KEY ISSUES IN CUSTOMER SERVICES

W.EUROPE 1991

INPUT

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USER ISSUES AND TRENDS IN WESTERN EUROPEAN CUSTOMER SERVICES

1991

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Customer Services Programme - Europe

User Issues and Trends
In Western European Customer Services 1991

CE-TP1 - 1991

Abstract

This study presents a review of trends and issues in user satisfaction with vendor customer services in Western Europe.

This study provides a summary of data previously published by INPUT, in three reports titled "User Satisfaction in Western Europe 1991". Each of these three reports refers to either the large, medium or small systems sector of the market.

The data presented in this study was collected by INPUT in a survey of computer users in the following countries:

- Belgium
- France
- Germany
- Italy
- The Netherlands
- Norway
- Spain
- Sweden
- The United Kingdom

Trend data presented covers a five year period from 1987 to 1991 and thus allows a comparison of changing user needs with actual service performance.

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VI Key Vendors in Western Europe - Five Year Service Trends

VI Key Vendors in Western Europe - Five Year Service Trends (Cont'd)

I Introduction

A Objectives and Scope

This study is aimed at providing data relating to user perception of vendor customer services performance in Western Europe.

The study has three objectives:

- To provide data indicating trends in user satisfaction with customer services over a five year period from 1987 to 1991.
- To provide data indicating trends in user perception of system and vendor service performance over a five year period 1987 to 1991.
- To provide analysis and identification of trends in key user issues over a five year period 1987 to 1991.

B Methodology

The data presented in this report was compiled from interviews with computer users throughout Western Europe. Users were chosen at random and interviewed by telephone in their native language. The basis of the interview was a questionnaire relating to some 150 aspects of service and support, compiled in discussion with major service vendors. A copy of the 1991 user questionnaire is included as Appendix A.

Details of user samples that relate to the data presented in this report are as follows:

- Interviews with 756 computer users during 1991
- Interviews with 1,211 computer users in 1990
- Interviews with 1,626 computer users in 1989
- Interviews with 1,593 computer users in 1988
- Interviews with 1,321 computer users in 1987.

A breakdown of the 1991 user interview sample is provided by Exhibits I-1 and I-2.

Exhibit I-1

1991 User Interview Programme
User Sample by Country

	SYSTEM RANGE			
COUNTRY	LARGE	MEDIUM	SMALL	TOTAL
BELGIUM	7	15	4	26
FRANCE	27	52	16	95
GERMANY	30	42	12	84
ITALY	33	35	19	87
SPAIN	13	38	12	63
SWITZERLAND	9	19	8	36
NETHERLANDS	13	20	10	43
NORWAY	7	13	4	24
SWEDEN	5	20	14	39
UK	78	123	55	256
OTHER EUROPEAN COUNTRIES	3	-	-	3
TOTAL	**225**	**377**	**154**	**756**

Exhibit I-2

1991 User Interview Programme
User Sample by Vendor

	SYSTEM RANGE			
COUNTRY	LARGE	MEDIUM	SMALL	TOTAL
AMDAHL	111	-	-	111
BULL	12	27	27	66
DIGITAL	18	30	34	82
HEWLETT PACKARD	-	50	12	62
IBM	39	77	15	131
ICL	22	49	29	91
NCR	8	29	1	38
STRATUS	-	53	-	53
UNISYS	11	55	31	97
OTHER VENDORS	4	7	14	25
TOTAL	**225**	**377**	**154**	**756**

C
Structure

The remaining chapters of this study are structured as follows:

- Chapter II explains the interpretation of the data presented in this study.
- Chapter III is an Executive Overview which summarises the key service trend indicators in Western Europe and presents the data in a condensed form.
- Chapter IV presents analysis of trends in key user issues.
- Chapter V contains an analysis of key service trends in Western Europe Overall, segmented by systems range.
- Chapter VI presents analysis of the service performance of the three leading vendors in each system size market segment.
- Appendix A contains the 1991 user questionnaire used for telephone interviews.

D
Related INPUT Reports

Data used in compiling previous years comparative data was sourced from the following reports:

- User satisfaction with Vendor Customer Services, 1990 which was published in three volumes:
  - Large Systems
  - Medium Systems
  - Small Systems.
- Customer Services in Western Europe, 1989 Annual Report.
- Customer Services in Western Europe, 1988 Annual Report.
- Customer Services in Western Europe, 1987 Annual Report.

The base data used for presentation of 1991 vendor service performance achievements was sourced from:

- User Satisfaction in Western Europe, 1991. This study was published in three volumes: Large Systems, Medium Systems and Small Systems.

II Interpretation of the Data

A
Definitions

- Hardware: any computer system or peripheral system.
- Software: operating systems software, NOT applications.
- Large system: a system that is considered by the vendor part of that vendor's large system product range - for example IBM 309X and 308X, Bull DPS 8, or Digital VAX 8XXX.
- Medium system: a system that is considered by the vendor part of that vendor's medium system product range - for example IBM 43XX and AS/400, Bull DPS 7, or Digital VAX 6XXX.
- Small system: a system that is considered by the vendor part of that vendor's small system product range - for example IBM S/34 and S/36, Bull DPS6, or Digital Microvax.

B
Ratings and Satisfaction Index

In this study, ratings for importance and satisfaction are on a scale of 0 to 10 where:

- Importance
  - 0 = of no importance whatsoever
  - 5 = of average importance
  - 10= extremely important
- Satisfaction
  - 0 = total and absolute dissatisfaction
  - 5 = average satisfaction
  - 10= total satisfaction.

The satisfaction index throughout this report is based on the difference between the importance and satisfaction ratings for specific aspects of service. The questions concerning importance and satisfaction were asked at the same time and the answers therefore reflect the respondent's value judgement at that time.

- Ratings of 10 and 10, or 6 and 6, etc., give a difference value of zero, indicating that the importance needs are fully satisfied.

- Ratings of importance 8 and satisfaction 9 would indicate overfulfilment of the importance needs, and would give a satisfaction index of -1. In INPUT's analysis an overfulfilment of -1 is represented as (1).

- Ratings of importance of 6 and satisfaction 5 indicate underfulfilment of the importance needs and would give a satisfaction index of 1, the degree of fulfilment being related to the magnitude of this difference.

- Satisfaction index can thus be interpreted as follows:

  - (1) = overfulfilled or oversatisfied
  - 0 = completely satisfied
  - 1 = concerns and worries
  - 2 = real dissatisfaction
  - 3 = pain level.

III Executive Overview

A
Users Signal Significant Improvements in Satisfaction with Vendor Service

All key service indicators support a relatively significant improvement in user satisfaction with vendor customer services at the overall Western European level.

Between 1987 and 1989 user satisfaction with vendor customer services was subject to a progressive decline. However, 1990 user survey results indicated a marginal improvement and suggested that a reversal of previous negative trends in user satisfaction starting to take place. User survey results for 1991 confirm that a reversal of previous trends has been maintained.

The key service indicators that have been assessed as measures of the improvement in user satisfaction relate to:

- Hardware service
- Systems software support
- System failure rates and system availability.
- Vendor responsiveness
- Vendor remedial activities.

The key findings that emerge from INPUT's 1991 survey of computer users in Western Europe are highlighted by Exhibit III-1.

The major impact of recent improvements in user satisfaction, when assessed at the overall European level, is that users are well satisfied with vendor service. However, specific country markets, primarily Germany, continue to indicate relatively high degrees of use dissatisfaction with vendor service performance.

The key issues related to user satisfaction in Germany are assessed as being more concerned with the value rating of service, rather than the quality of delivery. Service is considered by customer services management in Germany to be expensive.

User in Italy and Spain indicate a degree of concern with service, especially with systems software support.

One further result of improved user satisfaction with service is that many previous key issues appear to have been addressed and are no longer raised by users, at the overall European level, as areas of concern. For example:

- Spares availability
- Systems software support documentation.

However, although many key issues have disappeared one key issue remains marginal in terms of user satisfaction. That aspect of service is software support engineer skills which continues to be subject to marginal user concern in specific sectors of the market, for example in the large systems sector.

Exhibit III-1

Key Findings

- User satisfaction with service improves
  - But not across the board
- Users well satisfied with vendor service
  - But pockets of dissatisfaction remain
- All key indicators of service performance support improvement in user satisfaction
- Many key issues disappear
  - But one critical issue remains marginal

B
User Satisfaction Trends, 1987-1991

Exhibit III-2 provides indication of overall user satisfaction with hardware service and systems software support in 1991. Data provided in this exhibit is the average level of user satisfaction for a number of specific aspects of service. For example:

- Hardware service includes:
  - Spares availability
  - Engineer skills
  - Problem escalation
  - Documentation
  - Remote diagnostics
- Systems software support includes:
  - Engineer skills
  - Documentation
  - Software installation
  - Provision of Updates
  - Remote diagnostics.

One key factor highlighted by Exhibit III-2 is that a high degree of consistency exists between system ranges. User importance ratings decrease slightly as system size reduces, but are broadly similar. The satisfaction index shows little variation with system size, although user satisfaction with hardware service is at a slightly higher level than that expressed for systems software support.

The lack of significant variation in user satisfaction ratings with system size supports the validity of assessing key trends at an overall European level, without the need to demarcate the data at the system size level.

Exhibits III-3 and III-4 indicate trends in user satisfaction with hardware service and systems software support over the five year period 1987 to 1991. In both exhibits the progressive decline in user satisfaction between 1987 and 1989 is apparent, as is the improvement that has been achieved since that time.

Exhibit III-2

User Satisfaction in Western Europe, 1991

HARDWARE SERVICE			
SYSTEM RANGE	IMPORTANCE RATING	SATISFACTION RATING	SATISFACTION INDEX
LARGE SYSTEMS	8.2	8.2	0.0
MEDIUM SYSTEMS	7.9	8.1	(0.2)
SMALL SYSTEMS	7.7	7.8	(0.1)

SYSTEMS SOFTWARE SUPPORT			
SYSTEM RANGE	IMPORTANCE RATING	SATISFACTION RATING	SATISFACTION INDEX
LARGE SYSTEMS	8.3	7.9	0.4
MEDIUM SYSTEMS	8.3	8.0	0.3
SMALL SYSTEMS	8.0	7.8	0.2

Exhibit III-3

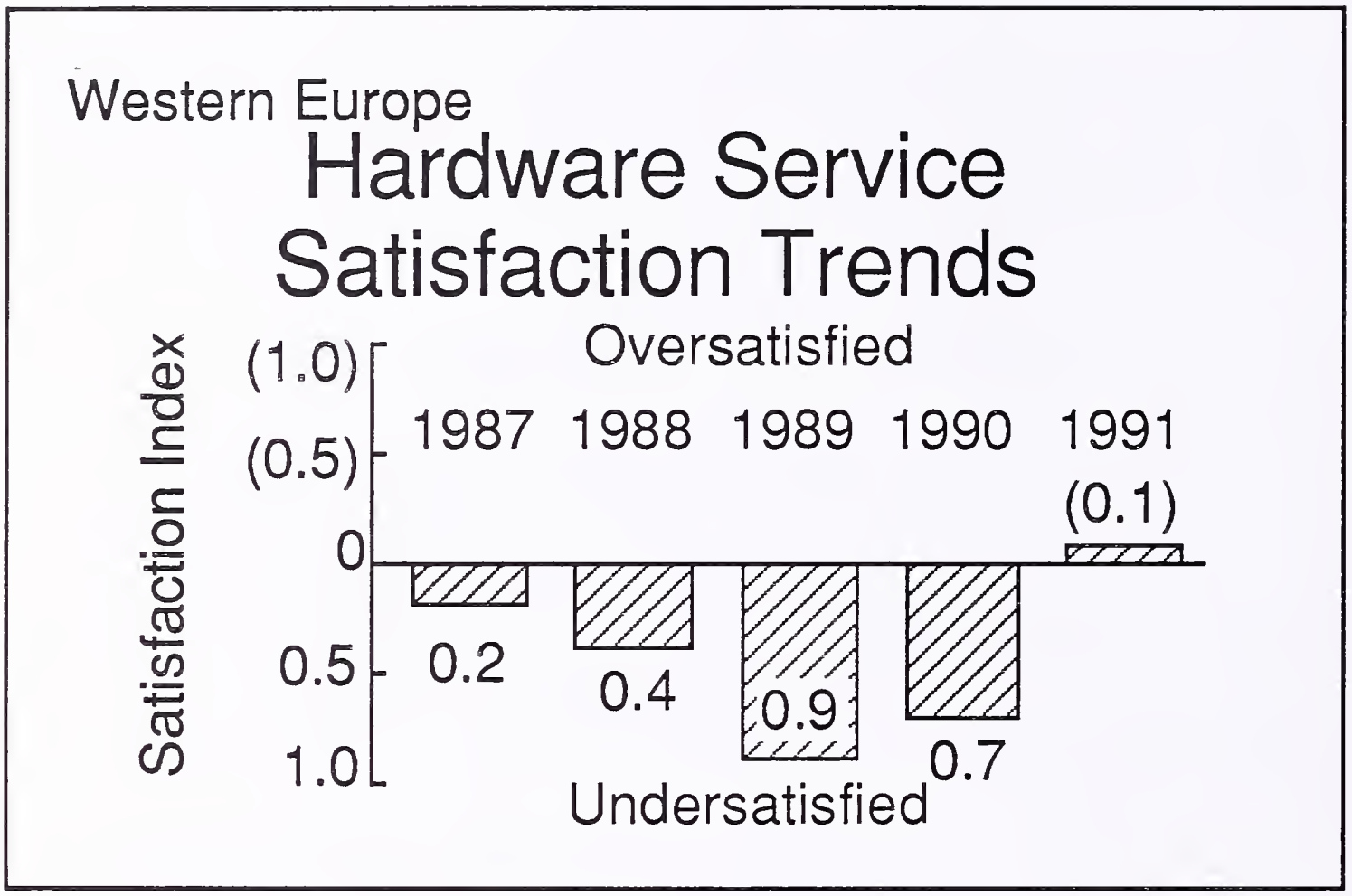
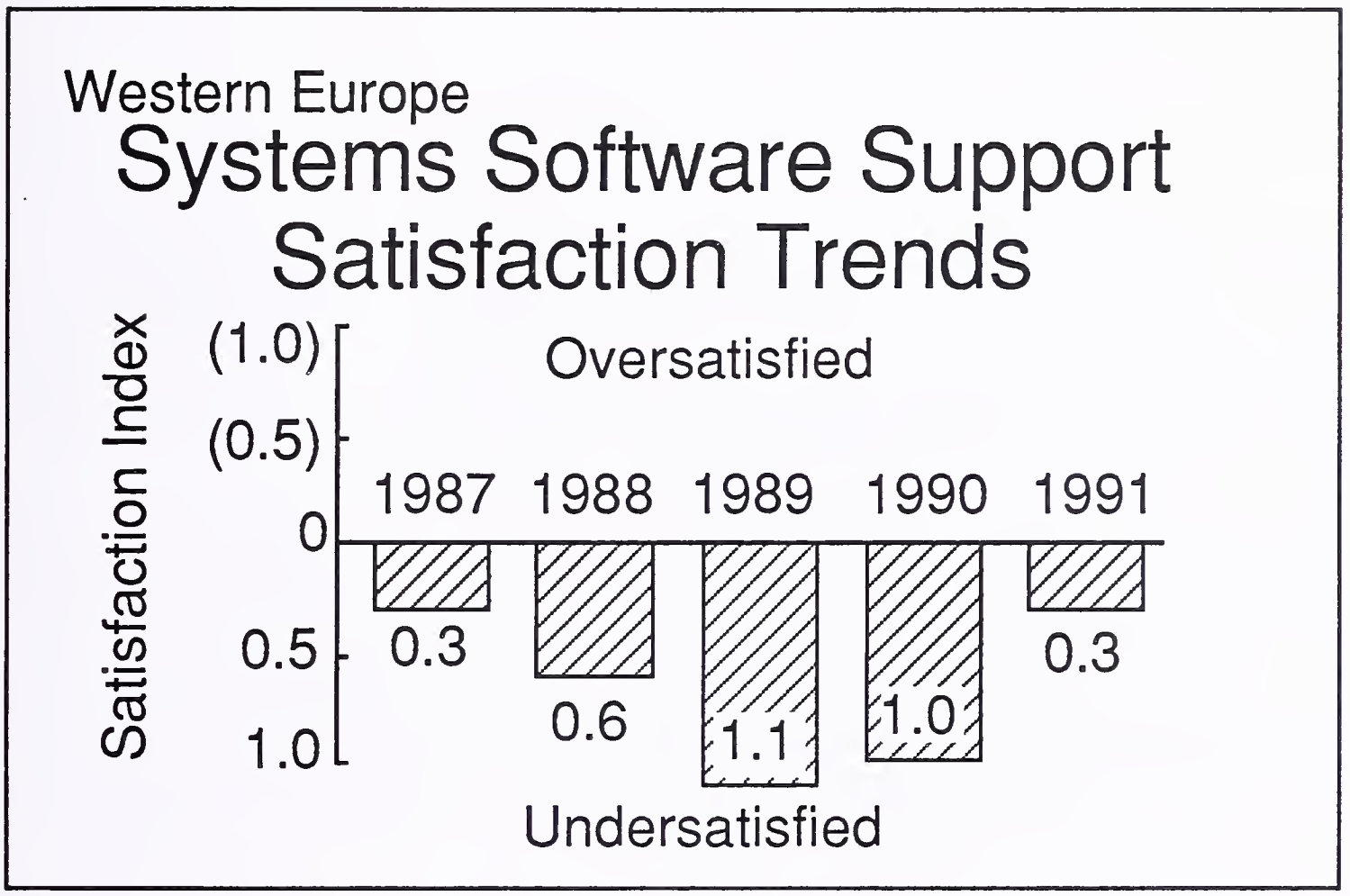


Exhibit III-4



C
System Performance Trends, 1987-1991

Exhibit III-5 highlights the trend in user perceived system failure rates over the five year period 1987 to 1991.

