

DECEMBER 1990

U.S. PC/WORKSTATION USER REQUIREMENTS

1990



Published by
INPUT
1280 Villa Street
Mountain View, CA 94041-1194
U.S.A.

Customer Service Program (CSP)

***U.S. PC/Workstation User Requirements,
1990***

Copyright ©1990 by INPUT. All rights reserved.
Printed in the United States of America.
No part of this publication may be reproduced or
distributed in any form or by any means, or stored
in a data base or retrieval system, without the prior
written permission of the publisher.



Abstract

This report analyzes PC/workstation system user requirements for and satisfaction with service and support. The following PC/workstation systems are analyzed in the report: Apollo, IBM, Sun, and another category comprised of Altos, Apple, Compaq, ITT, and Tandy users. The results of the overall sample are presented for comparison to the results of each individual user group.

Each individual vendor/product analysis begins with the service contract coverage. Next, it covers the user's criteria for selecting a service vendor and the sources of hardware maintenance. Perceptions of independent maintenance organizations are shown with the reasons why IMOs are used and some of the reasons why companies will not use an independent maintenance organization for their service requirements. The traditional areas of system availability, response time, and repair time are presented. Software support is analyzed in the same manner, examining the software maintenance provider, the type of contract, and response/fix times for software problems. Opportunities for other services are presented, examining respondents who currently contract for selected services and the propensity of others to expand their contracts for additional services. The area of discounts is also examined, presenting discounts currently received and the attraction of users to discount programs.

The report is presented in three chapters. Chapter I provides an introduction to the report, including the scope and methodology. Chapter II is an overview of the PC/workstation systems sample. Chapter III provides individual analyses by product vendor. Appendix A provides the questionnaire used for the research.

The report contains 70 pages, including 85 exhibits.



Table of Contents

I	Introduction	1
	A. Scope	1
	B. Methodology	2
	C. Interpretation of the Data	3
<hr/>		
II	U.S. Service Performance Data	5
<hr/>		
III	Vendor Performance Data	17
	A. Apollo	17
	B. IBM	27
	C. Sun	38
	D. All Other Systems	49
<hr/>		
A	Appendix: User Questionnaire	61



Exhibits

I	-1 User Sample by Vendor—PC/Workstation Systems	2
	-2 Distribution by Industry Sector—PC/Workstation Systems	3
<hr/>		
II	-1 Contract Coverage—All PC/Workstation Systems	5
	-2 Service Vendor Selection Criteria—All PC/Workstation Systems	6
	-3 Hardware Maintenance Provider—All PC/Workstation Systems	7
	-4 Reasons for Independent Maintenance Company Use—All PC/Workstation Systems	7
	-5 Reasons Independent Maintenance Company Not Used—All PC/Workstation Systems	8
	-6 Price Reduction Required to Consider IMO—All PC/Workstation Systems	9
	-7 Maintenance Contract Terms—All PC/Workstation Systems	9
	-8 System Availability Performance Analysis—All PC/Workstation Systems	10
	-9 System Failure Rates—All PC/Workstation Systems	10
	-10 Hardware Service Required versus Received—All PC/Workstation Systems	11
	-11 Software Maintenance Provider—All PC/Workstation Systems	11
	-12 Maintenance Contract Terms—All PC/Workstation Systems	12
	-13 Software Problem Resolution—All PC/Workstation Systems	12
	-14 System Software Support Required versus Received—All PC/Workstation Systems	13
	-15 Opportunities for Other Services—All PC/Workstation Systems	14
	-16 Discounts Currently Received—All PC/Workstation Systems	14
	-17 User Attraction to Discount Programs—All PC/Workstation Systems	15



Exhibits (Continued)

III

-1	Contract Coverage—Apollo	18
-2	Service Vendor Selection Criteria—Apollo	19
-3	Hardware Maintenance Provider—Apollo	20
-4	Reasons Independent Maintenance Company Not Used— Apollo	20
-5	Price Reduction Required to Consider IMO—Apollo	21
-6	Maintenance Contract Terms—Apollo	21
-7	System Availability Performance Analysis—Apollo	22
-8	System Failure Rates—Apollo	22
-9	Hardware Service Required versus Received—Apollo	23
-10	Software Maintenance Provider—Apollo	23
-11	Maintenance Contract Terms—Apollo	24
-12	Software Problem Resolution—Apollo	24
-13	System Software Support Required versus Received— Apollo	25
-14	Opportunities for Other Services—Apollo	26
-15	Discounts Currently Received—Apollo	27
-16	User Attraction to Discount Programs—Apollo	27
-17	Contract Coverage—IBM	28
-18	Service Vendor Selection Criteria—IBM	29
-19	Hardware Maintenance Provider—IBM	30
-20	Reasons for Independent Maintenance Company Use— IBM	30
-21	Reasons Independent Maintenance Company Not Used— IBM	31
-22	Price Reduction Required to Consider IMO—IBM	32
-23	Maintenance Contract Terms—IBM	32
-24	System Availability Performance Analysis—IBM	33
-25	System Failure Rates—IBM	33
-26	Hardware Service Required versus Received—IBM	34
-27	Software Maintenance Provider—IBM	34
-28	Maintenance Contract Terms—IBM	35
-29	Software Problem Resolution—IBM	35
-30	System Software Support Required versus Received—IBM	36
-31	Opportunities for Other Services—IBM	37
-32	Discounts Currently Received—IBM	38
-33	User Attraction to Discount Programs—IBM	38
-34	Contract Coverage—Sun	39
-35	Service Vendor Selection Criteria—Sun	40
-36	Hardware Maintenance Provider—Sun	41
-37	Reasons for Independent Maintenance Company Use— Sun	41
-38	Reasons Independent Maintenance Company Not Used—Sun	42
-39	Price Reduction Required to Consider IMO—Sun	43



Exhibits (Continued)

-40	Maintenance Contract Terms—Sun	43
-41	System Availability Performance Analysis—Sun	44
-42	System Failure Rates—Sun	44
-43	Hardware Service Required versus Received—Sun	45
-44	Software Maintenance Provider—Sun	45
-45	Maintenance Contract Terms—Sun	46
-46	Software Problem Resolution—Sun	46
-47	System Software Support Required versus Received—Sun	47
-48	Opportunities for Other Services—Sun	48
-49	Discounts Currently Received—Sun	49
-50	User Attraction to Discount Programs—Sun	49
-51	Contract Coverage—All Other Systems	50
-52	Service Vendor Selection Criteria—All Other Systems	51
-53	Hardware Maintenance Provider—All Other Systems	52
-54	Reasons for Independent Maintenance Company Use— All Other Systems	52
-55	Price Reduction Required to Consider IMO— All Other Systems	53
-56	Maintenance Contract Terms—All Other Systems	53
-57	System Availability Performance Analysis—All Other Systems	54
-58	System Failure Rates—All Other Systems	54
-59	Hardware Service Required versus Received—All Other Systems	55
-60	Software Maintenance Provider—All Other Systems	55
-61	Maintenance Contract Terms—All Other Systems	56
-62	Software Problem Resolution—All Other Systems	56
-63	System Software Support Required versus Received— All Other Systems	57
-64	Opportunities for Other Services—All Other Systems	58
-65	Discounts Currently Received—All Other Systems	59
-66	User Attraction to Discount Programs—All Other Systems	59





Introduction







Introduction

This report presents PC/workstation system user requirements for and the satisfaction with their service and support. The report analyzes the user's requirement for other ancillary services. The report also includes data from the Western European report, *User Satisfaction—Small Systems, 1990* for comparison purposes.

A

Scope

The report analyzes the service requirements of users of the following PC/workstation systems: Apollo, IBM, SUN, and another group comprised of Altos, Apple, ITT, and Tandy users. Exhibit I-1 provides a breakdown of the manufacturers included in the U.S. sample and the Western European sample.

