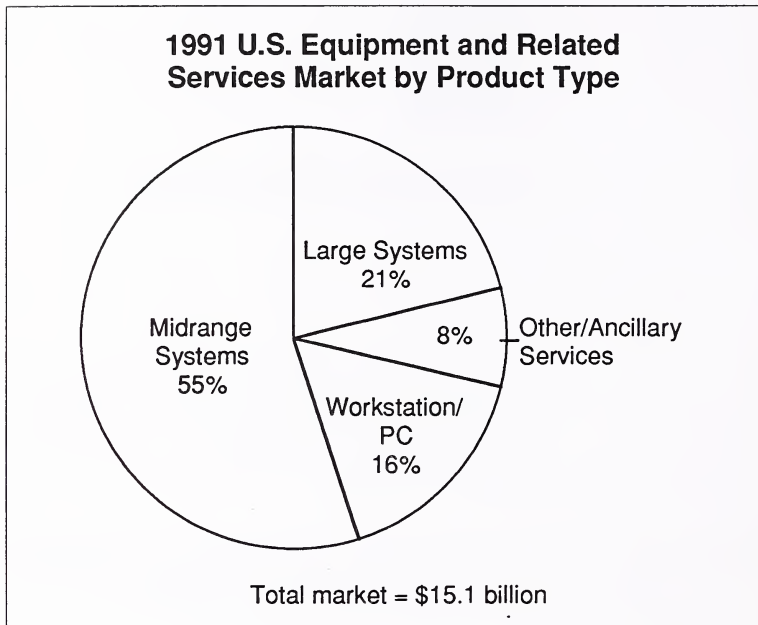
This report analyzes the market directions, growth, changes and opportunities available to manufacturers and independent maintenance organizations now offering equipment services.

A

1991 Market Overview

In 1991, the U.S. equipment services and related services market totalled \$15.1 billion, an increase of 7% over 1990. Although midrange systems accounted for over half the market in 1991, as shown in Exhibit II-1, it is forecast to shrink to 45% of the market by 1997.

EXHIBIT II-1

**B****1991-1997 Growth****1. Market Growth**

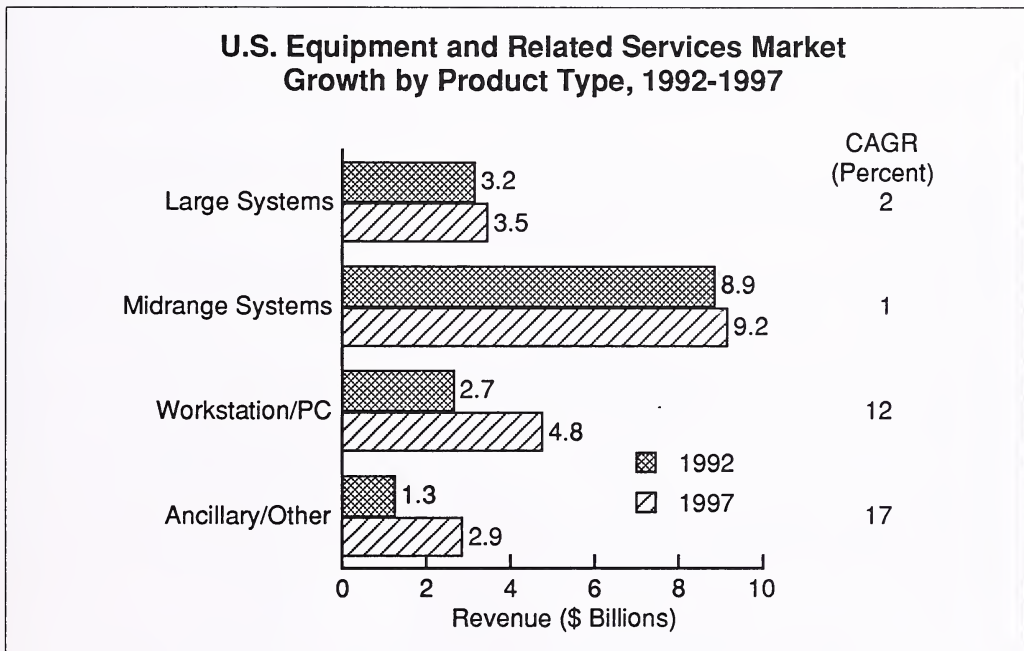
Growing at a compound annual rate (CAGR) of 3%, the market will grow to \$20.3 billion by 1997. This growth rate is 5% less than that previously forecast, due largely to the greater use of workstations and downsized application systems in place of larger systems.

- The decreasing rate of growth for the sales of mainframe and midrange systems will cause equipment services expenditures for these classes of equipment to grow much more slowly.
- The increased growth in use of workstation/PC systems will not be sufficient to overcome the shortfall in expenditures for equipment services for larger systems.

Increasing reliability of equipment and competition will also impact expenditures for equipment services.

The forecast growth rates are different for the four groupings of services, as shown in Exhibit II-2. The growth rate is lowest for large systems and highest for the ancillary and other services sold by equipment services vendors—a clear indicator of where vendors can find opportunities for the future.

EXHIBIT II-2



Workstation/PC service will continue to grow somewhat faster than the rest of the equipment services market, as shown in Exhibit II-2.

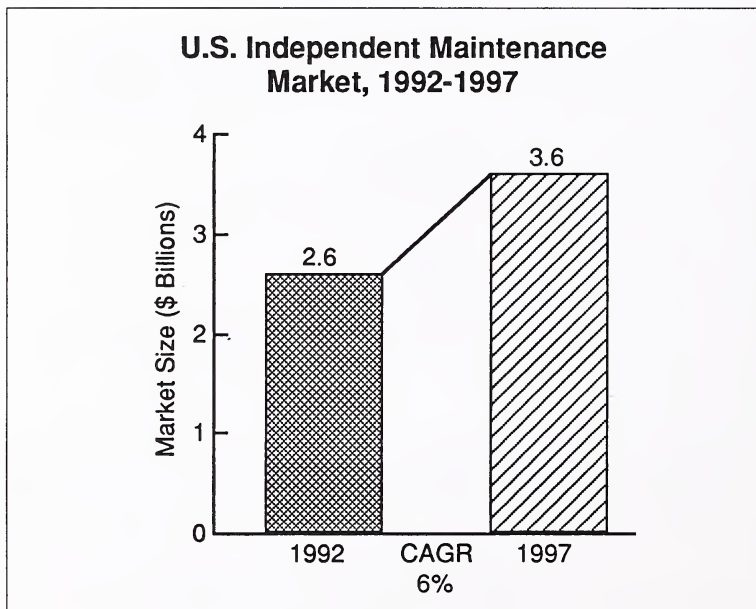
- Workstation/PC services will increase its share of user expenditures by about 50% by 1997; whereas the shares of the services market held by midrange and large systems will decrease.
- Expenditures for equipment services for workstations will continue to benefit from increasing growth in sales of this class of equipment and growth in the use of local-area networks (LANs) and client/server application systems, as well as from increased use of downsizing.

The technological advances in both product performance and serviceability, which helped midrange systems such as the IBM AS/400 to gain a large percentage of the hardware market, are now contributing to the rapid growth in workstation use.

The user expenditures for equipment and related services shown in Exhibits II-1 and II-2 include totals for manufacturers as well as independent maintenance organizations (IMOs). User expenditures for IMOs are shown separately in Exhibit II-3.

- Expenditures for large and midrange systems are growing by slower amounts than are shown in last year's report. Actually, these expenditures will peak during the forecast period and will begin decreasing by 1997.
- Expenditures for workstation/PC systems are growing at a rate that is 3% higher than in the previous forecast.
- Expenditures for ancillary and other services are forecast to grow at a rate that is 1% higher than the rate shown last year.

EXHIBIT II-3



2. Factors Affecting Growth

The rates of growth for equipment services expenditures are under pressure from the factors shown in Exhibit II-4.

- The increasing power of workstations and downsizing has started to impact the growth of mainframes and midrange computers, and this will have a considerable impact on equipment services revenues during the next five years.

- The increasing reliability of hardware and mounting competition will also exert pressure on revenues. There will be a reduced need for maintenance of new equipment and an increased number of vendors competing for such service.

Another factor noted in Exhibit II-4, which has been affecting growth in equipment services during the recent past, has been the pricing strategy and actions of IBM. This strategy had been aimed at reducing the cost of ownership of IBM systems during most of the 1980s.

- When IBM altered its strategy and began to increase prices, driven by the need to increase overall revenues and profitability, this had the effect of establishing a price umbrella.
- An adjustment or increase in prices by IBM can provide an opportunity for other vendors to increase prices. Unfortunately, competitive pressures must also be considered.

