Report Quality Evaluation

1. Report title: ***Service Vendor Analysis—Third-Party Maintenance Vol. I*** (FTVA)

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

3. Please indicate extent report used and overall usefulness:

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

4. How Useful was:

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

5. How useful was the report in these areas:

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

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

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

8. Other comments or suggestions: _____

Name _____   Title _____

Department _____

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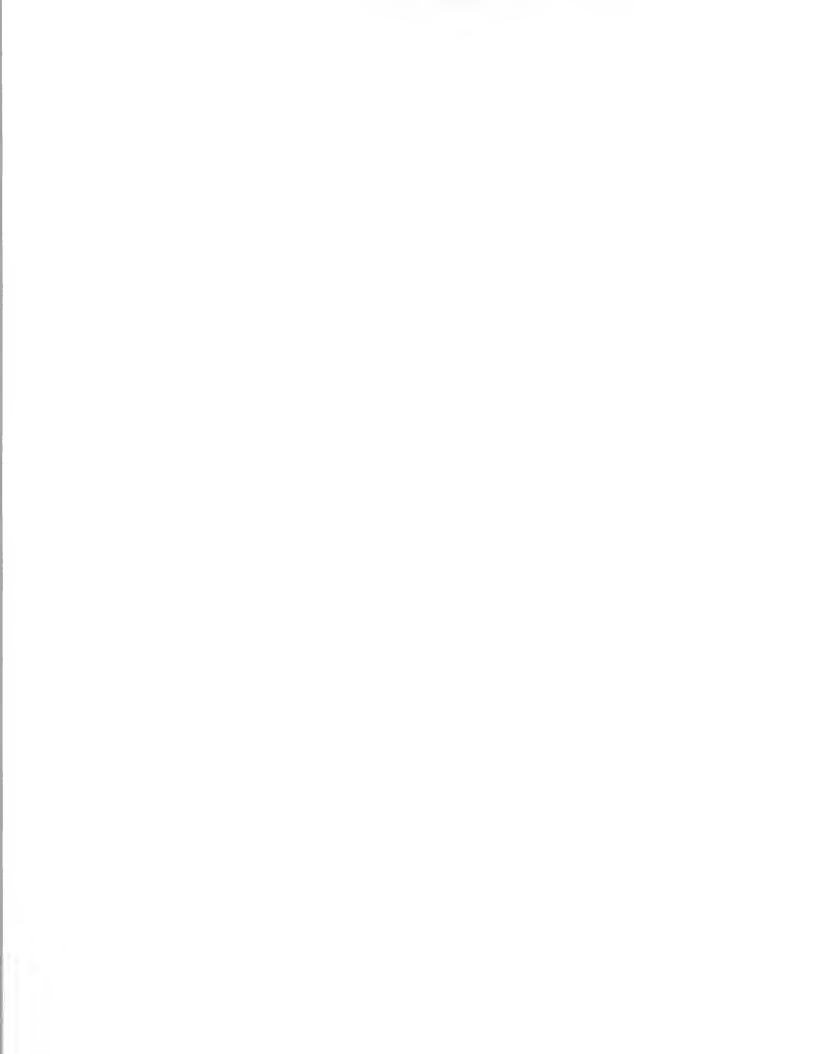City _____   State _____   ZIP _____

Telephone _____   Date Completed _____

Thank you for your time and cooperation.   M&S 633/01 12/89

INPUT

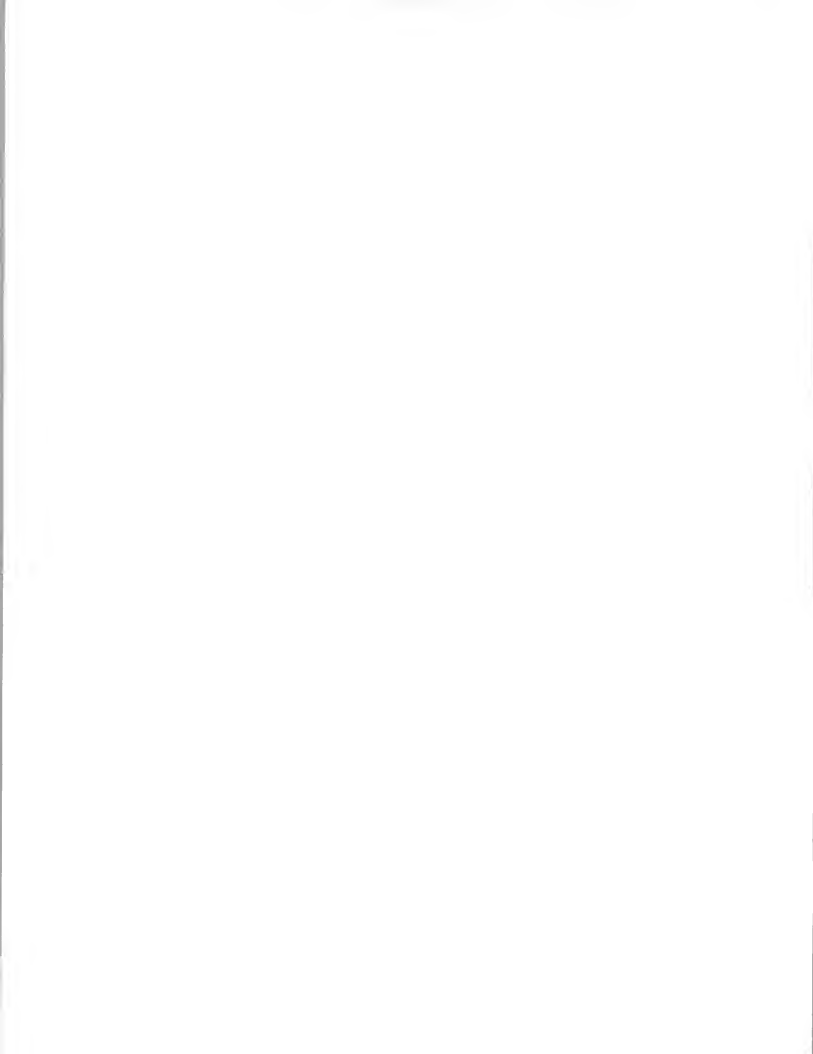# SERVICE VENDOR ANALYSIS

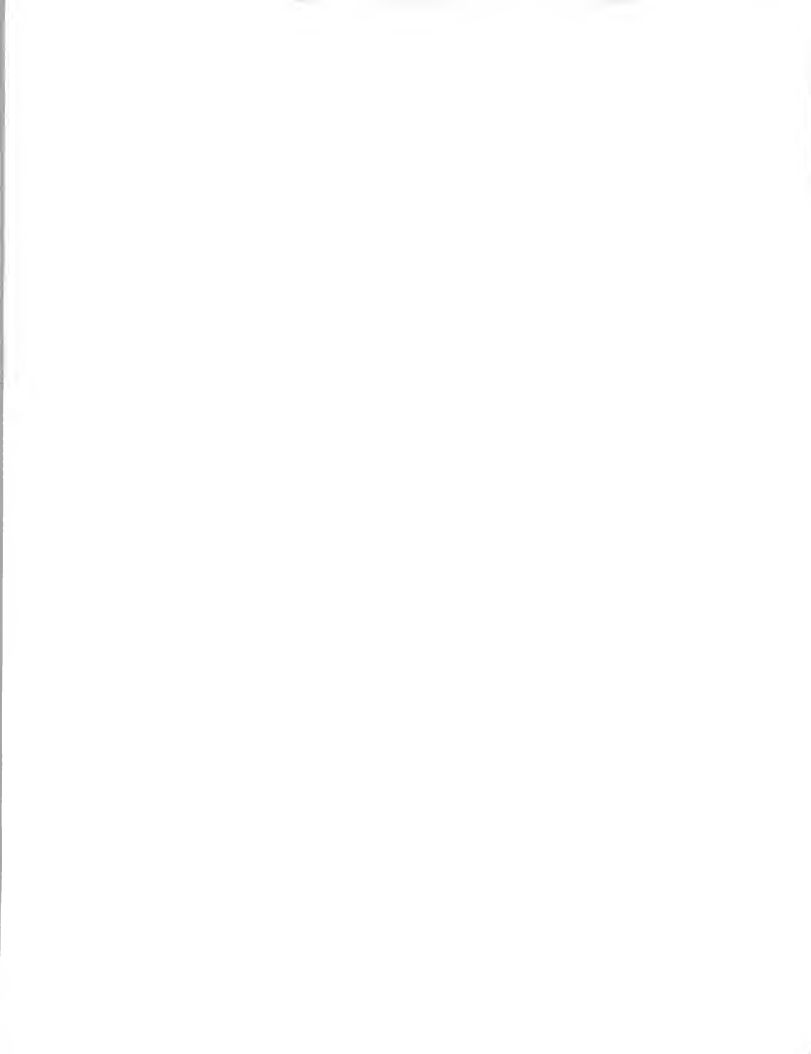# THIRD-PARTY MAINTENANCE

VOLUME I

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INPUT
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Mountain View, CA 94041-1194
U.S.A.

Customer Service Program

Service Vendor Analysis—
Third-Party Maintenance Vol. I

FTVA • 357 • 1989

Abstract

This report, *Service Vendor Analysis—Third-Party Maintenance*, is the first deliverable in the Third-Party Maintenance module of INPUT's 1989 Customer Service Program. The second report, *Third-Party Maintenance User Requirements*, measures user requirements for and satisfaction with service and support as provided by leading TPM vendors. The last report in the series, *U.S. Customer Service Market Analysis*, will provide a current market sizing and five-year forecasts for the entire services marketplace, as well as summarize the year's research findings.

This report is broken out into two volumes. The first volume contains profiles of the service organizations of eleven of the leading TPM organizations: CDC Third-Party Maintenance Division, Dataserv Computer Maintenance, Decision Data Service, Inc., GE Computer Services, Grumman Systems Support, IDEA Servcom, Intelogic Trace, Inc., McDonnell Douglas Field Service Company, NCR Corporation Customer Services Division, Sorbus, and TRW Customer Service Division. Each profile begins with a short discussion of the company and important service news items from the past year. Next, each profile presents demographic data about the service organization, including revenue totals and employee and office counts. Each profile concludes with a discussion of service delivery and strategic positioning of each firm.

Following these profiles, the report provides summary tables of key service information about the profiled service organizations. These tables allow quick comparisons between companies analyzed in this study.

The two volumes of this report present profiles of 100 of the leading third- and fourth-party maintenance vendors in the 1989 marketplace: Volume I contains in-depth profiles of the ten leading players; Volume II of the set contains concise two-page profiles of 90 additional vendors' operations and direction.

The report contains 62 pages, including 19 exhibits.

Table of Contents

Exhibits

I

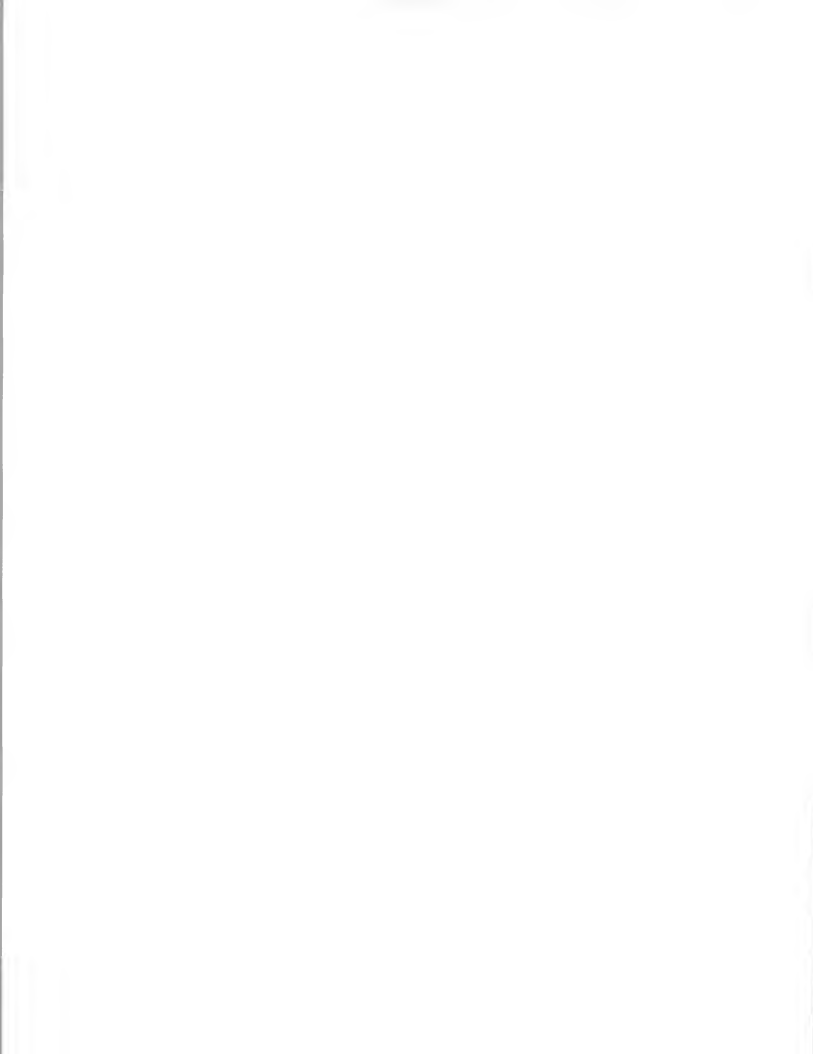# Introduction

I

Introduction

This report, *Service Vendor Analysis—Third-Party Maintenance*, is the first deliverable in the Third-Party Maintenance module of INPUT's 1989 Customer Service Program. The second report, *Third-Party Maintenance User Service Requirements*, measures user requirement for and satisfaction with service and support as provided by leading TPM vendors. The last report in the series, *U.S. Customer Service Market Analysis*, will provide current market sizing and five-year forecasts for the service marketplace, as well as summarize the year's research findings.

A
Scope

This in-depth vendor analysis is delivered in two volumes. The first volume contains profiles of the service organizations of the top eleven TPM organizations: CDC Third-Party Maintenance Division, Dataserv Computer Maintenance, Decision Data Service, Inc., GE Computer Services, Grumman Systems Support, IDEA Servcom, Intelogic Trace, Inc., NCR Corporation, Sorbus, and TRW. Each profile begins with a brief discussion of the organization and its significant actions over the past year. Next, the service operations of each firm are profiled, including revenue totals and demographic service information as available. The analysis concludes with a discussion of the ongoing service delivery and strategic alignment of the top TPM firms. Two of these organizations (CDC and NCR) are primarily hardware manufacturers. When these companies are removed from the list, Grumman becomes number nine in revenue.

Following these profiles, the report provides summary tables of key service information about the profiled service organizations. These tables allow quick comparisons between companies analyzed in this study.

The second volume contains concise two-page profiles of these eleven, plus 90 additional providers of third- and fourth-party maintenance, complementing Volume I, and providing a comprehensive snapshot of the 1989 independent maintenance marketplace.
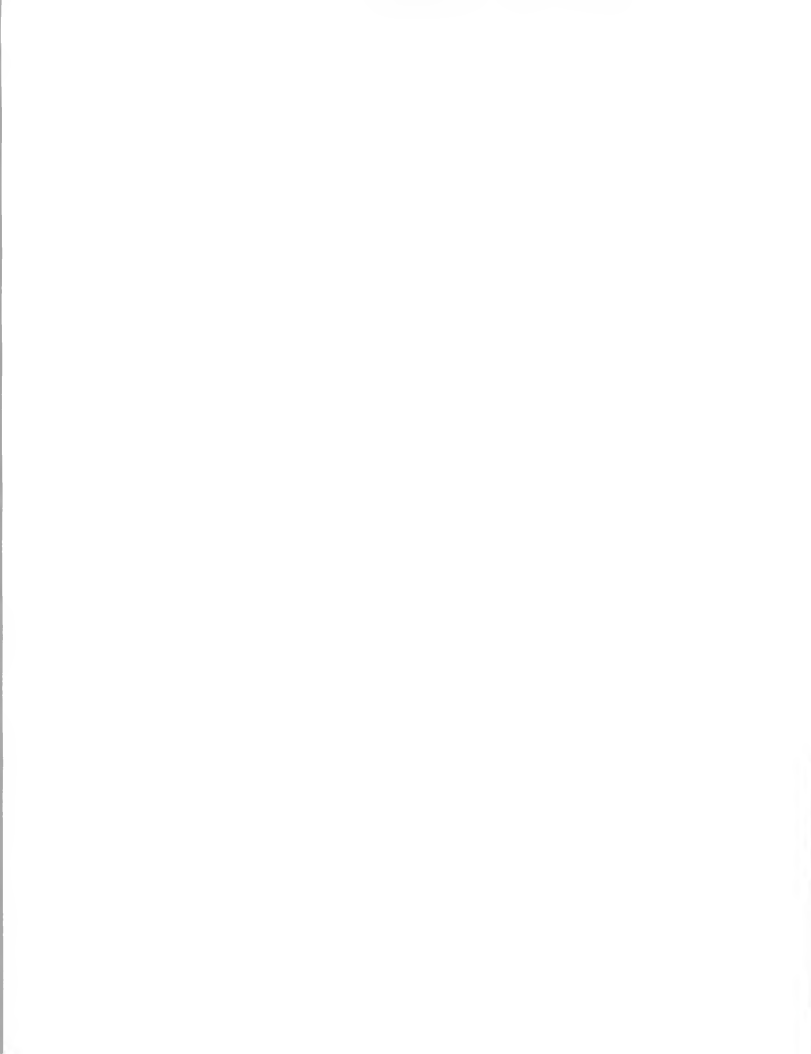
Appendixes at the end of this report contain an example of the questionnaire used for this study, as well as a list of definitions used in the report.

B

Methodology

INPUT contacted each firm included in these two volumes by phone, and gathered demographic data using the standardized questionnaire contained in Appendix A. A discussion of strategic position was conducted with key service management personnel of each of the leading 10 vendors, and supplements the demographic information in these Volume I profiles. Current news items and service offering information was collected from the firms, and from INPUT's Vendor Information Center.

II
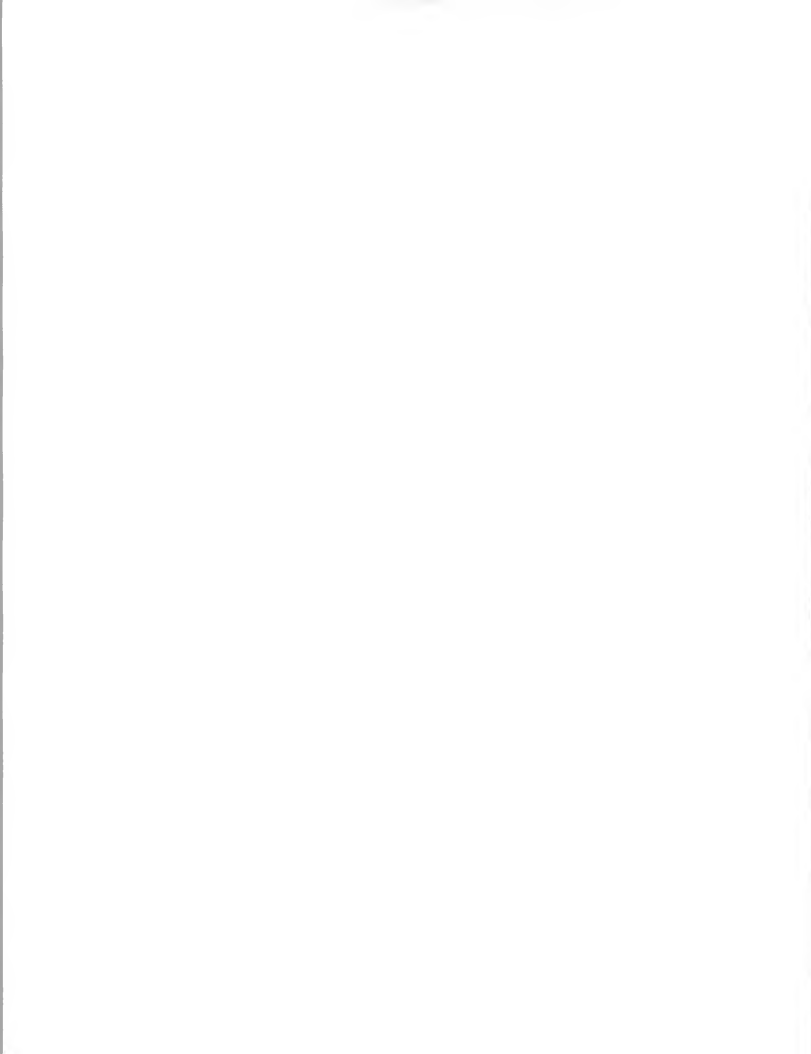
Service Vendor Profiles

CONTROL DATA CORPORATION Michael E. Sherck, Vice President
Computer Systems and Services Service Employees: 900*
Third-Party Maintenance Division 1988 TPM Revenue: $97 Million*
8100 34th Avenue South
Minneapolis, MN 55440
(612) 853-4069

                                         * INPUT estimate

The Company   1989 was a year of continued divestment for Control Data
                   Corporation, facing ongoing liquidity problems with its diverse set
                   of technical operations. Nearly 20 separate operating units have
                   been sold off since the divestment strategy was implemented in
                   1986. CDC's U.S. Third-party Maintenance Division was among
                   the casualties of 1989, having been preceded by the sale of a wide
                   array of hardware operations, including the Imprimis disk drive
                   unit, and European TPM operations.

                   Significant actions were taken in other marketplaces as well,
                   including a swift exit from the education and training market (with
                   the sale of the Control Data Institutes in Europe, Canada, and the
                   U.S.), and the departure from the consumer credit marketplace
                   with the sale of Action Data Services. In all, CDC reduced its
                   corporate worth by over $1.5 billion over the past year. Capital
                   raised from these divestitures is slated for investment in a sharply
                   focused set of operations in the data systems and data service area.

                   Now pending is the definitive agreement between Control Data
                   and Bell Atlantic Customer Service to combine CDC's TPM
                   Division with Bell Atlantic's Sorbus subsidiary. Sorbus will
                   acquire CDC's nationwide maintenance facilities and third-party
                   customer base, with Control Data retaining responsibility and
                   revenues from the support of its Cyber line. Final closure of the
                   agreement is expected in early January, and the process of
                   organizational restructuring is currently underway.

Service Demographics

CDC had readied its customer services division for divestment in mid-1989, splitting its TPM group off from Cyber support resources. Previously combined in its Technical Services Division, the entire support operation was renamed "CDC Computer Systems and Services," and the third-party resources were spun-off into a separate division. Because all CDC field offices and personnel have been involved in both systems and third-party support throughout CDC's history, the physical division of resources was not clear cut. The end result, however, was a TPM division consisting of an estimated 900 service employees and over 100 service locations. Operational realignment will undoubtedly involve some staff reductions in the name of reducing redundancy, as will the transfer of corporate functions to Sorbus' Frazer, PA headquarters.