Each individual vendor/product analysis begins with the service contract coverage. Next, it covers the user's criteria for selecting a service vendor, the source of hardware maintenance, and the perceptions of independent maintenance organizations. The traditional areas of system availability, response time, and repair time are presented. Software support is analyzed in the same manner, with examination of the software maintenance provider, the type of contract, and response/fix times for software problems. Opportunities for other services are presented, examining how many respondents are currently contracted for selected services and the propensity of the others to expand their contract for additional services. The area of discounts is also examined, presenting discounts currently received and the attraction of users to discount programs.



EXHIBIT I-1

**User Sample by Vendor—
PC/Workstation Systems**

	U.S.	W. Europe
Apollo	9	
BULL		36
DEC		24
Hewlett-Packard		10
IBM	16	40
ICL		26
Siemens		3
Sun	16	
Unisys		15
Wang		30
Other Vendors	12	21
Total	53	205

The report is presented in three chapters. Chapter I provides an introduction to the report, including the scope and methodology. Chapter II is the overview of the PC/workstation systems sample. Chapter III provides individual analyses by product vendor. Appendix A provides the questionnaire used for the research.

B

Methodology

For this report, INPUT surveyed 53 users of PC/workstation systems in the U.S. and 205 in Western Europe as to their requirement for and satisfaction with the service that they receive. Each of the interviews was conducted by telephone using the questionnaire in Appendix A. INPUT targets the appropriate systems executive at each company; typical titles include Data Processing Manager, IS Director or Manager, or Vice President of IS. Companies are from a wide range of industries, as shown in Exhibit I -2.



EXHIBIT I-2

**Distribution by Industry Sector—
PC/Workstation Systems**

	U.S.	W. Europe
Manufacturing	17	61
Distribution	1	22
Transportation	1	6
Utilities		4
Banking/Finance	3	18
Insurance	2	4
Government	4	5
Services	4	31
Other	21	54
Total Sample	53	205

INPUT emphasizes the value of telephone interviews over other types of research-gathering practices because of the ability to focus the respondent and control the source of information, as well as the size of the sample.

After the data gathering process is complete, the information is entered into a dBase III Plus (Ashton-Tate) data base and analyzed using ABstat (Anderson Bell). Quality control is applied at each step to ensure data integrity.

C

Interpretation of the Data

Mean values are used throughout the tabulated data presented in this report. These mean values refer to the mean value of user ratings for specific aspects of service performance or the mean value of a range of service performance required or received by the respondents.

In this report, the ratings for service requirements and satisfaction ranged from 0 - 10, with 0 equal to a very low requirement or satisfaction and 10 being an extremely high requirement or very high satisfaction.







U.S. Service Performance Data






 II

U.S. Service Performance Data

In this chapter, the overall PC/workstation systems sample is presented.

- Exhibit II-1 looks at the contract coverage that is utilized by the sample and compares it to the contract coverage of the 1989 sample.

EXHIBIT II-1

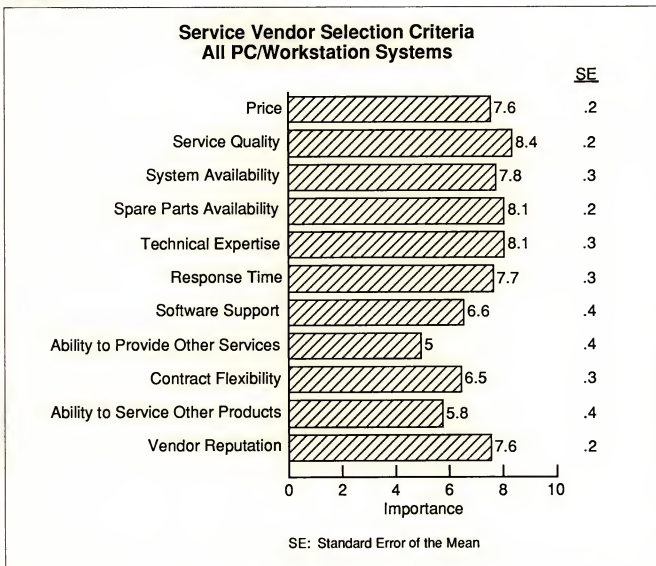
Contract Coverage All PC/Workstation Systems

	1990 Percent of Sample	1989 Percent of Sample
<u>Days Covered</u>		
Monday - Friday	67	76
Monday - Saturday	-	1
Monday - Sunday	33	23
<u>Hours Covered</u>		
1 - 9	58	75
10 - 16		4
17 - 24	42	21



- The service vendor selection criteria are presented in Exhibit II-2.

EXHIBIT II-2



- Exhibits II-3 through II-5 present the source of hardware maintenance for the sample and why the companies in the sample do or do not use independent maintenance organizations.



EXHIBIT II-3

Hardware Maintenance Provider All PC/Workstation Systems

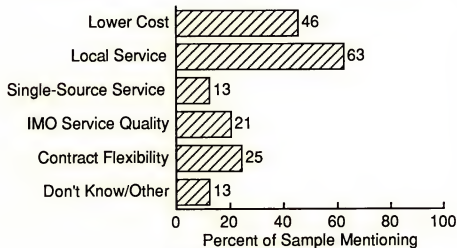
	Percent of Mentions	
	U.S.	W. Europe
Manufacturer	51	80
Dealer/distributor	8	7
Independent maintenance company	45	14
In-house	13	2
Other	2	1

Multiple responses allowed.

Sample size: 53 (U.S.), 205 (W. Europe)

EXHIBIT II-4

Reasons for Independent Maintenance Company Use—All PC/Workstation Systems



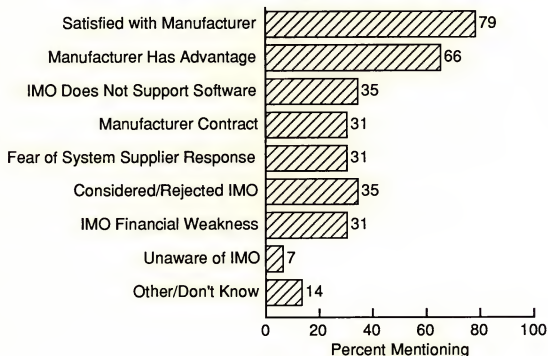
Multiple responses allowed.

Sample size: 24



EXHIBIT II-5

Reasons Independent Maintenance Company Not Used—All PC/Workstation Systems



Multiple responses allowed.

Sample size: 29

- Exhibit II-6 presents the levels of discount required for the respondents to consider independent maintenance.
- The length of maintenance contract terms is shown in Exhibit II-7.
- Traditional items of hardware maintenance are examined in Exhibits II-8 through II-10, showing system availability, system failure rates, and service required versus received. A percent satisfied column is included in Exhibit II-8 to show the percent of users in each category where the service received met or exceeded the service required. The mean satisfaction rating shown in Exhibit II-10 provides an actual rating by users of their satisfaction.



EXHIBIT II-6

**Price Reduction Required to Consider
IMO—All PC/Workstation Systems**

Percent Discount	Percent of Respondents
1 - 10	19
11 - 20	6
21 - 30	7
31 - 40	13
41 - 50	13
50 +	16
Unwilling at any price	13
Other	13

EXHIBIT II-7

**Maintenance Contract Terms
All PC/Workstation Systems**

Hardware Maintenance	Percent of Respondents
Warranty	17
Three-year	4
One-year	49
Time and materials	20
Other	4
None	6



EXHIBIT II-8

System Availability Performance Analysis All PC/Workstation Systems

	Mean Required	Mean Received	Percent Satisfied
System availability (%)	96.1	95.2	48
Response time (hrs)	7.9	10.0	79
Repair time (hrs)	8.8	8.3	77

EXHIBIT II-9

System Failure Rates All PC/Workstation Systems

	U.S.	W. Europe
Mean failures per annum	4.3	3.1
<u>Cause of failures</u> (Percent)		
Hardware	68	66
System software	13	13
Application software	3	3
Other	16	18

Sample size: 51 (U.S.), 205 (W. Europe)



EXHIBIT II-10

Hardware Service Required versus Received All PC/Workstation Systems

	Mean Ratings		
	Required	Received	Satisfaction
Spare availability	8.3	7.9	7.9
Engineer skills	8.5	8.1	7.8
Problem escalation	8.2	8.0	7.4
Documentation	8.0	7.2	6.8
Remote diagnosis	6.3	7.0	6.0

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

- Software contracts and service are examined in Exhibits II-11 through II-14.