The data provided by Exhibit III-5 is based on user perception of how many times, each year, the computer systems fails completely for a period of one hour or more. Study of the trends in system failure rates will indicate that they follow a similar pattern to trends in user satisfaction with service.

Between 1987 and 1989 users perceived that system failure rates were increasing. Since 1989 the trend of increasing failure rates has been reversed.

Trends in user satisfaction with system availability are illustrated by Exhibit III-6. System availability is considered to be one of the most critical aspects of computer system performance and on this basis it may be significant that user satisfaction with systems availability reached a low point one year ahead of other service trends. This earlier "dip" in user satisfaction with systems availability could well have been a prior indication that service levels were falling behind user requirements.

Since 1988 user satisfaction with systems availability has shown a progressive rather than dramatic, improvement. At the overall European level users now indicate that they are relatively satisfied with systems availability.

One key factor concerning system performance is that user perceived system failure rates have reduced by 40% between 1989 and 1991.

Exhibit III-5

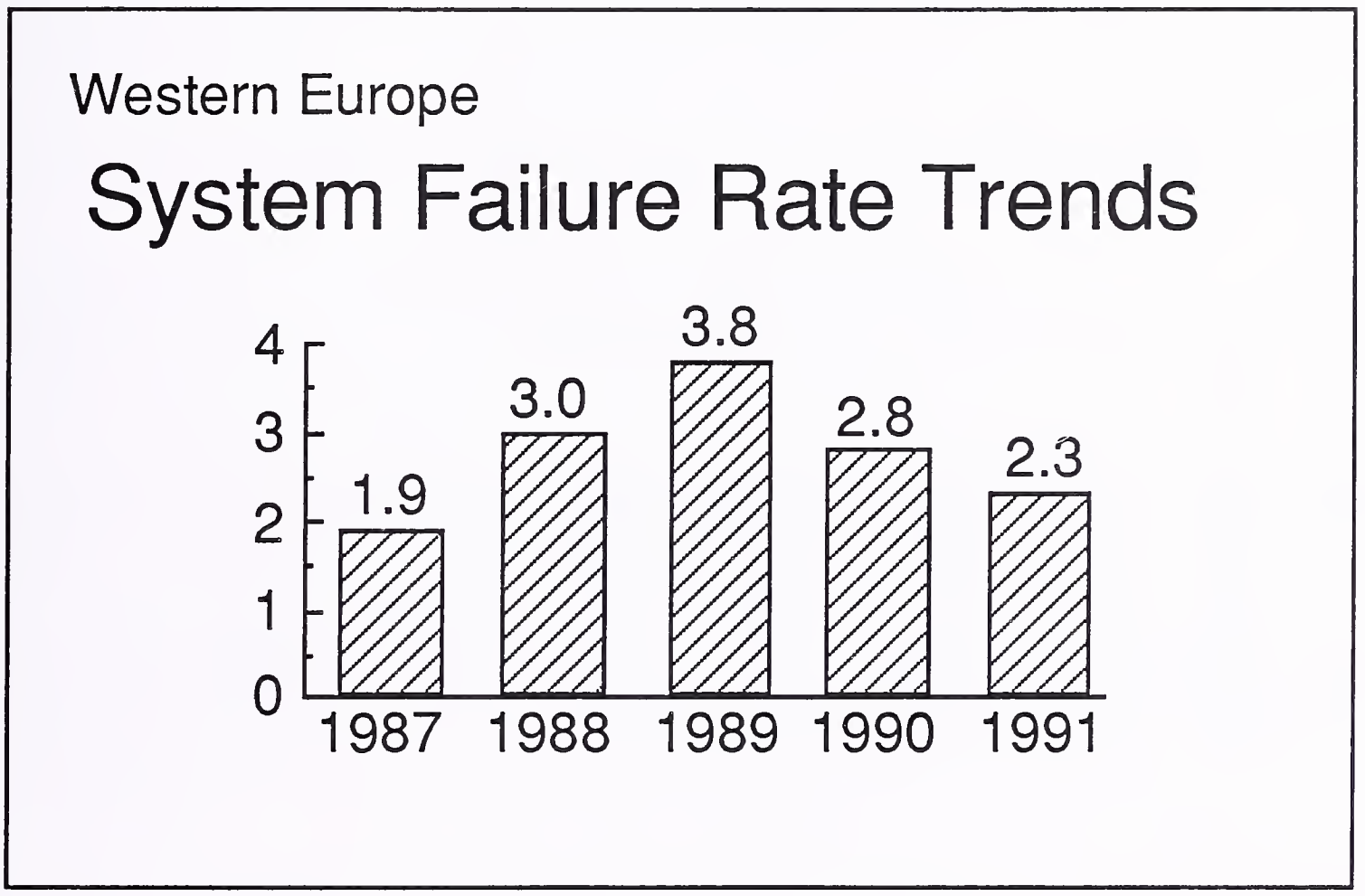
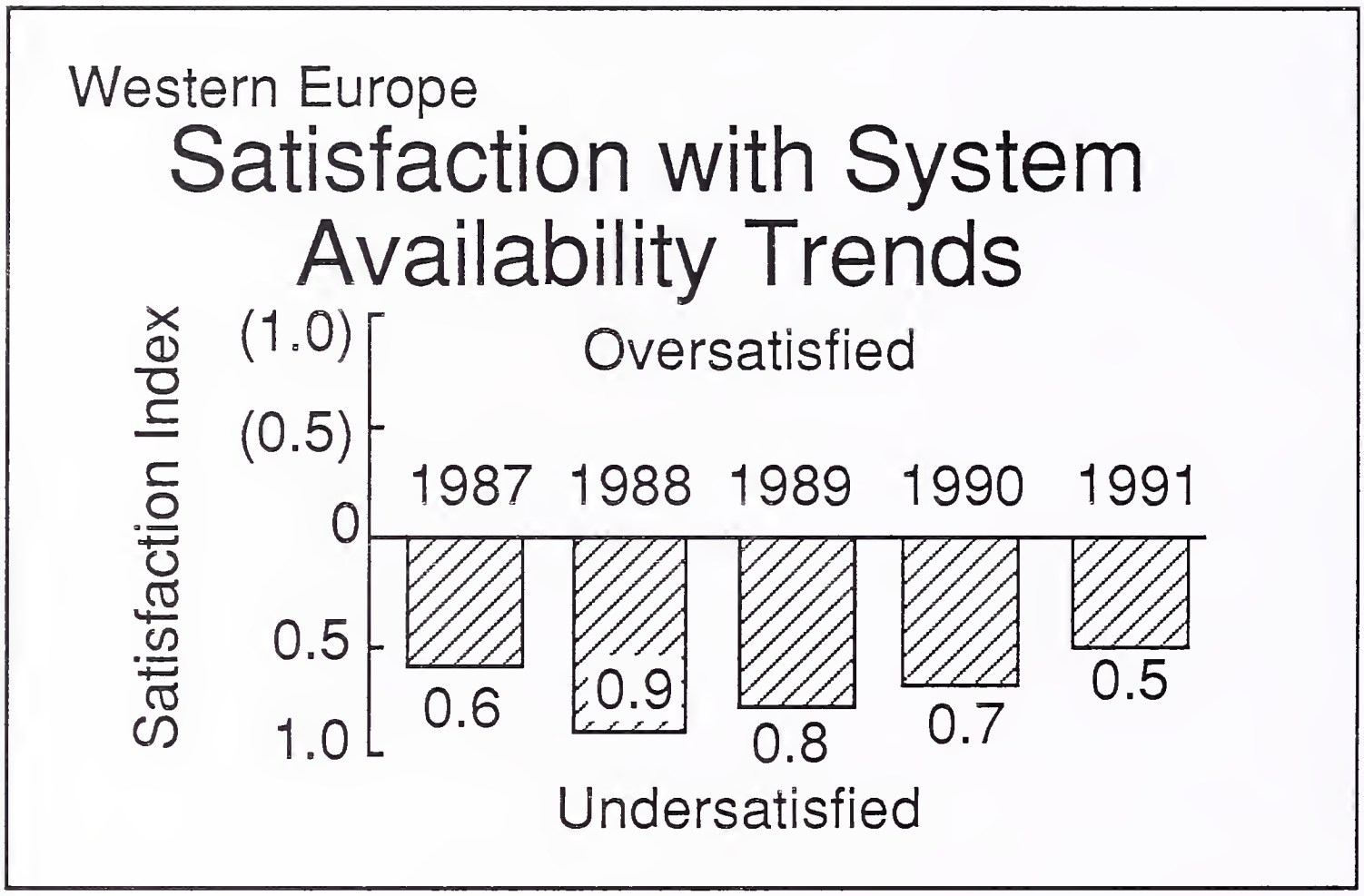


Exhibit III-6



D
Service Performance Trends

1. Hardware Service

Exhibit III-7 illustrates trends in user perception of vendor response time performance over the five year period 1987 to 1991.

Between 1987 and 1990 vendor response time performance was perceived by users as falling short of expectation by an average of about 12%, a marginal but not serious shortfall. In 1991 users claimed that vendor responsiveness had improved, at the overall European level, to the point where user requirements are now being oversatisfied.

The calculation carried out to arrive at the data presented in Exhibit III-7 is as follows

$$\left[1 - \frac{\text{Experienced response time}}{\text{Response time Expectation}}\right] \times 100\%$$

Trends in user perception of vendor repair time performance are illustrated by Exhibit III-8.

The pattern of trends in vendor repair time performance are similar to those indicated for vendor response time performance. Between 1987 and 1990 a shortfall against user expectation is indicated but an improvement in 1991 has resulted in user requirements (or expectations) being exceeded.

Exhibit III-7

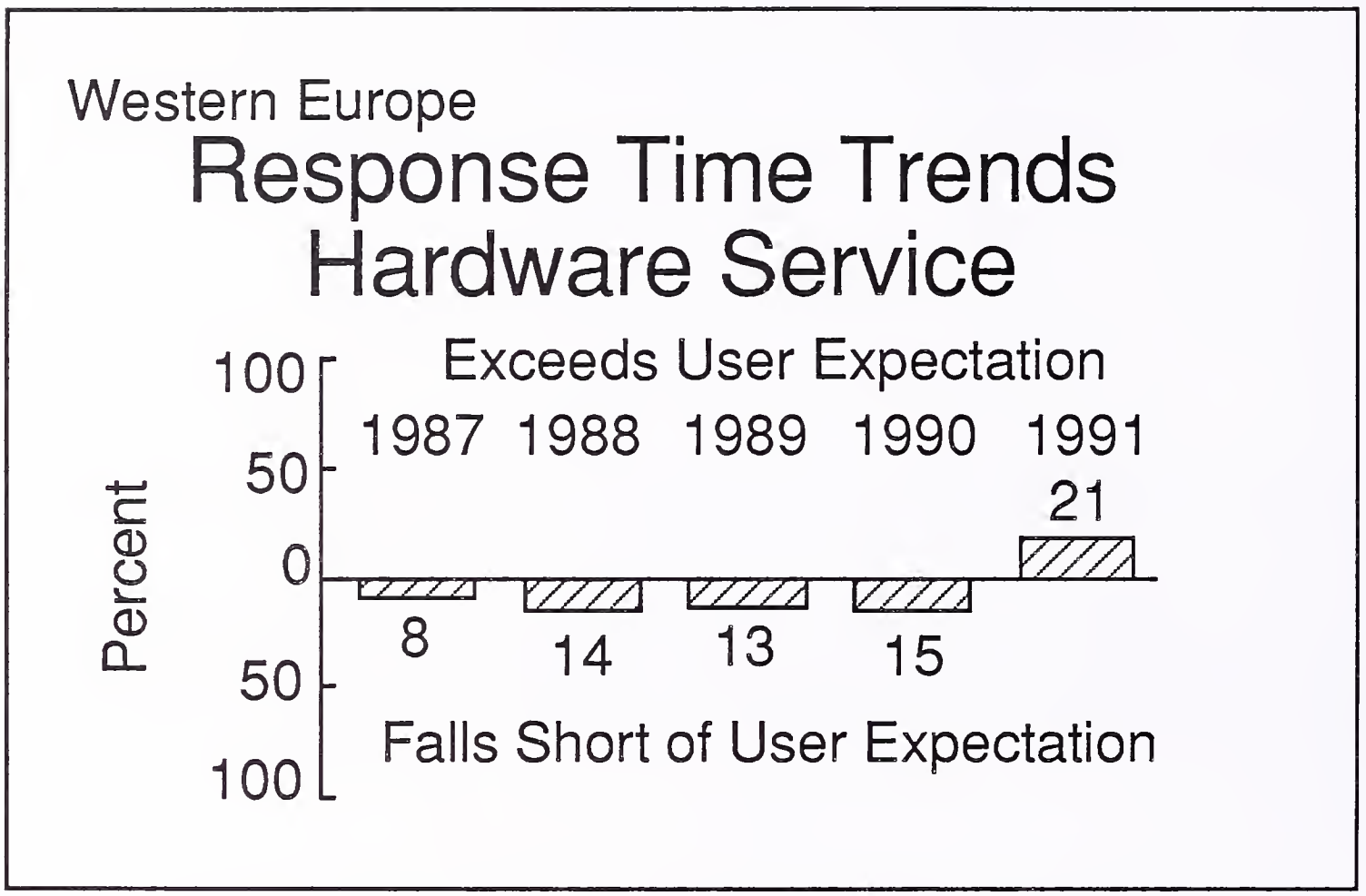
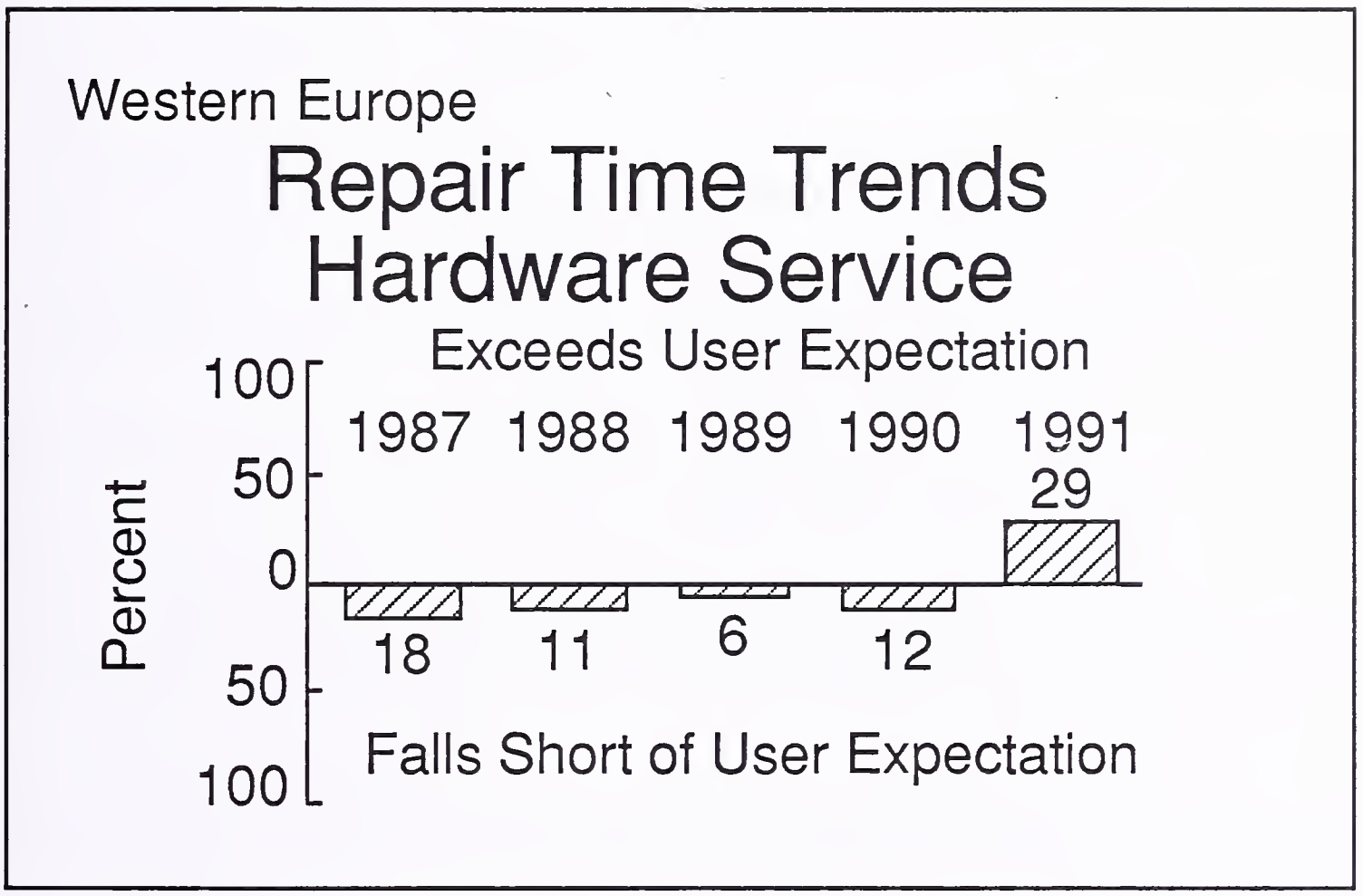