EXHIBIT II-4

Factors Impacting Equipment and Related Services Revenue

Factors Increasing Equipment and Related Services Revenue	Impact
Increasing power of workstations and use of downsizing	Movement to workstations and decreasing growth rates for other classes of computer
Increasing equipment reliability	Reduced maintenance work
IBM price umbrella adjustments	Increased vendor opportunities
Need for vendors to increase revenue profitability	Introduction of new services needed
Increasing customer demand for predictable performance	Increased need for new technology and services
Growing installed base of client/servers and networks (including more complex networks)	Need for new types of support

Users are taking advantage of competition, as well as the improvement in equipment reliability, by requesting special bids to reduce equipment services or divide services up so that less expensive vendors can be used for selected services.

The combination of factors noted above will result in continuing restraints on equipment services expenditures during the forecast period, and will drive vendors to offer more ancillary and other services and/or seek means of obtaining more equipment services work. Exhibit II-4 indicates, however, that there are opportunities to provide users with additional services.

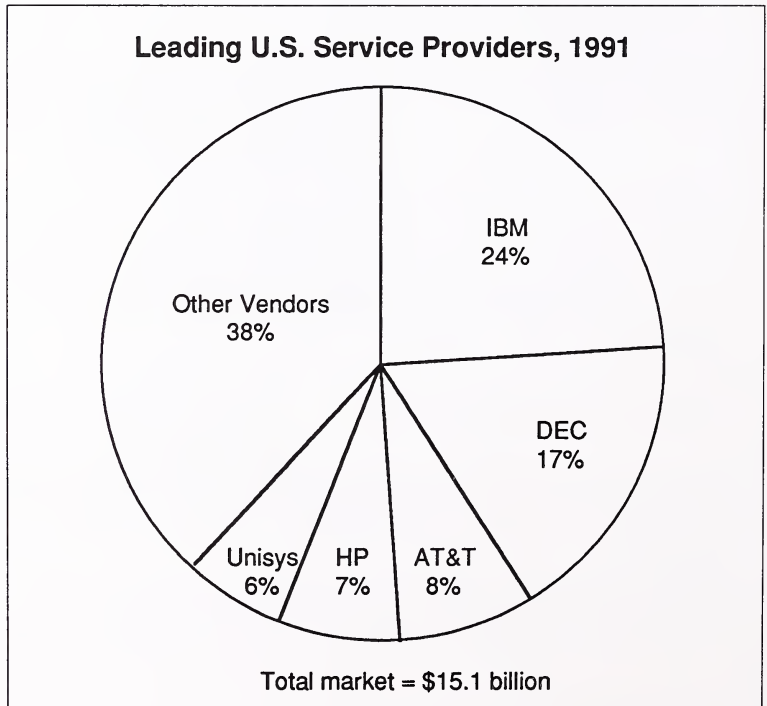
C

Leading U.S. Service Providers

The market for equipment services is dominated by the largest manufacturers.

- IBM and DEC accounted for over 40% of the equipment services market in 1991, as shown in Exhibit II-5.
- Expenditures for services of IBM, DEC, Unisys, HP and AT&T amount to almost two-thirds of the market.

EXHIBIT II-5



Dominance is also shown in the large-scale market and, to a lesser extent, in the midrange market. IBM dominates the former, as shown in Exhibit II-6, and DEC is the largest vendor in the midrange market, sharing 47% of the market with IBM, as indicated in Exhibit II-7.

The workstation/PC market is more fragmented.

- No single vendor has more than one-sixth of the total market, as shown in Exhibit II-8.
- IMOs, as well as computer manufacturers, are among the top firms in this market.

EXHIBIT II-6

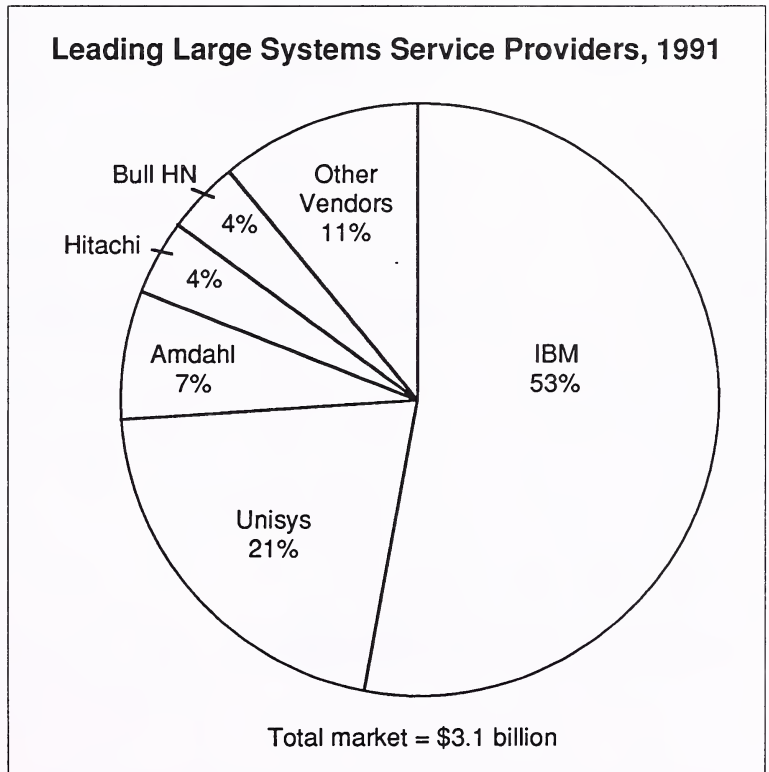


EXHIBIT II-7

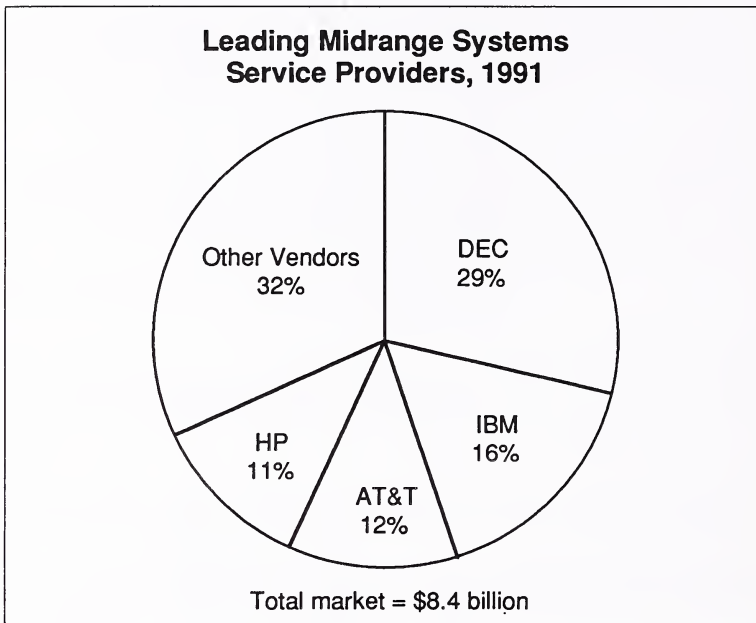
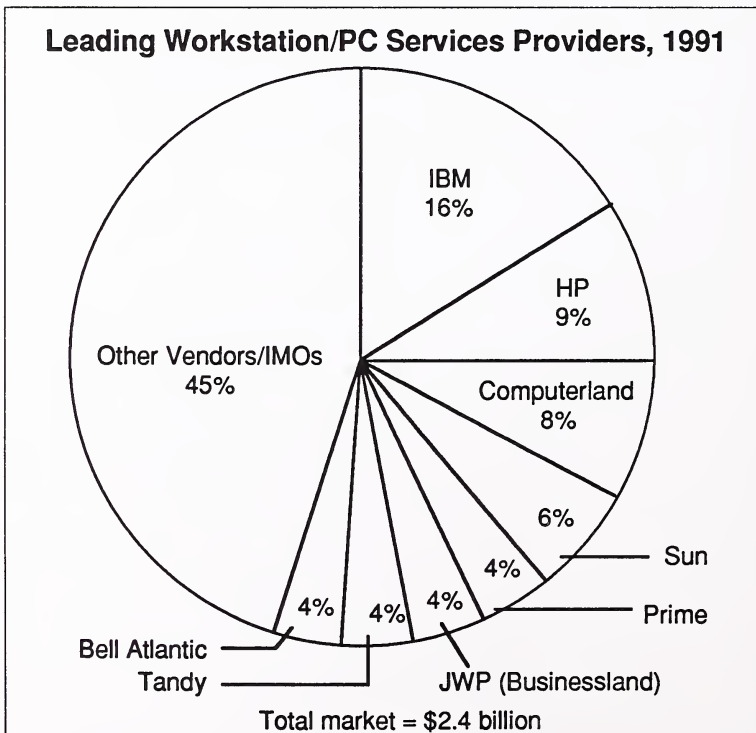