EXHIBIT II-11

Software Maintenance Provider All PC/Workstation Systems

Provided By	Percent Mentioning	
	U.S.	W. Europe
Hardware manufacturer	55	60
Software house	6	16
Software product vendor	12	4
Value-added reseller	2	1
In-house	34	16
Other	0	4

Multiple responses allowed.

Sample size: 46 (U.S.), 205 (W. Europe)



EXHIBIT II-12

Maintenance Contract Terms All PC/Workstation Systems

System Software Maintenance	Percent of Respondents
Included in software license fee	35
Three-year	0
One-year	37
Custom	13
None	15

EXHIBIT II-13

Software Problem Resolution All PC/Workstation Systems

Solved By Phone (%)	56.0
Elapsed Time (hrs)	12.0
<u>Other problems</u>	
Response time	
• Required (mean hrs)	34.2
• Received (mean hrs)	36.1
• Percent satisfied	78.0
Fix time	
• Required (mean hrs)	10.9
• Received (mean hrs)	7.9
• Percent satisfied	95.0



EXHIBIT II-14

System Software Support Required versus Received All PC/Workstation Systems

	Mean Ratings		
	Required	Received	Satisfaction
Engineer skills	8.7	8.2	7.6
Documentation	8.7	7.7	7.3
Software installation	8.1	7.5	7.6
Provision of updates	8.2	7.9	7.5
Remote diagnosis	7.2	7.8	7.3

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

- Opportunities for other services for the maintenance vendors are given in Exhibit II-15, including the number of respondents currently contracting for the services, those requiring the services but not having them now, and the mean level of interest of respondents requiring the services.
- Discounts currently being received by the sample are shown in Exhibit II-16 and interest in discounts is shown in Exhibit II-17.



EXHIBIT II-15

Opportunities for Other Services All PC/Workstation Systems

	Number of Mentions		Mean Level of Interest
	Currently Contracted	Not Contracted But Require	
Configuration planning	15	3	8.3
Capacity planning	15	3	8.7
Environmental planning	14	3	8.3
Cabling	11	4	9.3
Software evaluation	16	2	8.0
Consulting	15	0	0.0
Network planning	13	4	6.0
Network management	12	3	6.3
Disaster recovery	10	2	7.5
Facilities management	14	3	5.0
Problem management	18	4	5.5
Application software support	25	2	8.0

Sample size: 53

EXHIBIT II-16

Discounts Currently Received All PC/Workstation Systems

Discount	Percent Receiving	Mean Percent of Discount
Multiyear	33	20.5
Prepayment	26	7.6
Call screening/problem mgmt.	16	26.0
Deferred response	9	20.0

Sample size: 46



EXHIBIT II-17

**User Attraction to Discount Programs
All PC/Workstation Systems**

Discount	Willingness	Respondents
Multiyear	3.4	28
Prepayment	3.8	29
Call screening/problem mgmt.	2.1	33
Deferred response	2.2	36

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.







Vendor Performance Data

A vertical line is present on the left side of the page, extending from the middle of the page down to the bottom.





Vendor Performance Data

Chapter III presents the individual vendor product analyses for Apollo, IBM, Sun, and other PC/workstation systems.

A

Apollo

There are nine users in the Apollo sample, representing the DH, DM, and DN systems.

- Exhibit III-1 looks at the contract coverage that is utilized by the sample and compares it to the contract coverage of the 1989 sample.
- The service vendor selection criteria of the Apollo sample are presented in Exhibit III-2.
- Exhibits III-3 and III-4 present the source of hardware maintenance for the sample and why they do not use independent maintenance organizations. There was only one respondent in the Apollo sample that made use of an independent maintenance organization.
- Exhibit III-5 shows the levels of discount required for the respondents to consider using an independent maintenance organization.
- The length of maintenance contract terms is shown in Exhibit III-6.
- Traditional items of hardware maintenance are examined in Exhibits III-7 through III-9, showing system availability, system failure rates, and service required versus received.



- Software contracts and service are examined in Exhibits III-10 through III-13.
- Opportunities for other services for the maintenance vendors are given in Exhibit III-14, with the number of respondents currently contracting for the services, those requiring the services but not having them now, and the mean level of interest of respondents requiring the services.

Discounts currently being received by the sample are shown in Exhibit III-15 and interest in discounts is shown in Exhibit III-16.

EXHIBIT III-1

Contract Coverage—Apollo

	1990 Percent of Sample	1989 Percent of Sample
<u>Days Covered</u>		
Monday - Friday	100	92
Monday - Saturday	0	8
Monday - Sunday	0	0
<u>Hours Covered</u>		
1 - 9	87	88
10 - 16	0	4
17 - 24	13	8



EXHIBIT III-2

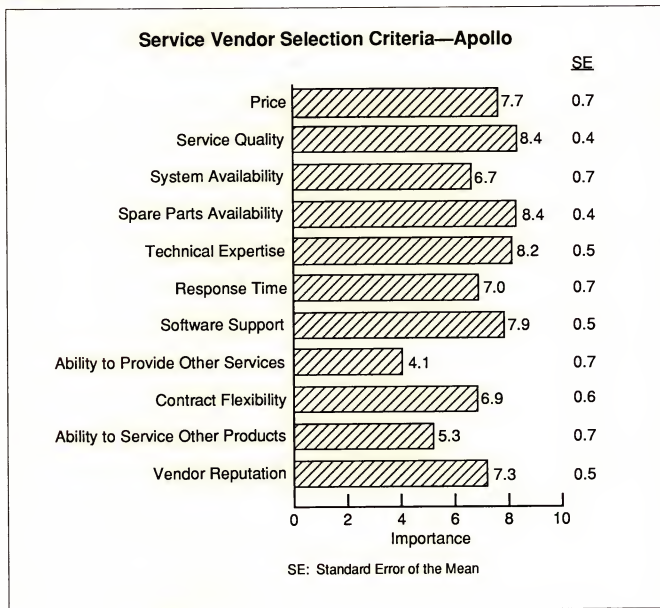




EXHIBIT III-3

**Hardware Maintenance Provider
Apollo**

	Percent of Mentions
Manufacturer	89
Dealer/distributor	11
Independent maintenance company	11
In-house	0
Other	0

Multiple responses allowed. Sample size: 9

EXHIBIT III-4

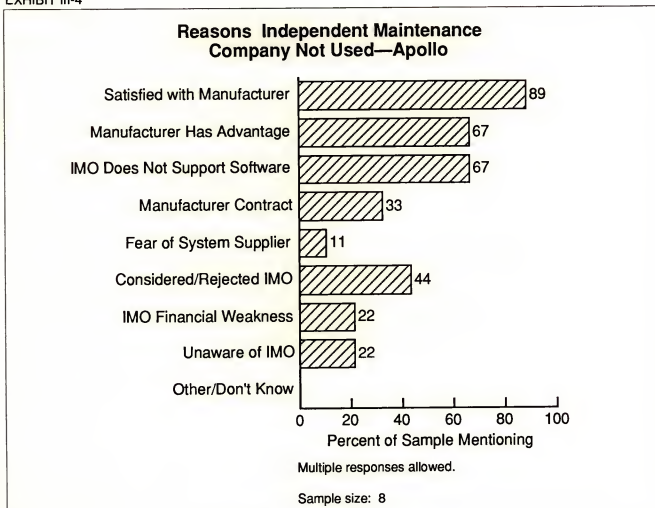




EXHIBIT III-5

**Price Reduction Required
to Consider IMO—Apollo**

Percent Discount	Percent of Respondents
1 - 10	11
11 - 20	11
21 - 30	0
31 - 40	11
41 - 50	22
50 +	45
Unwilling at any price	0
Other	0