Exhibit III-8



2. Systems Software Support

Trends in user perception of vendor systems software support response time performance are illustrated by Exhibit III-9. These trends cover the five year period 1987 to 1991.

The improvement in vendor responsiveness over the five year period is relatively dramatic and has been achieved in "steps". From a position where users were experiencing a shortfall of almost 100% against expectation in 1987 vendors have achieved full satisfaction of user requirements in 1991.

One factor that is considered to have played a major part in improved vendor responsiveness is the implementation of service technology, for example:

- Response centres
- Automatic call handing and logging systems
- Mobile communications.

Exhibit III-10 illustrates trends in user perception of vendor systems software "fix" time performance over the period 1987 to 1991.

Data presented relates to software problems that cannot be resolved by telephone, or remotely, and therefore require a site visit.

As in the case of vendor responsiveness the improvements in vendor software fix time performance has been relatively dramatic. A shortfall of almost 80% against user expectation in 1987 has been improved to the level where oversatisfaction of user needs is being achieved in 1991.

One factor that is likely to have had major impact on vendor software fix time performance is the implementation of remote diagnostics technology and the capability to provide software "patches" and updates remotely. Trends in service performance suggests that users are now recognising and appreciating the benefits of improved service technology.

Exhibit III-9

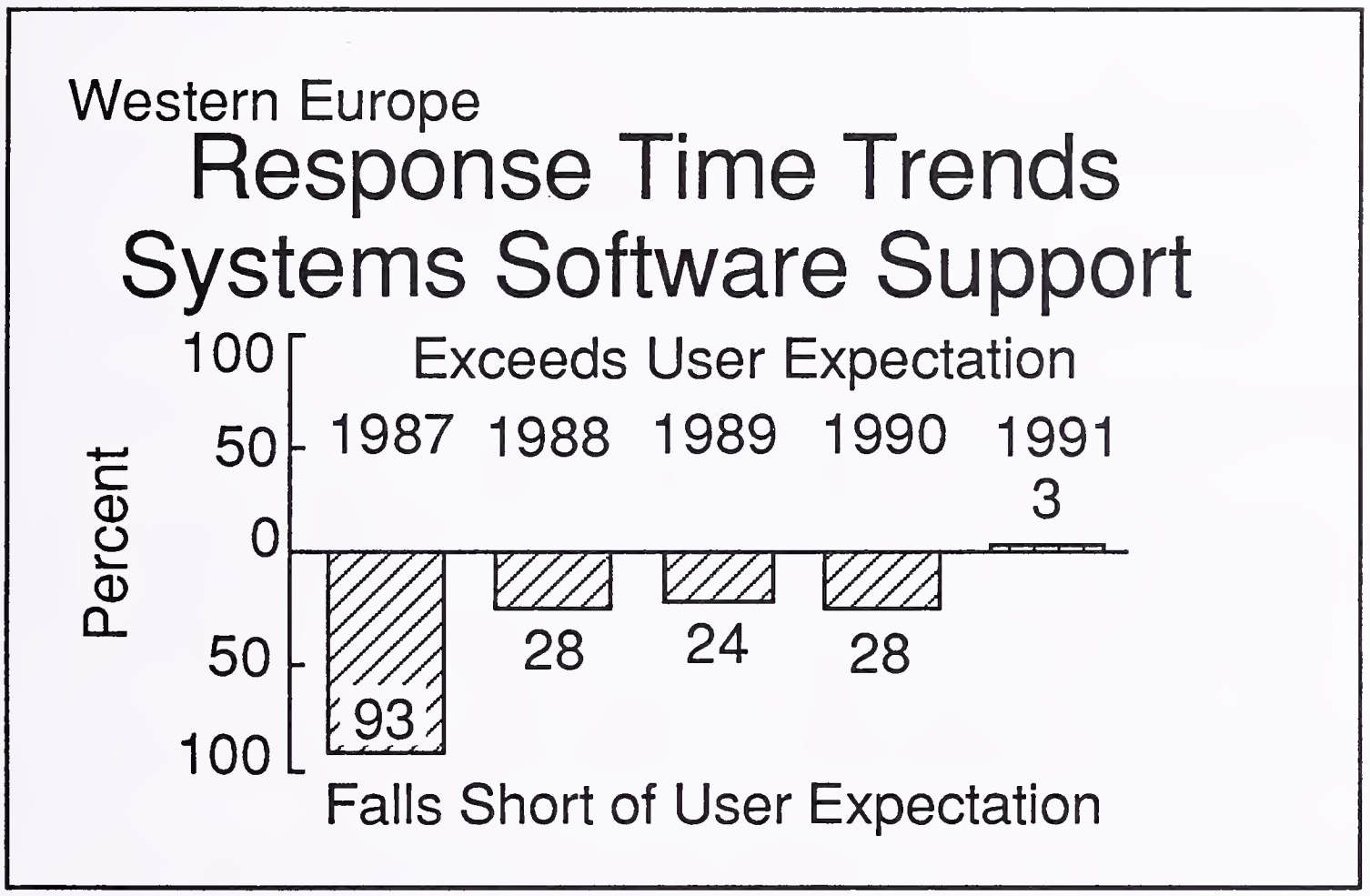
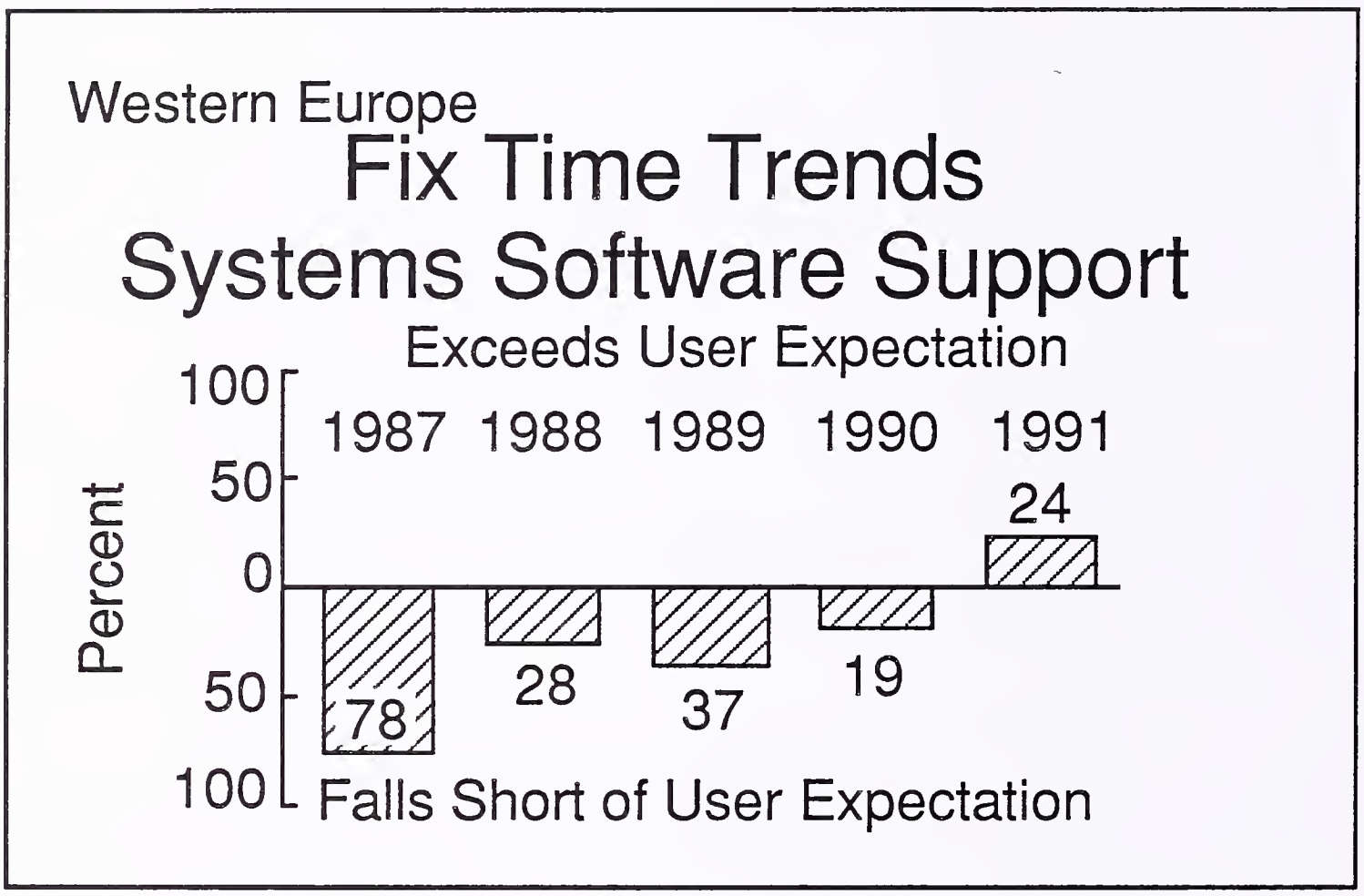


Exhibit III-10



E
Leading Performers in 1991

Exhibit III-11 to III-16 list the leading service performers in 1991 based on the results of INPUT's 1991 user survey. The exhibits are sequenced as follows:

- Large systems, hardware services - Exhibit III-11.
- Large systems, systems software support - Exhibit III-12.
- Medium systems, hardware service - Exhibit III-13
- Medium systems, systems software support - Exhibit III-14.
- Small systems, hardware service - Exhibit III-15.
- Small systems, systems software support - Exhibit III-16.

These exhibits contain two primary pieces of information:

- Weighted response; refers to the overall average level of user satisfaction achieved across five specific aspects of hardware service or systems software support.
- Quality image; data presented relates to the answer to a single question - How important is hardware service (or systems software support) to your business and how satisfied are you with your vendors overall performance? previous analysis carried out indicates that:
  - User responses to this question tend to relate to measurable service performance factors, rather than an emotional response.
  - When answering this question users responses reflect additional areas of service performance. For example system failure rates, systems availability and response/repair time performance.
  - Answers to this question are considered to be a measure of the vendors service quality image.

Likely explanations related to vendor service quality image ratings where these reflect a degree of user concern are as follows:

- Large systems, hardware service;
  - IBM; Marginal shortfall of 3% against user expectation of hardware repair time, compared with an overall European average of 30% oversatisfaction.
  - ICL; Marginal user concern with spares availability and an above average system failure rate, 3.8 failures per year compared with an overall European average of 2.2. Also 90% of ICL system failures were claimed by users to be related to hardware.
- Large systems, systems software support:
  - Amdahl; Marginal user satisfaction with engineer skills and a shortfall of 11/12% against user expectation for response time.
  - IBM; User concern with engineer skill levels and a shortfall of about 14% against user expectation for response and fix time.
- Medium systems, systems software support:
  - Digital; Marginal user concern with remote diagnostics
  - Hewlett-Packard; Shortfall of about 11% against user expectation for response time.
- Small systems, hardware service:
  - ICL; User concern with spares availability and an above average system failure rate, 3.5 failures per year compared with an overall European average of 2.6.
- Small systems, systems software support:
  - ICL; Marginal concern with engineer skills and an above average systems failure rate.
  - Digital; User concern with remote diagnostic capability.

Exhibit III-11

Leading Vendors in Western Europe, Large Systems - Hardware Service

SATISFACTION INDEX		
VENDOR	WEIGHTED RESPONSE	QUALITY IMAGE
AMDAHL	(0.5)	0.5
IBM	0.3	1.1
ICL	0.6	1.3

Exhibit III-12

Leading Vendors in Western Europe, Large Systems - Systems Software Support

SATISFACTION INDEX		
VENDOR	WEIGHTED RESPONSE	QUALITY IMAGE
AMDAHL	0.0	1.0
IBM	0.7	1.4
ICL	0.7	0.7

Exhibit III-13

Leading Vendors in Western Europe, Medium Systems - Hardware Service

SATISFACTION INDEX		
VENDOR	WEIGHTED RESPONSE	QUALITY IMAGE
STRATUS	(1.4)	(0.4)
ICL	(0.5)	0.9
DIGITAL	(0.4)	0.9

Exhibit III-14

Leading Vendors in Western Europe, Medium Systems - Systems Software Support

SATISFACTION INDEX		
VENDOR	WEIGHTED RESPONSE	QUALITY IMAGE
STRATUS	(0.8)	(0.2)
DIGITAL	0.0	1.1
ICL/HP	0.4 each	0.7/1.2

Exhibit III-15

Leading Vendors in Western Europe, Small Systems - Hardware Service

SATISFACTION INDEX		
VENDOR	WEIGHTED RESPONSE	QUALITY IMAGE
UNISYS	(0.9)	0.3
DIGITAL	(0.6)	0.8
ICL	0.0	1.2

Exhibit III-16

Leading Vendors in Western Europe, Small Systems - Hardware Service

SATISFACTION INDEX		
VENDOR	WEIGHTED RESPONSE	QUALITY IMAGE
UNISYS	(0.7)	0.5
ICL	(0.1)	1.0
DIGITAL	0.3	1.2

IV Key User Issues

A
Introduction

As a consequence of relatively significant improvements in user satisfaction with vendor service, at the overall Western European level, many specific areas of previous user concern have been eliminated in 1991.

This chapter of the study provides data outlining trends in user key issues over the period 1987 to 1991, at the overall European level. Data is also provided which highlights specific deviations from the overall results obtained from INPUTs 1991 user survey.

User concern is defined as the level at which the satisfaction index reaches a value between 1.0 and 1.9. Real dissatisfaction is defined as the point where the satisfaction index exceeds a value of 2.0.

B
Spares Availability

Trends in user satisfaction with spares availability are illustrated by Exhibit IV-1. This exhibit covers the time period 1987 to 1991 and the data presented relates to the overall Western European level of user satisfaction.

Between 1987 and 1989 user satisfaction with spares availability progressively declined. After 1989 the level of user satisfaction indicates a progressive improvement, although in 1990 it was continuing to demonstrate a marginal degree of user concern. Analysis of the results of the 1991 survey indicates that spares availability is no longer subject to user concern, at the overall European level.