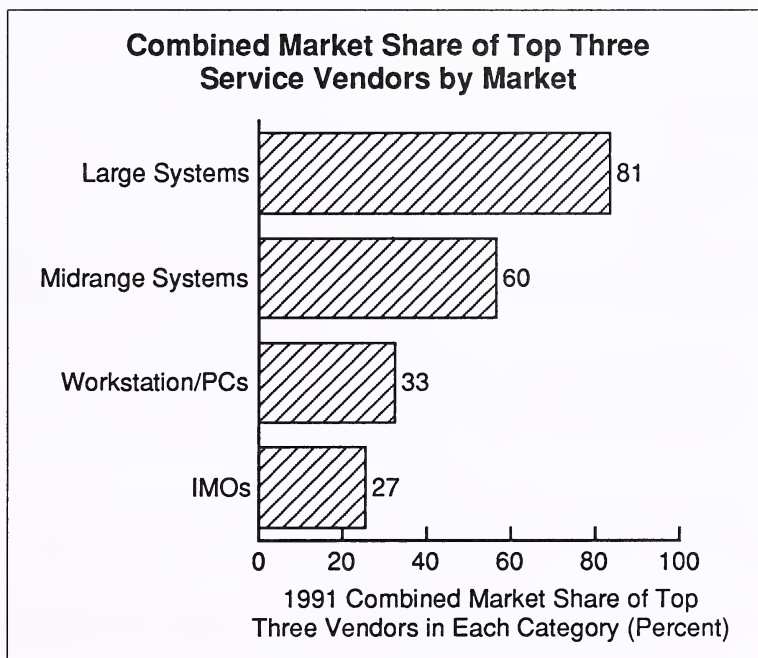
EXHIBIT II-8



The dominance of leading vendors in the service markets for each of the three classes of equipment, and among IMO vendors, is compared in Exhibit II-9. This exhibit illustrates that a fall-off in dominance is occurring, particularly in the workstation market and among IMOs, but a small group of vendors still collects a large share of expenditures in most areas of the market. The reasons for the concentration of work include:

- The relative amount of sales of equipment by manufacturers. Ones with a large share of sales (of a specific class of equipment) have a better opportunity to gain more work in that class.
- The structure of the market, which makes it much easier for firms that offer equipment services to become known by prospects.

EXHIBIT II-9



D

System Availability Trends, 1984-1992

System availability remains an attribute of significant importance to users of information systems. INPUT has tracked user ratings of availability for large and midrange systems since 1983 and found that users have generally rated performance to be satisfactory.

- Issues that users mention (of concern in maintenance) do not stress problems with system availability, however, but focus on parts supply, adequacy of communication and availability of network, software and other technical knowledge and support.
- Users of larger computers are also concerned with obtaining more predictable performance from their equipment, even if its availability is at a high level.

E

Key Findings and Recommendations

The effect of new technology on the equipment services business is one of the major findings of this study, as shown in Exhibit II-10.

EXHIBIT II-10

Findings and Recommendations

- Findings
 - New technology has created challenges
 - The effect of competition is increasing
 - Many new services are being offered
 - Equipment services firms are changing their service mix
 - High quality is a continuing need
- Recommendations
 - Analyze customer needs more fully
 - Expand services
 - Rethink sales and marketing strategies
 - Keep field service information systems current

- The use of new workstations and downsizing, as well as the increased reliability of equipment, have reduced the potential amount of equipment services work.
- New equipment service technology—including methods of performing remote diagnostics, and field service information systems—have aided vendors in improving and increasing services.

One of the services that this new technology has encouraged is multivendor services. Some vendors are profiting from expanding their business through multivendor services and others, particularly IMOs, may be suffering from this form of increased competition.

In general, competition is increasing for equipment services, and a number of vendors have begun to provide additional services to clients—including software support, aid with use of client/servers and LANs and disaster recovery—as noted in Exhibit II-10. Over two-thirds of equipment services vendors will introduce or expand new services for clients during the near future.

Equipment services vendors are also changing their business focus and are beginning to resemble other information services vendors. They offer professional, processing and systems operations services, and in some cases, software products and network services. Vendors are becoming more interested in helping clients achieve solutions to problems rather than just maintaining equipment.

INPUT has responded to these trends by making equipment services an information services delivery mode. The INPUT data base of equipment expenditures the associated market analysis will reflect this change.

The equipment services market is still distinguished by the ongoing concern of customers about the quality of service and fast response, as noted in Exhibit II-10.

- User concerns used to focus more on equipment reliability, but since reliability has dramatically improved, customers are now affected more by problems with parts availability and lack of communication or follow-up.
- Field service information systems have proven of considerable value in addressing the supply of parts and follow-up communications regarding customer problems that could affect availability.

The field service information systems mentioned above have also enhanced the image of vendors and aided sales in a time of intense competition.

Vendors should decrease their reliance on limited field services information systems. Since newer, full-service systems can make such a difference in customer service and relations and encourage sales, vendors should not keep running an older or less economic system that limits either service or response.

Other recommendations for equipment services vendors, listed in Exhibit II-10, focus on analyzing and expanding their services business.

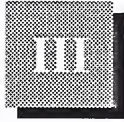
Since equipment services is relying heavily on the sale of new services, there should be more planning and effort related to the marketing and sales of these services.

- One approach that should be considered is a more detailed investigation and analysis of what clients and prospects need and would buy from equipment services vendors. This approach should consider expansion of equipment services into such areas as multivendor support as well as into professional and other services.
- Satisfaction surveys should be expanded to include evaluations of new types of services currently offered by competitors. For instance, users indicate that some vendors have not provided adequate software support, operational aid or other newer services.

Pricing strategies should be reviewed to find ways of encouraging clients to use additional services, as well as to find methods of increasing revenues.

Finally, equipment services firms *must* recognize that they are in the information services business. This means that:

- Clients are interested in services that can expand their ability to utilize information systems more effectively for their organizations.
- There are many concerns that clients have in regard to their own goals, and there is a number of opportunities to offer products and services that can help them achieve their objectives. For example, some equipment services vendors have started to offer productivity packages, specialized training and other means of aiding clients to improve their effectiveness in the use of information systems—a logical step for a knowledgeable vendor in the information services business.



Equipment Services Market Size and Forecast, 1992-1997

A

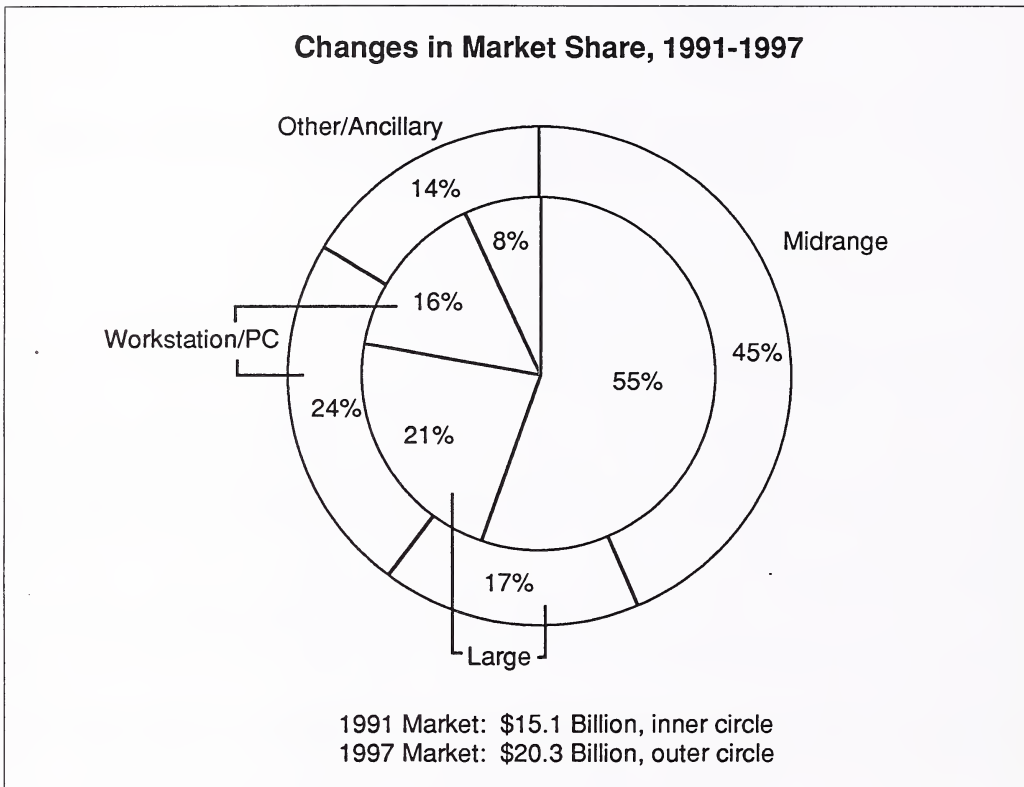
U.S. Equipment Services Market Size and Forecast

The U.S. equipment and related services market includes user expenditures for equipment services for large, midrange and workstation/PC systems as well as expenditures for ancillary/other services, which is chiefly composed of professional and processing services. The expenditures for all equipment services was \$15.1 billion in 1991 and will grow to \$20.3 billion in 1997, as shown in Exhibit III-1.