EXHIBIT III-6

**Maintenance Contract Terms
Apollo**

Hardware Maintenance	Percent of Respondents
Warranty	25
Three-year	0
One-year	50
Time and materials	25
Other	0
None	0



EXHIBIT III-7

System Availability Performance Analysis Apollo

	Mean Required	Mean Received	Percent Satisfied
System availability (%)	96.1	96.1	56
Response time (hrs)	13.6	16.1	78
Repair time (hrs)	18.2	22.9	78

EXHIBIT III-8

System Failure Rates Apollo

	U.S.
Mean failures per annum	2.4
<u>Cause of failures</u> (Percent)	
Hardware	53
System software	5
Application software	5
Other	37

Sample size: 9



EXHIBIT III-9

Hardware Service Required versus Received Apollo

	Mean Ratings		
	Required	Received	Satisfaction
Spares availability	7.8	7.4	7.8
Engineer skills	8.2	8.3	8.0
Problem escalation	7.8	7.9	7.5
Documentation	8.0	6.6	6.3
Remote diagnosis	5.0	7.0	5.8

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

EXHIBIT III-10

Software Maintenance Provider Apollo

Provided By	Percent Mentioning
	U.S.
Hardware manufacturer	89
Software house	0
Software product vendor	11
Value-added reseller	0
In-house	22
Other	0

Multiple responses allowed.

Sample size: 9



EXHIBIT III-11

Maintenance Contract Terms Apollo

System Software Maintenance	Percent of Respondents
Included in software license fee	44
Three-year	56
One-year	0
Custom	0
None	0

Sample size: 9

EXHIBIT III-12

Software Problem Resolution Apollo

Solved By Phone (%)	58.0
Elapsed Time (hrs)	8.1
<u>Other Problems</u>	
Response Time	
• Required (mean hrs)	46.4
• Received (mean hrs)	44.8
• Percent Satisfied	89.0
Fix Time	
• Required (mean hrs)	12.4
• Received (mean hrs)	9.7
• Percent Satisfied	100.0



EXHIBIT III-13

**System Software Support Required versus Received
Apollo**

	Mean Ratings		
	Required	Received	Satisfaction
Engineer skills	8.8	8.3	8.0
Documentation	8.4	7.2	7.2
Software installation	8.1	7.2	7.6
Provision of updates	8.8	7.1	7.0
Remote diagnosis	4.3	6.3	6.3

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.



EXHIBIT III-14

Opportunities for Other Services Apollo

	Number of Mentions		Mean Level of Interest
	Currently Contracted	Not Contracted But Require	
Configuration planning	2	1	7
Capacity planning	1	0	0
Environmental planning	3	0	0
Cabling	1	0	0
Software evaluation	2	0	0
Consulting	1	0	0
Network planning	1	0	0
Network management	1	0	0
Disaster recovery	0	0	0
Facilities management	1	0	0
Problem management	2	1	7
Application software support	4	0	0

Sample size: 9



EXHIBIT III-15

Discounts Currently Received Apollo

Discount	Percent Receiving	Mean Percent of Discount
Multiyear	29	NA
Prepayment	40	8.0
Call screening/problem mgmt.	43	NA
Deferred response	29	NA

NA: Not available

EXHIBIT III-16

User Attraction to Discount Programs Apollo

Discount	Willingness	Respondents
Multiyear	5.8	5
Prepayment	1.5	4
Call screening/problem mgmt.	1.5	4
Deferred response	0.4	5

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

B**IBM**

There are 16 users in the IBM sample, representing IBM 5150 and PS/2 users.

- Exhibit III-17 looks at the contract coverage that is utilized by the sample and compares it to the contract coverage of the 1989 sample.
- The service selection vendor criteria are presented in Exhibit III-18.



- Exhibits III-19 through III-21 present the source of hardware maintenance for the sample and why they do or do not use independent maintenance organizations.
- Exhibit III-22 presents the levels of discount required for the respondents to consider using an independent maintenance organization.
- The length of maintenance contract terms is shown in Exhibit III-23.
- Traditional items of hardware maintenance are examined in Exhibits III-24 through III-26, showing system availability, system failure rates, and service required versus received. A percent satisfied column is included in Exhibit III-24 to show the percent of users in each category where the service received met or exceeded the service required. The mean satisfaction rating shown in Exhibit III-26 provides an actual rating by the users of their satisfaction.
- Software contracts and service are examined in Exhibits III-27 through III-30.
- Opportunities for other services for the maintenance vendors are given in Exhibit III-31, with the number of respondents currently contracting for the services, those requiring the services but not having them now, and the mean level of interest of respondents requiring the services.
- Discounts currently being received by the sample are shown in Exhibit III-32 and interest in discounts is shown in Exhibit III-33. Exhibit III-33 shows users' willingness to subscribe to the various discount programs, on a rating scale of 0-10.

EXHIBIT III-17

Contract Coverage IBM		
	1990 Percent of Sample	1989 Percent of Sample
<u>Days Covered</u>		
Monday - Friday	37	58
Monday - Saturday	0	0
Monday - Sunday	63	42
<u>Hours Covered</u>		
1 - 9	31	54
10 - 16	0	4
17 - 24	69	42



EXHIBIT III-18

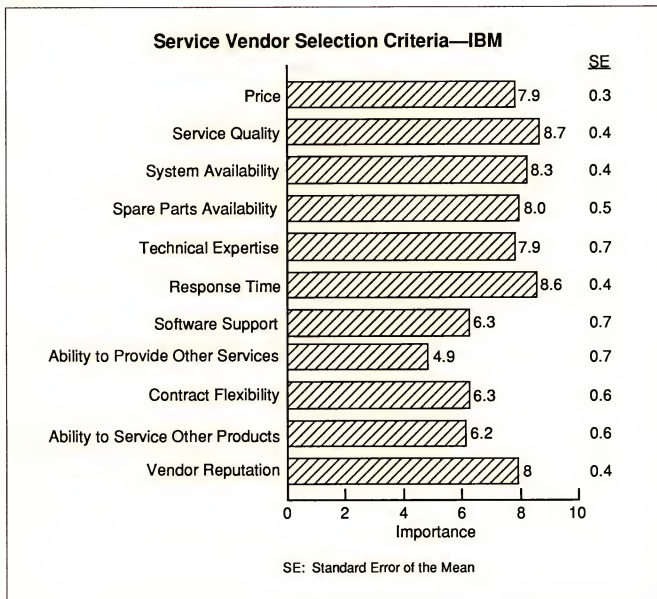


EXHIBIT III-19

Hardware Maintenance Provider IBM

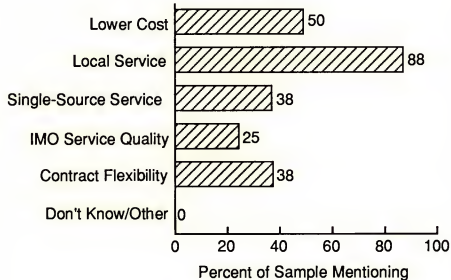
	Percent of Mentions	
	U.S.	W. Europe
Manufacturer	44	65
Dealer/distributor	19	10
Independent maintenance company	50	28
In-house	25	0
Other	6	3

Multiple responses allowed.

Sample size: 16 (U.S.), 40 (W. Europe)

EXHIBIT III-20

Reasons for Independent Maintenance Company Use IBM



Multiple responses allowed.