More detailed data relating to user satisfaction with spares availability is provided by Exhibits IV-2 and IV-3.

Exhibit IV-2 indicates that there is a relatively consistent level of user satisfaction with this aspect of service in the three system size sectors of the 1991 user sample. However, the data presented by Exhibit IV-2 relates to the total sample for Europe and does not expose any differences that exist within individual country markets.

Differences in user satisfaction with spares availability between the four largest country markets in Western Europe are highlighted by Exhibit IV-3. This exhibit indicates the following country market characteristics:

- At the system size level user satisfaction is relatively consistent in each set of country market data.
- User satisfaction in Germany suggests a relatively high degree of user concern.
- Users in the United Kingdom indicate that their needs for spares availability are being fully satisfied.
- Users in France and Italy indicate that they are marginally satisfied with vendor performance in the availability of spares.

Exhibit IV-1

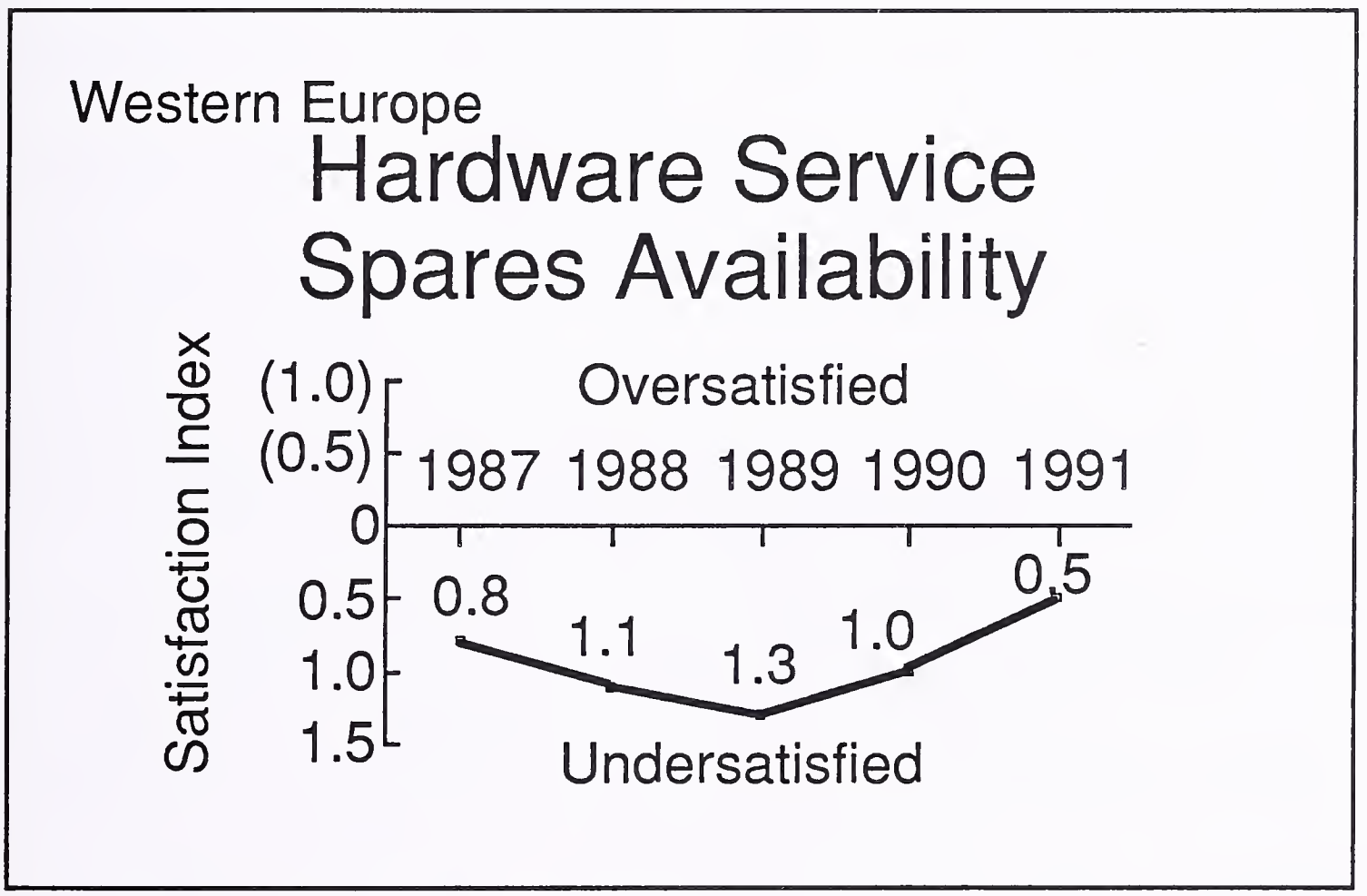


Exhibit IV-2

User Satisfaction in Western Europe 1991
Hardware Service - Spares Availability

SYSTEM RANGE	IMPORTANCE RATING	SATISFACTION RATING	SATISFACTION INDEX
LARGE SYSTEMS	9.0	8.5	0.5
MEDIUM SYSTEMS	8.9	8.4	0.5
SMALL SYSTEMS	8.8	8.2	0.6

Sample sizes 1991:
- Large systems - 225
- Medium systems - 377
- Small systems - 154

Exhibit IV-3

Country Market User Satisfaction 1991,
Hardware Service - Spares Availability

	SATISFACTION INDEX		
COUNTRY MARKET	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
FRANCE	0.8	0.8	Note 1
GERMANY	1.6	1.6	Note 1
UNITED KINGDOM	(0.1)	(0.2)	0.2
ITALY	0.7	0.7	Note 1

Sample sizes 1991:
- France - 95
- Germany - 83
- United Kingdom - 255
- Italy - 87

Note 1: Insufficient sample for analysis

C
Systems Software Support Engineer Skills

Exhibit IV-4 illustrates trends in user satisfaction with systems software support engineer skills, at the overall Western European level, over the five year period 1987 to 1991.

Over the two year period 1987 to 1989 user satisfaction with software support engineer skills progressively declined. However, since that time, in 1990 and 1991, user satisfaction has shown a progressive improvement and in 1991 a marginal degree of user satisfaction is being achieved at the overall European level.

Data sub-dividing the total 1991 survey results by system size is presented by Exhibit IV-5. At the system size level two factors are revealed:

- Large systems users continue to express a marginal degree of concern with systems software support engineer skills.

- Users of medium and small systems indicate that a marginal degree of user satisfaction is being achieved.

Exhibit IV-6 sub-divides the total 1991 survey results to indicate user satisfaction with systems software support engineer skills in the four largest country markets in Western Europe. Data presented in this exhibit reveals differences at both the system size level and at the country market level. Analysis of these data indicates:

- Large systems users in France express a marginal degree of concern and medium system users express a level of satisfaction that is tending towards concern.

- German users express real dissatisfaction with systems software support engineer skills.

- Users in the United Kingdom indicate that they are relatively well satisfied with this aspect of service.

- In the Italian market large systems users indicate a marginal degree of concern, whereas medium systems users express a relatively high degree of concern with systems software support engineer skills.

Exhibit IV-4

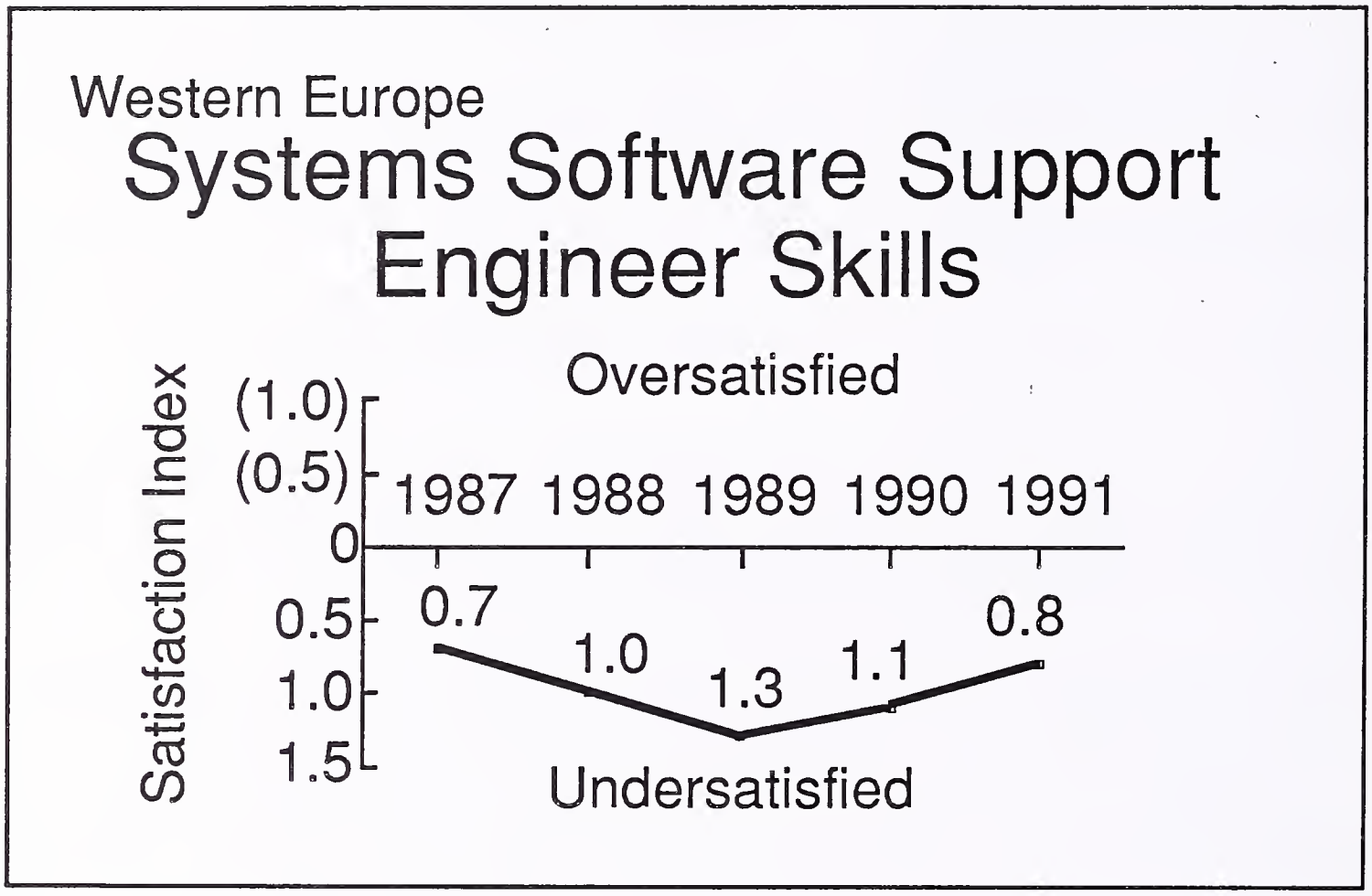


Exhibit IV-5

User Satisfaction in Western Europe 1991
Systems Software Support - Engineer Skills

SYSTEM RANGE	IMPORTANCE RATING	SATISFACTION RATING	SATISFACTION INDEX
LARGE SYSTEMS	9.2	8.2	1.0
MEDIUM SYSTEMS	9.2	8.4	0.8
SMALL SYSTEMS	9.1	8.4	0.7

Sample sizes 1991:
- Large systems - 225
- Medium systems - 377
- Small systems - 154

Exhibit IV-6

Country Market User Satisfaction 1991
Systems Software Support - Engineer Skills

	SATISFACTION INDEX		
COUNTRY MARKET	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
FRANCE	1.1	0.9	Note 1
GERMANY	2.2	2.1	Note 1
UNITED KINGDOM	0.3	0.1	0.4
ITALY	1.0	1.4	Note 1

Sample sizes 1991:
- France - 95
- Germany - 83
- United Kingdom - 255
- Italy - 87

Note 1: Insufficient sample for analysis

D
Systems Software Support Documentation

Trends in user satisfaction with systems software support documentation are presented by Exhibit IV-7. These trends cover the five year period 1987 to 1991 and refer to user satisfaction at the overall Western European level.

Systems software support documentation has been a key user issue for a number of years. User concern with this aspect of service is apparent over the period 1987 to 1990 and also showed a relatively high level of decline between 1987 and 1989.

1991 survey results indicate a dramatic improvement in user satisfaction with systems software support documentation. The reason for this dramatic improvement is considered to be related to the levels of economic recession in Western Europe, the fact that recession has caused users to focus more on critical aspects of service and less on the non-critical aspects.

Exhibit IV-8 sub-divides the total 1991 user survey results by system size. Data presented by this exhibit indicates that there is not a significant difference between the satisfaction levels expressed by users of different system ranges. At all levels of system size users indicate that they are relatively well satisfied with system software support documentation.

The results of the 1991 user survey are presented by Exhibit IV-9 sub-divided by the four largest country markets in Western Europe. At the country market level significant differences in user satisfaction are revealed:

- Large systems users in France indicate a marginal degree of satisfaction, while medium systems users in that country indicate a relatively high degree of concern.

- German users indicate a marginal degree of concern with systems software support documentation.

- In the United Kingdom users express a relatively high degree of oversatisfaction with systems software support documentation.

- Italian large systems users express a marginal degree of concern, compared with medium systems users in Italy who express a relatively high degree of concern with systems software support documentation.

One factor of note relating to software support documentation concerns the language documentation is published in. As the use of computer systems spreads throughout an industry, from professional data processing centres to the individual level, documentation language likely becomes more important as knowledge of English diminishes.

Exhibit IV-7

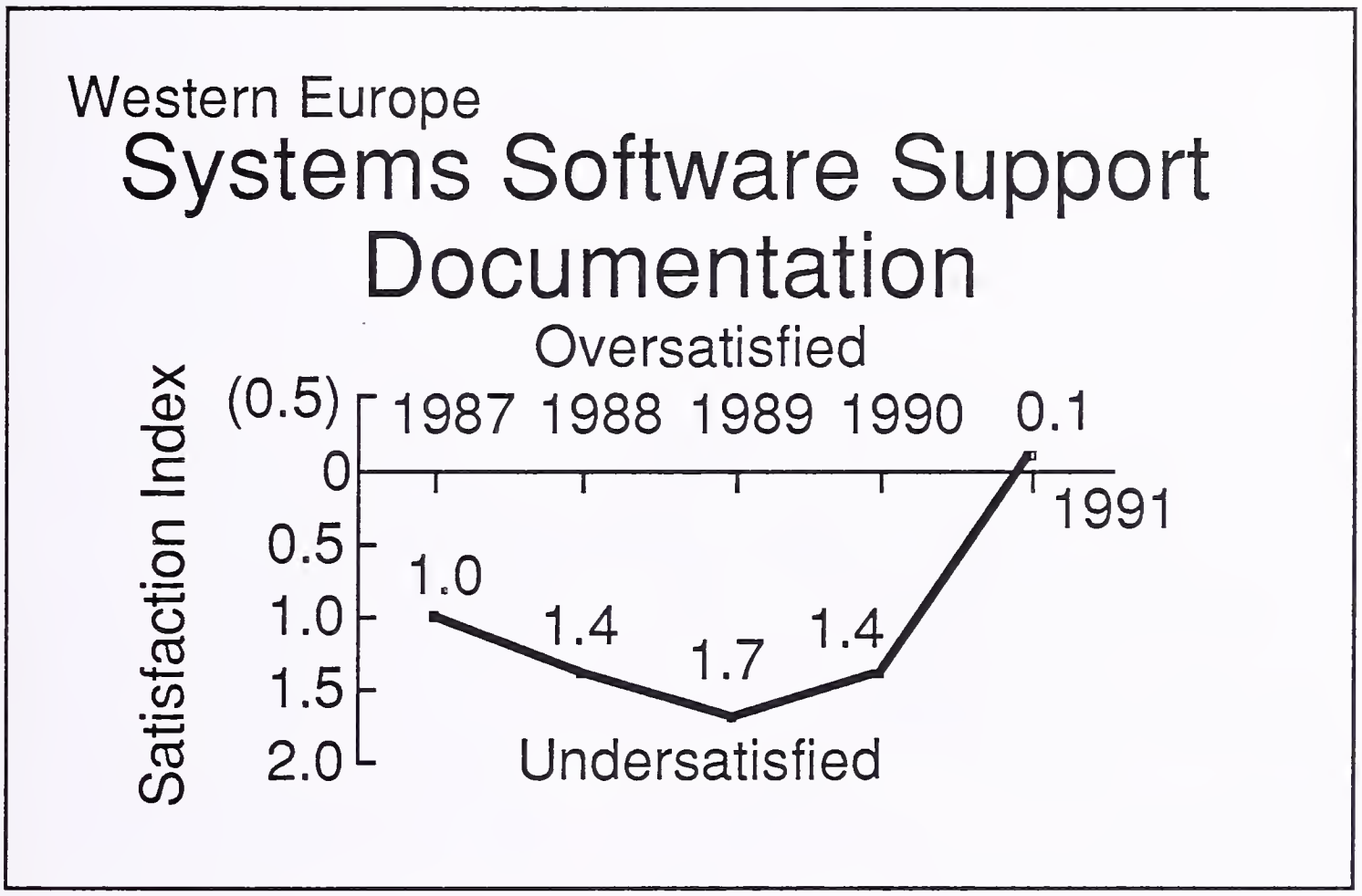


Exhibit IV-8

User Satisfaction in Western Europe 1991
Systems Software Support - Documentation

SYSTEM RANGE	IMPORTANCE RATING	SATISFACTION RATING	SATISFACTION INDEX
LARGE SYSTEMS	7.4	7.6	(0.2)
MEDIUM SYSTEMS	7.3	7.4	0.1
SMALL SYSTEMS	6.9	7.2	(0.3)

Sample sizes 1991: Large systems - 225
Medium systems - 377
Small systems - 154

Exhibit IV-9

Country Market User Satisfaction 1991,
Systems Software Support - Documentation

	SATISFACTION INDEX		
COUNTRY MARKET	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
FRANCE	0.9	1.4	Note 1
GERMANY	1.0	1.0	Note 1
UNITED KINGDOM	(1.4)	(1.0)	(1.7)
ITALY	1.0	1.6	Note 1

Sample sizes 1991: France - 95
Germany - 83
United Kingdom - 255
Italy - 87

Note 1: Insufficient sample for analysis

E
Systems Software Support Vendor Quality Image

Trends in user ratings for vendor systems software support quality image are provided by Exhibit IV-10. Data presented in this exhibit represents user responses to a single question:

- How important is systems software support to your business and how satisfied are you with your vendors performance?