There are noticeable changes in the division of user expenditures among the components of equipment services between 1991 and 1997, as shown in Exhibit III-1.

- The percentages of expenditures devoted to large and midrange systems are each forecast to decrease by almost 20%, and expenditures for the workstation/PC class are forecast to rise by 50%, reflecting the movement toward the use of newer workstation technology with higher cost/performance.
- Expenditures for other/ancillary services are also forecast to increase sharply.

EXHIBIT III-1



The scale or class of computers being serviced that is designated as large includes traditional mainframes, minisupercomputers and supercomputers.

- Large computers have typical word lengths of 32 bits and configuration prices in excess of \$350,000—such as the IBM 303X, 308X, 309X and ES 9000, and computer systems that compete with these products, including systems from Hitachi, Amdahl, NCR, Unisys, CDC and Bull.
- A smaller segment of the large market is composed of products of supercomputer manufacturers (typical configuration prices exceeding \$1 million) such as Cray Research.

The midrange systems class includes both superminicomputers and the more traditional business minicomputers that were originally defined as providing 16-bit to 32-bit word lengths at prices ranging from \$15,000, exclusive of peripheral equipment, to \$350,000.

- A growing number of microcomputers and workstations meet the 32-bit definition, and many cross over the \$15,000 lower price limit. (The cost of peripherals is not considered when classifying computer systems.)
- Typical midrange systems include IBM's System /3X, 43XX, AS/400 and 937X product lines; DEC's PDP and VAX families; and competitive products from a wide range of vendors, including HP, Data General, AT&T, Concurrent, Gould, Unisys, NCR, Bull, Harris, Tandem, Stratus and many others.

The increase in speed, capacity and connectivity brought about by new technology has been enhancing the role of midrange systems and their service versus larger systems during the last few years.

- The volume of midrange equipment service will remain high in view of the service level that has been achieved, but advances in technology of workstations/PCs has changed the relative advantages and growth rates of this technology. The growth rate of equipment services for workstations/PCs is now increasing at a faster rate than for other equipment classes, as reflected in the changes shown in Exhibit III-1.
- The volume of equipment services for midrange equipment will also remain higher than the volume for other equipment classes since some services for higher priced workstations/PCs will be reported in totals for midrange systems, based on definitional issues.

Client/server application systems and the use of downsizing have greatly contributed to the workstation/PC market segment, which will grow from 16% to 24% by 1997.

- The workstation/PC segment contains business-use microcomputers, supermicrocomputers, and workstations that have been defined as having 16- to 32-bit word lengths and systems prices that typically fall below \$15,000.
- Leading products in this segment include the IBM PS/2, Apple Macintosh and systems from Compaq, Tandy, Digital and at least 200 "name" and "no-name" IBM-PC clone manufacturers.
- This market also includes workstations such as those marketed by Sun, HP, Altos, Digital and IBM, many of which take advantage of RISC technology.

Other/ancillary services provided by equipment services vendors have generally consisted of maintenance training, preinstallation planning, consulting, installation/deinstallation, and network design and planning.

- There are additional services now being offered that fall outside this definition, including network review, equipment workflow analysis, operational review, disaster recovery, and upgrade and materials review and supply.
- Some equipment services vendors are also providing aid in additional areas such as software product support and LAN and client/server use.

The changes in the division of user expenditures among equipment classes has been caused by advances in technology that improve the performance of equipment in the smaller two classes as well as by the use of computers in client/server relations, which allow applications to be performed on machines connected by networks, particularly local-area networks.

- These developments have resulted in a strong trend to downsize computing applications from large computers to midrange and workstation/PC equipment and from midrange to workstations/PCs.
- Although work is being downsized to midrange systems at the present time, the trend is for an increasing amount of work to be downsized to workstation/PC equipment because the performance of equipment at this level provides the greatest efficiency versus cost and this movement supports the migration of work to user responsibility, which is being demanded by users in many companies.

The result of the downsizing trend is reflected in the forecast of the equipment services market shown in Exhibit III-2. Equipment services for large and midrange computers are forecast to have lower growth rates in the later years of the five year-period than in the earlier years.

EXHIBIT III-2

Computer Services Market Forecast, 1992-1997

System Size	\$ Millions							92-97 CAGR (Percent)
	1991	1992	1993	1994	1995	1996	1997	
Large	3,127	3,211	3,287	3,369	3,452	3,502	3,460	2
Midrange	8,365	8,921	9,515	10,098	10,100	9,800	9,150	1
PC/Workstation	2,425	2,656	2,917	3,205	3,591	4,175	4,780	12
Other/Ancillary	1,175	1,339	1,527	1,760	2,051	2,414	2,913	17
Total	15,092	16,127	17,246	18,432	19,194	19,891	20,303	5

The aggregate amount of equipment services work will have a lower growth rate over time, as illustrated by Exhibit III-3, since the rate of growth of expenditures for workstation/PC systems can't compensate up for the decrease in expenditures for the other two classes.

- Equipment services vendors will expand the volume of other/ancillary services that they offer in order to counter the falling rate of growth in equipment services revenues.
- As shown in Exhibit III-3, INPUT forecasts that other/ancillary services will grow faster than equipment services, although from a relatively low base. This growth reflects the increasing opportunity for equipment services firms to expand their offerings and revenues with associated professional and other information services.

EXHIBIT III-3

Use of Equipment Services versus Ancillary/Other Services

Service	1991	1992	1993	1994	1995	1996	1997
Total Equip. Svcs. (\$ Billions)	13,917	14,788	15,719	16,672	17,143	17,477	17,390
Ancillary/Other Services (\$ Billions)	1,175	1,339	1,527	1,760	2,051	2,414	2,913
Ancillary/Other as Percent of Total Equip. Svcs.	8	9	10	11	12	14	17

1. Forecast Factors

In addition to the impact of downsizing on the mix of equipment being serviced and resulting user expenditures, other factors have also had an impact on the equipment services market, as illustrated in Exhibit III-4.

- There have been benefits that have resulted from the service price increases (the price umbrella) that IBM has been making since 1989. IBM has been introducing these increases to improve overall revenues and profitability.

- The improvements in technology that have increased the reliability of equipment and reduced the incidence of problems and maintenance requirements (as well as the impact of downsizing) have reduced the potential amount of equipment services work. This has increased competition for equipment services work and reduced possibilities for vendors to take advantage of IBM price increases. Exhibit III-4 also illustrates that there are needs for new services that equipment services vendors can offer, as well as opportunities for new services resulting from new technology or the use of information services.

EXHIBIT III-4

Factors Impacting Equipment and Related Services Revenue

Factors Increasing Equipment and Related Services Revenue	Impact
Increasing power of workstations and use of downsizing	Movement to workstations and decreasing growth rates for other classes of computer
Increasing equipment reliability	Reduced maintenance work
IBM price umbrella adjustments	Increased vendor opportunities
Need for vendors to increase revenue profitability	Introduction of new services
Increasing customer demand for predictable performance	Increased need for new technology and services
Growing installed base of client/servers and networks (including more complex networks)	Need for new types of support

2. Independent Maintenance Organizations

Equipment services providers include manufacturers of computing equipment and independent maintenance organizations (IMOs).

In the recent past, IMOs did not meet with much competition from manufacturers for service of the following types of equipment:

- Peripheral equipment, particularly equipment supplied by a manufacturer different from the one supplying the CPU.
- Microcomputers/workstations manufactured by a company that does not have a service presence or a well-known service image.
- Older or obsolete equipment of a manufacturer that is unwilling or unable to perform service or that no longer exists.

However, computer manufacturers are now expanding the coverage that they offer to clients to make up for reductions in the growth of equipment services revenues. Through multivendor contracts and other types of maintenance arrangements, manufacturers are now competing more aggressively for additional business.

As shown in Exhibit III-5, INPUT forecasts an overall volume of business for the IMO market that remains less than that of the equipment services maintenance business of computer manufacturers. The exhibit indicates that IMOs enjoy their greatest success in equipment services for workstations/PCs and ancillary services, as do computer manufacturers.