Sample size: 8



EXHIBIT III-21

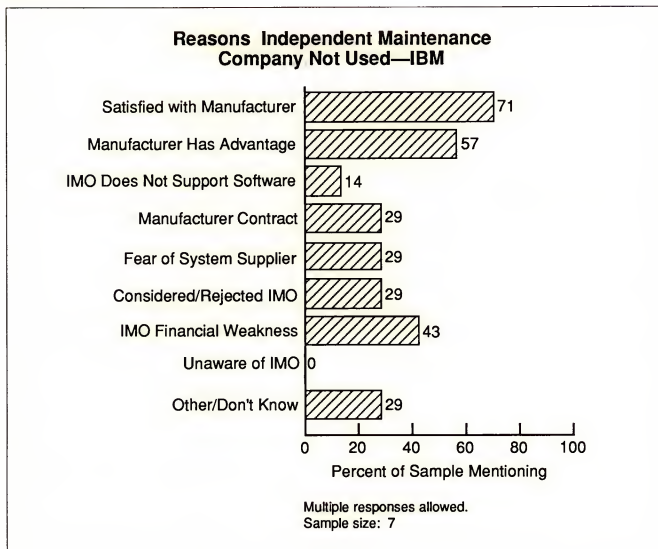




EXHIBIT III-22

**Price Reduction Required
to Consider IMO—IBM**

Percent Discount	Percent of Respondents
1 - 10	0
11 - 20	14
21 - 30	0
31 - 40	0
41 - 50	14
50 +	14
Unwilling at any price	29
Other	29

EXHIBIT III-23

**Maintenance Contract Terms
IBM**

Hardware Maintenance	Percent of Respondents
Warranty	13
Three-year	6
One-year	50
Time and materials	19
Other	6
None	6



EXHIBIT III-24

System Availability Performance Analysis IBM

	Mean Required	Mean Received	Percent Satisfied
System availability (%)	96.2	96.5	50
Response time (hrs)	2.9	6.2	67
Repair time (hrs)	2.3	4.1	67

EXHIBIT III-25

System Failure Rates IBM

	U.S.	W.Europe
Mean failures per annum	3.1	2.1
<u>Cause of failures</u> (Percent)		
Hardware	81	54
System software	3	12
Application software	6	0
Other	10	34

Sample size: 16 (U.S), 40 (W. Europe)



EXHIBIT III-26

Hardware Service Required versus Received IBM

	Mean Ratings		
	Required	Received	Satisfaction
Spares availability	8.3	8.1	7.4
Engineer skills	8.9	8.5	7.9
Problem escalation	8.2	8.0	7.3
Documentation	7.2	7.5	7.1
Remote diagnosis	5.9	7.5	5.3

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

EXHIBIT III-27

Software Maintenance Provider IBM

Provided By	Percent Mentioning	
	U.S.	W. Europe
Hardware manufacturer	31	53
Software house	6	20
Software product vendor	13	3
Value-added reseller	6	3
In-house	50	15
Other	0	0

Multiple responses allowed.

Sample size: 16 (U.S.), 40 (W. Europe)



EXHIBIT III-28

Maintenance Contract Terms IBM

System Software Maintenance	Percent of Respondents
Included in software license fee	46
Three-year	0
One-year	8
Custom	23
None	23

Sample size: 13

EXHIBIT III-29

Software Problem Resolution IBM

Solved By Phone (%)	59.0
Elapsed Time (hrs)	6.5
<u>Other Problems</u>	
Response Time	
• Required (mean hrs)	14.8
• Received (mean hrs)	28.3
• Percent Satisfied	71.0
Fix Time	
• Required (mean hrs)	6.9
• Received (mean hrs)	10.2
• Percent Satisfied	83.0



EXHIBIT III-30

**System Software Support Required versus Received
IBM**

	Mean Ratings		
	Required	Received	Satisfaction
Engineer skills	8.2	8.5	7.9
Documentation	8.2	8.7	7.7
Software installation	6.6	8.3	7.8
Provision of updates	7.3	8.0	7.0
Remote diagnosis	6.4	8.0	6.7

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.



EXHIBIT III-31

Opportunities for Other Services IBM

	Number of Mentions		Mean Level of Interest
	Currently Contracted	Not Contracted But Require	
Configuration planning	4	0	0
Capacity planning	5	0	0
Environmental planning	2	0	0
Cabling	2	0	0
Software evaluation	3	1	8
Consulting	2	0	0
Network planning	2	1	7
Network management	1	2	8
Disaster recovery	2	1	7
Facilities management	3	0	0
Problem management	4	1	5
Application software support	7	1	8

Sample size: 16



EXHIBIT III-32

Discounts Currently Received IBM		
Discount	Percent Receiving	Mean Percent of Discount
Multiyear	33	26
Prepayment	14	NA
Call screening/problem mgmt.	14	26
Deferred response	0	0

NA: Not available

EXHIBIT III-33

User Attraction to Discount Programs IBM		
Discount	Willingness	Respondents
Multiyear	2.8	8
Prepayment	4.4	11
Call screening/problem mgmt.	2.3	10
Deferred response	2.8	12

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

C**Sun**

There are 16 users in the Sun sample, representing various PC/workstation systems.

- Exhibit III-34 looks at the contract coverage that is utilized by the sample and compares it to the contract coverage of the 1989 sample.
- The service vendor selection criteria are presented in Exhibit III-35.



- Exhibits III-36 through III-38 present the source of hardware maintenance for the sample and why they do or do not use independent maintenance organizations.
- Exhibit III-39 presents the levels of discount required for the respondents to consider using an independent maintenance organization for their service needs.
- The length of maintenance contract terms is shown in Exhibit III-40.
- Traditional items of hardware maintenance are examined in Exhibits III-41 through III-43, showing system availability, system failure rates, and service required versus received. The percent satisfied column refers to the percent of users in each category where the service received met or exceeded the service required. The mean satisfaction rating refers to a mean of the actual user ratings given for satisfaction.
- Software contracts and service are examined in Exhibits III-44 through III-47.

Opportunities for other services for the maintenance vendors are given in Exhibit III-48, with the number of respondents currently contracting for the services, those requiring the services but not having them now, and the mean level of interest of respondents requiring the services.

Discounts currently being received by the sample are shown in Exhibit III-49 and the attraction of users to various discounting programs is shown in Exhibit III-50.

EXHIBIT III-34

**Contract Coverage
Sun**

	1990 Percent of Sample	1989 Percent of Sample
<u>Days Covered</u>		
Monday - Friday	77	76
Monday - Saturday	0	0
Monday - Sunday	23	24
<u>Hours Covered</u>		
1 - 9	64	80
10 - 16	0	0
17 - 24	36	20



EXHIBIT III-35

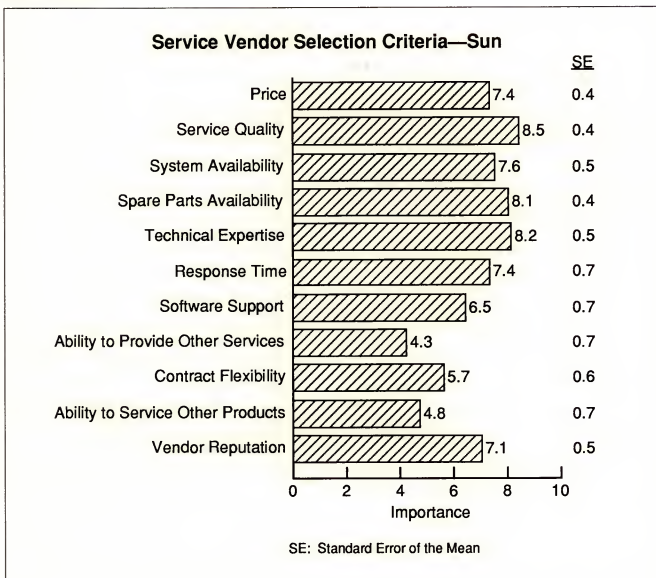




EXHIBIT III-36

Hardware Maintenance Provider Sun

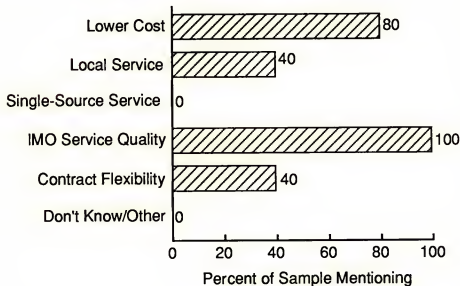
	Percent of Mentions
	U.S.
Manufacturer	63
Dealer/distributor	0
Independent maintenance company	31
In-house	19
Other	0

Multiple responses allowed.