Answers to this question are considered to provide a measure of a vendors service quality image and have been found to take into account a number of aspects of measurable service performance. For example

- Overall user satisfaction with systems software support
- Satisfaction with systems availability
- System failure rates
- Vendor response and software fix time performance.

Exhibit IV-10 indicates that, at the overall Western European level, vendor systems software support quality image has progressively improved since 1989.

Exhibit IV-11 provides data relating to vendor systems software support quality image in 1991 sub-divided by system image. One characteristic shown by this Exhibit is that at the overall European level vendor systems software support quality image is not subject to significant variations between system ranges. The major difference is that large systems users express a marginal degree of concern while other systems users express a marginal degree of satisfaction.

However, when the data is sub-divided by country market more significant differences emerge. Exhibit IV-12 provides analysis of user satisfaction sub-divided into the four largest country markets in Western Europe. Comments relating to the country market level analysis are as follows:

- In France users express a marginal degree of satisfaction with vendor systems software support quality image.
- Users in Germany indicate a relatively high degree of real dissatisfaction with this aspect of vendor service. The extent of this dissatisfaction suggests that systems software support in Germany has a relatively poor quality image.

- Large systems and small systems users in the United Kingdom express a marginal degree of satisfaction with vendor systems support quality image. By comparison medium systems users in the United Kingdom express a relatively high level of satisfaction with this aspect of vendor service.

- Large systems users in Italy express a marginal degree of concern with vendor systems software support quality image, while medium systems users express a relatively high degree of concern.

Exhibit IV-10

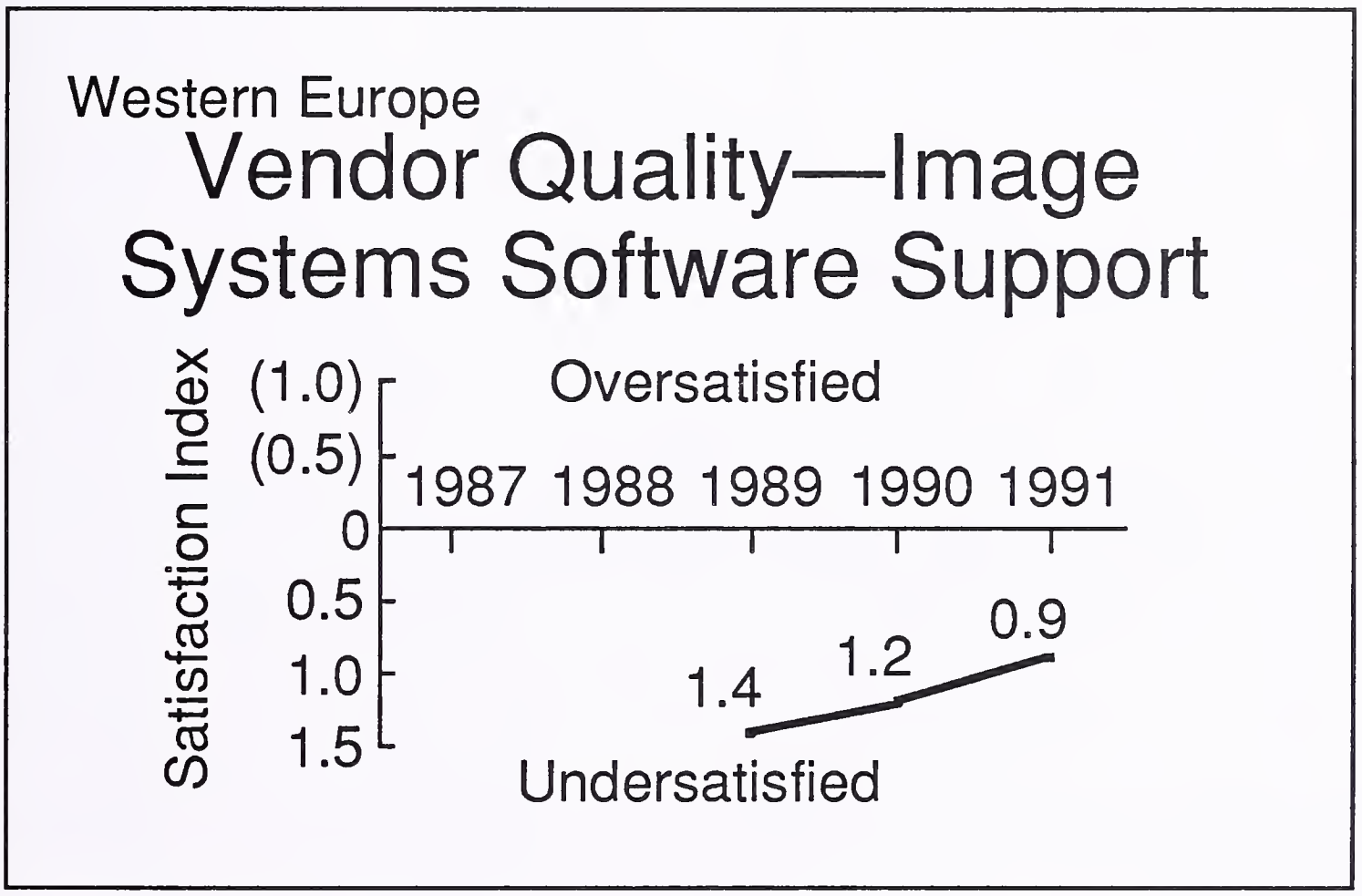


Exhibit IV-11

User Satisfaction in Western Europe 1991
Vendor Quality Image - Systems Software Support

SYSTEM RANGE	IMPORTANCE RATING	SATISFACTION RATING	SATISFACTION INDEX
LARGE SYSTEMS	9.3	8.2	1.1
MEDIUM SYSTEMS	9.1	8.2	0.9
SMALL SYSTEMS	9.1	8.3	0.8

Sample sizes 1991: Large systems - 225
Medium systems - 377
Small systems - 154

Exhibit IV-12

Country Market User Satisfaction 1991.
Vendor Quality Image - Systems Software Support

	SATISFACTION INDEX		
COUNTRY MARKET	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
FRANCE	0.7	0.7	Note 1
GERMANY	2.5	2.4	Note 1
UNITED KINGDOM	0.9	0.4	0.8
ITALY	1.0	1.4	Note 1

Sample sizes 1991: France - 95
Germany - 83
United Kingdom - 255
Italy - 87

Note 1: Insufficient sample for analysis

V Five Year Service Trends in Western Europe

A Introduction

This chapter of the study presents a five year trend analysis of user perception of vendor customer services performance in Western Europe. Analysis is presented in sections as follows:

- Large systems analysis is provided by Exhibits V-1 and V-5.
- Medium systems analysis is provided by Exhibits V-6 to V-10.
- Small systems analysis is provided by Exhibits V-11 to V-15.

Each systems size section is further subdivided as follows:

- User satisfaction with vendor hardware service is presented in the form of satisfaction index trends over the five year period 1987 to 1991. The satisfaction index highlighted in these exhibits is the overall average for specific aspects of hardware service as follows:
  - The years 1987 to 1989 are represented by the average satisfaction index obtained from user responses related to questions on twelve specific aspects of hardware service:
    (i) Spares availability
    (ii) Engineer skills
    (iii) Problem escalation
    (iv) Call handling
    (v) Back-up support
    (vi) Hardware training
    (vii) Telephone support
    (viii) Service administration
    (ix) Documentation
    (x) Consultancy/planning
    (xi) Remote diagnostics
    (xii) Out-of-house service.
  - The years 1990 and 1991 are represented by the average satisfaction index obtained from user responses related to questions on five key aspects of hardware service:
    (i) Spares availability
    (ii) Engineer skills
    (iii) Problem escalation
    (iv) Documentation
    (v) Remote diagnostics

- User satisfaction with vendor systems software support is presented in the form of satisfaction index trends over the five year period 1987 to 1991. The satisfaction index in these exhibits is the overall average for specific aspects of systems software support as follows:

- The years 1987 to 1989 are represented by the average satisfaction index obtained from user responses related to questions on thirteen specific aspects of systems software support:-
  (i) Engineer skills
  (ii) Telephone support fix speed
  (iii) Telephone support accessibility
  (iv) Documentation
  (v) Provision of updates
  (vi) Software installation
  (vii) Software training
  (viii) Hotline
  (ix) Capacity tuning
  (x) On-site support
  (xi) Consultancy/Planning
  (xii) Remote diagnostics
  (xiii) Software problem database

- The years 1990 and 1991 are represented by the average satisfaction index obtained from user responses related to questions on five key aspects of systems software support:-
  (i) Engineer skills
  (ii) Documentation
  (iii) Software installation
  (iv) Provision of updates
  (v) Remote diagnostics

- User perception of system performance. These exhibits highlight trends in user perception related to two key aspects of system performance.

  - System failure rates over the period 1987 to 1991

  - User satisfaction with system availability over the period 1987 to 1991.

- Service performance trends. These exhibits highlight trends in user perception of vendor service performance over the five year period 1987 to 1991:

  - Hardware service response and repair times, expressed in terms of the percentage by which vendor performance exceeds or falls short of user expectation

  - System software response and fix times, expressed in terms of the percentage by which vendor performance exceeds or falls short of user expectation.

B
Summary of Results

Trends in six key aspects of vendor service performance, at the overall European level, support the improvement in user perception of the level and quality of service provided by vendors in 1991. Examination of trend data indicates and supports the fact that vendor service has improved in all three system size sectors.

The six key trend indicators are:-

- User satisfaction with hardware service
- User satisfaction with systems software support
- User perception of system failure rates
- User satisfaction with system availability
- User perception of hardware service response and repair times
- User perception of systems software support response and fix times.

Over the period 1987 to 1989 analysis of user data indicated that users considered that, in general terms, vendor service performance was degrading relative to their needs for service. However, during 1990 and 1991 analysis of user data indicates an improvement in user perception of vendor service and also that vendors have responded to user requirements for improved service.

As a result of improvements in service made by vendors the majority of critical aspects of service are now indicated to be over satisfying user needs. The only aspect of service that are not oversatisfied are:-

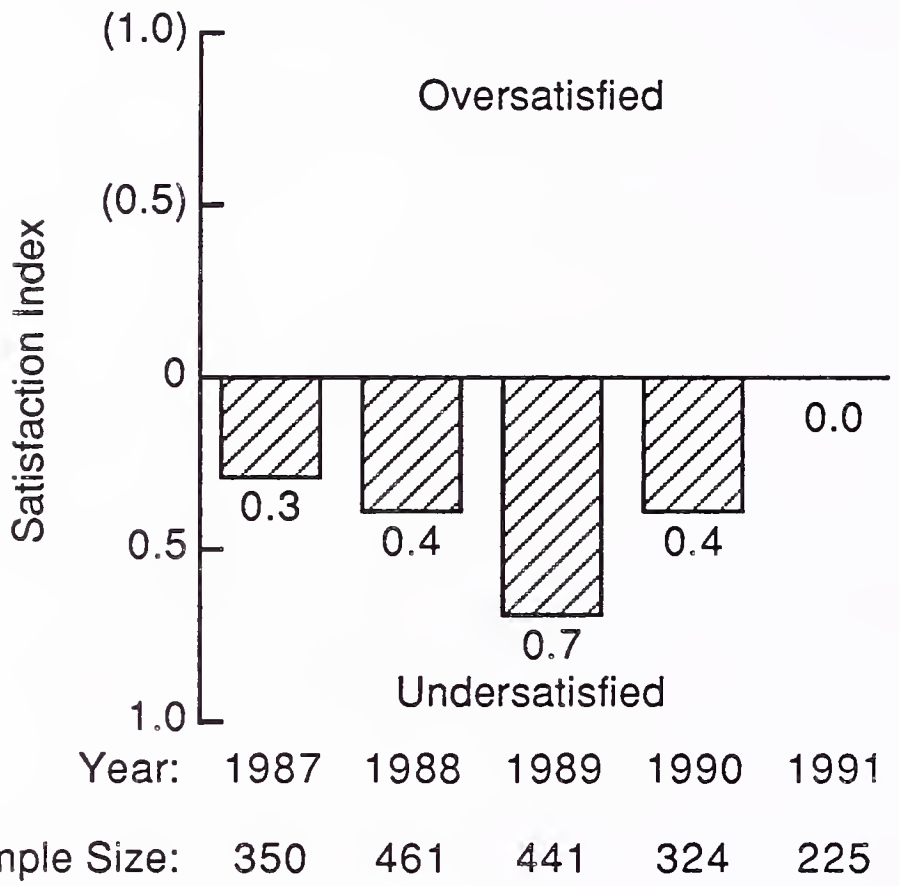
- Systems software support
- Systems availability.

Further, the two aspects of service highlighted as remaining undersatisfied indicate that, at the overall European level, a relatively acceptable degree of user satisfaction is being achieved.