EXHIBIT III-5

Independent Maintenance Organization Forecast, 1992-1997

System Size	\$ Millions							92-97 CAGR (Percent)
	1991	1992	1993	1994	1995	1996	1997	
Large	95	99	103	107	110	112	111	2
Midrange	1,151	1,220	1,289	1,360	1,410	1,415	1,375	2
Workstation/PC	985	1,089	1,218	1,356	1,511	1,682	1,714	9
Other/Ancillary	193	213	237	267	300	338	382	12
Total	2,424	2,621	2,847	3,090	3,331	3,547	3,582	6

The IMO industry developed by using lower pricing to attract users of new equipment, particularly users of systems who in the past stayed predominantly with the manufacturer's service organization.

- In order to accomplish this, IMOs had to rely on extremely low service prices (usually 25% to 33% less than manufacturer service prices).
- IMOs also used small-ticket product service (e.g., for microcomputers and peripherals) as a method of gaining entree to an account, with the hope of gaining larger-product service contracts in the future.

In the late 1980s, IBM and other manufacturers began to introduce service pricing and policy changes to deter IMO penetration into their accounts.

- The most significant of these actions on the part of IBM included elimination of non-prime (outside of Monday-Friday, 8 AM to 5 PM) time-and-material service; expansion of contract service coverage for all systems to 24-hours-per-day, 7-days-per-week service; and tightening of the spares pipeline. This reduced the ability of IMOs to utilize manufacturer services as a fall back.
- Another important change by IBM was the introduction of service discounting programs (CSA and MRSA), which brought IBM service pricing in line with, or even lower than, the prices of most IMOs.

IMO service organizations competing directly with IBM for equipment service were forced to offer similar service plans.

IBM kept pressure on IMOs by offering prepayment discounts (EMO) and its own multivendor service program, called Technical Services Management (TSM), which reduced the possibility for IMOs to obtain business for non-IBM equipment at IBM accounts.

Other manufacturers—including DEC, HP and DG—have also expanded and offered new multivendor support arrangements that have impacted IMO business.

As Exhibit III-6 illustrates, IMOs, as well as manufacturers, will suffer from the impact of downsizing during the forecast period.

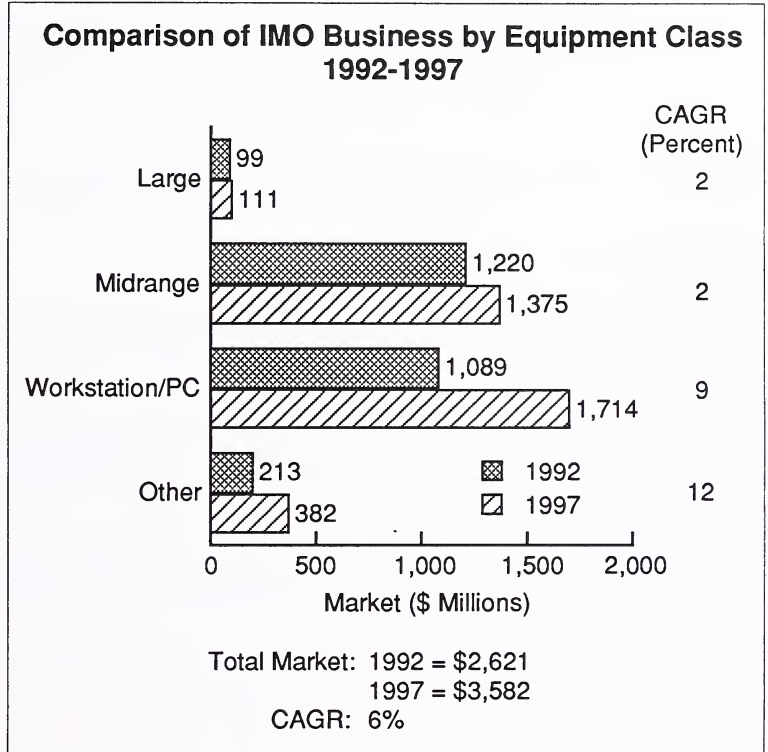
- As with manufacturers, the rate of growth of maintenance expenditures for large and mainframe computers decreases during the forecast period.
- The fall in the rate of large computers service growth is not as significant for IMOs as it is for manufacturers since IMOs have had a relatively small share of that market (about 3%) compared to their share of other markets.

IMOs have not had a high degree of success in the large computer services market due to the characteristics of users in this market.

- Large systems users are generally less price sensitive and more likely to require nonequipment services such as software support, which IMOs are not prepared to provide.
- These users are also concerned over spare parts availability and access to remote diagnostics and support tools since they have high system availability requirements.

IMO efforts to expand into this market have been limited to the largest IMOs or small IMOs with focused product or geographic coverage.

EXHIBIT III-6



One of the developments in equipment services has been the introduction of depot business. Depot business includes remanufacture, reeufacturing of products, upgrades/downgrades and cleaning and cosmetic changes that can be performed through drop off at a depot rather than shipment back to a manufacturer.

Depot maintenance is one of the methods of providing service that IMOs employ.

- The division between business performed on-site and through depot service by an IMO is shown in Exhibit III-7.
- IMO business performed through a depot is increasing at a fast rate, although the volume of business is small as yet.

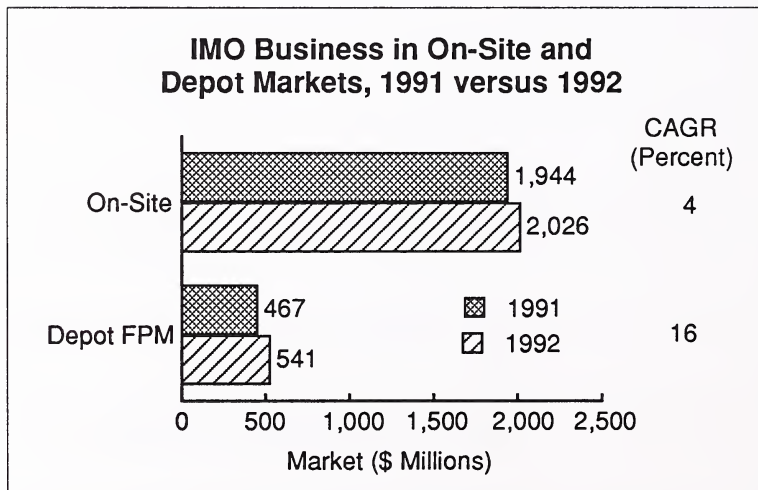
- IMO organizations often contract with fourth-party maintenance firms (FPM) to obtain depot service.

FPMs offer services to both IMOs and computer manufacturers, as well as to large users that are performing some degree of self maintenance. Computer manufacturers are using this service, in some cases, to aid them in bidding for equipment services work handled by IMOs.

- Using FPMs to remanufacture components frees manufacturers from having to send components back through their own manufacturing facilities, resulting in faster returns and minimal interruption of normal manufacturing cycles.
- TPMs (third-party maintenance firms) without remanufacturing capabilities can utilize an FPM to expand their service offerings to include product refurbishment, refeaturing and reconditioning services without the labor or materials (parts, equipment, and cleanroom) requirements.
- Many FPMs also provide service of sealed disk drives that require a Class 100 cleanroom environment, since dust contamination can destroy disk drives. This service provides equipment services firms an alternative to setting up their own operations.

FPMs can provide their services (such as service of disk drives) to users that want to provide their own maintenance, as well as to vendors.

EXHIBIT III-7



B

Competitive Environment

Leading equipment services providers in 1991, including manufacturers and IMOs, will be reviewed in this section.

1. Service Providers

Exhibit III-8, which lists the top ten U.S. service providers, illustrates that computer manufacturers appear to dominate the market.

- Nine of the top ten, all but Bell Atlantic, are computer manufacturers.
- The top ten account for 70% of the market, 68% if Bell Atlantic is not counted. This represents a decrease of 5% for manufacturers since the previous report, indicating that the market is becoming less concentrated.

The most notable change since the previous report is the movement of Amdahl into the eighth position. Vendors in the first seven positions remained in the same relative order.

In Exhibit III-9, the listing of the leading equipment services vendors for large computer systems only contains companies that have been computer manufacturers. Changes from the previous report are confined to the movement of CDC from position four to six and the movement of Bull and Hitachi up to positions four and five respectively.

Equipment services for large computer systems is dominated by vendors that have had experience in this equipment class. They account for 97% of user expenditures, as shown in Exhibit III-8. This concentration is caused by several factors.

- Manufacturers supplying large computers have a high level of interest in serving their accounts in order to guaranty follow-on business.
- Equipment services for large computers requires an investment in training and equipment, as well as the ability to supply additional products and services. Manufacturers are more prepared to supply these, as previously noted.