INPUT estimates that CDC's TPM-derived revenues were down slightly in 1989, although still providing an attractive revenue stream. With attentions concentrated on the potential divestiture of the operation, CDC was not as aggressive in its reactions to increasing competition in 1989. INPUT estimates CDC's third-party revenues at $97 million for 1989, showing a slight decrease from last year's $100 million mark.

Especially marked in the extended support areas, the series of IBM announcements went unmet by CDC in 1989. But undoubtedly, new attention to CDC's large systems market potential will be launched once it is settled into the Sorbus operation.

Service Coverage

CDC high-end service has provided 24-hour, 7-day coverage for a wide range of IBM equipment: Series/1, System 303X, System 3X, System 43XX, System 370, System 308X, System 309X, IBM peripherals, and selected non-IBM plug-compatible peripherals and terminals. The operation has provided preventive and remedial maintenance; installation, relocation, and migration services; and training, consulting and refurbishment services over its past 20 years in the maintenance business.

CDC's service line covered the full spectrum of equipment, from targeted mainframe systems to personal computer and local-area networks. Over 120 brands of systems and peripherals were serviced, 99% of that support being delivered on-site. Ninety percent of CDC's business was offered under contract; the remaining 10% was provided on an hourly per-call basis.
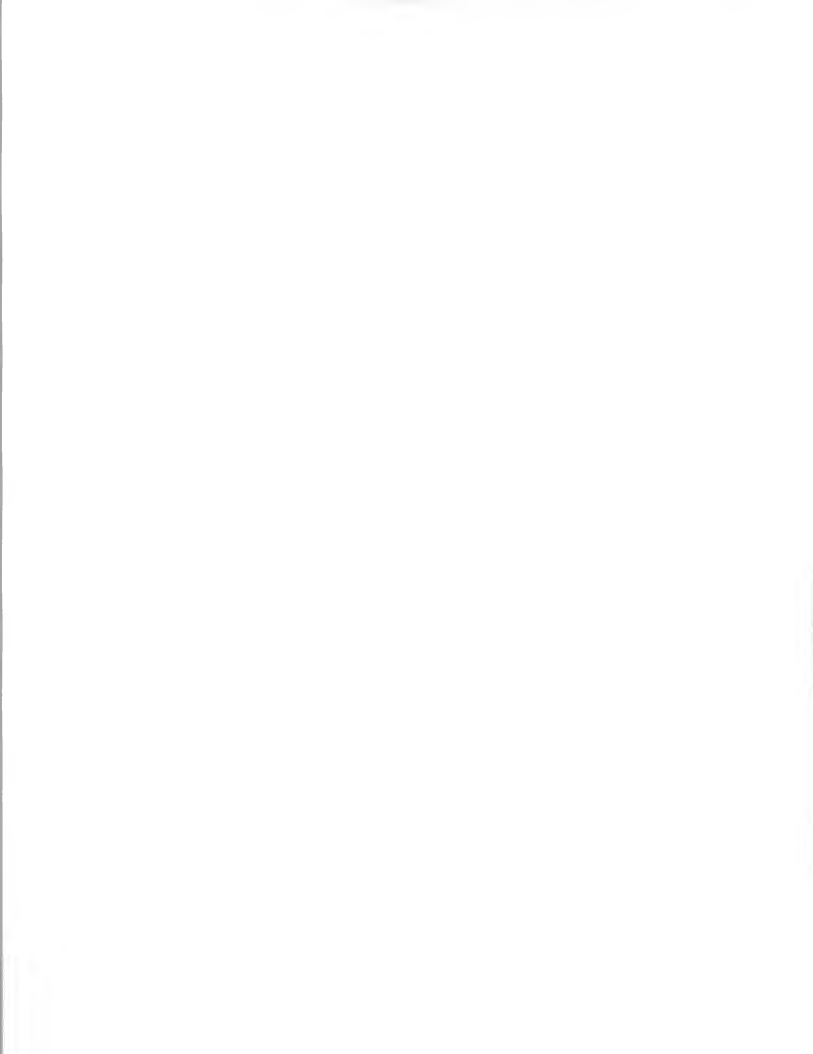
Strategic Focus   Because CDC once considered Sorbus among its most
troublesome third-party rivals, the merger of the two operations
should prove an interesting one. The alliance between two of the
third-party arena's heavy weights will undoubtedly produce some
anxiety among the TPM ranks, and not without cause. The sheer
size of the resulting operation will foster some ominous
competition, in terms of coverage and manpower as well as
financial strength. Bell Atlantic has been heavily pursuing a
number of acquisition candidates over the past year, but has
gained no operation of CDC's proportion since its purchase of
Sorbus in 1987.

Although the acquisition was a friendly one from Control Data's
corporate vantage point, the merger will cause some stir in the top
ranks of both Sorbus' and CDC's TPM organizations. The closing
of CDC's third-party headquarters in Minnesota has already
resulted in casualties at the management level, and coverage
overlap may lead to cutbacks at the branch level as well. When all
the dust has settled, however, the resulting organization is
expected to be approximately 1500 field engineers strong, with
more than 250 local offices nationwide.

In the long run, the purchase by the financially durable Bell
Atlantic should prove to be a positive move for the former-CDC
operation. With the strong support Bell Atlantic provides for its
TPM subsidiaries, the operation will emerge rejuvenated, and
customers of its high-end support should benefit from the renewed
interest in the operation's competitive stance.

EXHIBIT II-1

Service at a Glance

CDC Third-Party Maintenance Division

Brands supported include:

- IBM, DEC, DG, Cipher, Data Products, Zenith, Emulex, Cambex, Fujitsu

Service provided:

- Manufacturer warranty work
- Preventive maintenance
- Software maintenance
- Training
- Installation/relocation
- Refurbishment
- Remedial maintenance
- ECO/FCO (change orders)
- Consulting
- Disaster recovery
- Conversion/upgrade

Products maintained:

- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
- Telecommunications
  - LAN

Industries targeted include:

- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government
- Transportation
- Medical
- Banking/finance
- Education
- Federal government
- Other
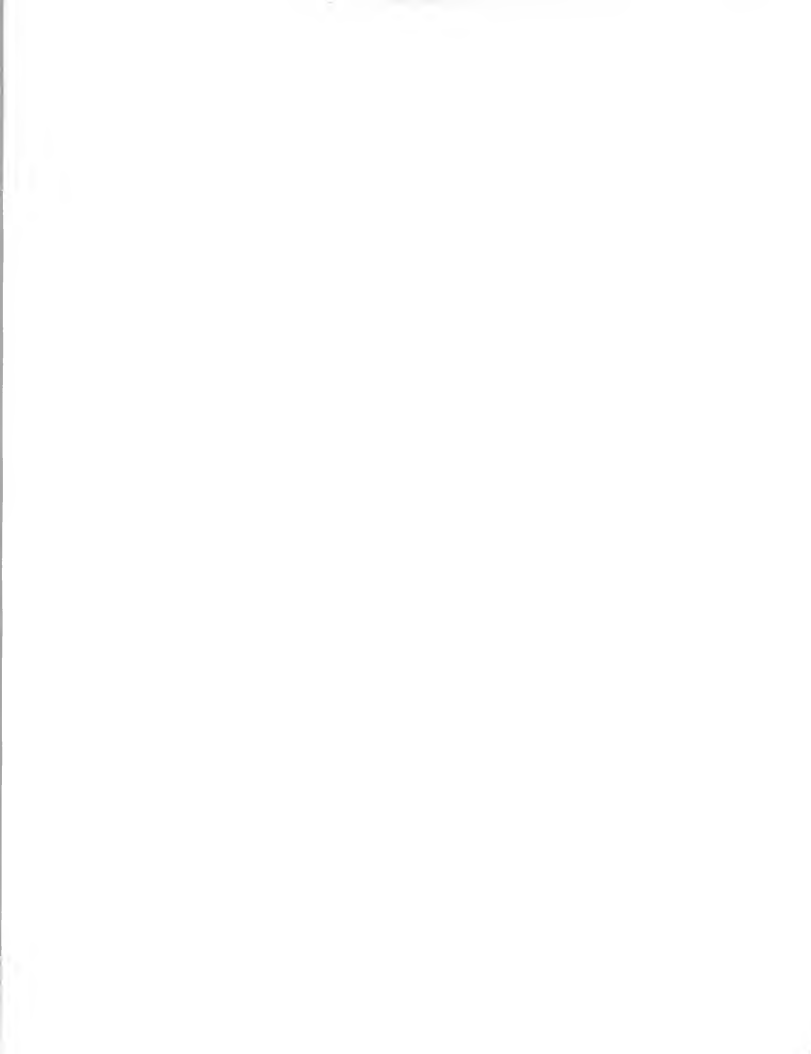
**DATASERV COMPUTER
MAINTENANCE**
12125 Technology Drive
Eden Prairie, MN 55344
(612) 829-6000

Phil Hinderaker, President, Dataserv, Inc.
Total Employees: 1034
1988 TPM Revenues: $80 million *

* INPUT Estimate

The Company

Dataserv Computer Maintenance, part of the Dataserv, Inc. subsidiary of BellSouth, is entering its second decade in the computer service marketplace. As it entered the third-party arena 10 years ago, its primary focus was on the leasing and parts sale aspects of its business. Hard competitive times have changed this focus through the course of the 1980s, and now Dataserv has sharpened this focus on the services end of its business.

Dataserv Computer Maintenance (DCM) significantly de-emphasized leasing in its line of support in 1989, and has taken a more aggressive stance in the third-party "extended service" marketplace. DCM's services can be categorized in three primary blocks: Technology Conversions and Installations; Technology Support Programs; and Technology Asset Management. These services are, in turn, complemented by parts services, retail sofware, and equipment sales through DCM's sister organizations.

DCM's Technology Conversions and Installation support provides users with help at the front-end of their systems problems, through staging, testing, and installation management services, as well as consulting on the cross-over between new systems and old. Technology Support offerings span the more traditional third-party maintenance services, with a focus on local-area network (LAN) support. Dataserv also has a Self-Maintenance Training program for customers developing in-house expertise, and can support their ongoing parts needs through its Dataserv Parts division.

The newest of Dataserv's support areas is called Technology Asset Management. Focusing on the process of "technological cascading," Dataserv offers on-going assistance with identification and replacement of obsolete equipment, monitoring of system performance, and the repositioning of equipment between user sites. Technological Asset Management was officially introduced in 1989, and details of the new offering are still being firmed up.

Service Demographics

Dataserv employs a service force of just over 1000, field engineers accounting for 60 percent of this total. The company offers service out of 150 service locations nationwide. Depot support is provided out of 2 of these locations, and Dataserv's parts inventory is centralized at its headquarters location in Eden Prairie, MN. Dataserv is the largest independent reseller of IBM parts in the U.S.

INPUT estimates Dataserv revenues for 1988 at $80 million, showing a slight upturn in revenues from the previous year. Dataserv's diverse services and solid relationships with its national account customers has spared the company from the downward spiral many traditional third-party maintainers have felt in the past year. Dataserv did implement some staff realignment in 1988, including a 5% cutback in its workforce--the first layoff in over seven years. The 1988 staff reduction affected both corporate and field personnel, but has apparently worked to strengthen Dataserv's financial position throughout the following year.

Service Coverage

Concentrating efforts in the IBM arena, Dataserv supports a wide range of IBM and compatible products, including NCR, Rolm, and a number of point-of-sale (POS) vendors. Although all classes of systems can be serviced under Dataserv's customized offerings, its primary service target is in the PC/LAN and POS area, with more limited work done in the minicomputer arena.

Dataserv's "total solutions" strategy dictates that the full spectrum of pre- and post-sale services be provided to customers. Dataserv offers one of the most complete menus of support offerings in the TPM arena, covering all aspects of systems planning and implementation, physical maintenance and system migration, on through refurbishment and fourth-party work: truly a "cradle to grave" support vendor.

Strategic Focus

Having approached the third-party market from a very different aspect than many other maintenance-focused players, Dataserv has always been somewhat unique in the TPM arena. Its service and support offerings naturally grew out of its involvement with used parts and equipment, and the repair and refurbishment of these products for resale or lease. Having come from this background, Dataserv has always been strong in pre- and post-sales support, and developed its maintenance operations to serve outside customers as its business grew--an approach opposite of most TPM's development.

"Technology" is the key word in Dataserv's approach to the marketplace, and its three lines of business (Technology Conversions and Installations; Technology Support Programs; and Technology Asset Management) illustrate Dataserv's comprehensive approach of its potential market. Dataserv attempts to foster a "partnership" relationship with its clients, and it relies on the development of long-term, stable relations with its customers for its on-going business.

Dataserv's revenue sources are highly concentrated, with a relatively small number of accounts providing the bulk of its earnings. Major national accounts in banking, retail and insurance markets are what guide the development of Dataserv's support offerings, and each customer's unique set of problems is met with an equally unique set of solutions.

In this highly customized environment, Dataserv perceives itself as outside of the traditional contract maintenance arena, and sees its business as being more project driven than most TPMs'. Dataserv feels its primary competition coming from the vendor side of the market (and from IBM in particular), due to its concentration on the broader solutions approach to service. DEC's and HP's recent entrance into the network support arena got Dataserv's attention in 1989, and the firm will feel increasing pressure on its business as other TPMs follow suit in the 1990s.

In a marketplace as ruthlessly competitive as third-party service, however, Dataserv's focus on developing and nurturing a number of major accounts has provided some shelter from the competitive storm. Its new Technology Asset Management program will provide Dataserv with a new tool to leverage its position in existing accounts, and will help sustain account presence in the long term.

EXHIBIT II-2

Service at a Glance

Dataserv Computer Maintenance

Brands supported include:
- IBM, NCR, Rolm

Products maintained:
- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- Peripherals

Service provided:
- Manufacturer warranty work
- Preventive maintenance
- Consulting
- Installation/relocation
- Refurbishment
- Equipment sale/lease
- Remedial maintenance
- ECO/FCO (change orders)
- Training
- Fourth-party maintenance
- Conversion/upgrade

Industries targeted include:
- Distribution
- Insurance
- Banking/finance
- Utilities
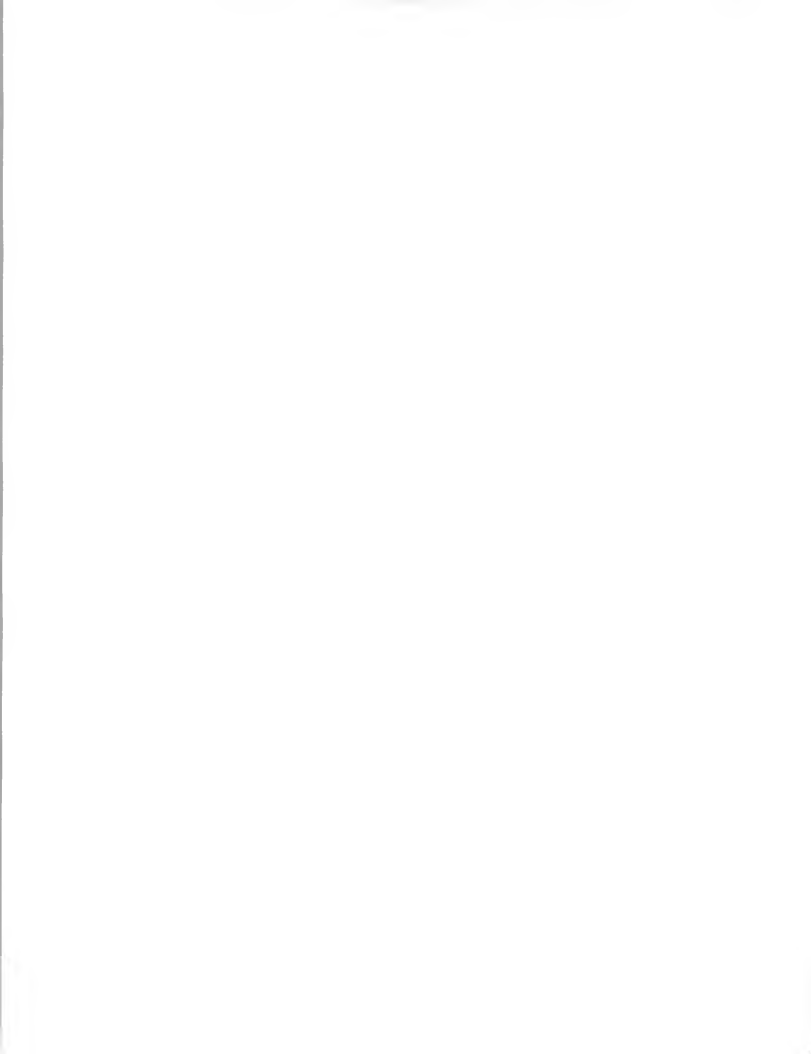
DECISION DATA SERVICE, INC. Richard Schwoebel, CEO
400 Horsham Road Service Employees: 1300
Horsham, PA 19044 1988 TPM Revenues: $125 million
(800) 654-3374

The Company

Early in 1989, Decision Data Service strengthened its third-party operations with the acquisition of FDR Field Service from American Express Travel Related Services Company. FDR had been a long-standing TPM player, having moved into the TPM arena in 1984 with the acquisition of its Indeserv unit, and later the New Jersey-based Kalbro third-party company. FDR's service organization had grown to an estimated $25 million business over its five years in TPM, and will bring Decision Data Service considerable business in the point-of-sale (POS) terminal maintenance arena.

This January's acquisition was close on the heels of the late-1988 merger of Decision Industries and Momentum Technologies, which created Decision Data, Inc. The new Decision Data organization, strengthened by the operational and financial synergy of the merger, has become a more aggressive player in the third-party arena in the past year, and will most likely continue in its acquisition strategy in the 1990s. Decision Data Service has assembled a field service force to rival top third-party competitors, and continued growth will rank it among TPM leaders in 1990.

Service Demographics

Decision Data Service employs 1300 service employees at 125 offices across the U.S. The firm's field engineering staff has grown to 700, and third-party activities contributed $125 million in revenues in 1988.

Decision Data's business has traditionally spanned a number of industries, including the federal and state/local government markets. Heavy presence in the midrange IBM arena has allowed the company to foster relationships across industry lines, and its newly acquired FDR service business will extend this presence in the DEC marketplace. New POS business picked up through the FDR merger will increase the importance of the distribution sector in Decision Data's business plan.

Service Coverage

Decision Data Service targets the IBM System/36, /38, and AS/400 service markets, and complements its support offerings with the sale of peripherals (terminals and printers), add-on memory, and power supplies through its sister corporation Decision Data Computer Corporation. In addition, the Decision Data Service provides maintenance services on Wang, DEC, Texas Instruments, and other makes of systems and peripherals in the minicomputer, superminicomputer, and microcomputer areas.

As part of its relationships with Decision Data sister companies and midrange OEMs, the company provides support on all Decision Data peripherals, MDS/Momentum products and related Qantel products. Decision Data Services will provide a wide range of services on these products, including hardware maintenance, training, consulting, installation/relocation, conversion/upgrade, refurbishment, and fourth-party maintenance.

Strategic Focus

Decision Data Service has remained focused on the midrange marketplace, and its calculated acquisition strategy has successfully provided penetration into this target market. Up against the likes of IBM, Wang, and DEC, Decision Data Service has concentrated on fortifying its field force and expanding geographic coverage over the past few years in order to hold its ground in the highly competitive minicomputer arena.

This most recent acquisition of FDR and its customer base has significantly strengthened the company's presence in the DEC marketplace as it enters the 1990s. Simultaneously, the firm has been able to capitalize on Wang's deteriorating financial condition (and support performance), winning considerable business in the Wang VS systems marketplace in 1989.

Despite a number of new extended-service announcements made by IBM in 1989, Decision Data Service has not felt the competitive pressure to be as extreme as previous years in the IBM arena. The company's management has an optimistic outlook in the IBM marketplace, feeling that the market may have seen the end of heavy price competition induced by IBM discounting. The next wave of competition is expected from the trend toward the unbundling of services, and the importance such flexibility carries with users.

Certain third-party firms who have catered to this flexibility--XL/Datacomp cited as an example--have consistently given the competition, including Dataserv, a run for the money. Other TPMs, including a number of major players in Decision Data's

marketplace, have been slower to react to this trend in market demand, and have suffered at the bottom line for it. Decision Data is attempting to take heed of these observations, and leverage its newly strengthened service resources to meet user requirements.

In terms of new markets and strategies, Decision Data Services foresees the network support trend as the challenge for the 1990s. Networks have finally "arrived," and Decision Data recognizes the requirement (and opportunity) to support these networks facing the TPM market. Decision Data Services is planning to enter the network support arena in the coming year, expanding service offerings to include the full range of hardware and software support involved in PC/network services.

Overall, Decision Data Services has recognized a new atmosphere evolving in the third-party marketplace, as market consolidation reaches new heights. More specific than individual acquisitions made over the past year, the company perceives the very face of the third-party market changing, the TPM arena beginning to rival the overall Information Systems marketplace in terms of instability. Decision Data Services has been a significant participant in this change of face, and will undoubtedly continue in its acquisition strategy entering the 1990s.

EXHIBIT II-3

Service at a Glance

Decision Data Service, Inc.