Exhibit V-1

Hardware Service Satisfaction Trends
Western Europe

Large Systems

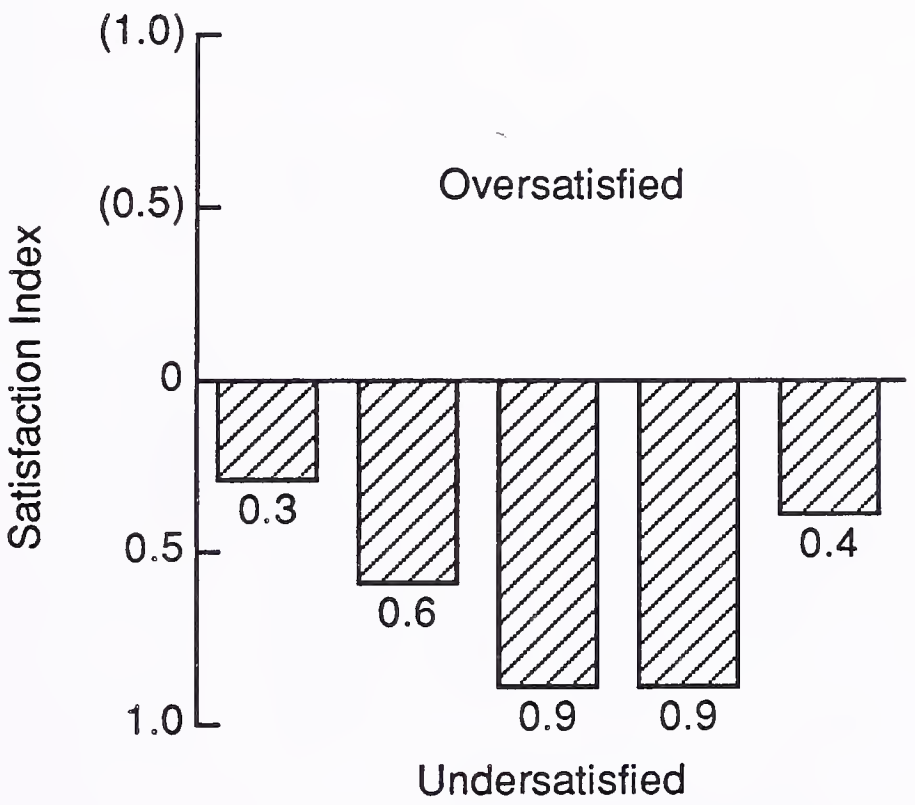


Year:	1987	1988	1989	1990	1991
Sample Size:	350	461	441	324	225

Exhibit V-2

Systems Software Support Satisfaction Trends—Western Europe

Large Systems

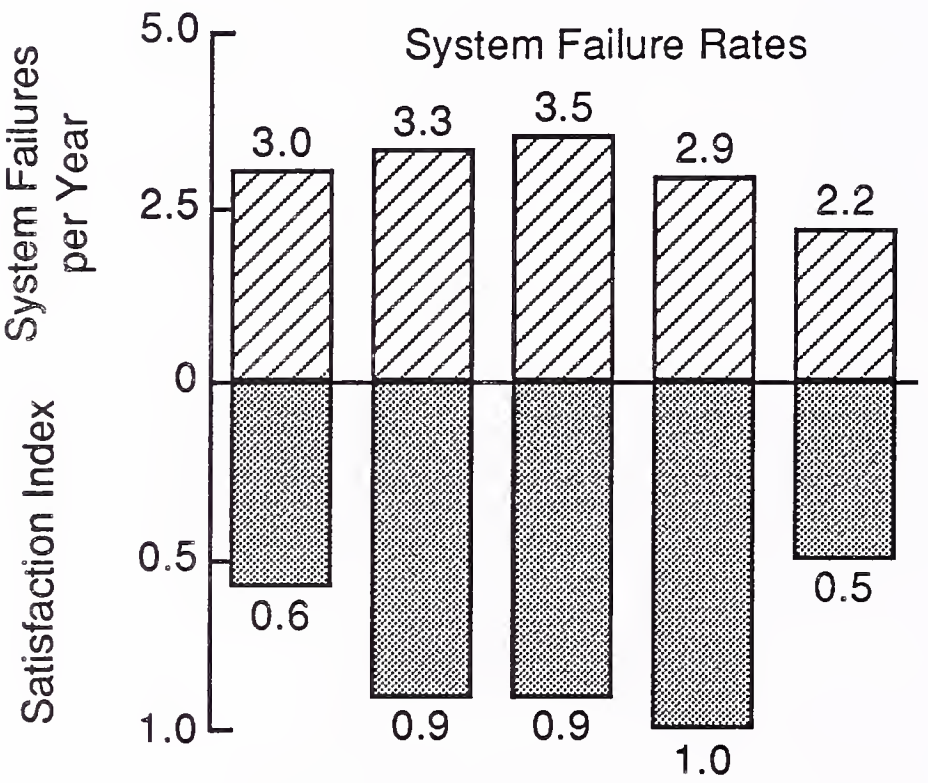


Year:	1987	1988	1989	1990	1991
Sample Size:	350	461	441	324	225

Exhibit V-3

System Performance Trends in Western Europe

Large Systems



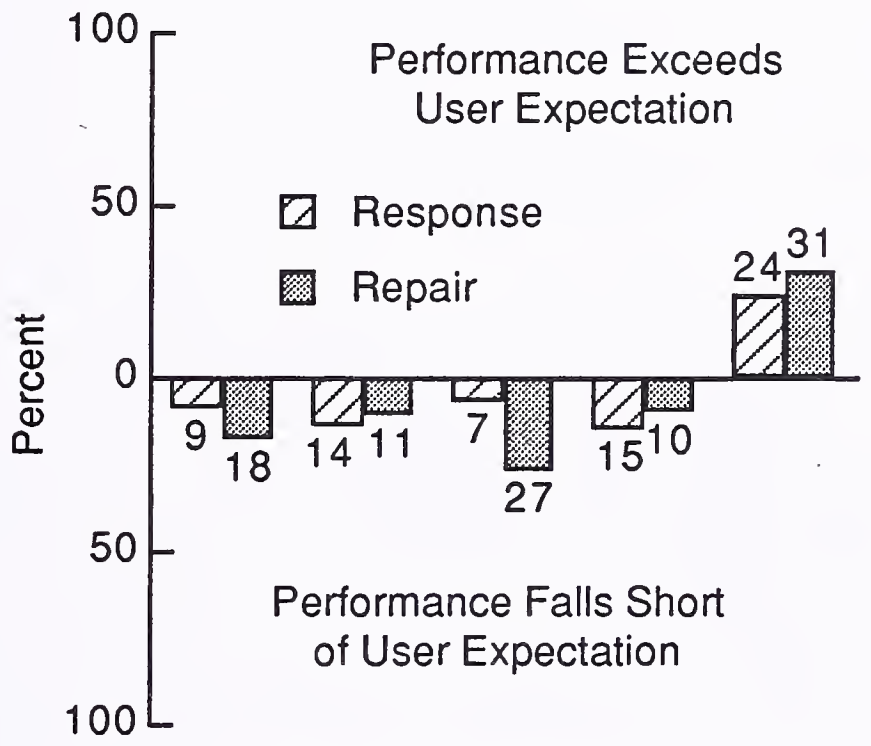
Year:	1987	1988	1989	1990	1991
Sample Size:	350	461	441	324	225

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-4

Hardware Service Response/Repair Time Trends in Western Europe

Large Systems



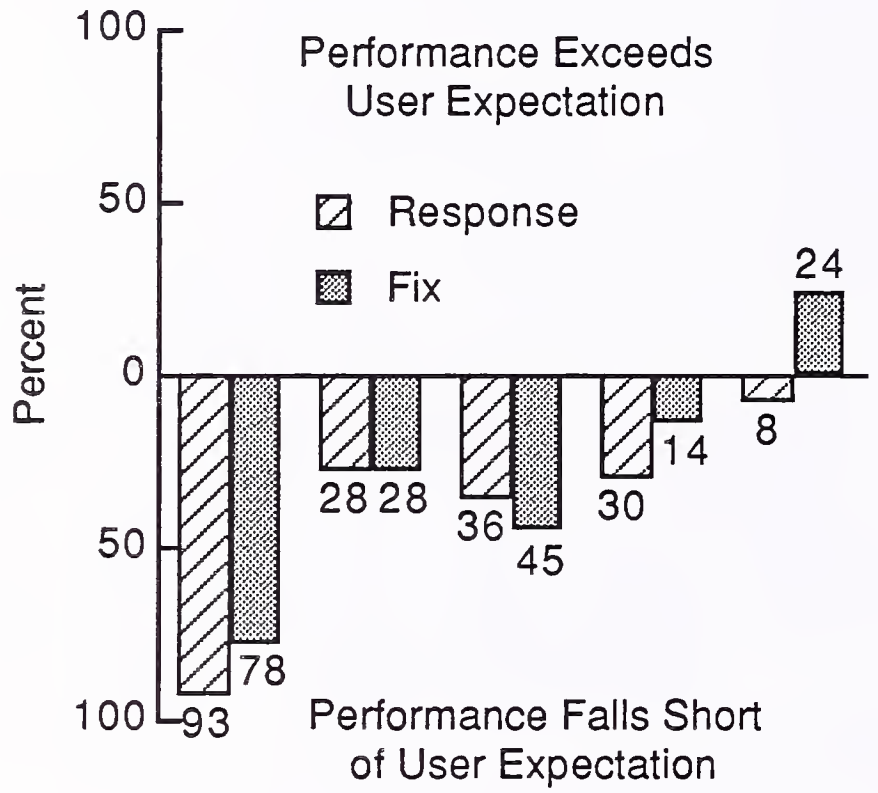
Year:	1987	1988	1989	1990	1991
Sample Size:	350	461	441	324	225

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-5

Systems Software Support Response/Fix Time Trends in Western Europe

Large Systems



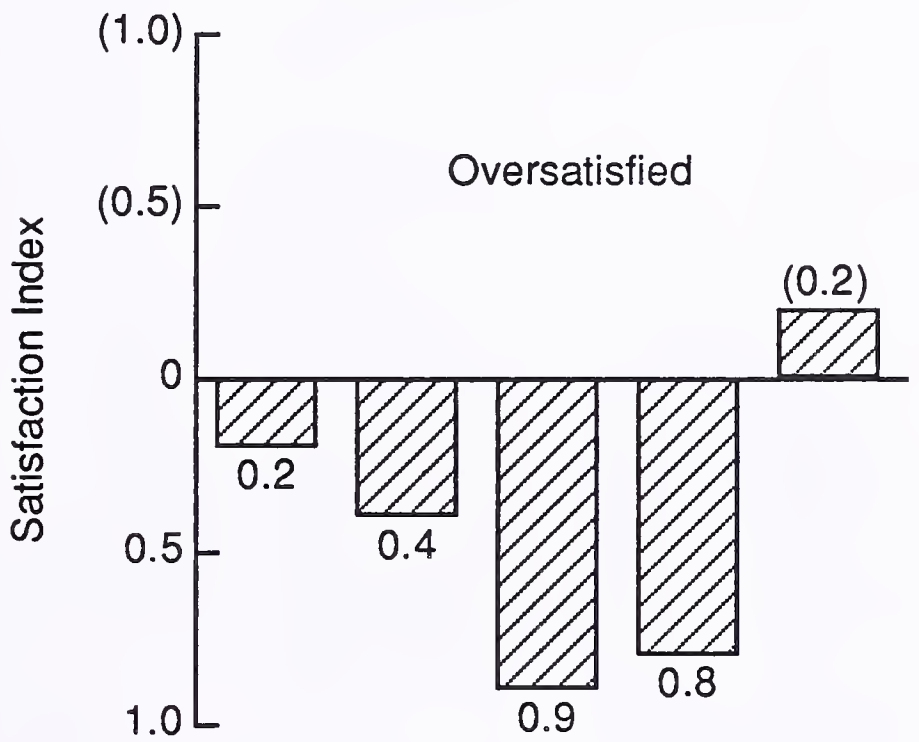
Year:	1987	1988	1989	1990	1991
Sample Size:	350	461	441	324	225

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-6

Hardware Service Satisfaction Trends
Western Europe

Medium Systems

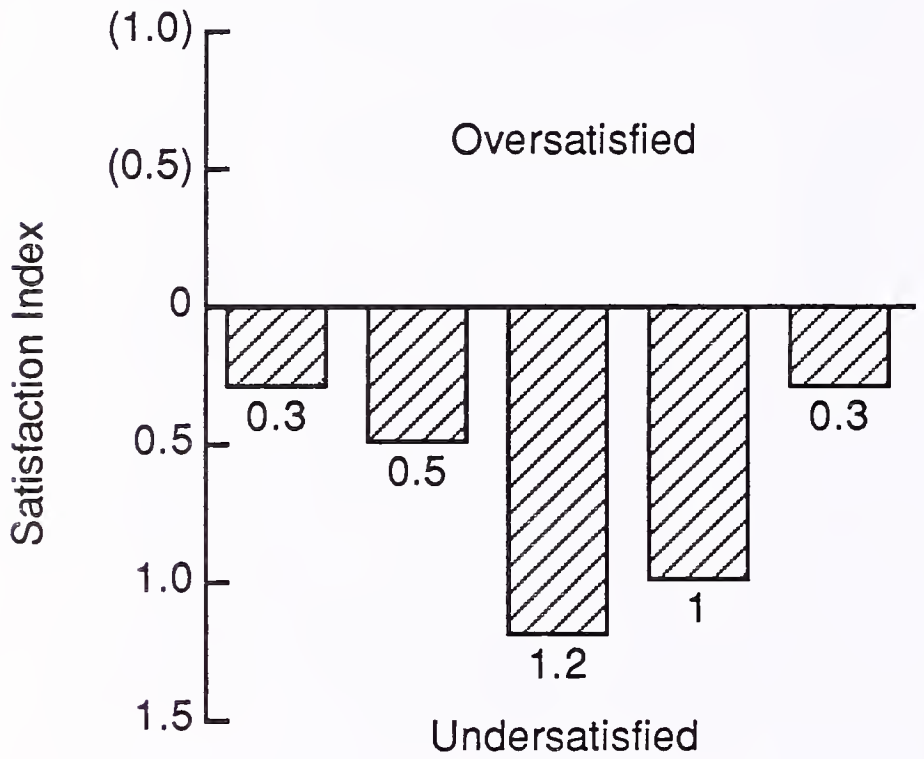


Year:	1987	1988	1989	1990	1991
Sample Size:	692	837	784	638	377

Exhibit V-7

Systems Software Support
Satisfaction Trends—Western Europe

Medium Systems

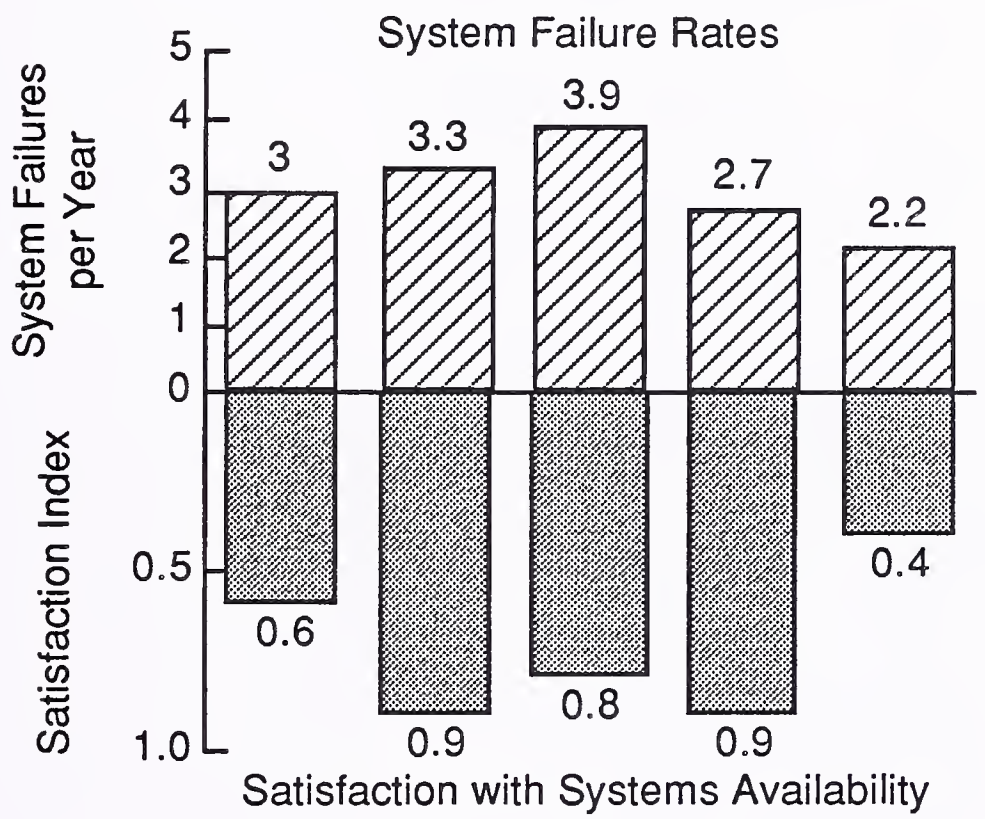


Year:	1987	1988	1989	1990	1991
Sample Size:	692	837	784	638	377

Exhibit V-8

System Performance Trends in Western Europe

Medium Systems



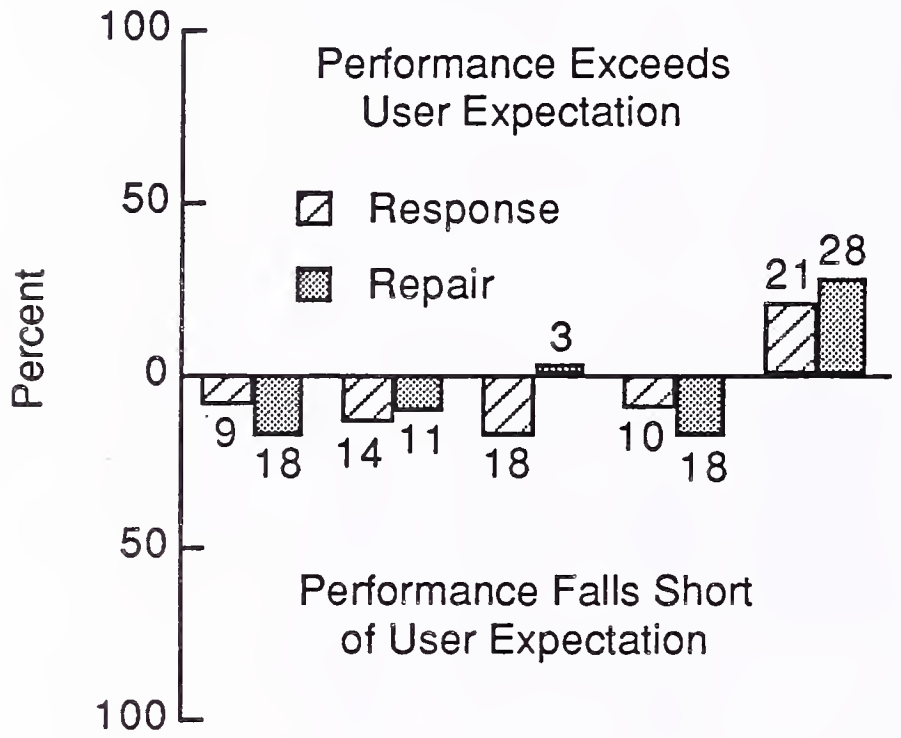
Year:	1987	1988	1989	1990	1991
Sample Size:	692	837	784	638	377