EXHIBIT III-8

Top Computer Service Vendors

Company	Rank	1991 U.S. Revenue (\$ Millions)	Market Share (Percent)
IBM	1	3,640	24
DEC	2	2,550	17
AT&T	3	1,150	8
HP	4	1,062	7
Unisys	5	860	6
Bull HN	6	360	2
Bell Atlantic Business Systems Services	7	305	2
Amdahl	8	231	2
Wang	9	208	1
Tandem	10	205	1
Total Top Vendors		10,571	70
Other Vendors		4,521	30
Total Market		15,092	100

EXHIBIT III-9

Top Large Systems Computer Service Vendors

Company	Rank	1991 U.S. Revenue (\$ Millions)	Market Share (Percent)
IBM	1	1,650	53
Unisys	2	656	21
Amdahl	3	231	7
Bull HN	4	140	4
Hitachi	5	110	4
CDC	6	100	3
Cray	7	80	3
AT&T	8	65	2
Total Top Vendors		3,032	97
Other Vendors		95	3
Total Market		3,127	100

The list of midrange systems shown in Exhibit III-10 also had some slight adjustments in the relative rankings of vendors.

- The revenues of NCR and AT&T have been combined under the entry for AT&T.
- Bell Atlantic has moved into eighth place with a market share of 2%.

The midrange market grew by 10% in 1990, spurred by the recent sales of IBM, DEC, HP, Tandem and other midrange equipment. It had grown by 7% in the previous year.

The share of the market controlled by the leading vendors increased by 1%, indicating that the concentration of work in this market is not lessening. Manufacturers that are selling this equipment are making an effort to control maintenance of it.

EXHIBIT III-10

Top Midrange Systems Computer Service Vendors

Company	Rank	1991 Revenue (\$ Millions)	Market Share (Percent)
DEC	1	2,505	30
IBM	2	1,540	18
AT&T	3	1,015	12
HP	4	835	10
Wang	5	208	2
Tandem	6	205	2
Data General	7	205	2
Bell Atlantic	8	155	2
Bull HN	9	145	2
Total Top Vendors		6,813	81
Other Vendors		1,552	19
Total Market		8,365	100

Note: Percents are rounded

As shown in Exhibit III-11, there is less concentration of work in the workstation/PC market than in other markets. The leading vendors control 55% of the market.

There was very little change in the relative position of vendors in the market in 1991. Bell Atlantic moved into position number seven, and Tandy moved down one position.

EXHIBIT III-11

Top Workstation/PC Systems Computer Service Vendors

Company	Rank	1991 Revenue (\$ Millions)	Market Share (Percent)
IBM	1	380	16
HP	2	217	9
Computerland	3	190	8
Sun	4	140	6
Prime	5	110	4
JWP	6	108	4
Bell Atlantic	7	105	4
Tandy	8	85	4
Total Top Vendors		1,335	55
Other Vendors		1,090	45
Total Market		2,425	100

The eight leading vendors in the independent maintenance organizations market, which are shown in Exhibit III-12, control only 46% of the market, indicating that this market is not as concentrated as the markets previously discussed, which computer manufacturers dominate. The largest vendors in this market also have market shares that are smaller than the leading vendors in the markets dominated by computer manufacturers.

- The leading IMO, for example, has a market share of 14% of the IMO market, but the leading vendor of large computer equipment services has a market share of 53%.
- It may be more difficult for IMO vendors to differentiate their services from each other so that they can obtain more market share.

EXHIBIT III-12

Top Independent Maintenance Organizations

Company	Rank	1991 Revenue (\$ Millions)	Market Share (Percent)
Bell Atlantic Business Systems Services	1	350	14
GECS	2	195	8
Intellogic Trace	3	110	5
AT&T	4	110	5
TRW*	5	106	4
Dataserv	6	90	4
Decision Data	7	72	3
IDEA Servcom	8	70	3
Total Top Vendors		1,103	46
Other Vendors		1,321	54
Total Market		2,424	100

* Integrated with Computerland as of 7/1/92

2. Selected Acquisition Activity

During 1991, there were a number of acquisitions of equipment services business by vendors in the services business.

- One of the more notable acquisitions of this kind was the purchase of the TRW maintenance business by Computerland.
- Data General acquired the service business of HBO, and HP acquired the service firm Avantek.

- JWP made several acquisitions of smaller equipment services firms during 1991.

In 1990, there was a large acquisition of equipment services business, Sorbus' acquisition of Control Data's third-party maintenance division. This move joined the top-ranking IMO with a highly ranked vendor

- The acquisition took full effect in 1991.
- When the acquisition was completed, Sorbus was renamed Bell Atlantic Business Systems Service since Bell Atlantic had previously acquired Sorbus.

E

New Service Opportunities

A number of equipment services organizations are entering or considering entry into new activities—such as consulting, education and training, software support, disaster recovery and systems operations—to offset slowdowns in the growth of equipment services revenues or expand the services that can be offered to current customers.

- These services are mostly submodes of professional services, except for disaster recovery, which is part of a submode of processing services and operational services, which are generally part of systems operations contracts.
- The information services that are being supplied are attractive to equipment services vendors since they are add-on business that can be sold to present clients and since they are growing more rapidly than most of the segments of traditional equipment services.

When users or vendors provide data for information services supplied together with equipment services, INPUT has made an effort to exclude these customer expenditures from its equipment services forecast (see Exhibit III-1).

(Blank)

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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Equipment Services Market Issues and Trends

Major issues and trends that are having an impact on the equipment services market are analyzed in this chapter.

The topics addressed include:

- Multivendor service
- Factors causing changes in vendors
- Changes in price levels
- Field service information systems
- Attitude toward the use of IMOs

A

Single-Source Hardware and Software Support

About 40% of user respondents reported receiving multivendor support from a single source on some IS equipment or systems. The presence of multivendor support on specific classes of equipment and systems that users reported is shown in Exhibit IV-1.

- The use of multivendor support has risen from the total of 28% that was found during the previous report.
- More users receive multivendor support for CPUs, peripherals, or network products associated with workstations/PCs than for other classes of equipment, as shown in Exhibit IV-1.

EXHIBIT IV-1

Users Receiving Multivendor Support			
System	Percent Receiving Support on		
	Other Vendor CPUs	Other Vendor Peripherals	Other Vendor Network Products
Large	9	21	16
Midrange	9	23	16
Workstation/PC	23	32	25

Users also expect the importance of multivendor services to increase in the near future, as shown in Exhibit IV-2.

EXHIBIT IV-2

Importance of Multivendor Services			
System	Mean Importance in Three Years		
	Other Vendor CPUs	Other Vendor Peripherals	Other Vendor Network Products
Large	2.1	2.4	2.6
Midrange	2.3	2.7	2.9
Workstation/PC	2.7	2.8	2.9
Total Sample	2.4	2.6	2.8

Scale: 1-5, where 1 = Low importance, 5 = High importance

- Workstations/PCs is expected to be the class of equipment where the importance of multivendor service will be highest in the future.
- However, midrange computer systems will be equally important in regard to multivendor use for associated network equipment according to users.

The percentage of vendors that report that they offer multivendor services amounts to 76%. About two-thirds of these vendors provide service to between 10 and 100 vendors, and 16% report service to over 100 vendors.

In Exhibit IV-3, user interest in single-point-of-contact service by size of computer system is shown. The highest level of interest in single-point-of-contact service was shown by the midrange systems group, as in the previous year, but interest was up for all classes.

EXHIBIT IV-3

**User Interest in
Single-Point-of-Contact Service**

System	Mean Interest
Large	3.5
Midrange	3.7
Workstation/PC	3.6
Total Sample	3.6

Scale: 1-5, where 1 = Low, 5 = High

B
User Requirements

When users rate the importance of selection criteria, the results indicate that a high level of importance is being given to quality of service, availability, technical expertise, response time and the availability of spares.

- These results are similar for all sizes of computers.
- Although this information indicates characteristics that equipment services vendors should strive for, it doesn't give an adequate picture of the factors that are currently causing users to consider using different vendors.

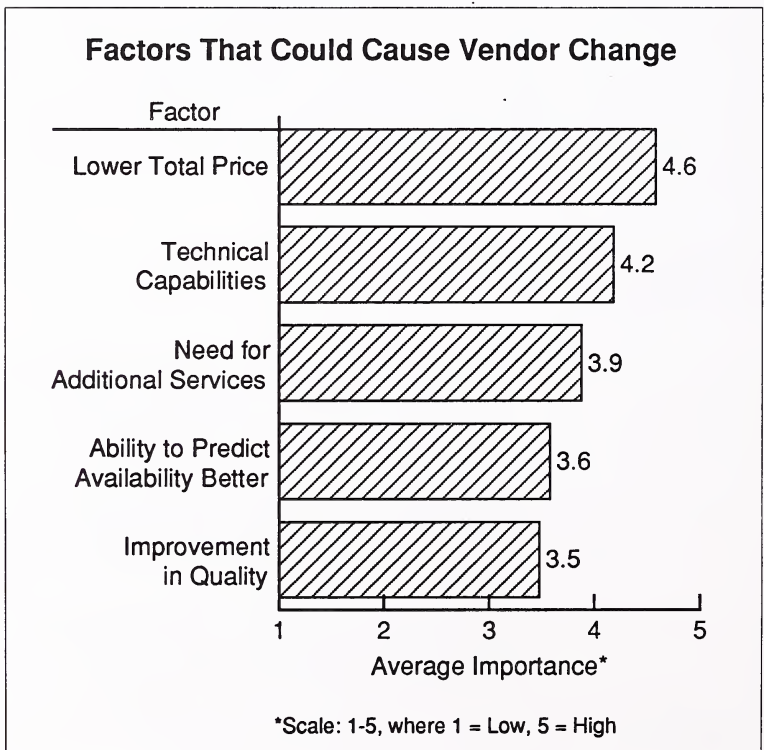
Exhibit IV-4 indicates that quality is not the leading reason for change of vendors, despite the importance of quality.