Brands supported include:
- IBM, DDCC, Wang, Texas Instruments, Qantel, MDS

Products maintained:
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
- Telecommunications
  - Modems
  - Multiplexors

Service provided:
- Manufacturer warranty work
- Preventive maintenance
- Consulting
- Installation/relocation
- Refurbishment
- Equipment sale/lease
- Remedial maintenance
- ECO/FCO (change orders)
- Training
- Fourth-party maintenance
- Conversion/upgrade

Industries targeted include:
- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government
- Transportation
- Medical
- Banking/finance
- Education
- Federal government
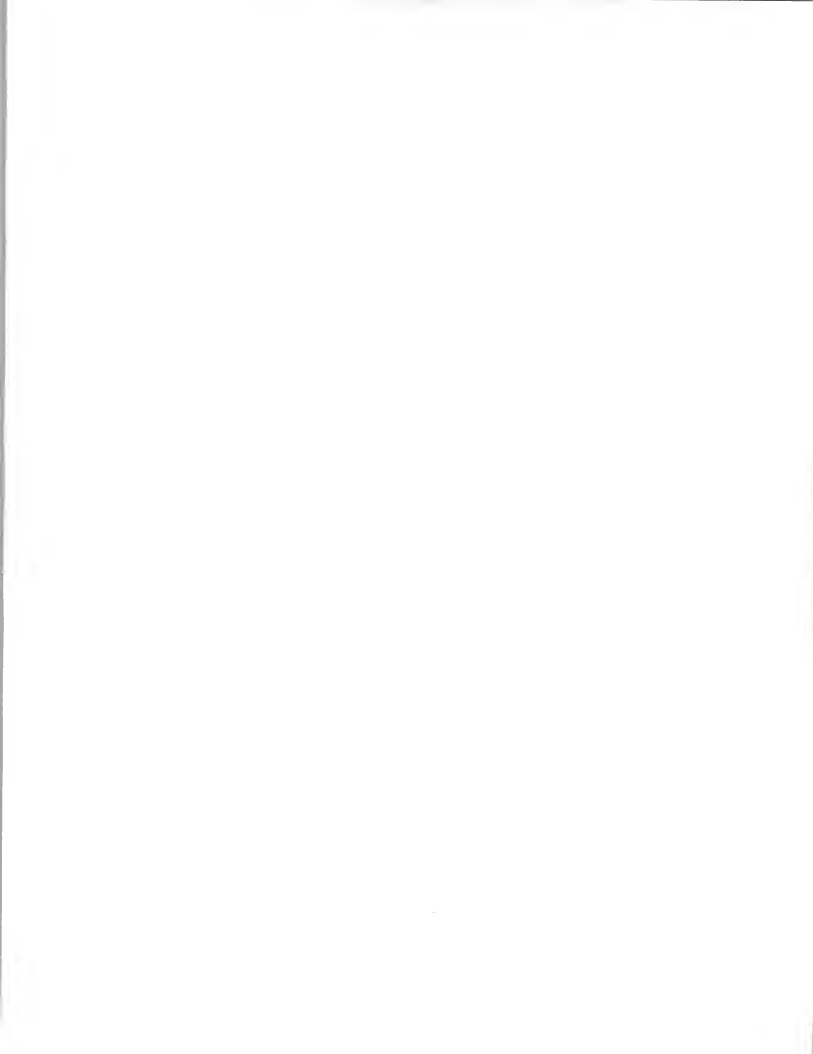
**GENERAL ELECTRIC
COMPUTER SERVICES**
5775 Peachtree Dunwoody
Atlanta, GA 30348
(404) 843-6200

J. O. Mitchell, General Manager
Total Employees: 1,800
Total TPM Revenue, Fiscal Year End
12/31/88: $120 million (INPUT estimate)

The Company

General Electric Computer Services (GECS) operates as a separate business unit under GE's Communications & Services Organization (CSO). Parent company General Electric Company is a leader in its technology, services, and core manufacturing businesses.

Third-party maintenance service is one of three elements of computer services provided by GECS. In addition to more traditional maintenance services (such as hardware maintenance, installation and relocation service, and conversion), GECS provides short- and long-term computer leasing services, and repair and recalibration services (out of its Electronics Services business). This profile deals only with GECS' TPM business.

In late 1988, GE engaged the service of Kidder, Peabody & Company, a New York-based investment banking firm, to actively broker the computer maintenance activities. There was a serious negotiation for sale in mid-1989. To our knowledge, there has been no further activity since that time. This followed earlier actions by GE to sell off other parts of its Information Services business, including Calma (sold to Prime Computer in October 1988) and its Digital Video Interactive Technology Venture facility (sold to Intel).
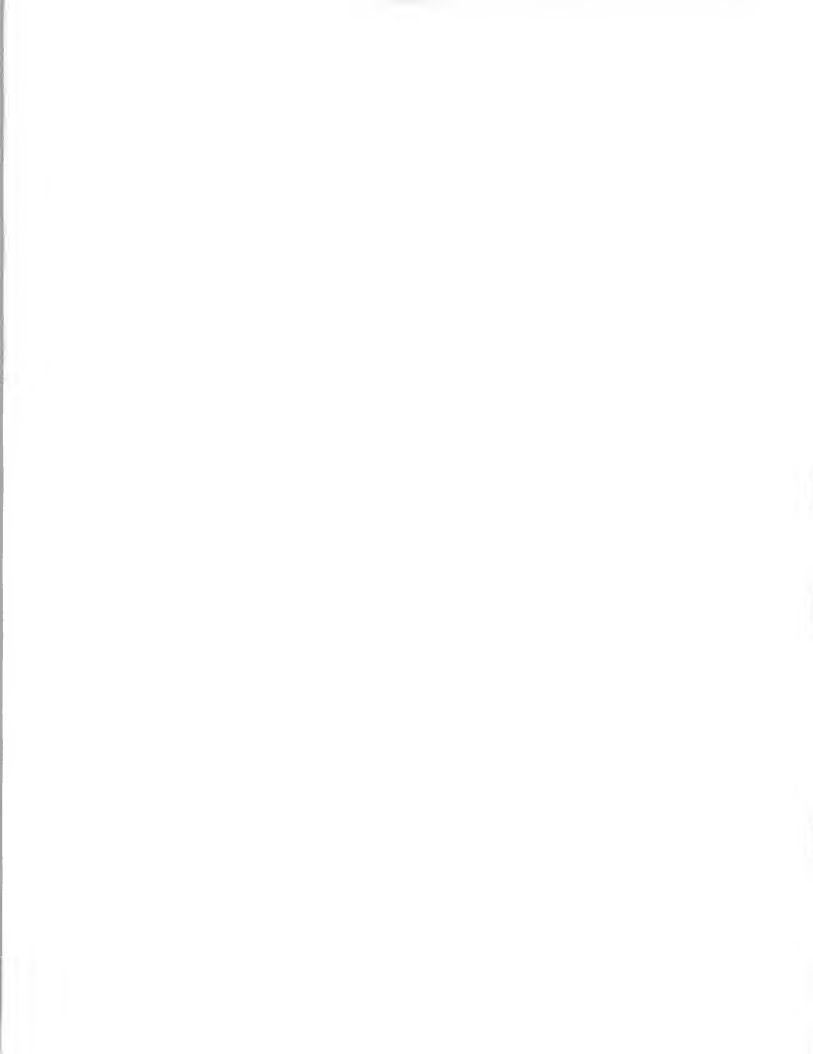
**Service
Demographics**

GECS currently employs 1,800 service employees, with 1,200 field engineers dispatched out of 283 service locations spread throughout the continental U.S. In addition, GECS offers mail-in and carry-in service out of 28 depot locations. All service locations carry spares; however, the majority of all spare parts are centralized at the Norcross (a suburb of Atlanta) dispatching/parts center. In mid-1987, GECS installed a $5 million information management network (based on Prime Computer systems) that uses both data and voice communications to allow customers to contact GECS dispatchers, as well as provide on-line customer information, dispatching capabilities, and spares tracking capabilities.

GECS does not release financial information; however, INPUT estimates that GECS contributed $120 million in third-party maintenance revenues in 1988.

Service Delivery

GECS offers maintenance and support services for a wide range of equipment types and brands, geared to the user of mixed-vendor systems.

In addition to providing service to the small systems, microcomputer, and peripherals markets, GECS has built a unique telecommunications offering among third-party maintainers. Telecommunications products serviced include LANs, PBXs, modems, fax equipment, and satellite earth stations.

GECS attempts to be flexible in the pricing and terms-and-conditions of its service. For example, while GECS' standard service contracts do not guarantee response times, GECS will negotiate such guarantees with customers with high system availability requirements. GECS is comfortable with this, citing an average response time of two hours.

GECS offers a service partnership program geared to VARs of DEC and Point-4 systems. Called Ge-SERVE, the program offers VARs two ways to be able to provide GECS' nationwide service to their customers. The first, called a Second Party Agreement, calls for the VAR to be responsible for managing the service contract, including billing. Under this option, the service is subcontracted to GECS at a discount from GECS' standard list price. The second option, called a Sales Representative Agreement, calls for the VAR to sell the service contract, and by doing so, receive a commission from GE. In addition, the VAR receives a commission for each annual service contract renewal.

GECS' principal competitors include Sorbus and TRW.
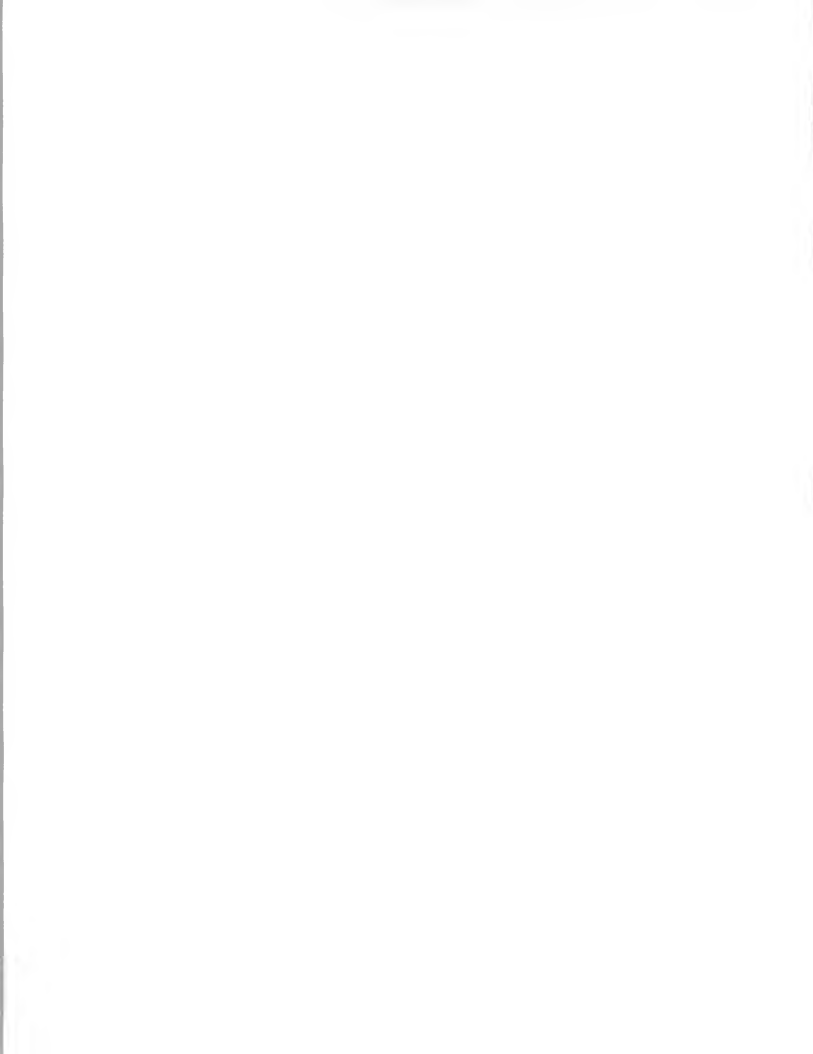
EXHIBIT II-4

Service at a Glance

GE Computer Services

Brands supported include:
- DEC, DG, IBM, Point-4, ADDS, Altos, AT&T, Amdek, Centronics, C.Itoh, Compaq, CDC, Data Products, Diablo, Emulex, Epson, Fujitsu, Genicom, Hayes, Hazeltine, HP, Honeywell, Kennedy, Lear Seigler, 3M, NEC, Okidata, Plessey, Qume, Tandon, Toshiba, Wyse

Products maintained:
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
- Telecommunications
  - LAN
  - PBX
  - Modems
  - Fax
  - Satellite earth stations

Service provided:
- Manufacturer warranty work
- Preventive maintenance
- Training
- Refurbishment
- Equipment sale/lease
- Remedial maintenance
- ECO/FCO (change orders)
- Installation/relocation
- Conversion/upgrade

Industries targeted include:
- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government
- Transportation
- Medical
- Banking/finance
- Education
- Federal government

COMPANY PROFILE

GRUMMAN SYSTEMS SUPPORT
90 Crossways Park Drive West
Woodbury, NY 11797
(800) 922-1225

Joseph Mulderig, President
Total Employees: 425
Total Revenue (FY 1988): $40 million
(INPUT estimate)

The Company

Grumman Systems Support (GSS), a unit of Grumman Data Systems, the computer systems integration division of Fortune 200 Grumman Corporation, has been providing third-party maintenance since 1970. Initially, GSS provided support for the complex systems that its parent organization sold to the federal government. In the mid-1970s, GSS expanded into the commercial marketplace, and commercially-derived revenues now comprise about two-thirds of the company's business base.

In 1989, GSS launched new product and service offerings that provide users with comprehensive support for their total information processing needs. The company combines support services in cost-efficient, single-source solutions available to customers nationwide in government, industry, commerce, healthcare, and education. GSS provides integrated support services in four functional areas:

• Equipment maintenance

• Equipment sales and installation

• Network support

• Professional services

The company signed a number of important VAR and distributor agreements in 1989 with computer equipment manufacturers such as Digital Equipment Corp., Wyse Technology, Develcon, and Nemonix. In 1989, GSS also reached a nationwide agreement with Charles River Data Systems for installation and maintenance of its newest product, the Relational Accelerator.

Continuing its geographic expansion drive in 1989, GSS opened new service facilities in Athens, GA; Charleston, SC; Erie, PA; Louisville, KY; and Raleigh, NC.

FTVA
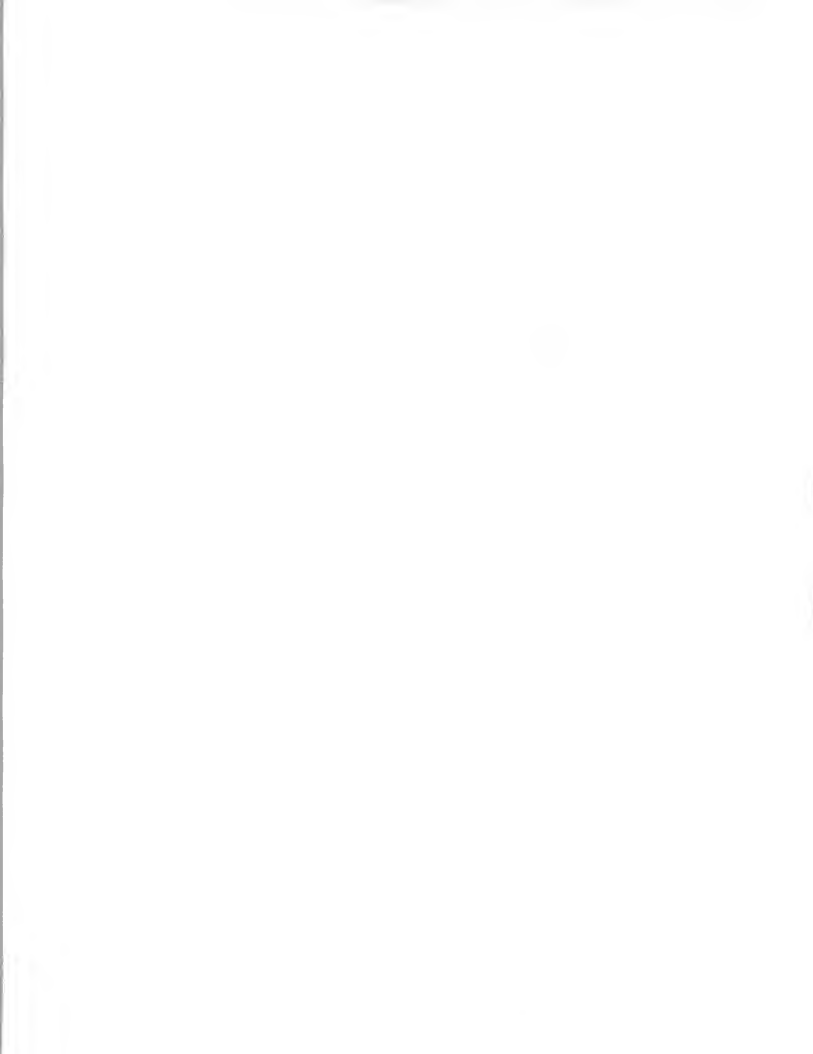
**Service
Demographics**

GSS offers nationwide service out of 65 service locations. Currently, GSS employs 425 service personnel, 275 of whom are field engineers. GSS offers depot support from a central repair depot. Spare parts are handled at three regional spare-parts centers and are tracked by an integrated, centralized inventory management system which can perform economic-order and minimum/maximum-level analyses, assuring optimum levels of sparing. The system also handles dispatching and service efficiency reporting functions such as MTBF and MTTR analyses.

Service Delivery

GSS offers maintenance service on over 300 product types by manufacturers such as IBM, Digital, Data General, CDC, Data Product, STC, Plexus, Wyse, Emulex, Pertec, SI, Tektronix, Versatec, Zetaco, and 3COM. Primary product markets are DEC and Data General.

The company also maintains a wide range of data processing equipment, including mainframes, minicomputers, microcomputers, peripherals, telecommunications equipment, networking products for LANs and WANs, and Plexus image processing systems.

Equipment maintenance services include preventive maintenance, remedial maintenance, installation/relocation, fourth-party maintenance, ECO/FCOs, and conversion/upgrade. GSS offers on-site service contracts with four-hour response provisions and either two-hour response or resident field engineer provisions for critical applications. Ninety percent of GSS customers sign up for maintenance contracts, the remaining pay the current time and material charge of $95 per hour.

The company's equipment sales and installation services include both new and used minicomputer and microcomputer systems as well as networking equipment from major manufacturers.

Grumman provides total network services for multivendor networks, including designing, engineering, operating, and maintaining all types of network facilities. The company specializes in supporting both LANs and WANs--linking PCs, minicomputers, and mainframes so that users can share data and applications. GSS also provides network management software and network diagnostics for fault isolation and problem identification.

Grumman's professional services include:

- Facility management services (outsourcing) such as systems training, workload scheduling and forecasting, capacity planning, logistics support, and service management

- Software support on operating systems and PC-based applications software for such applications as spreadsheets, word processing, and data base management

- Commercial systems integration services, including the design, development, and installation of multivendor systems to meet customer requirements
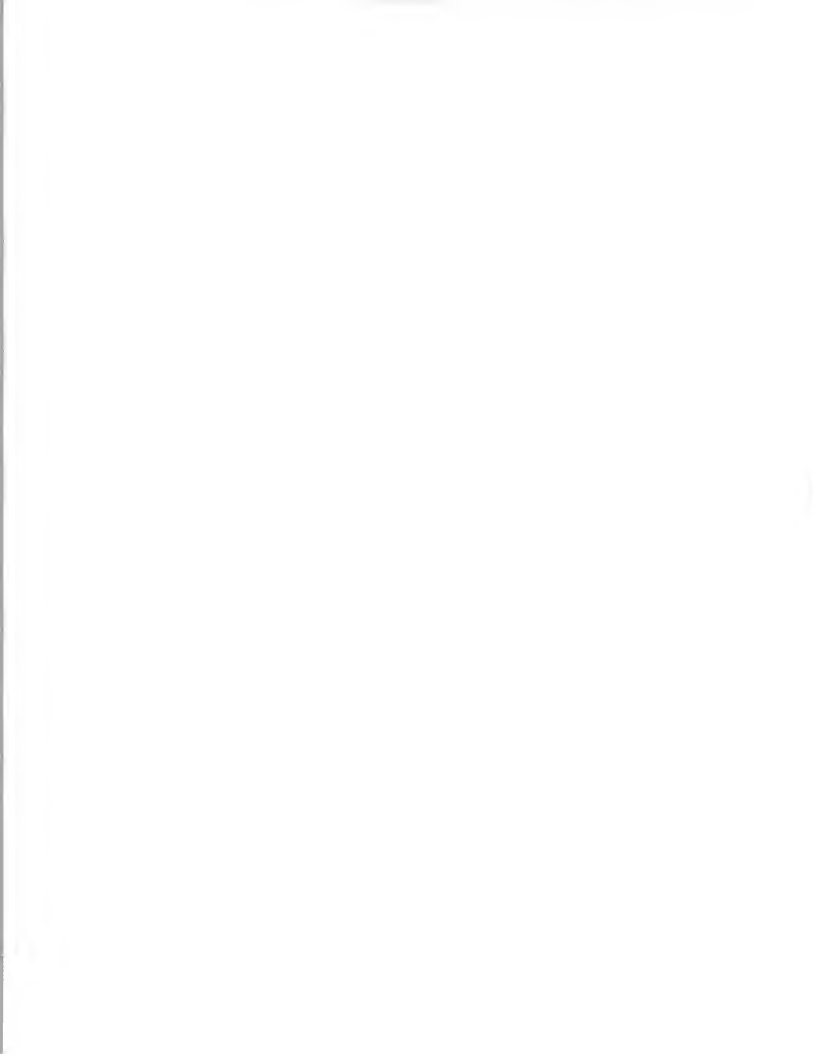
EXHIBIT II-5

Service at a Glance

Grumman Systems Support

Brands supported include:
- CDC, Data General, Data Products, DEC, Emulex, IBM, Plexus, Pertec, SI, STC, Tektronix, 3-Comm, Versatec, Wyse, Zetaco; most major brands of peripherals

Products maintained:
- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- LANs and related products
- WANs and related products
- Voice networks and related products
- Image processing systems

Service provided:
- Equipment maintenance
  - Manufacturer warranty work
  - Remedial maintenance
  - Preventive maintenance
  - System installation/relocation
  - Refurbishment
  - ECO/FCO
  - Conversion/upgrade
  - Fourth-party maintenance

- Network support
  - Network design
  - Network engineering
  - Network implementation
  - Network management

- Professional services
  - Facility management
  - Computer operations
  - Workload scheduling and forecasting
  - Capacity planning
  - Logistics support
  - Service management
  - Software support and maintenance
  - Commercial systems integration

- Equipment sales and installation
  - New equipment sales
  - Used equipment sales

Industries targeted include:
- Manufacturing
- Medical
- Banking/finance
- Education
- Distribution
- Insurance
- Federal government
- State/local government
- Services
- Utilities

IDEA SERVCOM
A Division of IDEA Courier, Inc.
1515 West 14th Street
Tempe, AZ 85281
(602) 894-7000

Steve Scott, General Manager
Service Employees: 600
1988 TPM Revenues: $70 Million

The Company

1989 was a year of strategic realignment for IDEA Servcom, as the firm adjusted to its new parent organization, IDEAssociates, Inc. The purchase of Alcatel Information Systems by IDEAssociates in mid-November of 1988 brought the Servcom service unit under the IDEA name, along with manufacturing operations of Courier and XTRA Business Systems, which Alcatel originally purchased from ITT in early 1987.

The new parent company, a manufacturer of PC-related products and services based in Billerica, MA, has imposed a more focused competitive agenda on the Servcom operation since the take over last year. In years past, Servcom had offered service on nearly 500 different brands of micro and minicomputer products, in an attempt to be "all things to all people" in an increasingly competitive marketplace. This strategy proved costly both in terms of support quality and service profitability. The new IDEA Servcom operation has been streamlined both in terms of operations and strategy, and has been able to turn a downward revenue trend around since the consummation of its relationship with IDEAssociates.