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-9

Hardware Service Response/Repair Time Trends in Western Europe

Medium Systems



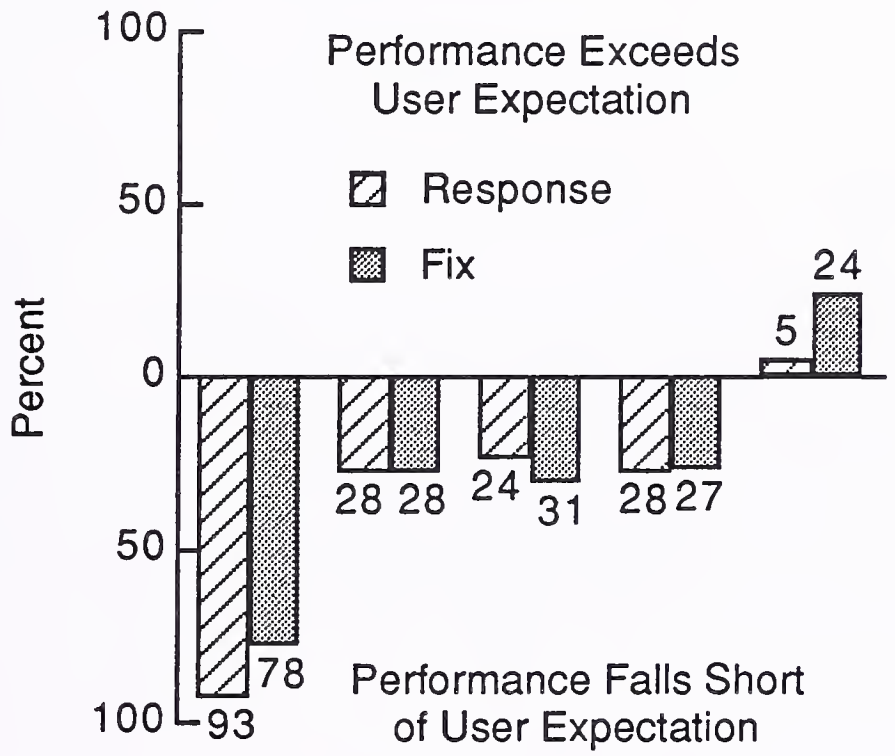
Year:	1987	1988	1989	1990	1991
Sample Size:	692	837	784	638	377

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-10

Systems Software Support Response/Fix Time Trends in Western Europe

Medium Systems



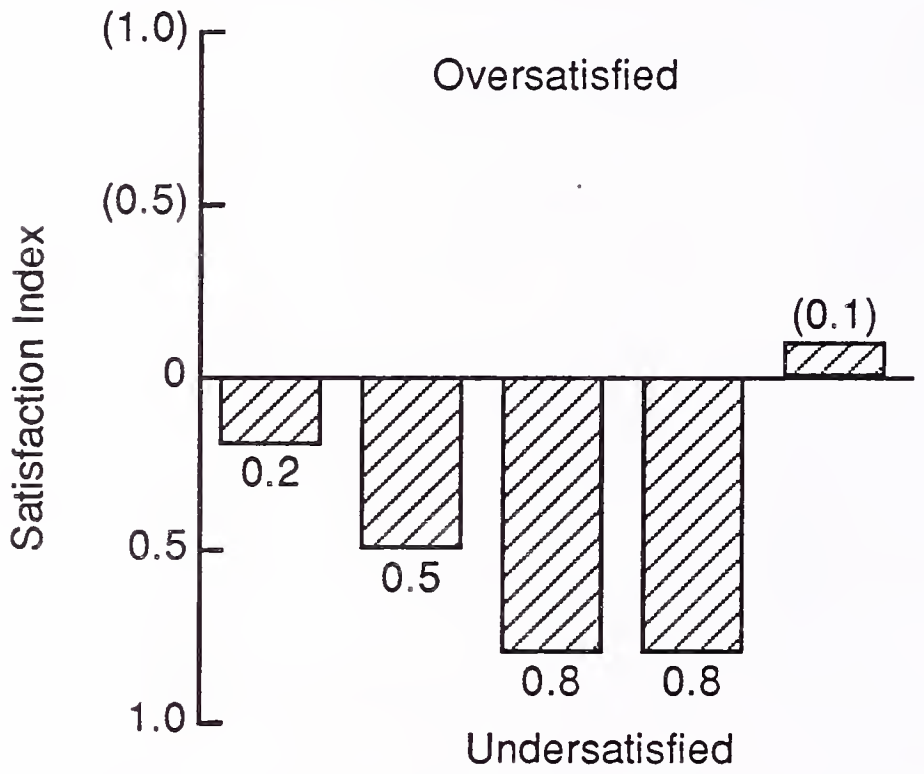
Year:	1987	1988	1989	1990	1991
Sample Size:	692	837	784	638	377

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-11

Hardware Service Satisfaction Trends
Western Europe

Small Systems

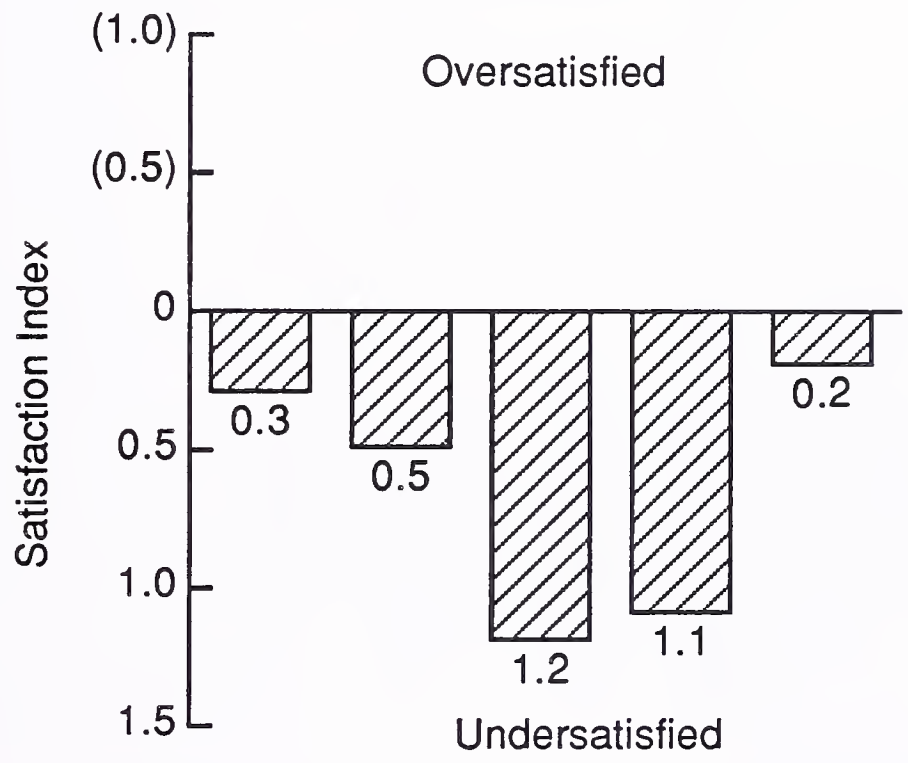


Year:	1987	1988	1989	1990	1991
Sample Size:	280	295	401	249	154

Exhibit V-12

Systems Software Support Satisfaction Trends Western Europe

Small Systems

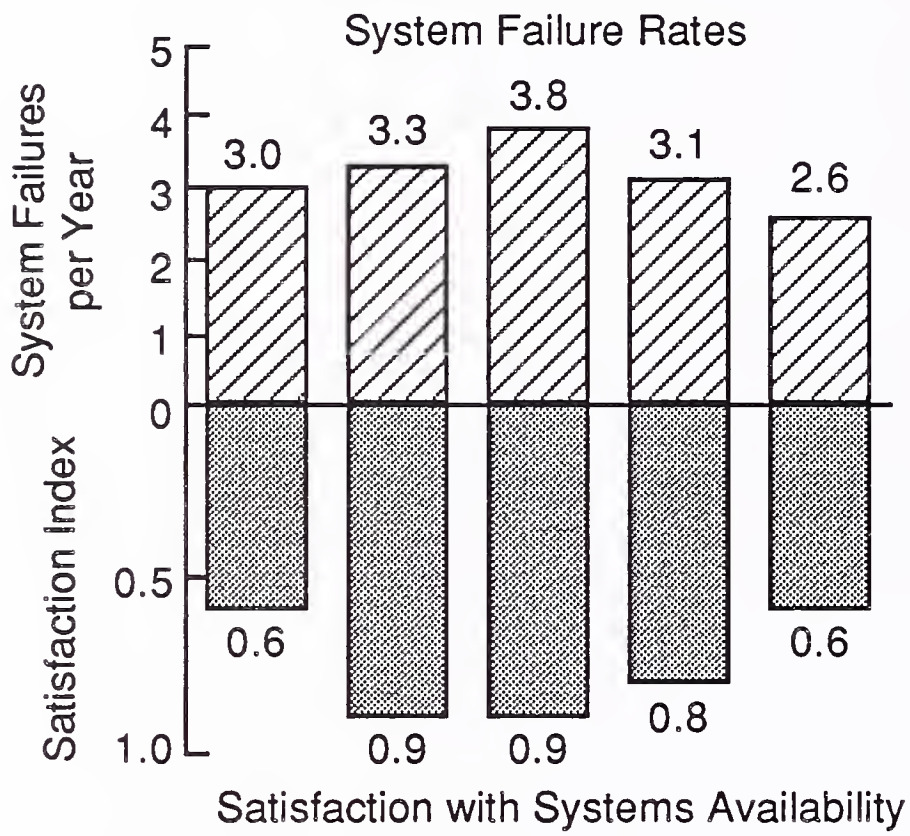


Year:	1987	1988	1989	1990	1991
Sample Size:	280	295	401	249	154

Exhibit V-13

System Performance Trends in Western Europe

Small Systems



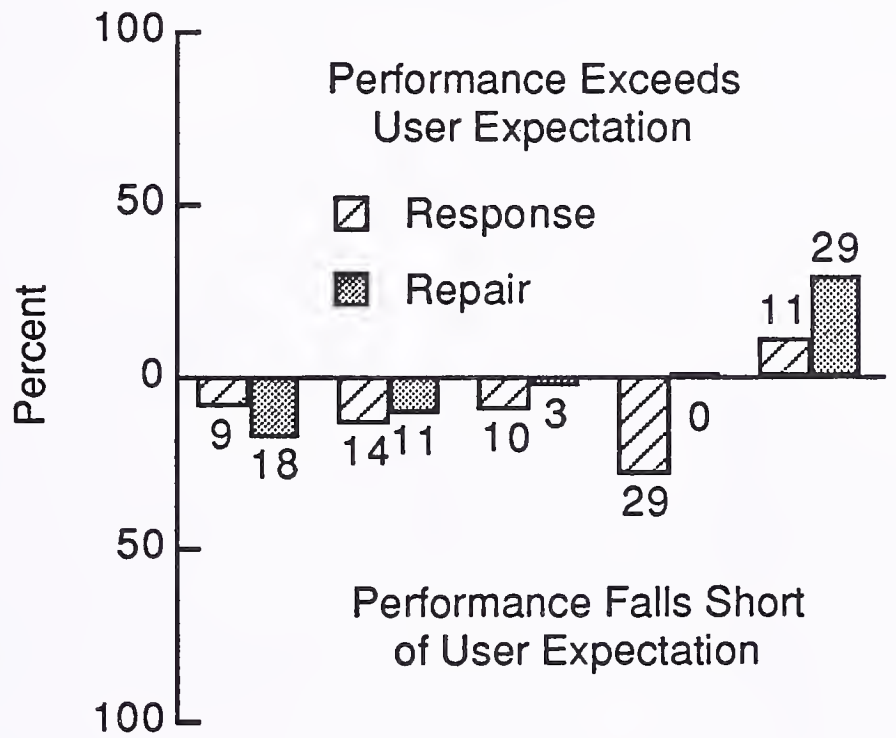
Year:	1987	1988	1989	1990	1991
Sample Size:	280	295	401	249	154

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-14

Hardware Service Response/Repair Time Trends in Western Europe

Small Systems



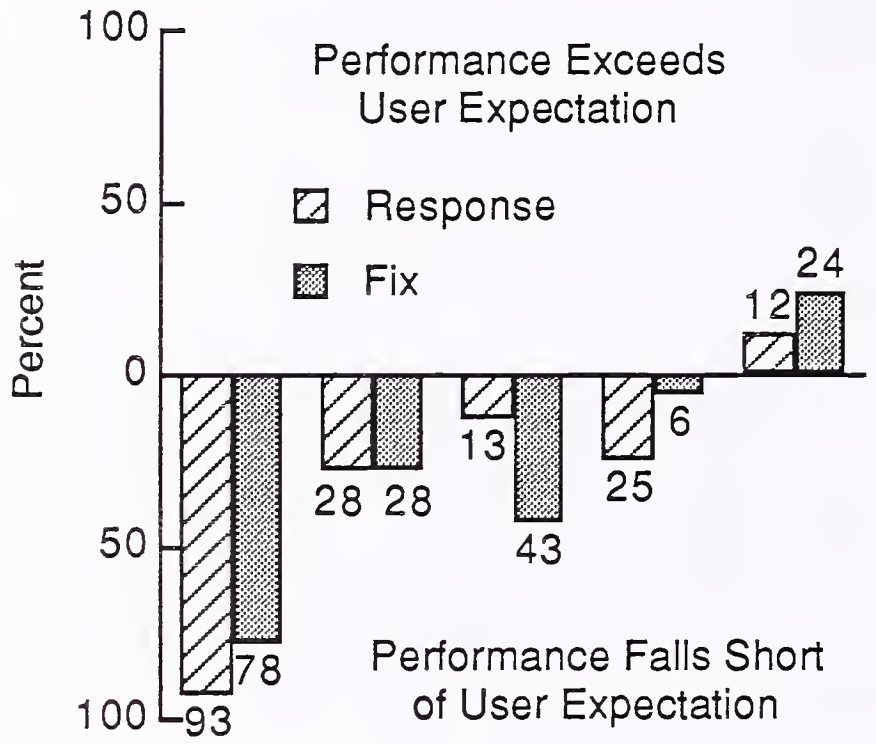
Year:	1987	1988	1989	1990	1991
Sample Size:	280	295	401	249	154

Note: 1987 and 1988 data refers to all system ranges.