- Although users, particularly the users of large computer systems, state that quality of service is the most important service requirement, they note that the increasing reliability and quality of equipment is making them expect higher levels of service as a given.
- The ability to reduce costs through the use of new vendors or the need for new services such as aid with client/server networks, application support or disaster recovery could cause users to utilize new vendors.

The use of new vendors is also driven by the fact that equipment services vendors are expanding the range of computers for which they are willing to offer services.

- A number of computer manufacturers presently service equipment other than their own.
- Almost two-thirds of equipment services vendors that were contacted are expanding the number of computers that they offer service for.

EXHIBIT IV-4



User willingness to consider new vendors and the expansion of services by vendors are two indications of the increase in competition that is taking place. Together with the introduction of technology that has been improving reliability, this competition has caused significant pressure on service price levels, as indicated in Exhibit IV-5.

- The percentage of vendors that have encountered decreases in price levels could be raised since most of those that refused to officially respond to this question indicated that they were aware of lower price levels. They did not want to admit that the lower levels of prices were a problem for their companies, however.
- Most of the vendor respondents indicated that the reduction in prices that they were encountering involved hardware prices. These respondents expect prices to deteriorate further.

EXHIBIT IV-5

Price Level Change	Percentage of Vendors Reporting Change
Decreasing	64
Increasing	8
Flat	4
Not sure or refuse to answer	24

The present situation in the equipment services market is described as critical or dangerous by many of the vendors contacted.

- The characteristics that make the situation critical are the competitive climate, price cutting, lower margins and reduced profitability that they have encountered, according to about half the vendors contacted, as indicated in Exhibit IV-6.
- However, Exhibit IV-6 also shows that a large percentage of vendors are considering factors that could respond to the present situation, such as offering additional services or meeting users' need for aid in dealing with the increasing complexity of information systems.

EXHIBIT IV-6

Challenging Market Conditions	
Factors Noted by Vendors	Percentage of Vendors
Competitive price cutting	60
Margin erosion or low profitability	48
Need to offer additional services	44
Improved reliability of equipment	32
Increasing complexity of information systems	24

The specific strategies that vendors plan to take to counter the competition and slowdown in revenue are listed in Exhibit IV-7.

EXHIBIT IV-7

Strategies to Counter Slowdown in Revenue	
Strategy	Percentage of Vendors Interested in Strategy
Diversify into maintenance-related services	72
Grow through increased sales per customer and more customers	68
Diversify into services not directly related to maintenance	60
Acquire companies with market share or needed skills	56
Concentrate on vertical markets	48
Improve maintenance services	40

- Not only is diversification into services related to equipment services mentioned most frequently by vendors, only a small number of vendors mentioned the improvement of maintenance as their only strategy.
- In general, equipment services vendors recognize that their business must now address more than equipment services.

Many of the vendors that were interviewed recognized that they were offering the services of several types of information services vendors.

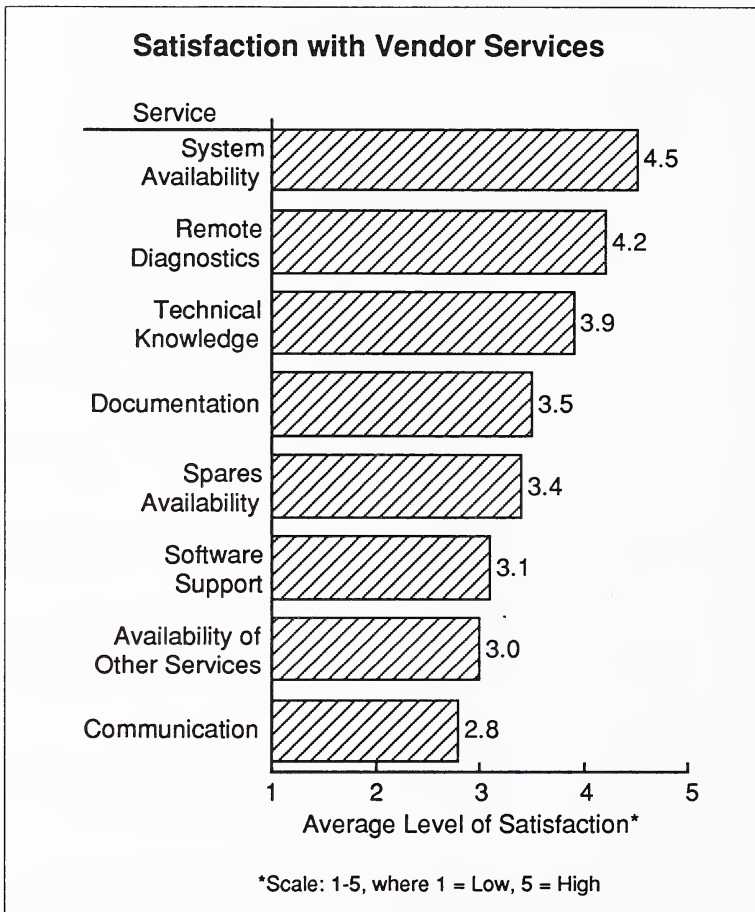
- Over two-thirds of vendors, including manufacturers and IMOs, said that they were now supplying software maintenance services, and a number discussed expanding their software development-related services to include capabilities such as applications management in the future.
- About three-quarters of vendors stated that they provided consulting or aid with the use of LANs and client/server installations.
- Almost 30% offer education and training courses.
- Over 80% of vendors provide processing or SO services such as disaster recovery or operations assistance.

The increased movement of equipment services vendors into the delivery modes noted above has suggested that the companies that offer equipment services have become integrated with vendors offering the other information services that INPUT tracks.

- In addition, a number of manufacturers—including IBM, Digital, HP, Unisys and NCR—are in the equipment services business as well as in other information services delivery modes.
- For these reasons, INPUT has decided to include equipment services as an information services delivery mode and include it in the programs of INPUT devoted to the information services industry rather than to analyze it as a separate line of business, as was done in past years.

Average ratings of user satisfaction, shown in Exhibit IV-8, indicate that the main indicators of service satisfaction are still systems availability and key aspects of hardware and software support.

EXHIBIT IV-8



As Exhibit IV-8 shows, the indicators of equipment services satisfaction now include measures other than equipment performance, indicating that service is now being thought of in a broader context.

- For most of the measures reported by users, the level of satisfaction was sufficient. Spares availability was not rated as high as other items, particularly for large and midrange users, indicating that this is a problem for some vendors.

- For nontraditional services, the level of satisfaction was not as high. Software support was not satisfactory for a number of users, and unfavorable comments were made about other services, particularly capacity planning, aid with productivity tools and disaster recovery services. There are opportunities for vendors to enter new accounts through improvements in these capabilities.

The interest that users are showing in obtaining new types of services from equipment services vendors provides IMOs an opportunity to gain entrance into new accounts.

- As shown in Exhibit IV-9, a number of users are more likely to use IMOs today.
- Users also report that IMOs have more services available than in the recent past, and that some of the IMOs are highly responsive to service requests (they respond faster and communicate better than vendors used previously, according to several respondents.)

EXHIBIT IV-9

Attitude	Percentage of Respondents
Likely to use (or are using)	68
IMOs have expanded their services	32
Some IMOs are more service oriented than manufacturers	28
Still don't have the knowledge level of manufacturers	28

There is still a group of users, particularly users of large computer systems, that find IMOs do not have sufficient knowledge of the equipment or other technical knowledge required to meet their needs. In the workstation/PC section of the market, however, users are much more likely to use IMOs, and this is the section of the market that is growing most rapidly for IMOs.

In addition to focusing on new services, equipment services firms must keep track of developments that can improve service to customers. One of the developments that has recently improved service significantly is the use of a field service information system.

- 80% of vendors, including manufacturers as well as IMO's, report the use of these systems.
- The vendors that offer these systems include the capabilities listed in Exhibit IV-10. There is a high level of capabilities for most systems, but some are lacking. Some of the systems are also older and do not result in the level of services of some more recent systems.