Service Demographics

Almost immediately after the merger with IDEA, a major layoff was announced, and Servcom staff was reduced by nearly 300. The reduction touched all areas of the organization and was primarily attributable to the consolidation of certain aspects of the Courier operation with Servcom. In 1989, however, IDEA pumped new resources into Servcom's sales side, expanding its sales force by 30%, with plans for additional hires in 1990. No further cutbacks have been imposed on the TPM operation since the initial layoff last year, and the transfer of some branch-level management from the service to the sales side has been the only significant staff change in 1989.
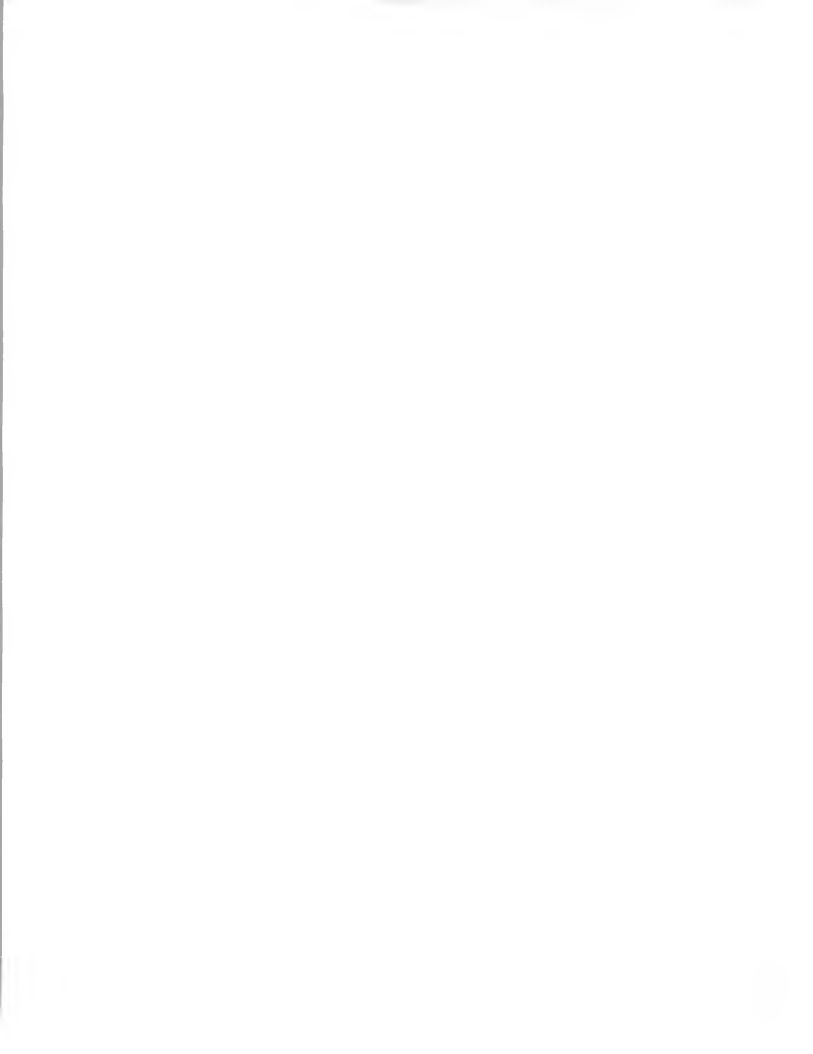
IDEA Servcom currently employs 600 in its service organization, with a total field force of 450 engineers. Technical support is provided by a staff of 50, administrative support by a staff of 60. Total service management headcount has been reduced to 40 for the 160 service locations covering the U.S. Eleven of these locations provide mail-in/carry-in depot support, and 24 branch offices service as major parts depots.

IDEA Servcom reported TPM service revenues of $70 million for 1988, with flat growth predicted for the coming year. Competitive pressures running high in IDEA Servcom's midrange/IBM marketplace, as well as initial set-backs stemming from the realignment and purchase of its operation last year, caused revenue losses since its 1987 peak at $79 million. (This 1987 figure also includes Courier warranty work; Servcom has since changed its revenue reporting policy to disallow "captive" warranty revenues from its Courier sister operation.)

Service Coverage

IDEA Servcom offers service on a broad range of mini- and microcomputers and is strong in the telecommunications arena with its ITT background. Support of LANs, modems, multiplexors and front-end processors has been part of Servcom support for some time, putting the company at a distinct advantage in the up-and-coming network support marketplace.

For this range of systems and components, IDEA Servcom provides an extensive list of services, including software support, training, consulting, and as of mid-1988, fourth-party maintenance. Warranty and change-order work is an important part of Servcom's exclusive service agreements with parent IDEA, Courier, Data Products, GBT, Qume and Pentax.

IDEA Servcom introduced the Shared Risk offering to the third-party marketplace late in 1988. This new contract option allows users to assume some of the financial risk of supporting a major installation, in exchange for the chance to save on total maintenance costs. Through its historical data base, IDEA Servcom can predict an average number of calls that can be expected for a given number and type of machines at a user site. Armed with this knowledge, IDEA Servcom provides the user with two types of service bids for the installation. First, the traditional "insurance" type of contract--a flat annual maintenance fee for an unlimited number of calls in a given year--is bid.
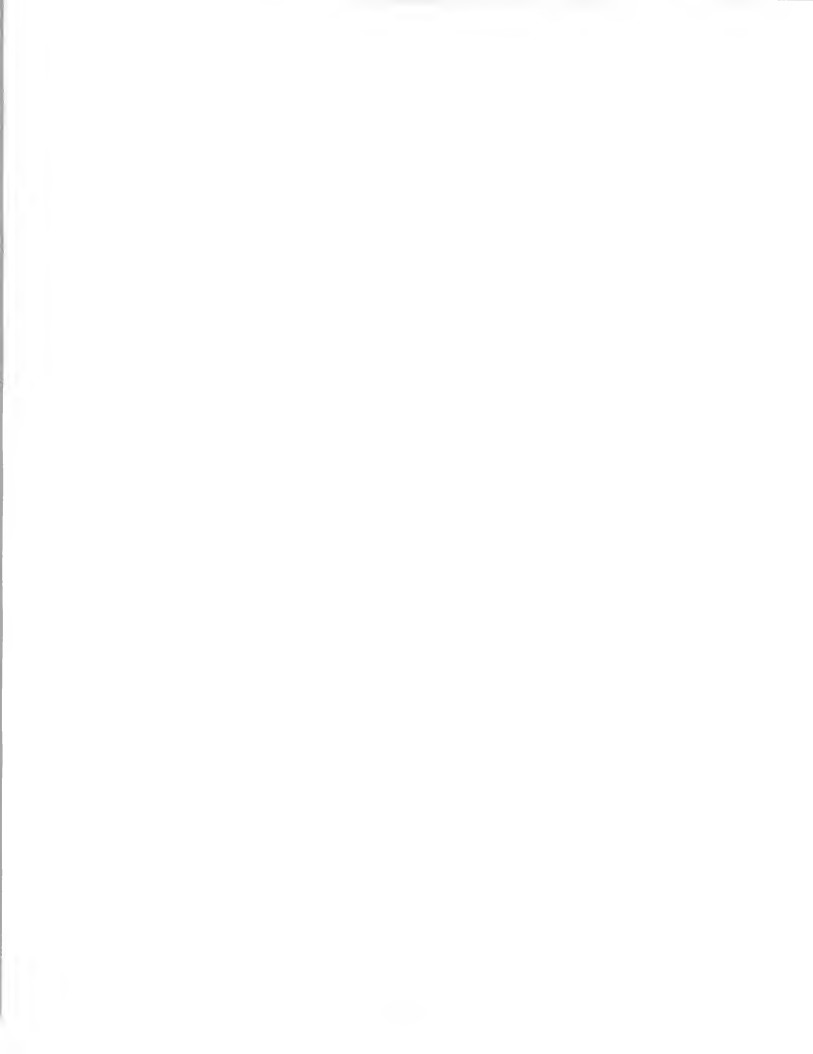
The second option, under the Shared Risk program, offers an alternative contract involving a much lower initial fee paid upfront, with subsequent flat fees charged for each service call made. In this pricing scheme, the user gambles on the total number of calls that will have to be paid for over the course of the year, and the inherent risk of a set-fee annual maintenance contract is shared between IDEA Servcom and the user. This type of offering is now becoming a popular option among competitive third-party firms.

Strategic Focus

IDEA's purchase of the Servcom operation has had a very significant and positive influence on the operation. The "shotgun" approach that Servcom had taken was becoming increasingly difficult to support in a marketplace where the breadth of services demanded compounded the cost of each new product introduced to the line card. Although IDEA Servcom continues to provide support for a wide variety of systems and peripherals, the company has learned to subcontract work out to other support organizations where feasible. In this way, IDEA Servcom can concentrate on developing expertise in its targeted areas, control its training and spare parts costs, and still provide multivendor "seamless billing" demanded by its customers.

The trend toward such subcontracting alliances between OEMs and third parties has had significance for IDEA Servcom on a number of levels in the past year. Subcontracting is key in the firm's newly focused market strategy, allowing it to balance cost control issues with customer demands. Servcom has been able to off load less profitable work while retaining crucial account control. On the other side of this trend, IDEA Servcom has itself acted as a subcontractor for OEM's under the same competitive pressures. An especially significant relationship with IBM has developed, with IDEA Servcom fielding up to 20 bids a month from the OEM.

Aside from these mutually beneficial arrangements, IBM is still considered IDEA Servcom's toughest and most aggressive competitor. In the Datapoint business, Intelogic Trace remains strong, and Wang continues to fight to retain control of its products' support. Sorbus remains IDEA Servcom's main adversary within the third-party arena, meeting Servcom head-to-head in the IBM midrange market. IDEA Servcom is hoping the purchase of CDC will distract Sorbus' attention from this niche, while it too attempts to leverage CDC's mainframe expertise. A side note to the Sorbus/CDC merger: IDEA Servcom gained a senior manager from CDC ranks during the takeover. Marty Kale has become the new Vice President of IDEA Servcom's support
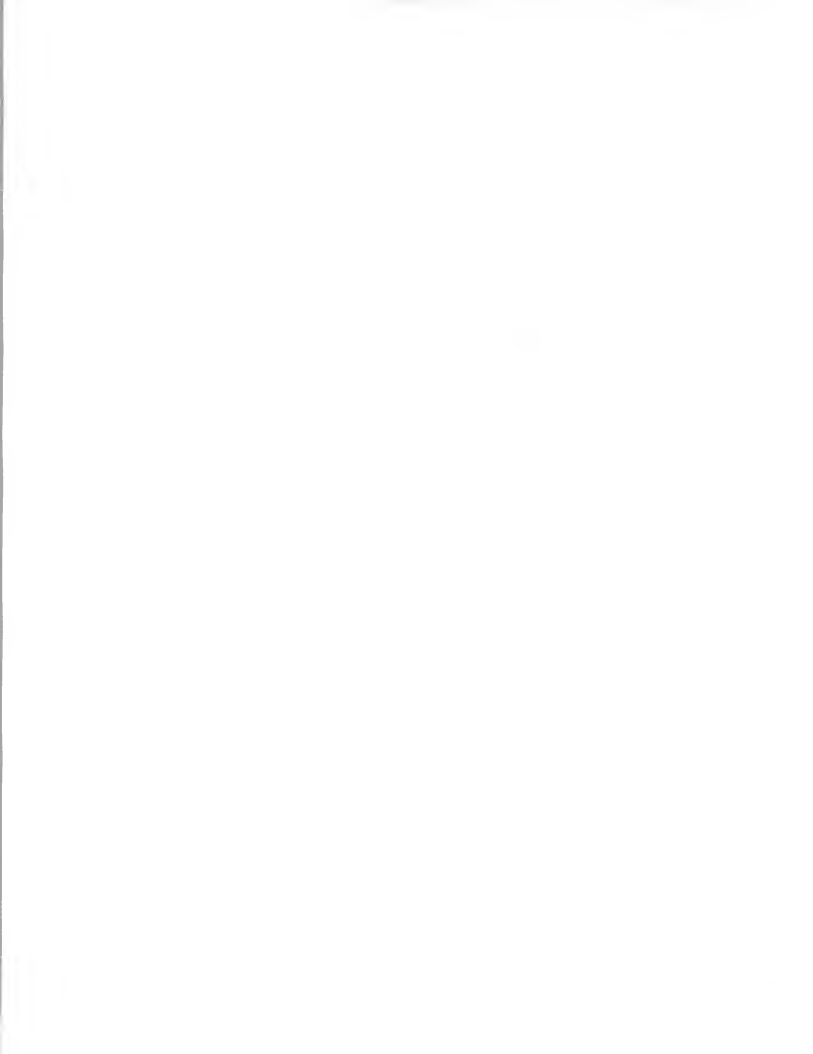
operation.

IDEA Servcom will continue to concentrate on fostering strategic alliances in the fight for competitive advantage in the 1990s. Outsourcing will continue to gain importance in Servcom's strategy, and the development of exclusive authorized service agreements with OEMs will take on greater significance as well. These support agreements offer advantages both in terms of the technical training provided by the vendor, as well as access to support dollars before the products go off warranty--a critical factor in early account control. IDEA plans to continue leveraging such arrangements now held with a number of midrange products' vendors, and to concentrate on fostering additional agreements throughout the coming year.
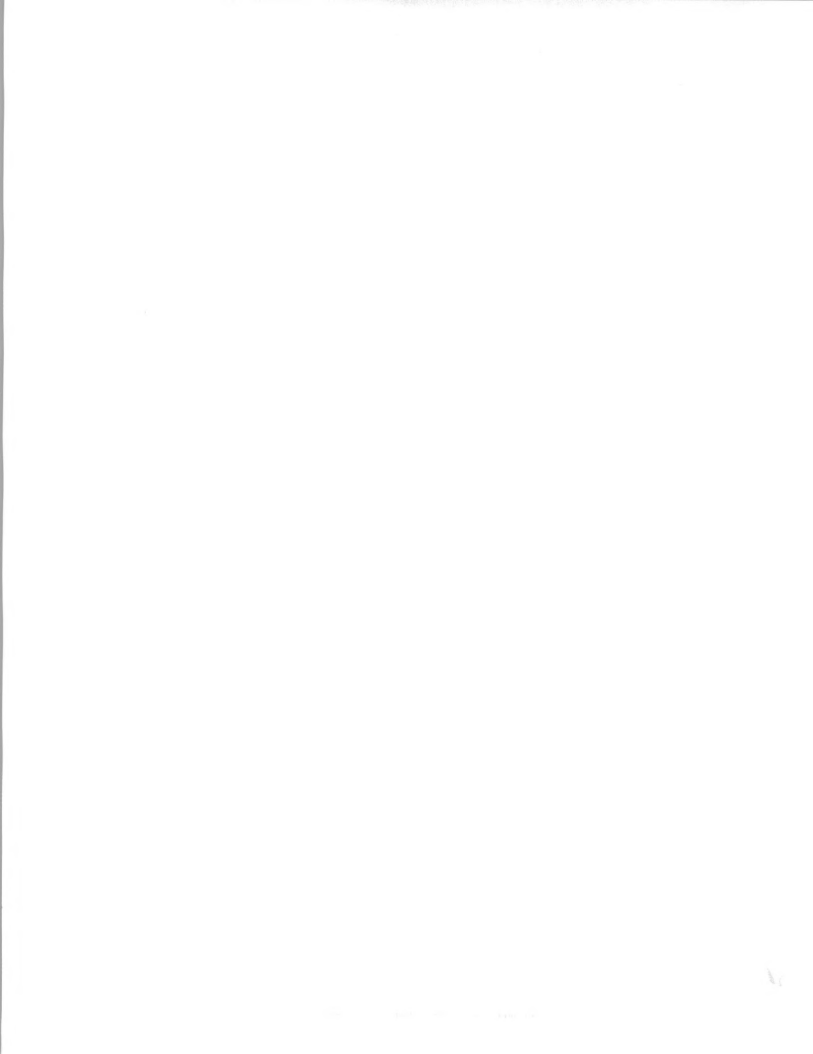
EXHIBIT II-6

Service at a Glance

IDEA Servcom

Brands supported include:
- Amdek, AMS, Anadex, AST, Brother, CDC, C. Itoh, CMI, Corvus, DataSouth, Datapoint, Davong, Decision Data, Diablo, Epson, Hayes, HP, IBM, ITT, Okidata, Texas Instruments, Wang, Zenith, STC, Apple, Centronics, DEC, Compaq, Printronix, Televideo, Anzac, Genicom, GBT, IDEA, ISI, OTC, Qume

Products maintained:
- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
  Telecommunications
  - LAN
  - Modems
  - Multiplexors
  - Front-end processors

Service provided:
- Manufacturer warranty work
- Preventive maintenance
- Software maintenance
- Training
- Fourth-party maintenance
- Conversion/upgrade
- Remedial maintenance
- ECO/FCO (change orders)
- Consulting
- Installation/relocation
- Refurbishment

Industries targeted include:
- Manufacturing
- Banking/finance
- Education
- State/local government
- Utilities
- Insurance
- Federal government

INTELOGIC TRACE, INC.
Turtle Creek Tower I
PO Box 400044
San Antonio, TX 78229

Clark Mandigo, President and CEO
Total Employees: 1,465
1988 TPM Revenue: $117 Million

The Company

Facing the third consecutive year of declining profits, 1989 has been a year of significant change for Intelogic Trace (IT) on a number of fronts. Three new service firms merged with IT's operations, as Ceres Maintenance, Computer Services and Resources, Inc., and William Marion Company were acquired in the first months of IT's 1989 fiscal year. William Marion Company, by far the largest of the acquisitions, joined IT in February, and brings a significant remarketing and maintenance customer base to IT. Both Ceres (acquired in December of 1988) and Computer Services and Resources (February 1989) have been active in the IBM midrange marketplace, and will strengthen IT's geographic presence in the East and Midwest.

Internally, staff reorganizations have placed three new executives in charge of the company's key strategic areas. Two executives from TexCom (a computer leasing company purchased in late 1987) have joined IT's executive ranks: William Todd (previous chairman of TexCom) has taken over responsibilities for sales, field operations and technical support. Larry Gibson (ex-TexCom president) will direct IT's marketing activities and sales operations for IT reseller and manufacturer programs. From the Xerox corporation, John Paget has joined IT as Senior Vice President of Operations.

This new management influx reflects IT's determination to rebound from slumping maintenance sales. Now aggressively pursuing share in the extended service marketplace, IT has announced its new corporate goal: to emerge as a "full-service support company." In pursuit of this goal, IT has been growing its new computer sales and leasing business, and has introduced a full service disaster recovery offering in 1989. "Total Systems Solutions" is the new theme at IT, and the introduction of its "Uniplan" program (detailed in the Service Coverage section of this profile) is indicative of IT's newly integrated approach to the marketplace.

Service Demographics

IT currently employs a staff of 1,465, including 617 field engineers and 313 field support personnel. Operational realignment to support new resale and leasing growth forced some staff reductions in field service during 1989. Total headcount was only affected slightly, however, as these resources were redirected to the sales side of the business.

Restructuring at the branch level was implemented as well, affecting all of IT's 230 local support offices. These support locations, previously managed as individual service units, have been grouped into four geographic regions (centered in Atlanta, New York, Chicago, and San Francisco), with each regional vice president now accountable for the area's profit and loss results. Along with this change, decision making responsibilities have been pushed down toward individual branch managers in efforts to bring strategic planning closer to those who know the customer best.

Drastic changes have occurred in IT's maintenance revenue structure since the company entered the TPM marketplace. When initially spun off from the Datapoint family, IT was heavily reliant on service revenues from the Datapoint support customers it held. Revenues from Datapoint service have declined by more than 25% since last year, and pressures in IT's targeted IBM midrange arena has forced the firm to rethink its long-term strategy. Although revenues from Datapoint customers still makeup over 60% of IT's TPM revenues, overall third-party marketshare has dropped consistently over the past three years. Currently, computer sales and leasing activities are gaining on these pure TPM revenues: $36 million in sales/leasing business was done this year, closely comparing to the $44 million in traditional (non-Datapoint) TPM work.

Service Coverage

IT provides service on an extensive list of mini- and microcomputers and peripheral devices, from such diverse manufacturers as Apple, AT&T, CDC, Compaq, IBM, Panasonic, Unisys, and Tandy to name just a few. IT also introduced extensive service on Wang products (both hardware and software) last year, having spent over $1 million dollars developing its own remote diagnostics and documentation on the midrange systems. In addition, IT supports telecommunications products from 3COM, Compaq Telecommunications, Pactel, Teknekron, Vitalink Communications, Voice Computer Technologies, and has developed a close relationship with local-area network (LAN) manufacturer Novell in 1989. This authorized service agreement with Novell signals IT's entry into the PC LAN arena, and will fortify its position in the micro and workstation marketplaces.
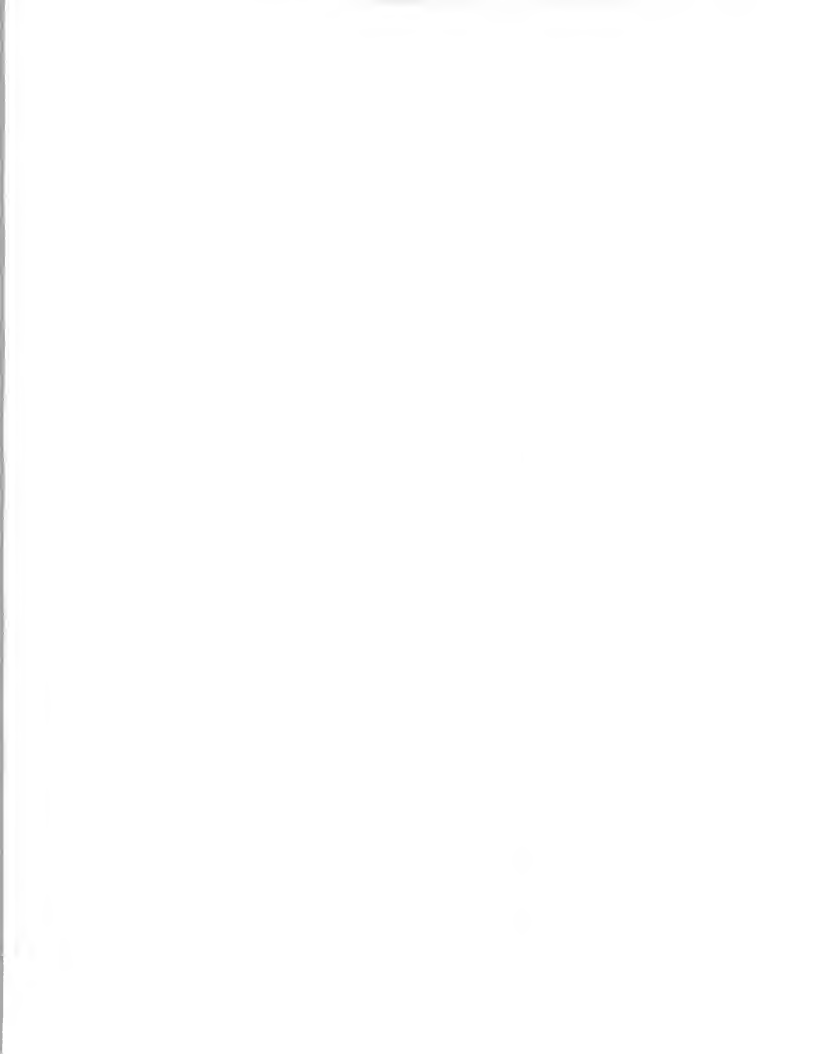
In the midrange area, IT has introduced a new service plan that extends its competitive target well beyond maintenance. In response to the growing competition in the crowded IBM System/3X and AS/400 TPM marketplace, IT will attempt to exploit the demand for extended services in this marketplace through its Uniplan offering. The plan encompasses sales and leasing of IBM equipment; pre- and postinstallation services (site planning, installation, upgrades, migration); support and maintenance of systems; technical consulting assistance; and disaster protection plans for the IBM midrange customers. The program is designed to offer a wide array of services (in line with IT's "full service" goal) in a manner that provides the flexibility users desire. Customers choose individual options as needed under one contract, simplifying planning and billing functions, and giving IT significant control of the service account.