Sample size: 16

EXHIBIT III-37

Reasons for Independent Maintenance Company Use—Sun

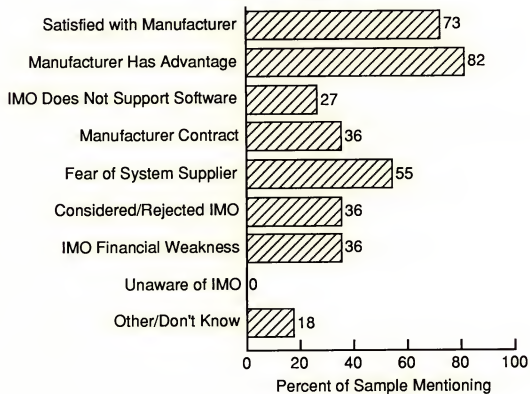


Multiple responses allowed.

Sample size: 5



EXHIBIT III-38

**Reasons Independent Maintenance Company
Not Used—Sun**

Multiple responses allowed.

Sample size: 11



EXHIBIT III-39

**Price Reduction Required
to Consider IMO—Sun**

Percent Discount	Percent of Respondents
1 - 10	28
11 - 20	0
21 - 30	18
31 - 40	27
41 - 50	9
50 +	0
Unwilling at any price	18
Other	0

EXHIBIT III-40

**Maintenance Contract Terms
Sun**

Hardware Maintenance	Percent of Respondents
Warranty	13
Three-year	7
One-year	60
Time and materials	7
Other	7
None	6

Sample size: 15



EXHIBIT III-41

System Availability Performance Analysis Sun

	Mean Required	Mean Received	Percent Satisfied
System availability (%)	96.5	94.3	33
Response time (hrs)	11.8	14.3	75
Repair time (hrs)	10.5	4.1	71

EXHIBIT III-42

System Failure Rates Sun

	U.S.
Mean failures per annum	7.9
<u>Cause of failures</u> (Percent)	
Hardware	50
System software	30
Application software	2
Other	18

Sample size: 16



EXHIBIT III-43

Hardware Service Required versus Received Sun

	Mean Ratings		
	Required	Received	Satisfaction
Spares availability	8.6	8.1	8.2
Engineer skills	8.3	7.6	7.3
Problem escalation	8.3	8.2	7.7
Documentation	8.8	7.0	6.5
Remote diagnosis	7.5	6.9	6.4

Multiple responses allowed.

Note: Scale 0 - 10: 0 - lowest, 10 = highest rating.

EXHIBIT III-44

Software Maintenance Provider Sun

Provided By	Percent Mentioning
	U.S.
Hardware manufacturer	80
Software house	0
Software product vendor	0
Value-added reseller	0
In-house	40
Other	0

Multiple responses allowed.

Sample size: 15



EXHIBIT III-45

Maintenance Contract Terms Sun

System Software Maintenance	Percent of Respondents
Included in software license fee	22
Three-year	0
One-year	64
Custom	7
None	7

Sample size: 14

EXHIBIT III-46

Software Problem Resolution Sun

Solved By Phone (%)	41.0
Elapsed Time (hrs)	26.9
<u>Other Problems</u>	
Response Time	
• Required (mean hrs)	60.5
• Received (mean hrs)	65.3
• Percent Satisfied	50.0
Fix Time	
• Required (mean hrs)	22.0
• Received (mean hrs)	11.8
• Percent Satisfied	100.0



EXHIBIT III-47

**System Software Support Required versus Received
Sun**

	Mean Ratings		
	Required	Received	Satisfaction
Engineer skills	8.9	7.5	6.7
Documentation	9.1	7.2	6.8
Software installation	8.6	6.9	7.9
Provision of updates	8.9	8.0	7.9
Remote diagnosis	8.6	8.6	7.6

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.



EXHIBIT III-48

Opportunities for Other Services—Sun

	Number of Mentions		Mean Level of Interest
	Currently Contracted	Not Contracted But Require	
Configuration planning	1	1	8.0
Capacity planning	0	2	9.0
Environmental planning	1	1	9.0
Cabling	0	2	9.0
Software evaluation	1	1	8.0
Consulting	2	0	0
Network planning	0	2	5.5
Network management	0	1	3.0
Disaster recovery	1	1	8.0
Facilities management	0	3	5.0
Problem management	2	2	5.0
Application software support	4	0	0

Sample size: 14



EXHIBIT III-49

Discounts Currently Received Sun

Discount	Percent Receiving	Mean Percent of Discount
Multiyear	33	NA
Prepayment	42	6.7
Call screening/problem mgmt.	9	NA
Deferred response	17	20.0

NA: Not available

EXHIBIT III-50

User Attraction to Discount Programs Sun

Discount	Willingness	Respondents
Multiyear	1.7	7
Prepayment	3.7	7
Call screening/problem mgmt.	1.4	11
Deferred response	1.3	10

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.

D

All Other Systems

The all other systems sample consists of Altos, Apple, Compaq, ITT, and Tandy PC/workstation users.

- Exhibit III-51 looks at the contract coverage that is utilized by the sample.
- The service vendor selection criteria are presented in Exhibit III-52.
- Exhibits III-53 and III-54 present the source of hardware maintenance for the sample and why they use independent maintenance organizations. Only two respondents reported using the manufacturer for their



service and they stayed with the service because they were happy with the service they were receiving.

- Exhibit III-55 presents the levels of discount required for the respondents to consider using an independent maintenance organization. Both respondents now using a manufacturer for service reported they would change for a discount of less than 10%.
- The length of maintenance contract terms is shown in Exhibit III-56.
- Traditional items of hardware maintenance are examined in Exhibits III-57 through III-59, showing system availability, system failure rates, and service required versus received. The percent satisfied column refers to the percent of users in each category where the service received met or exceeded the service required. The mean satisfaction rating refers to the mean of the actual ratings given by the users of their satisfaction.
- Software contracts and service are examined in Exhibits III-60 through III-63. One hundred percent of this portion of the sample received response time and repair time less than they required; therefore, they were 100% satisfied with the service received in these areas.
- Opportunities for other services for maintenance vendors are shown in Exhibit III-64, with the number of respondents currently contracting for the services, those requiring the services but not having them now, and the mean level of interest of respondents requiring the services.
- Discounts currently being received by the sample are shown in Exhibit III-65 and user attraction to various discount programs is shown in Exhibit III-66.

EXHIBIT III-51

Contract Coverage—All Other Systems

	1990 Percent of Sample	1989 Percent of Sample
<u>Days Covered</u>		
Monday - Friday	73	0
Monday - Saturday	0	0
Monday - Sunday	27	0
<u>Hours Covered</u>		
1 - 9	70	0
10 - 16	0	0
17 - 24	30	0

Sample size: 12



EXHIBIT III-52

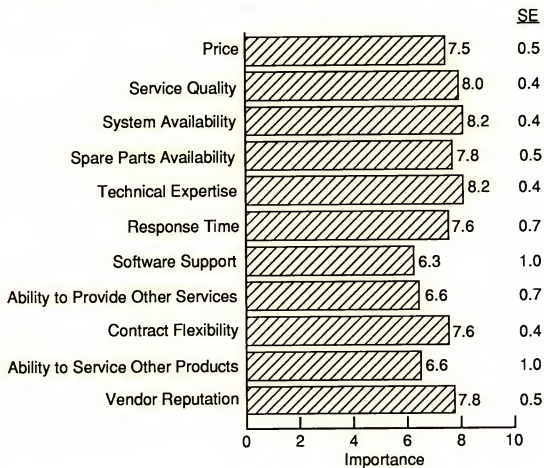
Service Vendor Selection Criteria—All Other Systems



EXHIBIT III-53

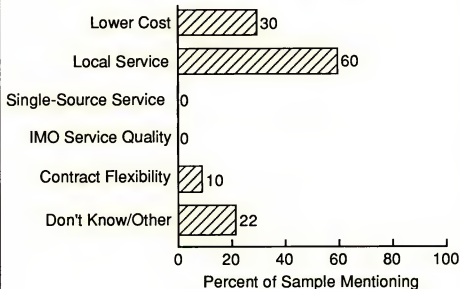
Hardware Maintenance Provider All Other Systems

	Percent of Mentions
	U.S.
Manufacturer	17
Dealer/distributor	0
Independent maintenance company	83
In-house	0
Other	0

Multiple responses allowed.