EXHIBIT IV-10

Capabilities of Field Service Information Systems

Capability	Percentage of Vendors Who Offer
Call handling and dispatch	100
Customer information file/ data base	100
Inventory control	90
Service billing	80
Remote hardware diagnostics	80
Remote software diagnostics/ repair	70
Security	5
Predictive information	5

The benefits that field service information systems offer include both benefits for users and vendors, as illustrated by Exhibit IV-11.

- Users are aided particularly by the tracking of parts and improved parts availability, as well as by the use of remote diagnostics, centralized control and improved problem resolution.
- Vendors benefit from more productivity, reduction in dispatching of service personnel, lower costs, and better tracking of activities and performance.
- Vendors also benefit from improved communication with accounts, which is more important in establishing and maintaining a good relation with customers than vendors usually are aware.

About one-fourth of the vendors interviewed also thought that these information systems improved their image and reputation with customers. Several vendors noted that they improved account control.

One of the services that users are very interested in, a predictive capability, has been integrated into these information services by only several of the vendors interviewed.

EXHIBIT IV-11

Benefits of Field Service Information Systems

Benefits Reported by Vendors

- Improved productivity
- Customer satisfaction
- Lowered MTTR
- Cost reduction
- Aid in problem resolution
- Better tracking of performance
- Better parts management
- Aid in planning with users
- Centralized control
- Reduction in dispatching service personnel

The reaction of users to anticipated price changes is indicated in Exhibit IV-12. Users are much more likely to respond to increases aggressively, today, and restructure services or consider using new vendors in order to keep costs down. Although users will plan such responses and there are pressures in the marketplace to reduce prices, there are opportunities to increase prices, particularly for vendors of proprietary large and some midrange systems where the knowledge and capabilities of the manufacturer are needed to supply adequate service.

EXHIBIT IV-12

Price Changes and Responses

Possible Response to Price Change	Percentage of User Respondents
Will adjust service to lessen impact of price increase	21
Will adjust service to lower price	21
Change will be minimal or none	18
Will obtain price decreases	18
Will be affected by price increase	16
Not sure	6

C**Analysis of Vendor Services**

In Exhibit IV-13, services that some vendors offer in addition to equipment maintenance are shown, together with information on the use of these services by customers.

- Some of these services—such as preventive maintenance and install/deinstall—would be classified as equipment services.
- Many of the services—such as training and education, planning tasks and software support—are part of professional services.
- There are also other information services mentioned—such as systems operation and disaster services.
- There were noninformation services tasks mentioned—such as maintaining alarm systems—that were not included on this list.

The expectation is for the number and volume of nonequipment services to increase.

EXHIBIT IV-13

Ancillary and Other Services

Service	Vendor Respondents Offer (%)	User Respondents May Utilize (%)
Configuration Planning	58	87
Capacity Planning	54	83
Environmental Planning	52	75
Software Support	60	65
Maintenance-Related Training	56	61
Install/Deinstall/Moves	85	95
Preventive Maintenance	80	82
Consulting	60	68
Network Planning	64	62
Network Management	56	60
Disaster Recovery	56	68
Systems Operation	34	54
Problem Management	58	60
Applications Software Support	55	69
Help Desk	68	70

In addition to expansion in the number of services, equipment services vendors are willing to consider alliances with other vendors for a number of purposes. Forty percent of vendors say that they feel outsourcing of equipment or functions would be an opportunity that they could meet with a partner that had outsourcing experience.

As indicated in Exhibit IV-14, the objective that most equipment services vendors feel that they face is to refocus the sales and marketing of services.

- The shift from the sale of traditional equipment-oriented services to the sale of professional services, such as consulting on network design or education and training, can be difficult for everyone to adjust to—from the sales staff to field engineers and support staff.
- The sale and delivery of equipment services involves a much smaller set of topics for personnel to explain and stay current about.
- In addition to selling and managing a large set of nontraditional services, equipment services firms realize that the high level of competition and narrow profit margins that they are confronting are major challenges.

EXHIBIT IV-14

Vendor Objectives	
Objective	Percentage of Respondents Reporting Objective
Marketing and selling non-traditional services	56
Meeting competitive challenges	52
Improving margins	52
Expanding services	40
Managing a wide set of services	35

D**New Technologies**

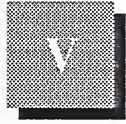
Field service information systems were discussed in Section B (User Requirements) since they are having a significant effect on the market at this time. In addition to these systems, there are new technological developments that equipment services firms should consider, including the following:

- New developments, including expert systems to aid in supplying better information on availability as well as in analyzing problems.
- Improved types of maintenance training that include aid in learning how to diagnose and repair problems remotely.

- Continuing developments in equipment reliability as well as in technology that can analyze, report and initiate certain maintenance tasks.

Over half of equipment services firms believe that technology will have a negative impact on the ability to grow equipment services, since reliability and automatic servicing of some problems will increase.

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Conclusions and Recommendations

A

Conclusions

Although some factors have remained constant, such as the high level of importance that clients give to quality and response time, the equipment services market is in a period of significant change, as illustrated by the findings shown in Exhibit V-1.

- New technology has improved the reliability of equipment to the point where some clients of equipment services are trying to cut back on the time or services under contract. Together with the increased level of competition that has occurred in the marketplace, this has led to a deterioration in revenues.
- More powerful workstations have also encouraged downsizing, a trend that will lead to a slower growth of mainframes and midrange computers in the near future, and a corresponding reduced growth in equipment services.

New technology has also created opportunities for vendors of equipment services:

- Some vendors are offering support for client/server use and providing training to meet the challenges of increasing hardware and software complexity.
- There are also new developments, such as the field service information system, that have proved to be highly valuable in the provision of equipment services.

Field service information systems have also reduced costs and logistical problems with parts, as well as providing improved communication and follow-up for client support.

- Many new or expanded services—including consulting, software support, disaster recovery, operational services and network support—are being offered by equipment services vendors. A number of vendors feel that they have to offer these services to remain profitable.
- Price has also become more important to vendors, since clients have become more willing to cut back on support expenditures, or bring in a less costly vendor for part of their support needs.

Despite the importance of new services to equipment services vendors, there are maintenance-related conclusions to consider as well.

- Field service information systems have proved their worth to both vendors and users.
- Equipment services clients are still looking for faster reaction on parts supply and some requests for information, as well as more predictive availability.

EXHIBIT V-1

Findings

- New technology has created challenges
- Competition has increased and margins have decreased
- Many new services are being offered
- Price has become more important
- Equipment service firms are changing
- There is a continuing need for high quality and fast response
- Field service information systems are important
- Customers need more improvements

B

Recommendations

New and expanded services should be evaluated and offered since they provide an opportunity to gain increased revenue and a higher profit margin, as shown in Exhibit V-2.

EXHIBIT V-2

Recommendations for Vendors

- Analyze customer needs more fully
- Expand services
- Rethink sales and marketing strategies
- Analyze pricing
- Make field service information systems as effective as possible
- Become an information services vendor

- These services can also provide the means to penetrate new accounts, as well as to gain increased revenue from existing accounts.
- Computer manufacturers have the opportunity to easily initiate many of these services—such as training, consulting, and software aid—since they already have such services available. Not all manufacturers are taking advantage of this situation, however.
- The provision of variety of services also offers the opportunity for a vendor to work closely with a user in solving complex problems that could involve hardware, maintenance, software products, communications and operations. Opportunities can arise from this type of cooperative work—such as the chance to sell disaster recovery services, change control software products or additional equipment services.

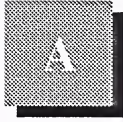
In view of the expansion of services that is taking place, vendors should rethink their sales and marketing strategies. Account managers and contact personnel should have familiarity with or training in the sale of information services and possibly IT products.

Equipment services vendors must recognize that they are in the information services business. For instance, leading IMOs, as well as manufacturers, should identify more opportunities to offer operator and technology training.

Finally, vendors should implement the field service information services and systems that have proved so attractive to both users and vendors.

- These systems should be used to improve the scope and quality of user contact, as well as to deal more quickly with problems and parts availability.

- Limited or older field service information systems should be evaluated since their ability to provide customers with the benefits they are interested in, such as predictive operations, or vendors with the cost reductions and tracking desired may be limited.
- Equipment services clients are still looking for faster reaction on parts supply and better responses to requests for information, as well as more predictive availability.



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 computer maintenance 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 1990</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 1991? Yes _____ No _____

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

4. What were the total revenues of your company in 1990, and what do you expect them to be in 1991?

	<u>1990</u>	<u>1991</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 1990</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 1990</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/Deinstall	_____	_____	_____
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. Growth by acquisition

Yes _____ No _____

- e. Growth 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?