Strategic Focus

IT, having reached a critical point in its development, has done some considerable rethinking of its long term viability in the course of the past year. Having traditionally competed in one of the fiercest marketplaces in the third-party arena, IT's move toward expanding its offerings has been a prudent one. The new Uniplan offering, and the variety of new programs it encompasses, will provide IT with new revenue sources, taking the pressure off of its ailing TPM operation. Its aggressive move into the resale and leasing of IBM equipment allows the firm to leverage its accumulated expertise in the IBM systems arena, and the new business has grown 134% since its inception in 1988 ($15.2 million in 1988, versus $35.7 million in 1989).

IT also plans to target the growing networking support marketplace, allowing it to leverage its knowledge of PC and telecommunications components. IT is aggressively soliciting authorized service agreements similar to the association made with Novell this year, which has given IT direct access to a sizeable portion of the LAN marketplace. Other relationships were struck with Samsung, Grid, and Hyundai under authorized service agreements, and the subcontracts were performed for IBM and DEC under their multivendor support offerings. Essentially, IT is looking up the distribution channel (toward manufacturers and resellers) for revenues, as well as focusing on newly exposed end-user targets.

The corporation's goal for 1990 is to complete IT's transition from a maintenance company to a service provider. IT will continue its push to regain profitability in traditional maintenance areas, but will keep its eye on these new, high-growth areas it has targeted. IT's affiliations with leading manufacturers, as well as IT Lockwood (an IBM software development subsidiary) and SoftComm (IBM midrange reseller division) will become increasingly important as IT's new strategy progresses in the 1990s.
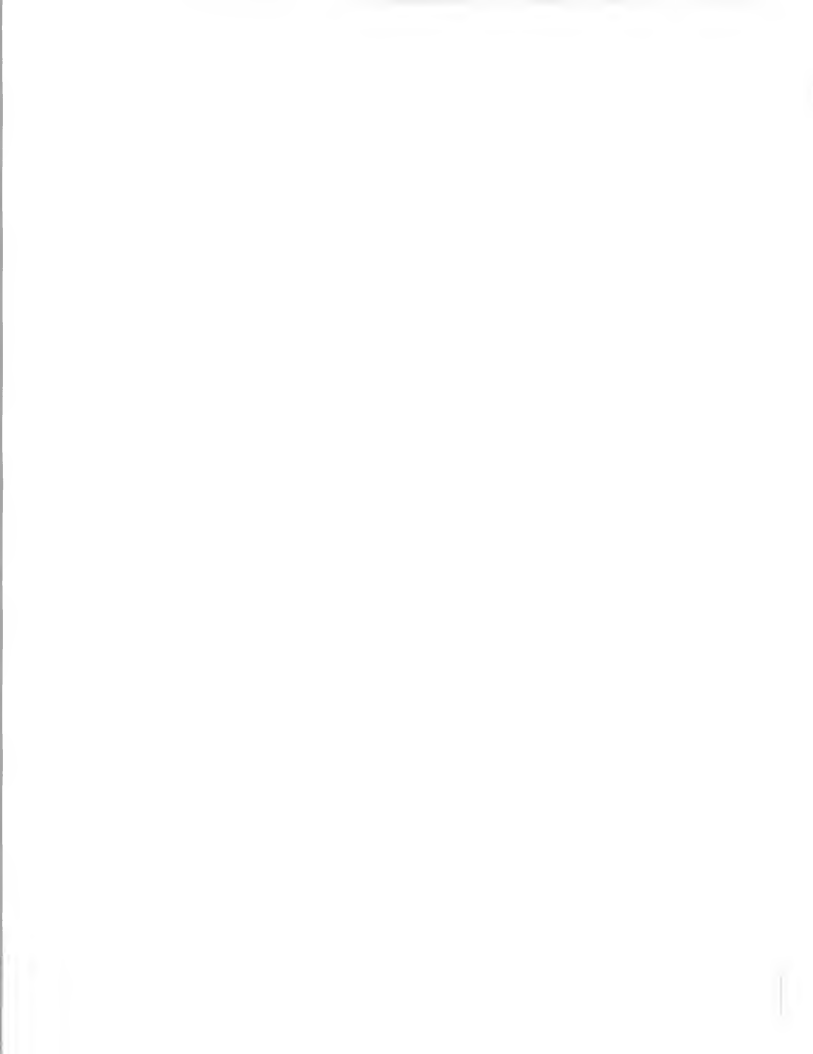
EXHIBIT II-7

Service at a Glance

Intelogic Trace

Brands supported include:

- IBM, Wang, DEC, Apple, AST, AT&T, Compaq, Convergent, Datapoint, Epson, NCR, NEC, Tandy, Toshiba, Televideo, Unisys, Wyse, Zenith, Amdek, Ampex, Espirit, Memorex, Mitsubishi, Qume, Archive, CDC, Diablo, Fujitsu, Kennedy, Maxtor, Mountain, Seagate, Tandon

Products maintained:

- Minicomputers
- Superminis
- Microcomputers
- Peripherals
- Telecommunications
  - LAN
  - PBX
  - Modems
  - Fax
  - Multiplexors
  - Satellite earth stations
  - Front-end processors

Service provided:

- Manufacturer warranty work
- Preventive maintenance
- Consulting
- Disaster recovery
- Fourth-party maintenance
- Conversion/upgrade
- Remedial maintenance
- ECO/FCO (change orders)
- Training
- Installation/relocation
- Refurbishment
- Equipment sale/lease

Industries targeted include:

- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government
- Transportation
- Medical
- Banking/finance
- Education
- Federal government

**MC DONNELL DOUGLAS FIELD
SERVICE COMPANY**
2361 McGaw Avenue
Irvine, CA 92714
(714) 566-4000

Bert Novak, President
Total Employees: 1,000
Total TPM Revenue: $69.3 million (INPUT
estimate)

The Company

One of eleven companies under the McDonnell Douglas
Information Systems Group umbrella, McDonnell Douglas Field
Service Company (MDFSC) has grown into a significant third-
party player from its beginnings with the Microdata Corporation
merger in 1967. Its later acquisition of Tymshare maintenance
operations well equipped MDFSC to compete well in the DEC
marketplace, a market it has come to dominate over its 22 years in
third-party support.

In mid-1989, it was announced that McDonnell Douglas Field
Service Company was available for sale. Acquisition of MDFSC
has not been completed.

**Maintenance
Operations**

McDonnell Douglas Field Service is currently staffed by more
than 1,000 support people, with over 50% of its crew involved in
field engineering. The pool of over 700 field engineers is backed
by an in-house support staff of 100 as well as 53 in administration
and another 147 in management. The high concentration of field
technicians within MDFSC reflects the importance of on-site
support to McDonnell Douglas' business; ninety-nine percent of
MDFSC support is provided at the user's site.

Depot support is also an option available to MDFSC customers,
although mail-in/carry-in services make up approximately 1% of
the company's business. Three major depot locations also house
MDFSC's main inventories, as well as repair facilities equipped to
offer support down to the board repair level. Electronic tracking
of new and reconditioned spares between these central locations
and all local inventories allows MDFSC to locate needed parts
anywhere in its 150 service locations across the U.S., including its
offices in Hawaii and Alaska.
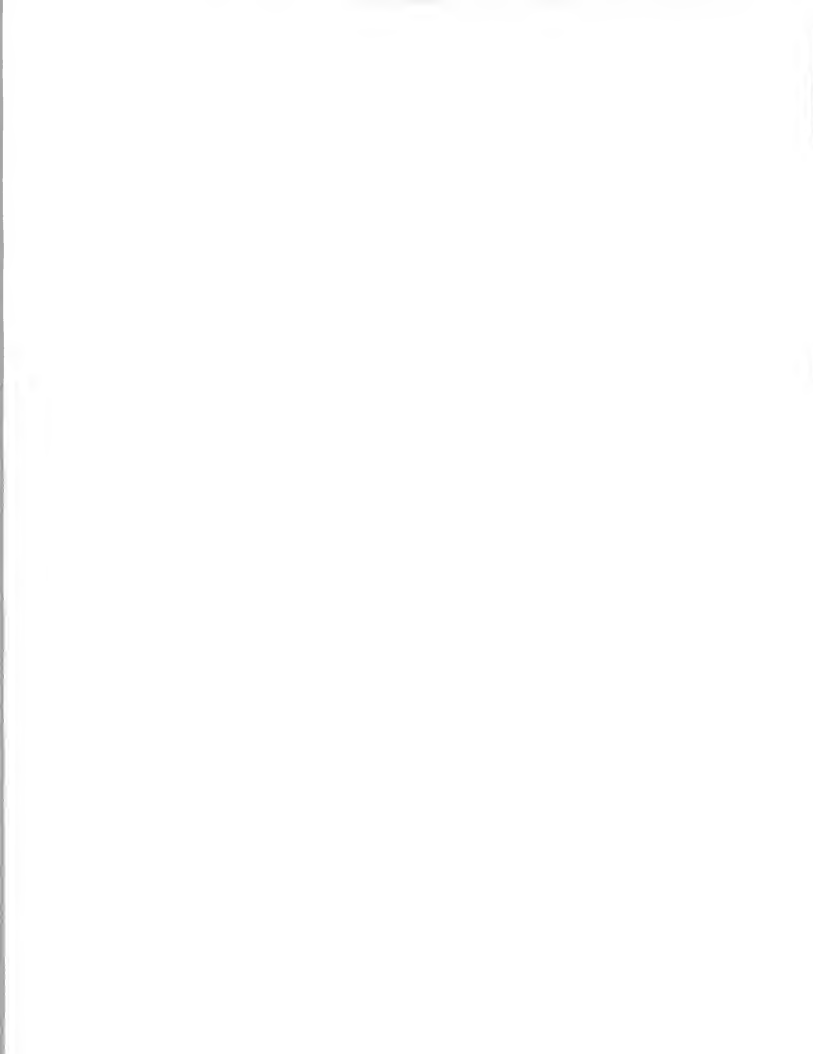
Service Coverage

McDonnell Douglas prides itself on the wide array of services it offers in the DEC marketplace, ranging from traditional hardware maintenance to refurbishment and training services. Its main line of products centers on DEC PDP and VAX systems. Over 100 brands of DEC compatible equipment compliment its core product menu, and microcomputers from the Xerox, AT&T, and IBM families round out MDFSC's full support offerings.

Competitive Focus

Able to leverage the exposure and experience gained through the business of other Information Systems Group companies, MDFSC remains highly active in the government sector, as well as in education, medical, and commercial industries. Although competition has traditionally been heavy within these target markets, MDFSC attributes its success to what it calls a "partnership" approach to service provision.

Attempting to position itself as a working associate in a customer's business, MDFSC works closely with the user staff to determine the exact levels and types of support needed to fulfill the firm's processing requirements and then constructs a program around these basic needs. This type of cooperative relationship between client and vendor allows MDFSC to "lend its expertise in hardware services to the client's own expertise in their chosen business." Maintaining an active role within the relationship, MDFSC monitors users' changing needs as well as its own performance on the job to provide a continual fine tuning of its service delivery product.

Market Outlook

Facing DEC as its principal competitor, MDFSC appreciates the importance of automation in the delivery of its service product. With recent increases in product reliability, MDFSC is striving to offset the ensuing squeeze on service revenues by increasing the average number of users a given engineer supports. Cost control, including the extensive use of remote diagnostic tools and centralized resource management, is recognized by MDFSC as the key to positive growth.

Another central issue is the consolidation of the TPM market. MDFSC feels that smaller firms that lack the resources to increase delivery efficiencies fall prey to the larger companies that have reached the "critical mass" necessary to operate at a competitive level. Although not a firm with an extremely aggressive acquisition history, MDFSC feels that consolidation within the third-party competitive market is far from over and recognizes the rapid growth potential in an acquisition strategy. MDFSC stresses

that it plans to hold its competitive ground by increasing its product menu and developing new service offerings according to customer-defined needs.

Strategic Perspective

McDonnell Douglas is facing a rapid influx of competition in its target marketplace as increasing numbers of TPMs expand support offerings into the growing DEC line. MDFSC was once an unrivaled leader within the DEC arena; other third-party giants, including Sorbus and Unisys Customcare, are beginning to aggressively pursue the DEC customer base, some offering service on high-end systems where MDFSC still lacks coverage. With DEC's internal push to market its networking capabilities in the high-end market, MDFSC could profit from an upscaling of its product menu into the upper VAX lines.

Currently, MDFSC is supporting an array of telecommunications equipment and networks under corporate-owned Tymnet operations and is in the process of developing internal software support capabilities for its computer Systems sister company. Expansion of its communications skills will likely surface in its third-party offerings and, although it reveals no current plans to extend software offerings to the TPM market, the increasing availability of third-party DEC software services may well entice MDFSC to join the competition.

MDFSC admits that its service business develops from the experience and knowledge base accumulated throughout the other business units under McDonnell Douglas Information Systems Group. Able to leverage its resources to efficiently fulfill its internal needs while it conducts its external TPM business, MDFSC has traditionally been guided by the larger corporate vision, and expansion within ISG is a good early indicator of probable third-party growth.
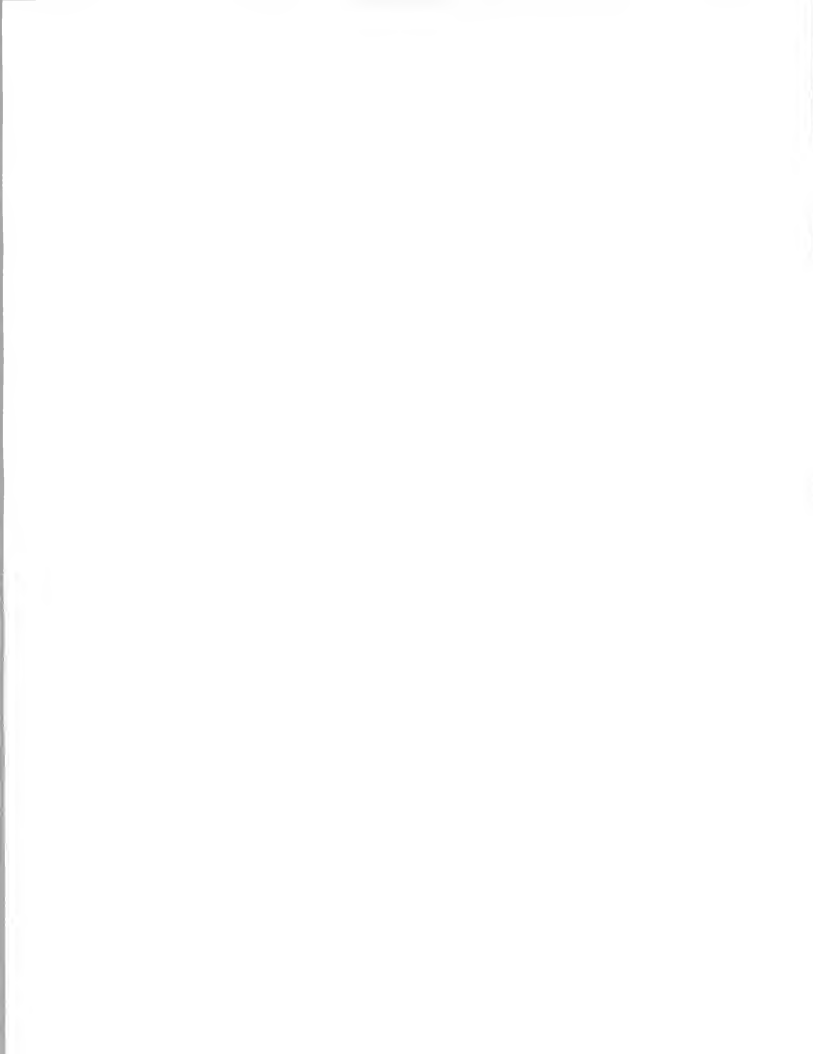
EXHIBIT II-8

Service at a Glance

McDonnell Douglas Field Service Company

Brands supported include:

- AST, AT&T, Able, ADDS, Ampex, Archive, Centronics, Century, Cipher, C.Itoh, CDC, DCA, Data Printer, Dataproducts, Datatrol, DEC, Diablo, Dilog, EMC, Emulex, Epson, Fujitsu, Genicom, Hayes, HP, IBM, Ibis, Intel, Kennedy, Lear Siegler, McDonnell Douglas Computer Systems, MDB, Maxtor, Memorex, Mitsubishi, Monolithic, Mostek, NCR, NEC, Nissho, Novell, Okidata, Paradyne, Concurrent, Pertec, Plessey, Printronix, Qume, Racal Vadic, Remex, Seagate, Storage Technology, System Industries, Tektronix, Texas Instruments, Toshiba, Vector, Ventel, Versatec, Wyse

Products maintained:

- Minicomputers
- Superminis
- Microcomputers
- Peripherals
- Multiplexors
- Front-end processors

- Telecommunications
  - LAN
  - PBX
  - Modems
  - Fax
  - Satellite earth stations

Service provided:

- Manufacturer warranty work
- Preventive maintenance
- Training
- Refurbishment
- Fourth-party maintenance

- Remedial maintenance
- ECO/FCO (change orders)
- Installation/relocation
- Conversion/upgrade
- Software maintenance

Industries targeted include:

- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government

- Transportation
- Medical
- Banking/finance
- Education
- Federal government

NCR CORPORATION
Customer Service Division
1700 South Patterson Blvd.
Dayton, OH 45479
(513) 439-8600

Richard B. Reese, Customer Services
Division Vice President
Service Employees: 6540
1988 TPM Revenues: $45 million

The Company

NCR Corporation remains the only thriving member of the so-called "BUNCH" computer firms, known for their group challenge against IBM market domination in the early 1980s. Burroughs, Sperry/Univac, CDC, and Honeywell have all fallen victim to acquisition of all or part of their information services operations as they stood in the mid-1980s, leaving NCR the only intact member of the original five. 1989 brought widespread speculation that this lone survivor may be next on the block.

NCR revenue growth had fallen sharply in 1988 (showing a 6 percent increase), down from previous years' consistent 10 to 15 percent increases, and industry analysts were considering the possibility of a takeover early in the year. At the same time, rumors were running high regarding an anticipated acquisition by AT&T of an unnamed computer manufacturer, inside talk naming NCR among the firms under consideration. Rumors had flown the previous year, as well, regarding a possible bid by Unisys for NCR's operations.

Despite continuing slumps in NCR corporate revenues, the firm remained intact through the year, and has proclaimed a strategic movement away from its centralized processing focus to embrace the new wave of networked systems. The firm established strategic partnerships with firms in the telecommunications and PC arenas, and has made moves toward adding systems integration resources to its Customer Services Division in 1989.

Service Demographics

Customer Services will undoubtedly play a major role in the support of NCR's new network focus, and steps to prepare the division for this role were seen in 1989. The operational split between NCR Third-Party Services and its own systems support resources was removed this past year, creating a unified NCR Customer Services Division. NCR's intentions to make way into the distributed systems area will require the ability to integrate and support the telecommunications and peripheral products other vendors contribute to the network. NCR's third-party maintenance experience will be key in this multivendor activity.

NCR employs a service staff of 6540 employees, shared between its systems support and third-party contracts. This organizational realignment of the Customer Services Division has made the split between the two operations even less distinct, even though NCR's technical service force has always been shared between the businesses to some extent. Of that total headcount, NCR employs 5300 field engineers and 500 field support people; management accounts for approximately 600 positions and administrative support, 140.

Service Coverage

Its manufacturing activities having been centered in the high-end arena, NCR has traditionally utilized its expertise in the third-party mainframe and minicomputer markets. The division has more recently concentrated efforts in the microcomputer and telecommunications areas, and provides support to a wide array of manufacturers. Among this list are CDC, Compaq, Dataproducts, Fujitsu, Hayes, HP, IBM, Seagate, Wyse, and Zenith, to name a few.

NCR leverages its manufacturing base through its service offerings in the fourth-party and refurbishment area, and provides a full menu of standard services, including warranty work, preventive and remedial services, training, installation, and consulting services.

Strategic Focus

Finding that the separation between its multivendor and systems work was becoming less and less distinct, the consolidation of the two business units marks a trend that will carry NCR toward its network goal in the 1990s. NCR reports that price competition has diminished over the course of the 1980s, and the quality, and even more importantly, the "fit" of a service solution has become the competitive ground. Fine tuning its support operation to match the needs of its target marketplace will be NCR's challenge over the coming decade.
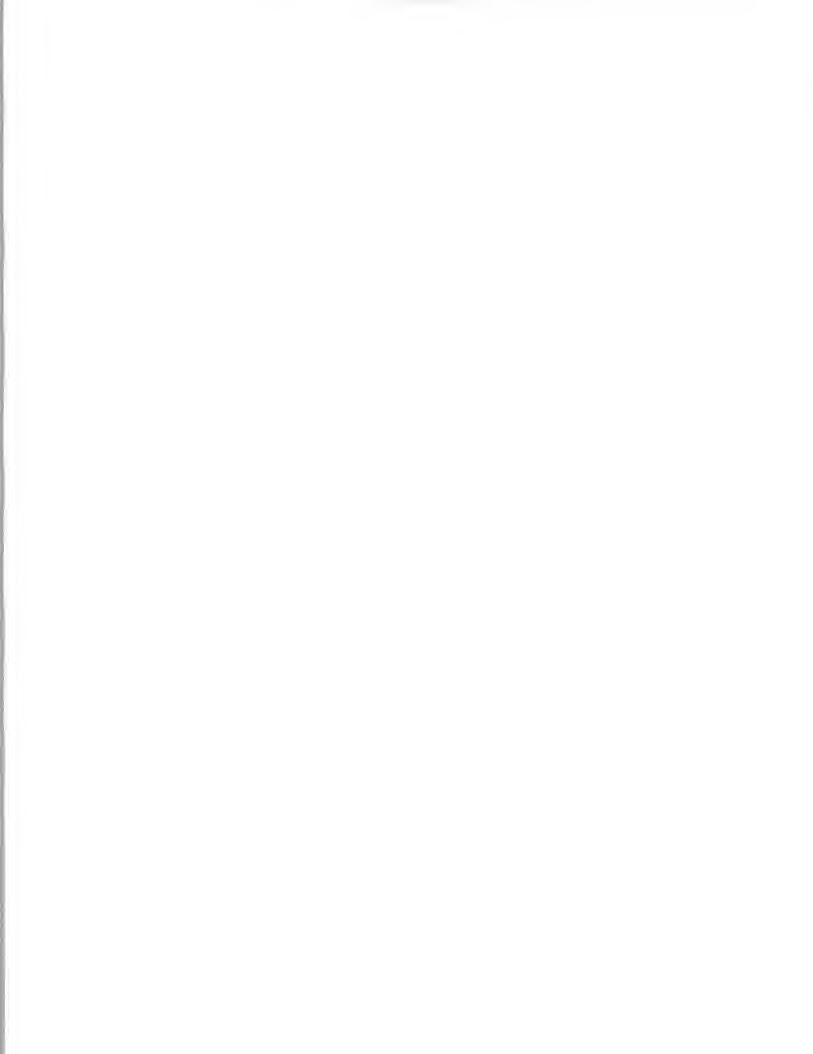
The strategic alliances NCR has made with CASE/DATEL (a networking equipment vendor) to jointly market its products through NCR's Customer Service Division is one of the first steps the firm has taken in that direction. Agreements with Businessland involving the resale of NCR's lower-end systems will increase the firms exposure in the PC marketplace. NCR has also strengthened its presence in the retail and financial markets (both very much in line with network goals) through the introduction of support for a series of IBM and Norand point-of-sale (POS) terminals.