EXHIBIT III-54

Reasons for Independent Maintenance Company Use—All Other Systems



Multiple responses allowed.

Sample size: 10



EXHIBIT III-55

**Price Reduction Required to
Consider IMO—All Other Systems**

Percent Discount	Percent of Respondents
1 - 10	100
11 - 20	0
21 - 30	0
31 - 40	0
41 - 50	0
50 +	0
Unwilling at any price	0
Other	0

EXHIBIT III-56

**Maintenance Contract Terms
All Other Systems**

Hardware Maintenance	Percent of Respondents
Warranty	25
Three-year	0
One-year	33
Time and materials	33
Other	0
None	9



EXHIBIT III-57

System Availability Performance Analysis All Other Systems

	Mean Required	Mean Received	Percent Satisfied
System availability (%)	95.7	94.3	58
Response time (hrs)	4.8	4.4	100
Repair time (hrs)	6.6	6.3	92

EXHIBIT III-58

System Failure Rates All Other Systems

	U.S.
Mean failures per annum	2.0
<u>Cause of failures</u> (Percent)	
Hardware	92
System software	0
Application software	0
Other	8

Sample size: 11



EXHIBIT III-59

Hardware Service Required versus Received All Other Systems

	Mean Ratings		
	Required	Received	Satisfaction
Spares availability	8.3	7.9	8.2
Engineer skills	8.5	8.3	7.9
Problem escalation	8.5	8.0	7.1
Documentation	8.1	7.6	7.1
Remote diagnosis	5.7	6.5	6.5

Note: Scale 0 - 10: 0 - lowest, 10 = highest rating.

EXHIBIT III-60

Software Maintenance Provider All Other Systems

Provided By	Percent Mentioning
	U.S.
Hardware manufacturer	27
Software house	18
Software product vendor	27
Value-added reseller	0
In-house	27
Other	0

Multiple responses allowed.

Sample size: 11



EXHIBIT III-61

Maintenance Contract Terms All Other Systems

System Software Maintenance	Percent of Respondents
Included in software license fee	30
Three-year	0
One-year	20
Custom	20
None	30

EXHIBIT III-62

Software Problem Resolution All Other Systems

Solved By Phone (%)	74.0
Elapsed Time (hrs)	1.5
<u>Other Problems</u>	
Response Time	
• Required (mean hrs)	8.7
• Received (mean hrs)	5.8
• Percent Satisfied	100.0
Fix Time	
• Required (mean hrs)	2.7
• Received (mean hrs)	1.8
• Percent Satisfied	100.0



EXHIBIT III-63

**System Software Support Required versus Received
All Other Systems**

	Mean Ratings		
	Required	Received	Satisfaction
Engineer skills	9.3	8.4	8.1
Documentation	8.6	7.5	7.4
Software installation	8.3	8.0	8.0
Provision of updates	7.9	8.3	8.3
Remote diagnosis	8.0	7.3	8.0

Note: Scale 0 - 10: 0 = lowest, 10 = highest rating.



EXHIBIT III-64

Opportunities for Other Services—All Other Systems

	Number of Mentions		Mean Level of Interest
	Currently Contracted	Not Contracted But Require	
Configuration planning	8	1	10.0
Capacity planning	9	1	8.0
Environmental planning	8	2	8.0
Cabling	8	2	9.5
Software evaluation	10	0	0.0
Consulting	10	0	0.0
Network planning	10	1	6.0
Network management	10	0	0.0
Disaster recovery	7	0	0.0
Facilities management	10	0	0.0
Problem management	10	0	0.0
Application software support	10	1	8.0

Sample size: 12



EXHIBIT III-65

**Discounts Currently Received
All Other Systems**

Discount	Percent Receiving	Mean Percent of Discount
Multiyear	33	15.0
Prepayment	17	10.0
Call screening/problem mgmt.	8	NA
Deferred response	0	0.0

NA: Not available

EXHIBIT III-66

**User Attraction to Discount Programs
All Other Systems**

Discount	Willingness	Respondents
Multiyear	3.9	8
Prepayment	4.1	7
Call screening/problem mgmt.	3.1	8
Deferred response	3.4	9







Appendix: User Questionnaire







Appendix: User Questionnaire

A

General

1. What is the make and model number of the main computer on your site and how many do you have?

Make _____

Model _____ (CRITICAL INFORMATION)

Units _____

2. Are you the person who is knowledgeable on the servicing of this system?
 Yes No

(If not then obtain the name of the correct person and start again.)

Name of person responsible _____

3. Do you have another system? What is the make and model number of that system and how many do you have?

Make _____

Model _____ (CRITICAL INFORMATION)

Units _____

All of the following questions that I am going to ask you are related to your _____ system. (Write in system type.)

(To confirm, read out the make and model number.)



4. So that we can ensure that we get a proper cross-section of industry and commerce, can you tell me what is the main business sector of your company? (Read out the list to allow for best choice. Then circle appropriate answer.)

Business sector

- Manufacturing 1
- Distribution 2
- Transportation 3
- Utilities 4
- Banking and Finance 5
- Insurance 6
- Government 7
- Services 8
- Other/Don't Know 9

B

Service Vendor Selection

I would like to ask you some questions relating to the vendor that services your computer system.

5. Could you please rate the importance of the following criteria in selecting your service vendor, on a scale of 0 to 10 (0 = low, 10 = high).

Criteria

Rating

- | | |
|---|-------|
| a. Price | _____ |
| b. Quality of service | _____ |
| c. Guaranteed system availability level | _____ |
| d. Guaranteed availability of spare parts | _____ |
| e. Technical expertise | _____ |
| f. Fast response time | _____ |
| g. Availability of software support | _____ |
| h. Ability to provide other services | _____ |
| i. Contract flexibility | _____ |
| j. Ability to service other products | _____ |
| k. Vendor reputation | _____ |

- 6a. Would you please tell me who services your computer system hardware? (Remind the user _____ system.)

(Please circle appropriate vendor type; multiple answers are allowed.)

- | | |
|---------------------------------|---|
| Manufacturer | 1 |
| Dealer/distributor | 1 |
| Third-party maintenance company | 1 |
| Own company | 1 |
| Other | 1 |

(If the respondent answered YES to third-party maintenance, ask the following question. If not, go to question 7.)



- 6b. I notice that your system, or part of it, is serviced by a third-party maintenance company. Could you tell me the reason why you use third-party maintenance?

(Please circle appropriate answer; multiple answers allowed.)

- Lower cost 1
- Local service 1
- Single-source service 1
- TPM service higher quality 1
- More flexible contract 1
- Other/Don't know 9

- 7a. I notice that you *do not* use a third-party maintenance company; is there a reason for this?

(Please circle appropriate answer; multiple answers allowed.)

- Satisfied with manufacturer 1
- Manufacturer has an advantage 1
- TPM cannot support software 1
- Tied to manufacturer with contract 1
- Fear of system supplier response 1
- Considered and rejected TPM 1
- TPM financial weakness 1
- Unaware of TPM 1
- Other/Don't know 9

- 7b. Assuming you were approached by a TPM company, at what level of price reduction would you consider using a TPM vendor to service your computer hardware?

(Please circle appropriate answer. Only one answer allowed.)

- 1% - 10% 1
- 11% - 20% 1
- 21% - 30% 1
- 31% - 40% 1
- 41% - 50% 1
- 50%+ 1
- Unwilling at any price 1
- Other/Don't know 9

8. How important is it that your service vendor communicates with you regularly and effectively to advise you of, for example:

- | | | |
|-----------------------------------|---|-------------|
| ___ The status of your system | > | |
| ___ Possible problems | > | |
| ___ Repair plans | > | INTERVIEWER |
| ___ Availability of spare parts | > | PROMPTS |
| ___ Routine visits | > | |
| ___ Hardware and software changes | > | |



Could you please provide an importance and satisfaction rating on a scale of 0 to 10, where 0 is of no importance or indicates total dissatisfaction, and 10 is at top importance or indicates full satisfaction.