EXHIBIT II-9

Service At A Glance

NCR Corporation

Brands supported include:

- ADDS, Amdek, AST, CDC, C. Itoh, Cetronics, CIE, Cipher, Compaq, Convergent, Data Products, DataSouth, Diablo, DCA, Epson, Fujitsu, Genicom, Hayes, HP, IBM, NEC, Okidata, Printronix, QMS, Racal-Milgo, Seagate, Siemens, Tecmar Televideo, UDS, Wyse, Zenith

Products maintained:

- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
- Telecommunications
  - LAN
  - Modems
  - Multiplexors
  - Satellite earth stations
  - Front-end processors

Service provided:

- Manufacturer warranty work
- Preventive maintenance
- Software maintenance
- Training
- Installation/relocation
- Refurbishment
- Remedial maintenance
- ECO/FCO (change orders)
- Consulting
- Disaster recovery
- Fourth-party maintenance
- Conversion/upgrade

Industries targeted include:

- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government
- Retail
- Transportation
- Medical
- Banking and finance
- Education
- Federal government

SORBUS
50 East Swedesford Road
Frazer, PA 19355
(215) 296-6000

H. Gene Greer, President
Total Employees: 2,300
1988 TPM Revenues: $175 million*

* INPUT estimate

The Company

"We're more than just talk."

Bell Atlantic Corporation, communications giant and parent of Sorbus since 1985, lives up to this motto through its diverse set of business units. The expansion of its unregulated companies has been a high priority of Bell Atlantic in the 1980s, and, under the Communications and Related Services segment of its operation, Bell Atlantic Customer Services has taken a priority role in this growth. The operations under Customer Services include a number of independently operating companies, including Camex-CPX, Inc., Electronic Service Specialist, and by far the largest service unit among them, Sorbus Inc.

The purchase of Sorbus by Bell Atlantic five years ago was a significant event in the company's development. Since the acquisition, Sorbus has moved to the forefront of the TPM marketplace, surpassing the long-time third-party leader TRW soon after the Bell Atlantic merger. Sorbus has been a significant driver of the market consolidation that has changed the face of third-party competition over the past decade. And the most recent purchase Bell Atlantic has made for its Sorbus subsidiary has been the most significant yet.

In October of 1989, Bell Atlantic officially announced its intent to absorb the third-party operations of Control Data Corporation. CDC's Third-Party Maintenance Division, having produced revenues near the $100 million mark in 1988, will be melded into Sorbus' operation throughout the coming year. The merger of the two contenders will create the largest TPM organization in the marketplace to date.

**Service
Demographics**

Sorbus service staff numbered 2300 in 1988, including a field force
of 1000 engineers. INPUT estimates that the CDC TPM unit
included a service staff of approximately 900, and after
organizational consolidation, the merger will increase Sorbus
headcount by around 700. The merger also added 100 service
locations to Sorbus' 200 nationwide offices, and it is expected that
after overlap adjustments, at least 60 locations will be added to
Sorbus' tally.

Reflecting the hardships felt across the third-party marketplace in
1988, Sorbus revenues fell to an estimated $175 million dollars
last year, showing a decline of nearly 15%. Looking forward to
1989, however, Sorbus is expecting a turnaround in this slump
when all is told, expecting gains of 8 to 10% for the year.
Although this growth is flat in comparison to previous years'
performances, the gain is significant compared to the continued
losses experienced by a number of TPM players in 1989. Bell
officially attributes the downturn in growth to increased price
competition in the industry, and plans to counter further revenue
erosion through continued diversification and expansion of
product lines and operations.

Sorbus' revenues are derived primary from contract agreements,
which constitute 90% of its business base. "Time & materials"
hourly rates are offered on services performed outside of contract
boundaries, and this per-call service accounts for the remaining
10% of Sorbus business.

Service Delivery

Sorbus provides on-site remedial and preventive maintenance,
system configuration, product modification and refurbishment, and
subassembly repair and refurbishment to over 3,000 different
hardware products. Systems serviced range from mainframes
(such as IBM 308X), minicomputers (such as IBM System 3X,
DEC PDP and VAX lines), and microcomputers (from a wide
range of vendors), to associated peripherals, including some
telecommunications equipment. However, it has stepped back
from promoting the support of PBX products in 1988.

Sorbus expanded its traditional maintenance offerings with the
introduction of software support and disaster recovery services in
1989. The disaster recovery offering, provided through a joint
marketing agreement with Sungard Corporation, spans its entire
line of IBM and DEC equipment, and is a key factor of its new
3Xtra support program, also introduced in 1989. The 3Xtra
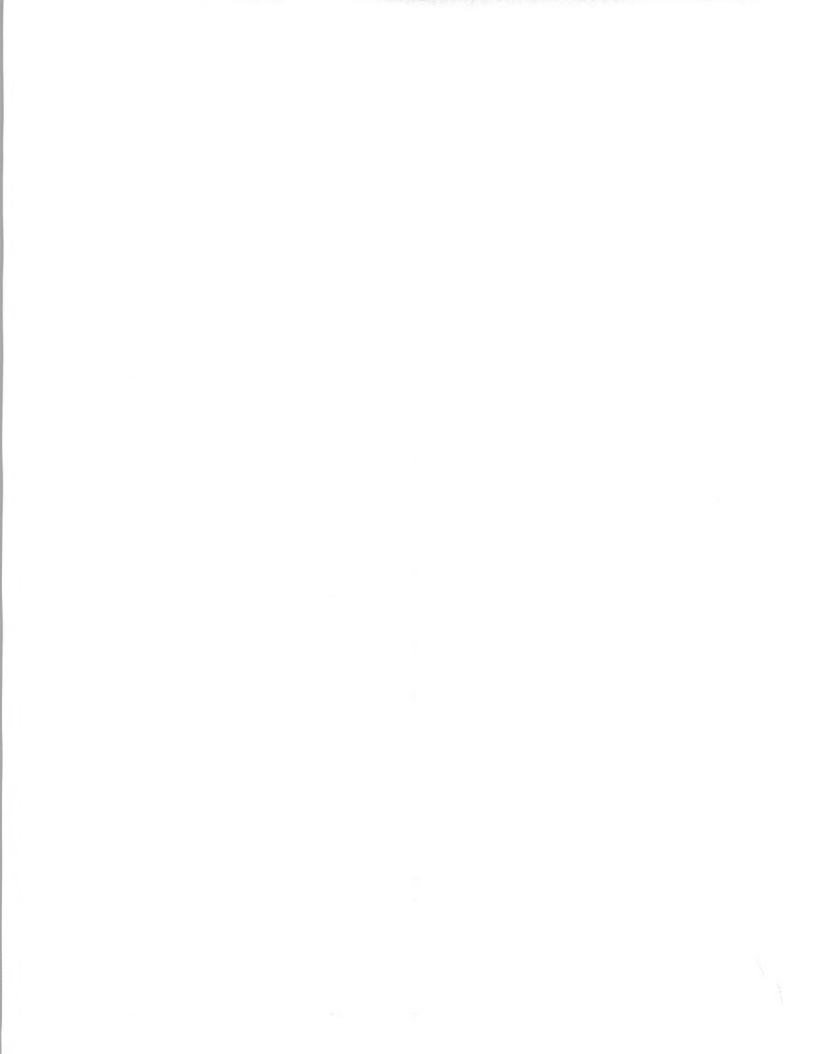
program combines telephone hotline, enhanced on-site services, and cold site disaster recovery support to the IBM System 3X marketplace, one of the most competitive among the IBM system markets.

In line with these value-added services, Sorbus also offered its customers direct access to its central dispatch system in 1989, allowing users to directly participate in the expedited support process. The communications link, called Direct Access Customer Service (DACS), is provided primarily to large, multilocation customers, and offers a direct line of communication between the customer help desk and Sorbus staff. The new offering allows users to monitor the status of equipment at multiple locations, and track the progress of problems and their resolutions remotely. The new service allows Sorbus to leverage its extensive internal dispatch system in new ways, and provide users with a greater sense of control over their system problems.

Strategic Focus

Backed by the financial stability of its Bell Atlantic parent corporation, Sorbus has managed to bounce back from revenue losses felt by most all TPMs in the late 1980s. As a key factor in Bell Atlantic's overall growth strategy, Sorbus has managed to retain a relatively healthy operation in these troubled times, primarily through its aggressive acquisition strategy. With Bell Atlantic finances readily available, Sorbus has the ability to react to market changes much more easily than struggling independent TPMs. For instance, a number of acquisitions in the DEC TPM arena over the past few years has allowed Sorbus to shift attentions away from the crowded IBM midrange arena, and has gained (or purchased) significant marketshare in targeted areas.

Now thoroughly entrenched in the DEC marketplace, Sorbus' latest strategic moves have been toward repenetration of IBM accounts, this time aiming at the higher end of the product line. 1989 brought rumors of Sorbus' plans to enter the IBM 3090 arena, previously a market segment in which IBM saw little third-party competition. The purchase of CDC's maintenance operation is undoubtedly one step in this strategic plan, considering CDC's considerable experience in the IBM mainframe market. Bell Atlantic's purchase of CDC's third-party customer base has, in effect, bought Sorbus into the large-systems marketplace, and considerably expedited its penetration into this new target market.

The addition of CDC's TPM resources to Sorbus' operations has created a formidable competitor in the third-party marketplace, the size of which the TPM market has never seen. Although there have already been staff reductions on the CDC side (primarily due to administrative and management overlap thus far), the combination of the operations should result in a service staff in the 3000 person range. The resulting organization will rival the resources of some of the leading equipment vendors, and Sorbus' focus on the development of extended services places it in close competition with some of the most comprehensive service offerings in the OEM arena.

Sorbus views IBM's moves into the value-added services end of maintenance as the most pressing service issue of 1989. Adding a multivendor edge to its extended service announcements this year, IBM has, in effect wandered into the third-party marketplace, and further complicated the concerns of TPM competitors. Sorbus' intent is to counter these moves, and shore up its competitive position for the long fight ahead. Its acquisition strategy has facilitated this goal thus far, providing the fast actions required in the highly competitive marketplace. INPUT expects Sorbus to continue to lead the market trend toward consolidation in the 1990s, continuing the upward climb it has taken through the 1980s.
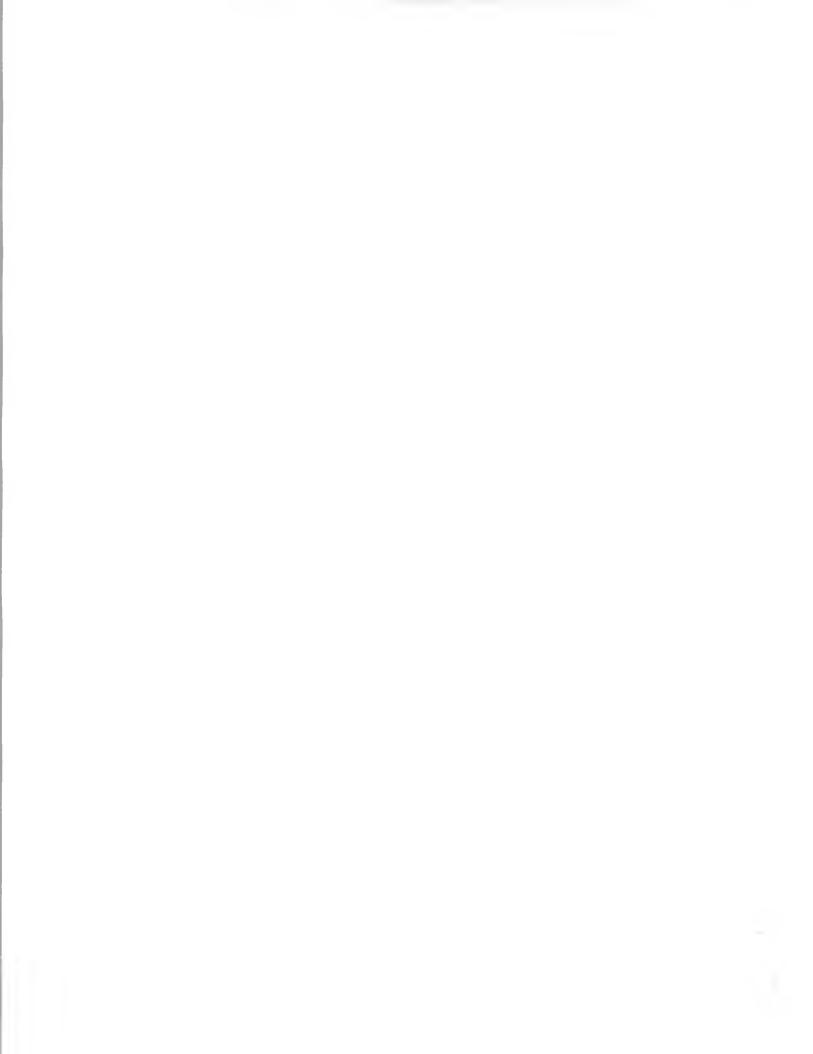
EXHIBIT II-10

Service at a Glance

Sorbus

Brands supported include:

- IBM, AT&T, CDC, Citizen, C. Itoh, Compaq, DataSouth, DEC, Diablo, Epson, Hayes, Hazeltine, Iomega, Kaypro, Mountain, NEX, Northstar, Okidata, Princeton, Quadram, Rodime, Seagate, Tallgrass, Televideo, Texas Instruments, Toshiba, Visual, Wang

Products maintained:

- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
  Telecommunications
  - Modems

Service provided:

- Manufacturer warranty work
- Preventive maintenance
- Consulting
- Fourth-party maintenance
- Conversion/upgrade
- Remedial maintenance
- ECO/FCO (change orders)
- Installation/relocation
- Refurbishment
- Disaster recovery
- Software support

Industries targeted include:

- Manufacturing
- Utilities
- Distribution
- Insurance
- Services
- State/local government
- Transportation
- Medical
- Banking/finance
- Education
- Federal government
- Other
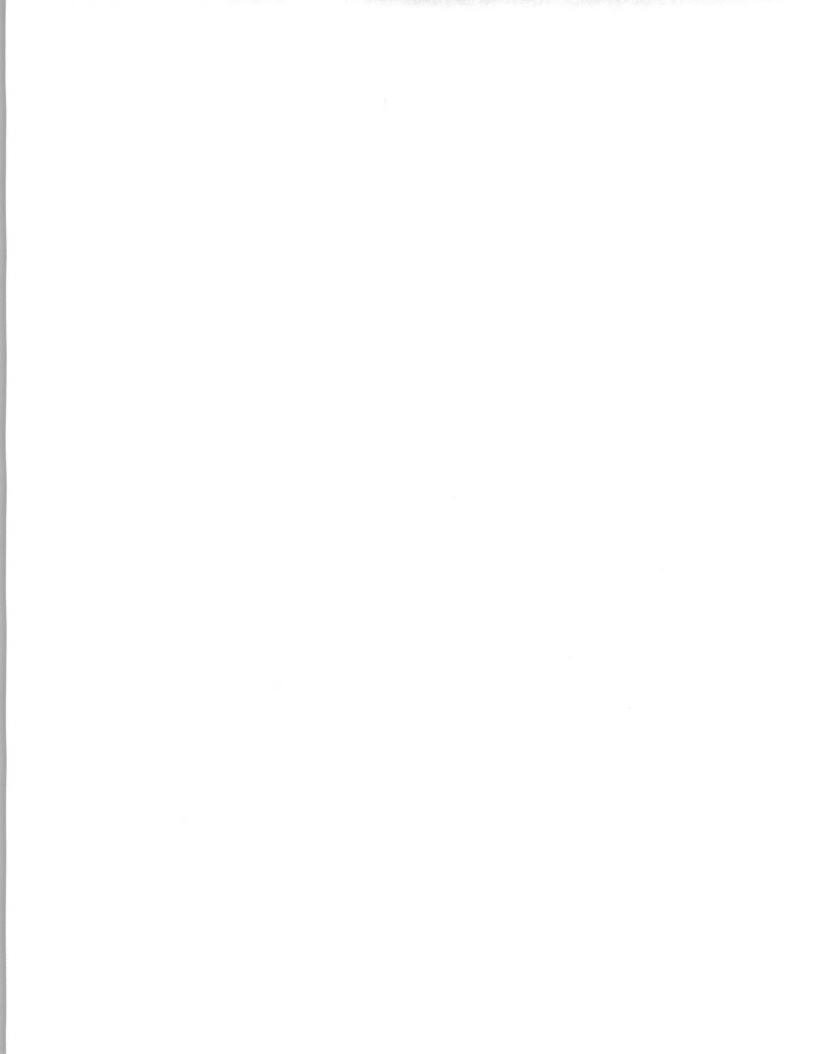
**TRW CUSTOMER SERVICE
DIVISION**
15 Law Drive
Fairfield, NJ 07007
(201) 575-7110

Arthur Branstein, President
Service Employees: 2,100
1988 TPM Revenue: $ 135 Million*

* INPUT Estimate

The Company

TRW Corporation, including its Customer Service Division, has experienced difficult financial times over the past year. Overall corporate revenue growth, as well as growth in TRW's Information Systems segment (of which the third-party maintenance operation is a part) was essentially flat, showing two and three percent gains, respectively. TRW's third-party revenues took a downward turn in 1988, with estimated revenues falling to $135 million in 1988 from the $155 million mark the previous year.

Corporate restructuring and cutbacks in defense spending have drawn on overall corporate revenues, and the Customer Service Division has fallen prey to tightening competition in the third-party marketplace. Although TRW Inc. does not release specific performance information about its subsidiaries and division, it has admitted weak sales and poor operating performance at the root of the declines in Customer Service Division revenues.

Entering its 13th year in the TPM arena, TRW's Customer Service Division looked to OEM and systems integrator organizations to help bring its ailing operations out of this slump. A new OEM repair service program was introduced which greatly enhances TRW's support of the vendor side of the maintenance marketplace--an increasingly attractive target considering the continued crowding in the end-user arena.

The depot support is offered out of TRW's five established repair centers located across the U.S. and Mexico, and offers a full range of repair and testing services to manufacturers and integrators of systems. TRW stresses the flexibility of its services and its ability to fully customize its facility to meet vendor needs in repair, burn-in, testing, and shipping of products. Support to the subassembly level is offered on disk drives, power supplies, circuit boards, printers, modems, and monitors.
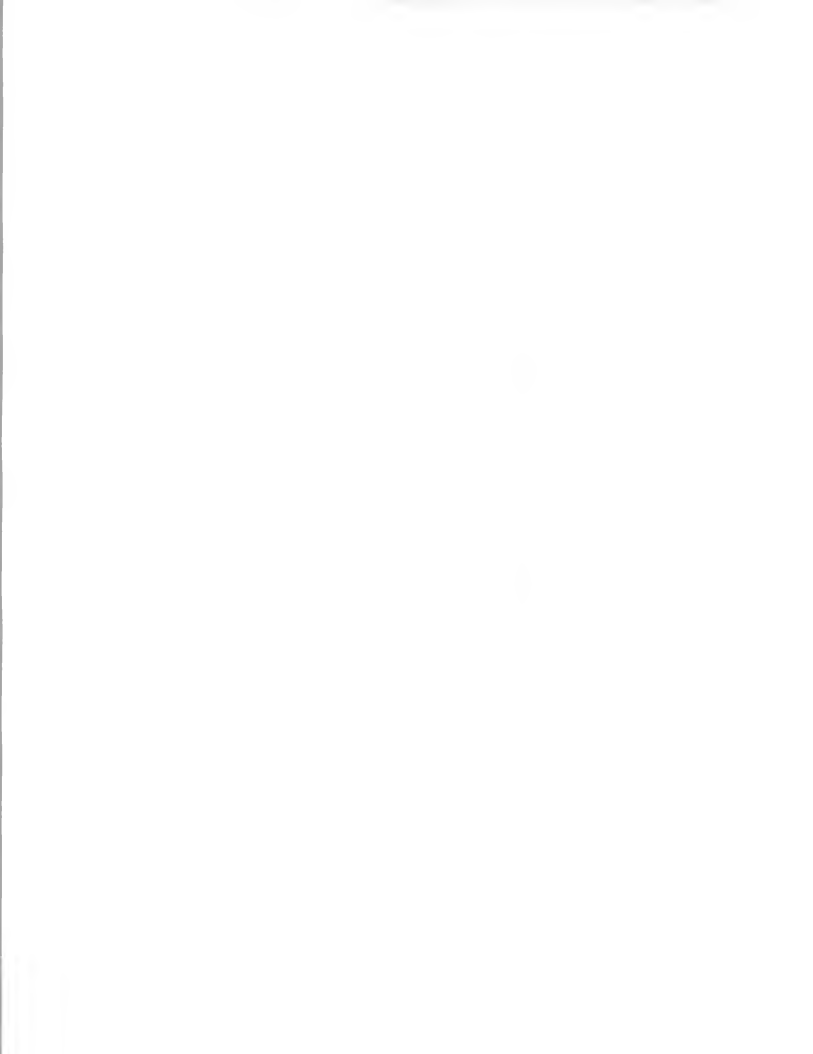
Very basically, the services provided under the new plan are highly specialized and extremely equipment/capital intensive. The program provides vendors a chance to shift some very expensive responsibilities to TRW, and free up capital to concentrate on more strategic areas of their own businesses. TRW has been involved in this "fourth-party" end of support for the better part of the 1980s, and will be able to leverage the investment it has made in this area on a much wider scale with this new and well-defined program.

Service Demographics

TRW reports that it employs 2,100 service employees, including 1,300 field engineers and 500 technical support specialists (the balance is in management and administrative personnel). Service is provided out of 125 service locations, 50 of which are carry-in/mail-in depot locations, all of which double as spare parts locations.

Currently, 75% of TRW's business is done under contract, with 15% from flat-fee depot work, and 10% hourly per-call. Eighty percent of all TRW CSD service is performed on-site, and another 10% performed in its network of depot service locations. TRW CSD has developed remote support capabilities for selected systems (including DEC VAX), and 5% of all TRW CSD service is performed via remote technology.