- Importance _____
- Satisfaction _____

- 9a. Would you prefer all hardware maintenance and software support to be provided by one service vendor at each site? If yes, what would your interest level be?

(Circle answer.)

Yes 1
 No 1
 Don't know 9

Level of interest: (please circle)

Low Medium High

(If the respondent answered YES, ask:)

- 9b. Who would you prefer that vendor to be?

(Please circle appropriate answer; multiple answers allowed.)

- The manufacturer of your main hardware 1
- Dealer/distributor/VAR 1
- TPM company 1
- One of your hardware manufacturers 1
- Don't know/other 9

Note: VAR is a value-added reseller.

C

Hardware Maintenance

I would now like to ask you some questions about the hardware maintenance of your computer system. (Reaffirm the system type _____)

Some of the questions are scaled with ratings from 0 to 10. Zero (0) represents zero importance or satisfaction, 5 is average, and 10 represents top importance or full satisfaction.

10. What is your rating for the importance of hardware maintenance to your business and how satisfied are you with your service vendor's performance?
- Importance rating _____
 - Satisfaction rating _____



11. If we define **systems availability** as the percentage of your normal working hours that the system is operational (disregarding non-critical peripheral breaks), what percentage has that been for your system over the last twelve months?

• Percentage _____%

12. How many times each year does your system fail completely for a period of greater than one hour?

• Per year _____

And what percentage of these system failures are due to:

Hardware	_____%
Systems software	_____%
Applications software	_____%
Other (i.e., power failure)	_____%

(Please check that percentages add up to 100.)

13. What is your rating for the importance of **systems availability** (scale 0 - 10), and what is your level of satisfaction?

• Importance rating _____
 • Satisfaction rating _____

14. Defining **hardware response time** as the time it takes between reporting a fault and the arrival of the service engineer on site (in working hours, that is to say 8 hours = 1 working day), what response time (in hours) do you find acceptable and what did you actually experience as an average over the last twelve months?

• Acceptable _____ Hours
 • Experienced _____ Hours

15. If **repair time** is defined as the time taken to get the system fully operational from the time the engineer arrives on site, then what time do you find acceptable (in working hours) and what time did you experience in the last twelve months?

(Note: 8 hours = 1 working day/shift)

• Acceptable _____ Hours
 • Experienced _____ Hours



16. I would now like to go through a list of five aspects of hardware maintenance and ask you to give an importance and satisfaction rating for each (scale 0 - 10).

	<u>Importance</u>	<u>Satisfaction</u>
• Spares availability	_____	_____
• Engineer skills	_____	_____
• Problem escalation	_____	_____
• Documentation	_____	_____
• Remote diagnostics	_____	_____

17. How important is it that your system supplier provides a hardware **consultancy/planning** service to support your operations and how satisfied are you with the service provided? (Scale 0 - 10)
- Importance _____
 - Satisfaction _____
18. If possible, I would like you to provide some information on hardware maintenance pricing.
- a. What percentage price increase or decrease did you pay for hardware maintenance in the year 1989?
- Increase _____%
 - Decrease _____%
 - No change 1 (circle)
- b. What do you expect the price changes for **hardware maintenance** to be in the future, in percentage terms per annum?
- Increase _____%
 - Decrease _____%
 - No change 1 (circle)
- c. How important do you rate hardware maintenance pricing and how satisfied are you with the price you currently pay? (Scale 0 - 10)
- Importance rating _____
 - Satisfaction rating _____



19. Which type of hardware maintenance contract do you currently have on the main part of your system?

(Please circle appropriate answer; only one answer allowed.)

- Warranty 1
- Three-year 1
- One-year 1
- Time and materials 1
- None 1

D

Software Support

I would like to ask you some questions relating to the service you get from your software support vendor.

These questions relate to systems software—not applications.

As before, some of the questions are scaled with ratings from 0 to 10. Zero (0) represents zero importance or satisfaction, 5 is average and 10 is top importance or full satisfaction.

20. Who supports your systems software?

(Please circle appropriate answer; multiple answers allowed.)

- Hardware manufacturer 1
- Software house 1
- Software product vendor 1
- Value-added reseller (VAR) 1
- In-house 1
- Other/Don't know 9

21. What is your rating for the importance of systems software support to your business and what is your satisfaction with your vendor's systems support activities? (Scale 0 - 10)

- Importance rating _____
- Satisfaction rating _____

22. What percentage of systems software problems are solved by telephone, and how long does this take in elapsed time from the time it is alerted to the service engineer?

- Solved by phone _____%
- Elapsed time _____ Hours



23. For those problems not possible to solve over the telephone, what **response time** would you find acceptable, and what time (on average and in working hours) have you experienced over the last twelve months? (Take **response time** to mean from the time the problem is reported to the arrival of the engineer on site.)
- Acceptable _____ Hours
 - Experienced _____ Hours
24. If **fix time** is defined as the time taken to get the system fully operational from the arrival of the engineer on site, then what time (in working hours) do you find acceptable, and what did you experience over the last twelve months?
- Acceptable _____ Hours
 - Experienced _____ Hours
25. I would like to go through a list of five aspects of **systems software support** and ask you to give an importance and a satisfaction rating for each. (Scale 0 - 10)

ImportanceSatisfaction

- | | | |
|-------------------------|-------|-------|
| • Engineer skills | _____ | _____ |
| • Documentation | _____ | _____ |
| • Software installation | _____ | _____ |
| • Provision of updates | _____ | _____ |
| • Remote diagnostics | _____ | _____ |

26. How important is it that your system supplier provides a systems software **consultancy/ planning** service to support your operations and how satisfied are you with the service provided? (Scale 0 - 10)
- Importance rating _____
 - Satisfaction rating _____
27. If possible I would like you to provide some information on **systems software support pricing**.
- a. What percentage price increase or decrease did you pay for systems software support in the year 1989?
- Increase _____%
 - Decrease _____%
 - No change 1 (circle)



b. What do you expect the price changes for systems software support to be in the future, in percentage terms per annum?

- Increase _____%
- Decrease _____%
- No change 1 (circle)

c. How important do you rate systems software support pricing and how satisfied are you with the price you currently pay? (Scale 0 - 10)

- Importance rating _____
- Satisfaction rating _____

28. Which type of systems software support contract do you currently have?

(Please circle appropriate answer. Only one answer allowed.)

- Support included in software license fee 1
- Three-year contract 1
- One-year contract 1
- Ad hoc 1
- None 1

E

Other Services

29. To conclude this questionnaire, I am particularly interested in obtaining your views on other services or modified current service offerings that your service suppliers could provide that would help to improve the running of your computer systems.

Could you say which of the following services your service vendor is currently contracted to supply and which you would like your service vendor to provide? Also, could you give a level of interest rating against each in the range 0 to 10, where 0 = no interest, 5 = average interest and 10 = must have?

(Please circle appropriate answer and give LOI rating.)

	Currently Contracted	Require	LOI
• Configuration planning	1	1	_____
• Capacity planning	1	1	_____
• Environmental planning	1	1	_____
• Cabling	1	1	_____
• Software evaluation	1	1	_____
• Consultancy	1	1	_____
• Network planning	1	1	_____



29. (cont.)

	<u>Currently Contracted</u>	<u>Require</u>	<u>LOI</u>
• Network management	1	1	___
• Disaster recovery	1	1	___
• Facilities management	1	1	___
• Problems management	1	1	___
• Applications software support	1	1	___

These last questions complete the questionnaire. I would like to thank you on behalf of INPUT for helping us to complete this survey. To express our appreciation for your time we will be sending you a "thank you" package containing a summary of the results from our survey.

Again, thank you for your time.