Service Coverage

TRW CSD offers a wide range of hardware maintenance services to users of an extensive list of data processing and telecommunications equipment. Product categories covered include mainframes, supermini- and traditional minicomputers, microcomputers, peripherals, LANs, and modems. TRW CSD currently services more than 50 different brands of equipment, including IBM, DEC, CDC, Altos, AT&T, Compaq, Zenith, and is continually reevaluating and adding brands to its line card.

TRW has also announced a new support option for PC and network customers. The new Shared Security program is basically a "retainer plan," whereby the customer pays a predetermined fee up front (which is considerably less than a standard annual maintenance fee), and then is charged a set amount for each service call that is made throughout the year. The initial fee in essence, acts as a retainer for TRW's services, and provides users with per-call flexibility with the priority status of a contract client.
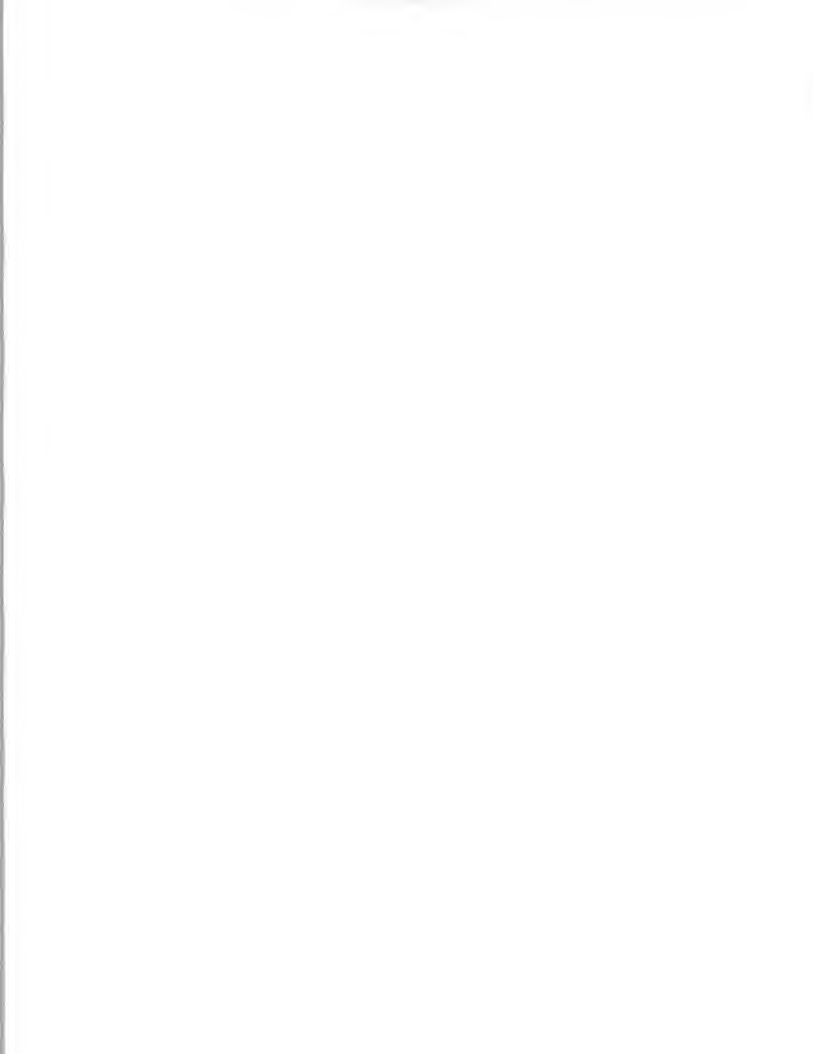
By paying for support on a per-call basis, users can be afforded considerable savings as TRW's risk of unforeseen maintenance costs are shared between the two parties. The Shared Security plan has reportedly been offered on a case-by-case basis for the past few years in certain regions. Nationwide availability was announced this past year.

Strategic Focus

As the largest of the third-party players throughout most the past decade, TRW has accumulated a substantial nationwide resource base, and a considerable customer base since its entry into TPM in the mid-1970s. With its headstart on the competition, TRW comfortably retained its position as marketleader through the early 1980s. Later in the decade, however, TPM rival Sorbus took the market lead in terms of both revenues and headcount, backed by its financially stable parent, Bell Atlantic. TRW took a backseat to Sorbus soon after the 1985 purchase by Bell Atlantic.

The continued growth of the Bell Atlantic/Sorbus service force will undoubtedly offer TRW some formidable competition in the 1990s, as well. The purchase of Control Data's third-party division by Bell Atlantic will reinforce Sorbus' competitive position, adding an expected 800 to 900 service personnel to Sorbus' 2300 person staff. TRW management has remained reserved in its reaction to the acquisition announcement, however, and is adopting a wait-and-see attitude to the merger.

After the dust has settled, however, the merger may even bode well for TRW, should Sorbus redirect efforts on developing CDC's large-systems market strengths, and let up on the midrange arena currently shared with TRW. Either way, the 1990s will undoubtedly be a critical period for TRW's Customer Service Division.

TRW stakes the majority of its TPM claim in the IBM and compatible arena, and feels its most threatening competition directly from IBM. TRW's long-standing presence in the marketplace provides a respectable level of differential advantage in terms of third-party support, but the firm has had to look beyond this as IBM stepped up its actions in the multivendor arena.
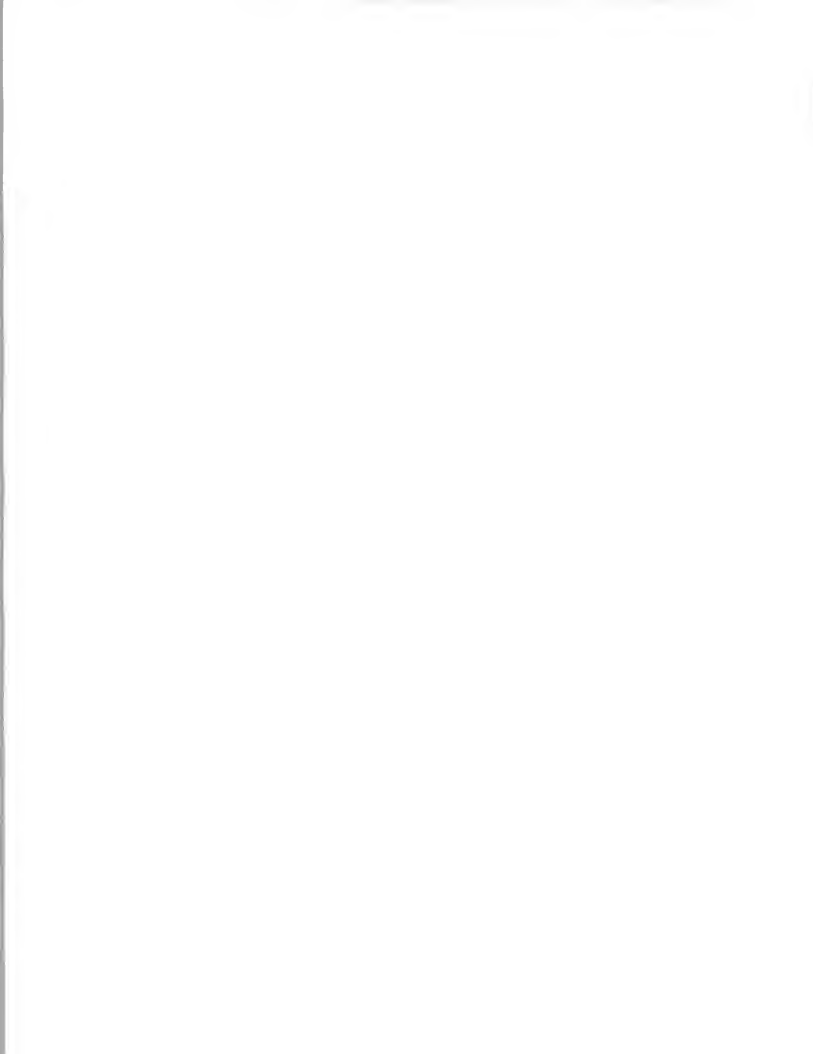
TRW's approach to the third-party service marketplace is admittedly opportunistic, with specific customer requirements driving its list of products and services. Next on its list of opportunities to be taken will undoubtedly be the network support arena. TRW has been involved in network support on a custom basis for a number of years, and admits that TPMs will need to be active in that marketplace to stay alive in the 1990s. With its substantial experience in PC and telecommunications support, TRW will again be able to enjoy a headstart on other TPMs currently approaching the network market.
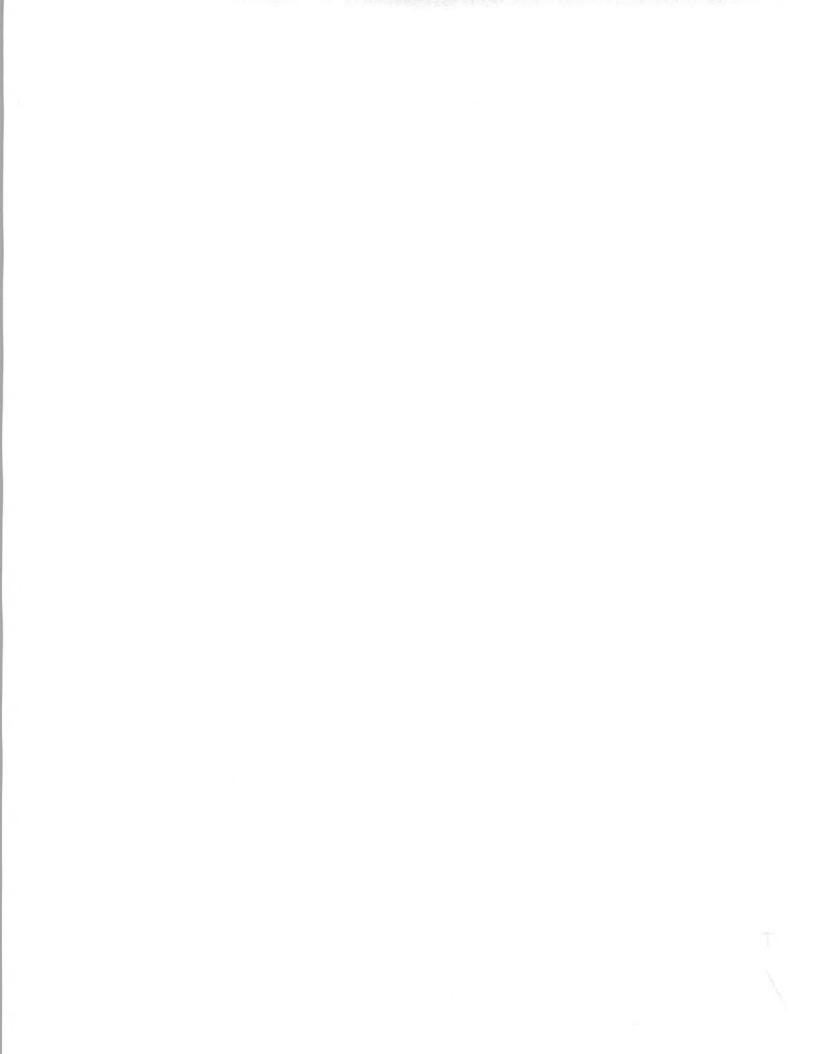
EXHIBIT II-11

Service at a Glance

TRW Customer Service Division

Brands supported include:
- 3-Com, Altos, Ampex, Anadex, AT&T, Bell & Howell, Compaq, CDC, Data Products, Diablo, DEC, Dilog, Emulex, Epson, Esprit, Fujitsu, Hayes, IBM, Iomega, Kennedy, Link, Mitac, Mitsubishi, Okidata, Plus Development, Quantum, Rodime, STC, Telex, Wyse, Docutel, Diebold, Zenith, HP, Toshiba, NEC, Texas Instruments, Datasouth
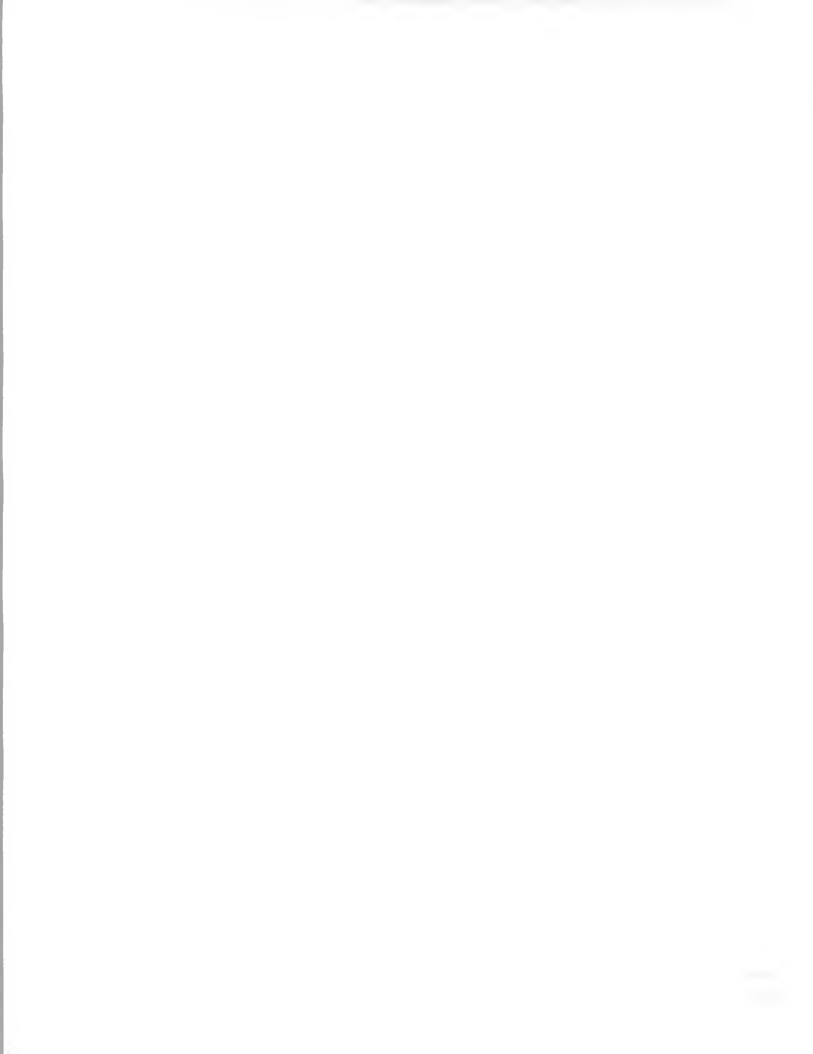
Products maintained:
- Mainframes
- Minicomputers
- Superminis
- Microcomputers
- Peripherals
  Telecommunications
  - LAN
  - Modems

Service provided:
- Manufacturer warranty work
- Preventive maintenance
- Consulting
- Installation/relocation
- Refurbishment
- Equipment sale/lease
- Remedial maintenance
- ECO/FCO (change orders)
- Training
- Fourth-party maintenance
- Conversion/upgrade

Industries targeted include:
- Manufacturing
- Medical
- Banking/finance
- Services
- State/local government
- Transportation
- Distribution
- Insurance
- Federal government

III

Third-Party Maintenance Service Vendor Comparative Tables

III

Third-Party Maintenance
Service Vendor Comparative Tables

EXHIBIT III-1

Company	1988 TPM Revenues ($ Millions)	Number of Service Employees	Number of FEs
CDC	97 e	900 e	550 e
Dataserv	80 e	1,034	600
Decision Data	125	1,300	700
GE Computer Services	120 e	1,800	1,200
Grumman Systems Support	40 e	425	275
IDEA Servcom	70	600	450
Intelogic Trace	117	1,465	617
McDonnell Douglas	69 e	1,000	500 e
NCR	45	6,540 *	5,300 *
Sorbus	175 e	2,300	1,000
TRW	135 e	2,100	1,300

TPM Revenue and Employee Size

e = INPUT estimate
* Shared between TPM and manufacturer business
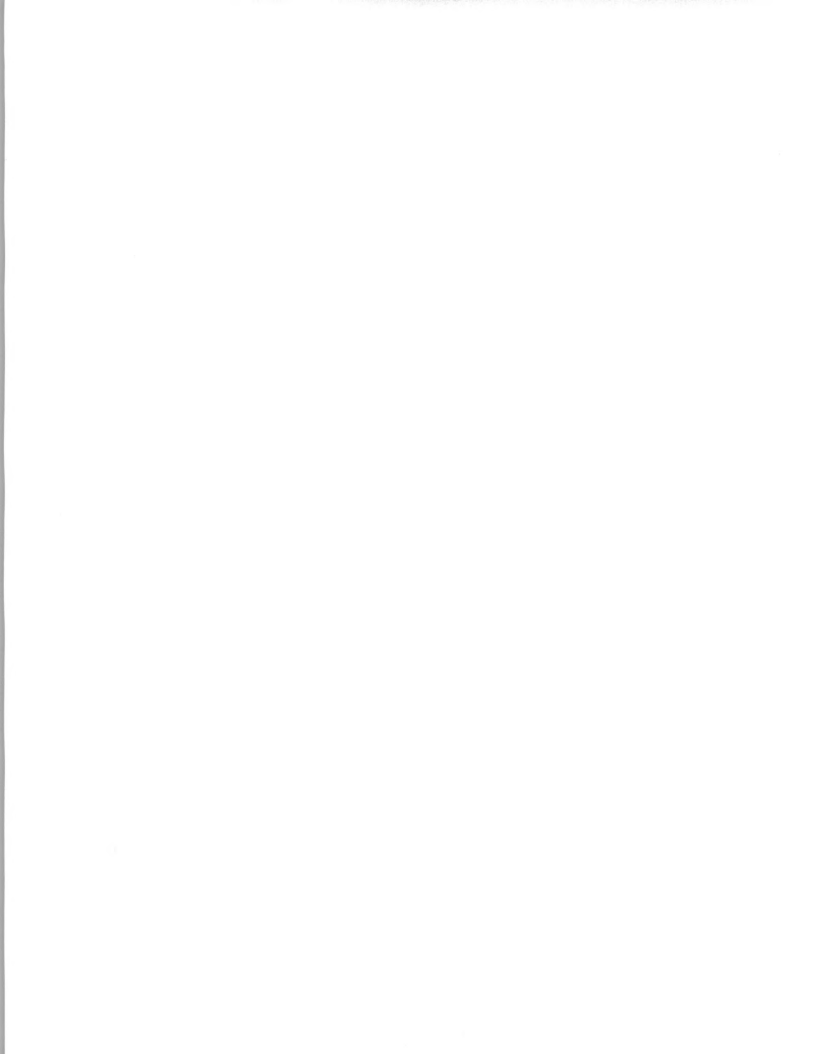
EXHIBIT III-2

TPM Geographic Coverage

Company	Nationwide Coverage	Number of Service Locations	Number of Repair Depots	Number of Major Parts Centers
CDC	X	100	*	*
Dataserv	X[†]	150	4	1
Decison Data	X	125	90	125
GE	X	283	28	283
Grumman	X[†]	65	1	3
IDEA Servcom	X	160	11	24
Intelogic Trace	X	230	19	24
McDonnell Douglas	X	150	3	3
NCR	X	425	425	425
Sorbus	X	200	18	2
TRW	X	125	50	50

* Company did not respond
† Excludes Alaska and Hawaii
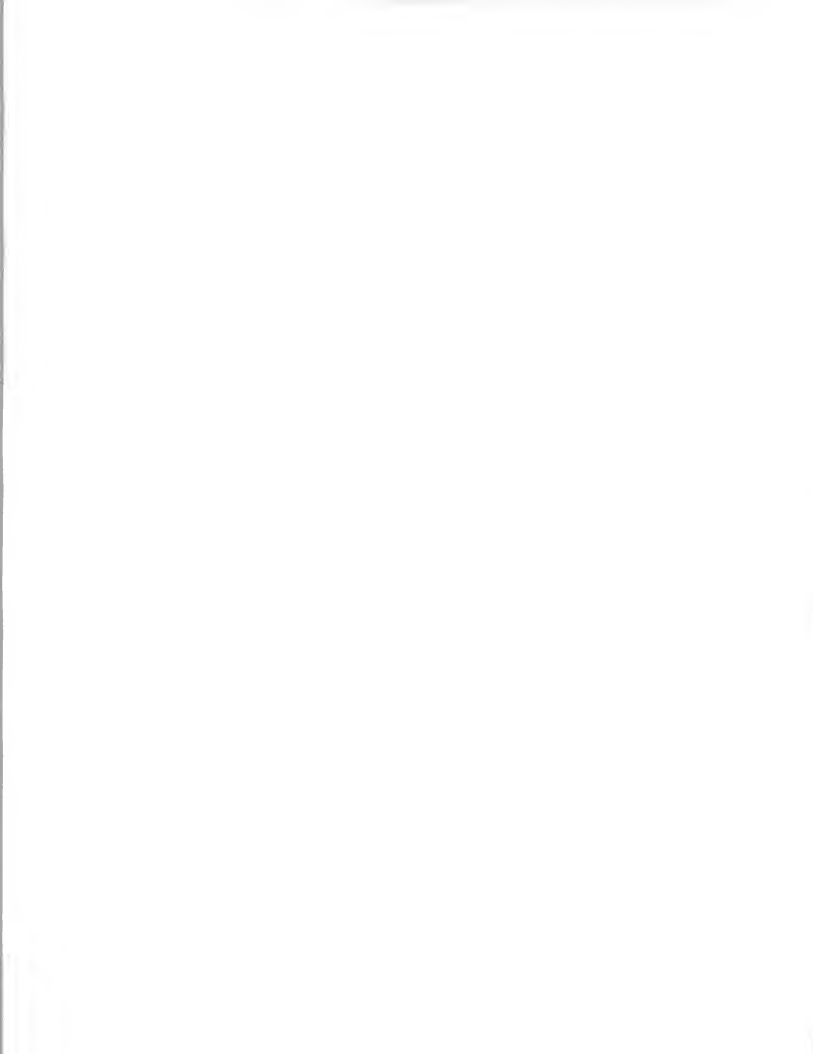
EXHIBIT III-3

TPM Product Service Coverage

Company	Products Serviced					
	Main-frames	Minis	Super-minis	Micros	Periph-erals	Telecom
CDC	X	X	X	X	X	X
Dataserv	X	X	X	X	X	
Decision Data		X	X	X	X	X
GE		X	X	X	X	X
Grumman	X	X	X	X		X
IDEA Servcom	X	X	X	X	X	X
Intelogic Trace		X	X	X	X	X
MDFCS	X	X	X	X	X	X
NCR	X	X	X	X	X	X
Sorbus	X	X	X	X	X	X
TRW	X	X	X	X	X	X

EXHIBIT III-4

TPM Telecom Product Service Coverage

Company	Telecom Products Serviced						
	LAN	PBX	Modem	Fax	MUX	Satellite Earth Stations	Front-End Processor
CDC	X						
Dataserv							
Decision Data			X		X		
GE	X	X	X	X		X	
Grumman	X						
IDEA Servcom	X		X		X		X
Intelogic Trace	X	X	X	X	X	X	X
MDFSC	X		X				X
NCR	X		X		X	X	X
Sorbus			X				
TRW	X		X				
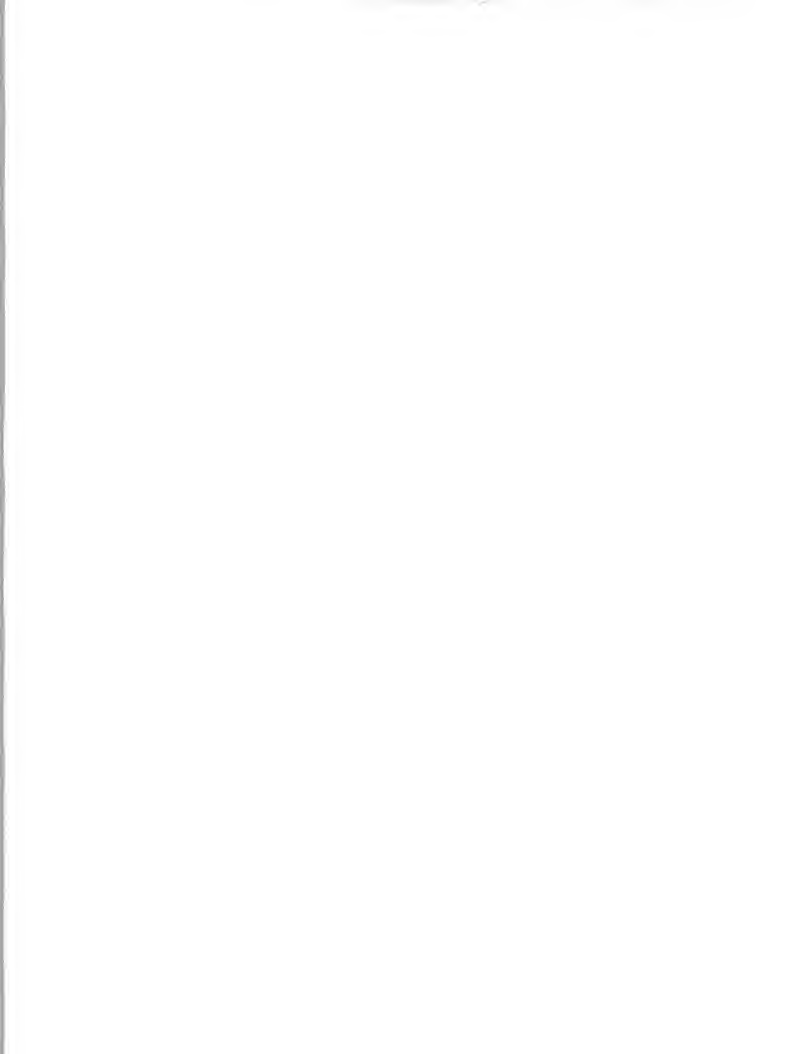
EXHIBIT III-5

TPM Services Offered

Company	Services Offered						
	Mfr. Warranty	Remedial Maint.	Preven- tive Maint.	ECO/ FCOs	Software Support	Consulting	Training
CDC	X	X	X	X	X	X	X
Dataserv	X	X	X	X		X	X
Decision Data	X	X	X	X		X	X
GE	X	X	X	X			X
Grumman	X	X	X	X	X	X	
IDEA Servcom	X	X	X	X	X	X	X
Intelogic Trace	X	X	X	X	X	X	X
MDFSC	X	X	X	X	X	X	X
NCR	X	X	X	X	X	X	X
Sorbus	X	X	X	X	X	X	
TRW	X	X	X	X		X	X

EXHIBIT III-6

TPM Services Offered (Continued)

Company	Services Offered						
	Disaster Recovery	Install/ Relocate	4th-Party Maint.	Refurb.	Convert/ Upgrade	Equip. Sales/ Lease	File Conver- sion
CDC	X	X		X	X		
Dataserv		X	X	X	X	X	
Decision Data		X	X	X	X	X	
GE		X		X	X	X	
Grumman		X	X	X	X	X	
IDEA Servcom		X	X	X	X		
Intelogic Trace	X	X	X	X	X	X	
MDFSC		X	X	X	X		
NCR	X	X	X	X	X		
Sorbus	X	X	X	X	X		
TRW		X	X	X	X	X	
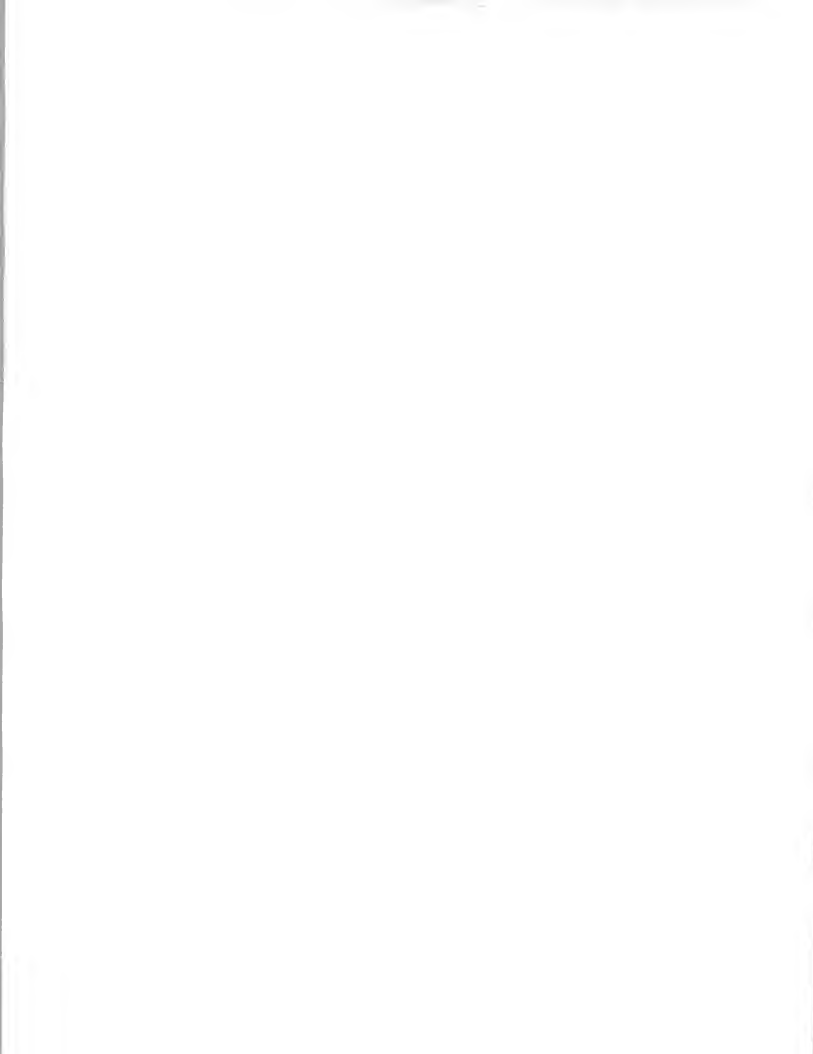
EXHIBIT III-7

TPM Contract Usage

Company	Service Derived From: (Percent)		
	Contract	Flat Fee	T & M
CDC	90	0	10
Dataserv	100	0	0
Decision Data	*	*	*
GE	60	20	20
Grumman	95	0	5
IDEA Servcom	90	2	8
Intelogic Trace	93	0	7
MDFSC	95	3	2
NCR	90	0	10
Sorbus	90	0	10
TRW	75	15	10

* Company did not respond
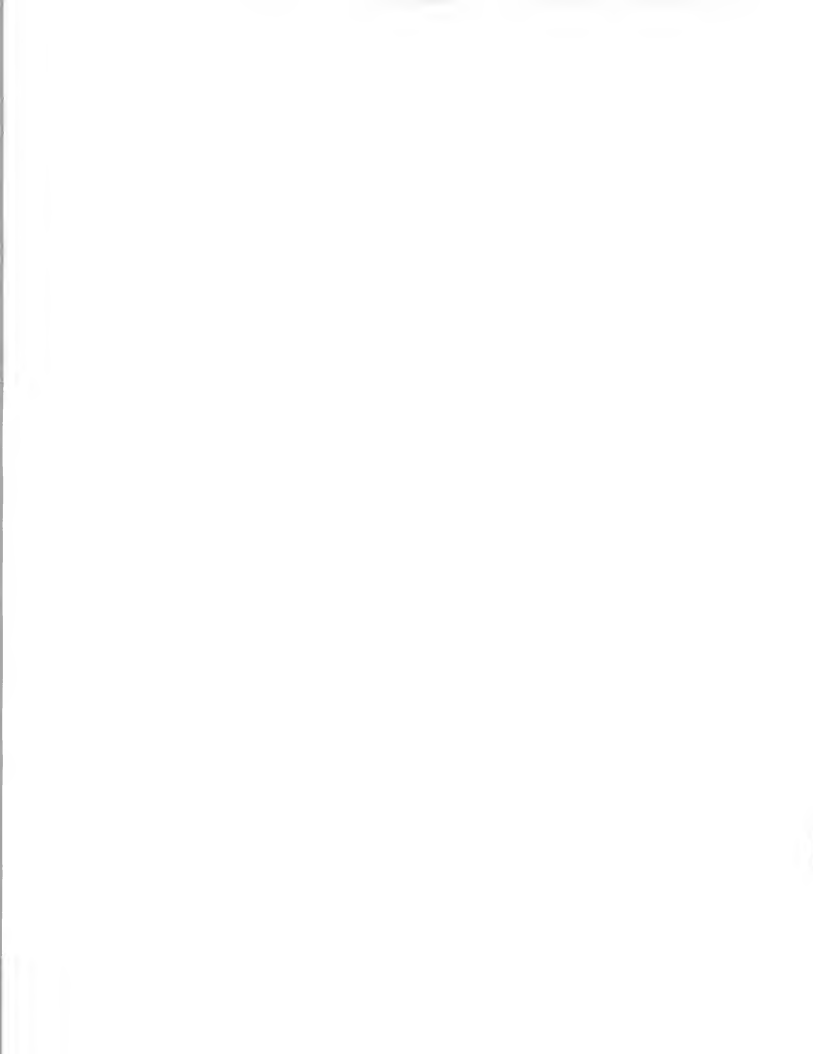
EXHIBIT III-8

TPM Service by Delivery Mode

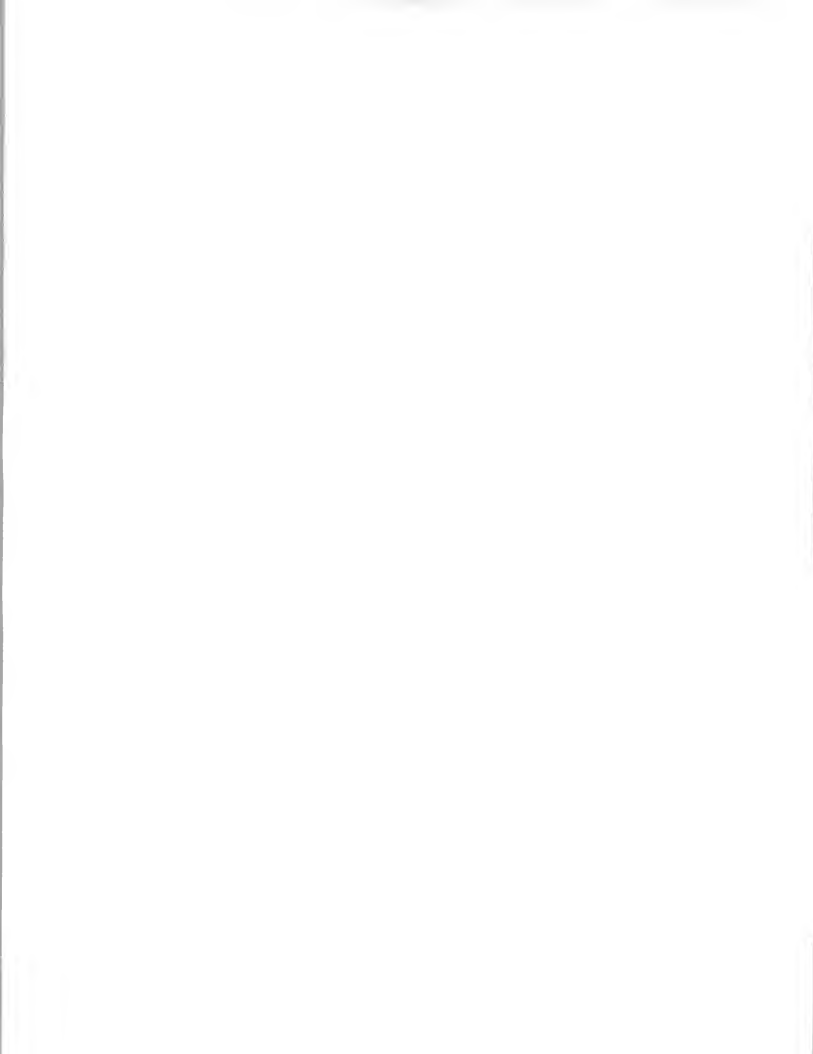| Company	Service Performed (Percent)			
	On-Site	Depot	Remote Diagnostics	Other
CDC	99	0	0	1
Dataserv	90	5	5	0
Decision Data	*	*	*	*
GE	70	20	10	0
Grumman	98	2	0	0
IDEA Servcom	95	5	0	0
Intelogic Trace	86	1	0	
MDFSC	99	1	0	0
NCR	80	15	0	5
Sorbus	*	*	*	*
TRW	80	10	5	5

* Company did not respond

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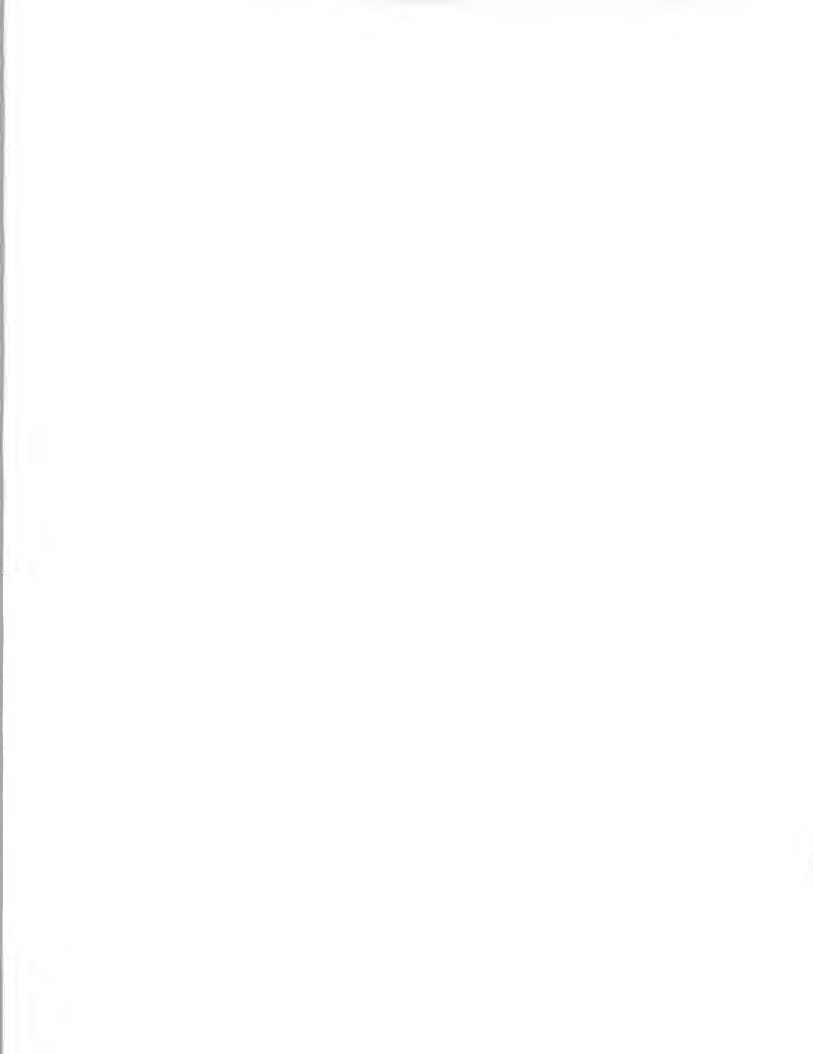
Appendix: Questionnaire

A

Appendix: Questionnaire

Your Name: _____ Your Phone/Ext: _____

Title: _____

Company: _____

Address: _____

_____

Main Phone: _____

CEO/President Name: _____

Title: _____

1. How many years has the company been in the TPM business? _____

2. How many people are dedicated to third-party service activities? _____
   Of this total what number (or percent) are in:
   a. Management: _____ or _____% of total
   b. Field Support: _____ or _____% of total
   c. Field Engineers: _____ or _____% of total
   d. Administration: _____ or _____% of total

3. a. How many service locations do you have in total? _____
   b. How many of these are repair depots (carry-in/mail-in)? _____
   c. How many of these are parts depots (major inventory centers)? _____

4. What is the geographic coverage of your service activities?
   a. ❏ NE (ME, VT, NH, NY, MA, CT, RI, PA, NJ, MD, DE, WV, VA, DC)
   b. ❏ SE (KY, AR, TN, NC, SC, MS, AL, LA, GA, FL)
   c. ❏ Central (MN, WI, MI, IA, IL, IN, OH, MO)
   d. ❏ SW (CA, NV, UT, AZ, CO, NM, TX, OK, KS)
   e. ❏ Noncontinental (AK, HI)
   f. ❏ NW (OR, WA, ID, MT, ND, SD, WY, NB)
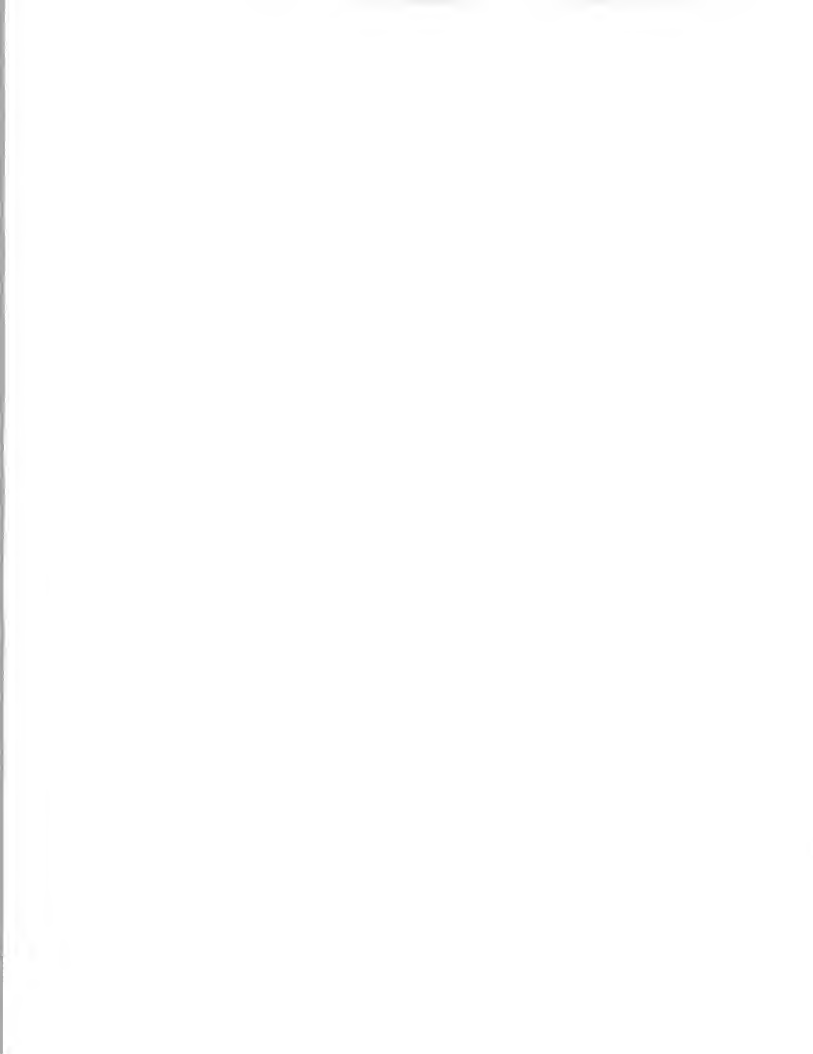
5. What industries do you primarily service?

   a. ❑ Manufacturing e. ❑ Distribution   i. ❑ Services
   b. ❑ Transportation f. ❑ Banking/Finance   j. ❑ Federal Gov't.
   c. ❑ Utilities   g. ❑ Insurance   k. ❑ State/Local Gov't.
   d. ❑ Medical   h. ❑ Education   l. ❑ Other

6. Do you service:

   a. ❑ Mainframes   f. ❑ Telecommunications
   b. ❑ Minicomputers   1) ❑ LAN   5) ❑ Multiplexors
   c. ❑ Superminis   2) ❑ PBX   6) ❑ Satellite Earth Stations
   d. ❑ Microcomputers   3) ❑ Modem   7) ❑ Front-end Processors
   e. ❑ Peripherals   4) ❑ Fax

7. Please list the principle manufacturers' products that you service:

(a) Manufacturer	(b) Product Type	(c) Model #s
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

   (Continue on back if necessary)

8. Which of the following services do you provide:

   a. ❑ Manufacturer Warranty   i. ❑ Installation/Relocation
   b. ❑ Remedial Maintenance   j. ❑ Fourth-Party Maintenance
   c. ❑ Preventive Maintenance   k. ❑ Refurbishment
   d. ❑ ECO/FCO (Change Orders)   l. ❑ Conversion/Upgrade
   e. ❑ Software Maintenance   m. ❑ Equipment Sale/Lease
   f. ❑ Consulting   n. ❑ File Conversion (SW)
   g. ❑ Training   o. ❑ Other (specify) _____
   h. ❑ Disaster Recovery   _____

9. Who do you consider your principal competitors?
   _____

10. What percent of your service is delivered in the following modes:
    a. On-site maintenance   _____ %   c. Repair depot/carry-in   _____ %
    b. Remote diagnostic services _____ %   d. Other (_____) _____ %

11. a. What were your 1988 revenues derived strictly from third-party maintenance-related services?
    $ _____ million

    b. What percentage growth in TPM do you anticipate in 1989? _____ %

12. What is your hourly (per-call) rate? $ _____/hour

13. What percent of your business is derived from services that are:
    a. Contract-based _____ %   c. Flat-fee per-incident   _____ %
    b. Hourly per-call _____ %

14. What types of services do your customers request most often?
    _____

15. What additional offerings (services/contract options) do you plan to add in the near future?
    _____
    _____

>>>>>>>>>>THANK YOU<<<<<<<<<<