Exhibit V-15

Systems Software Support Response/Fix Time Trends in Western Europe

Small Systems



Year:	1987	1988	1989	1990	1991
Sample Size:	280	295	401	249	154

Note: 1987 and 1988 data refers to all system ranges.

VI Key Vendors in Western Europe - Five Year Service Trends

A Introduction

This chapter of the study presents five year trend data, for the years 1987 to 1991, for the three leading vendors in INPUT's 1991 computer user survey in each system size sector. For example:

- Large Systems
- Medium Systems
- Small Systems

Data presented is based on user perception of each leading vendor's service performance in six key areas:

- User satisfaction with hardware service
- User satisfaction with systems software support
- User perception of systems failure rates
- User satisfaction with systems availability
- User perception of vendor hardware service response and repair time performance
- User perception of vendor systems software support response and fix time performance.

The format of the data presented is the same as that used in Chapter V and follows the following sequence:

- Large Systems vendors:
  - Amdahl; Exhibits VI-1 to VI-5
  - IBM; Exhibits VI-6 to VI-10
  - ICL; Exhibits VI-11 to VI-16.
- Medium Systems vendors:
  - Digital; Exhibits VI-17 to VI-20
  - ICL; Exhibits VI-21 to VI-25
  - Stratus; Exhibits VI-26 to VI-30.
- Small Systems vendors:
  - Digital; Exhibits VI-31 to VI-35
  - ICL; Exhibits VI-36 to VI-40
  - Unisys; Exhibits VI-41 to VI-45.

Exhibits relating to leading vendors are presented in alphabetical order. In order of ranking the leading vendors are as follows:

- Large Systems, hardware service:

  1 Amdahl
  2 IBM
  3 ICL

- Large Systems, systems software support:

  1 Amdahl
  2 IBM
  3 ICL

- Medium Systems, hardware service:

  1 Stratus
  2 ICL
  3 Digital

- Medium Systems, systems software support:

  1 Stratus
  2 Digital
  3 ICL

- Small Systems, hardware service:

  1 Unisys
  2 Digital
  3 ICL

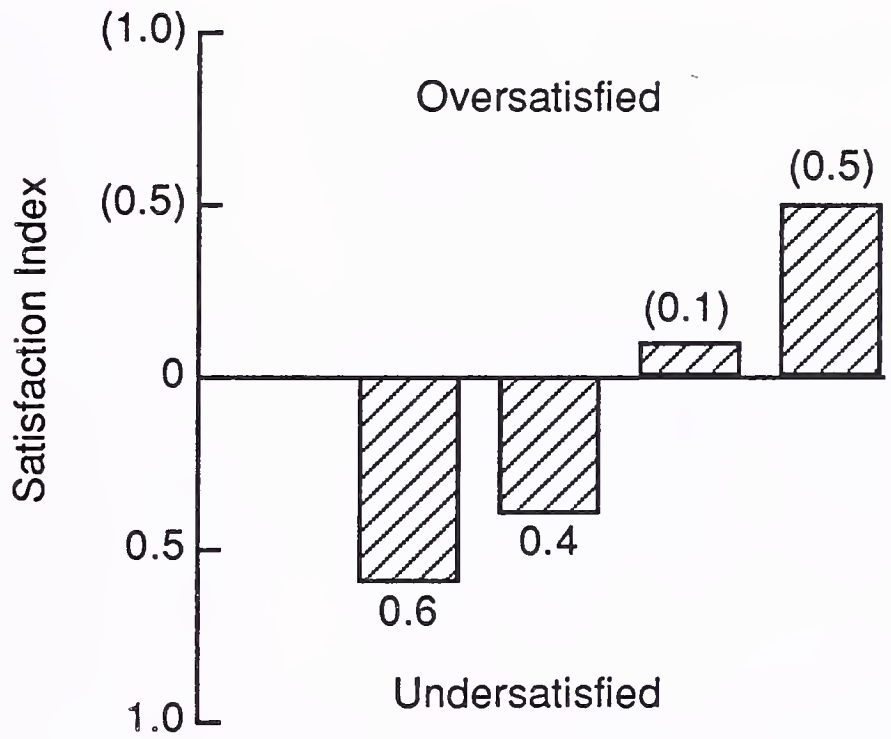
- Small Systems, systems software support:

  1 Unisys
  2 ICL
  3 Digital.

Exhibit VI-1

Hardware Service Satisfaction Trends Western Europe

Amdahl—Large Systems

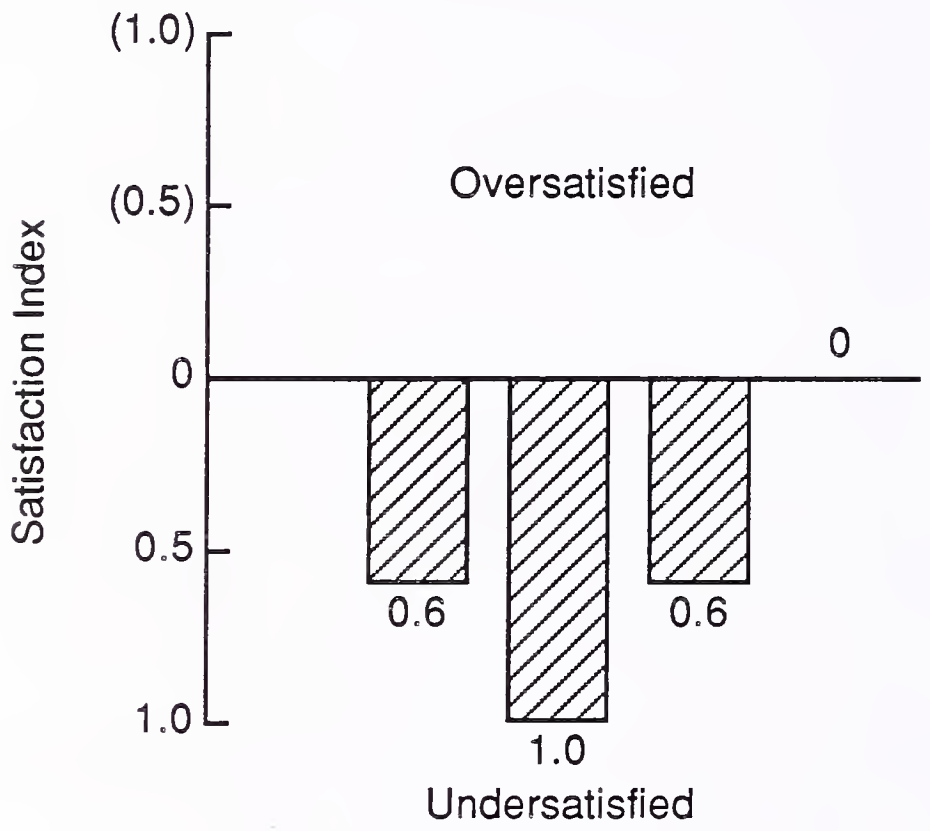


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	79	80	105	111

Exhibit VI-2

Systems Software Support Satisfaction Trends—Western Europe

Amdahl—Large Systems

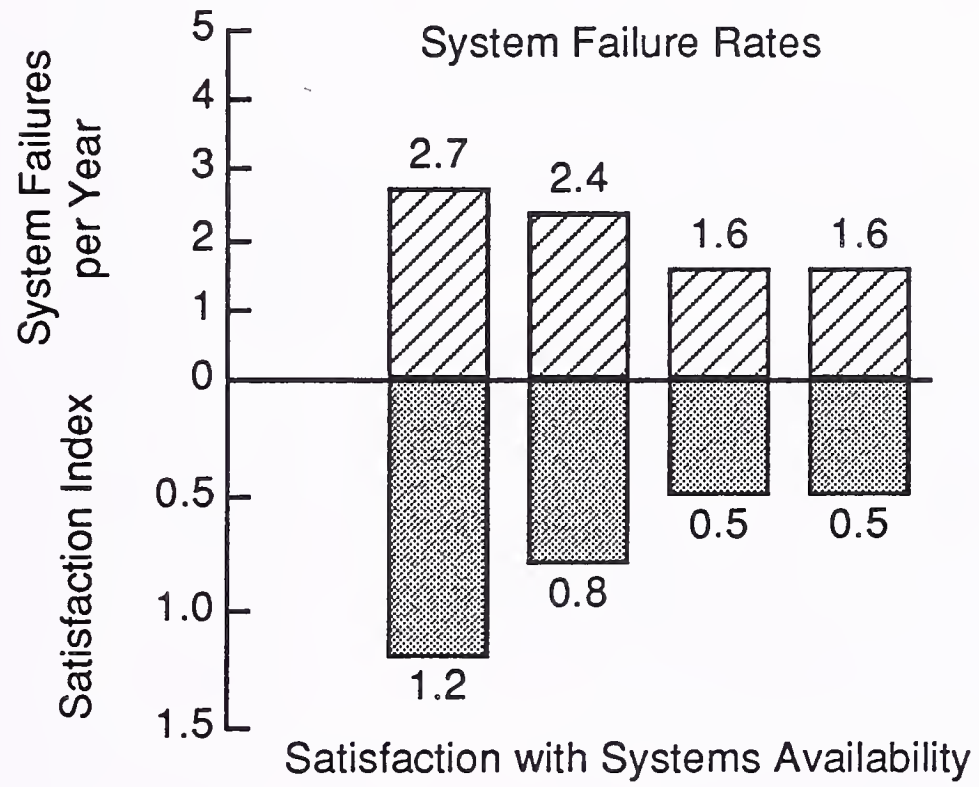


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	79	80	105	111

Exhibit VI-3

System Performance Trends in Western Europe

Amdahl—Large Systems

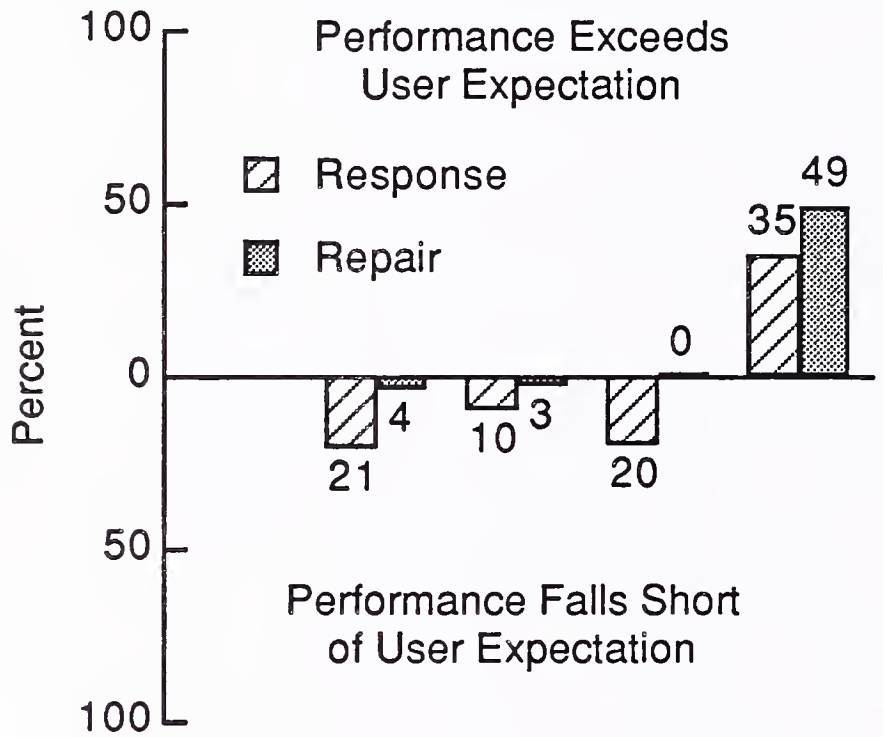


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	79	80	105	111

Exhibit VI-4

Hardware Service Response/Repair Time Trends in Western Europe

Amdahl—Large Systems

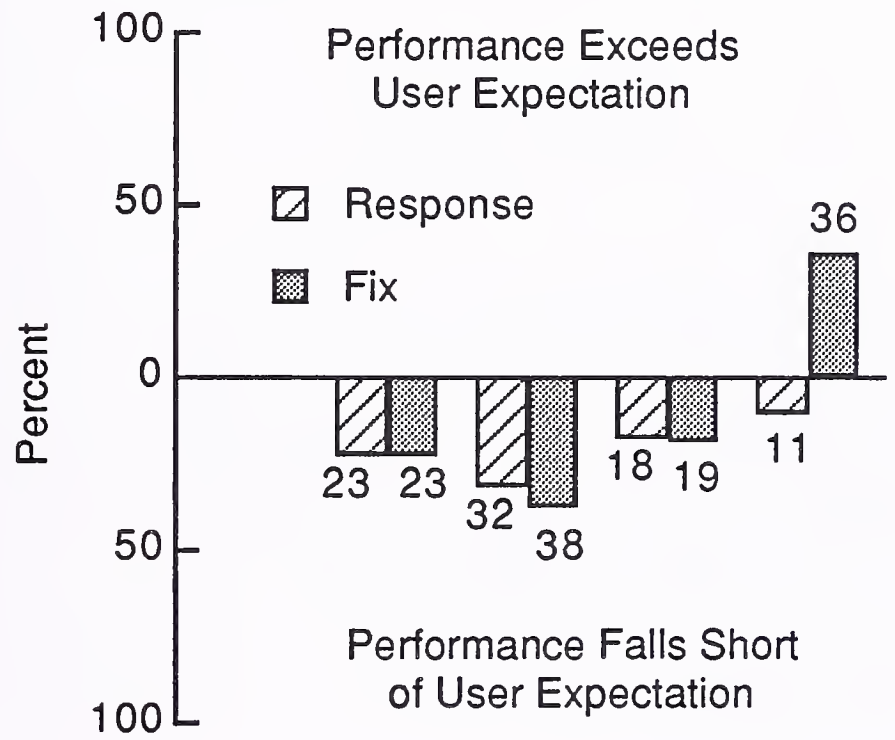


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	79	80	105	111

Exhibit VI-5

Systems Software Support Response/Fix Time Trends in Western Europe

Amdahl—Large Systems

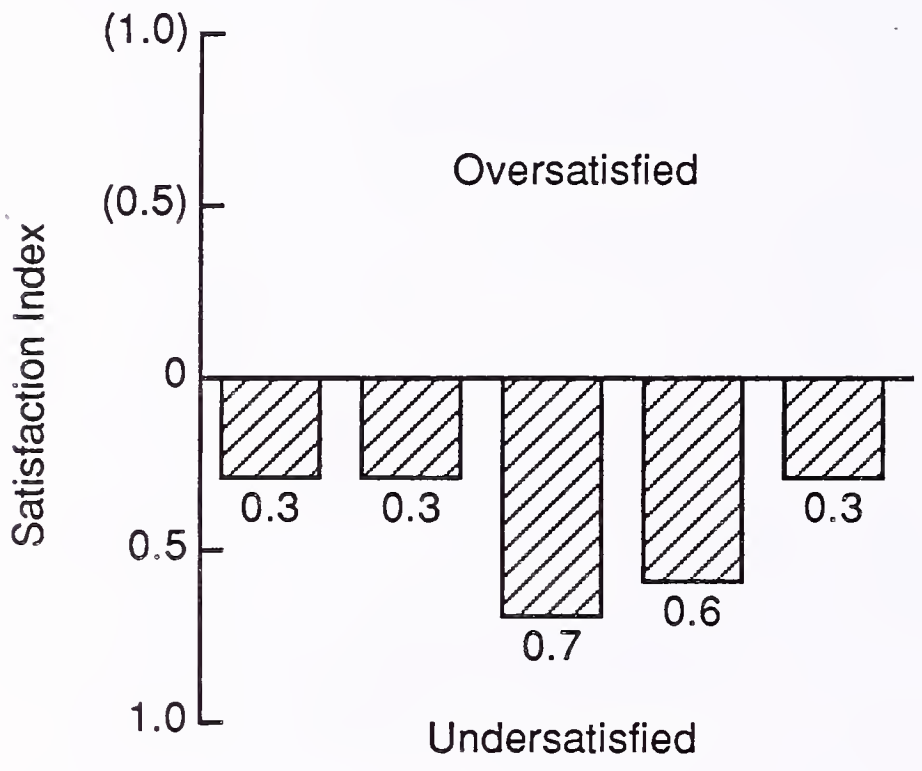


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	79	80	105	111

Exhibit VI-6

Hardware Service Satisfaction Trends
Western Europe

IBM—Large Systems

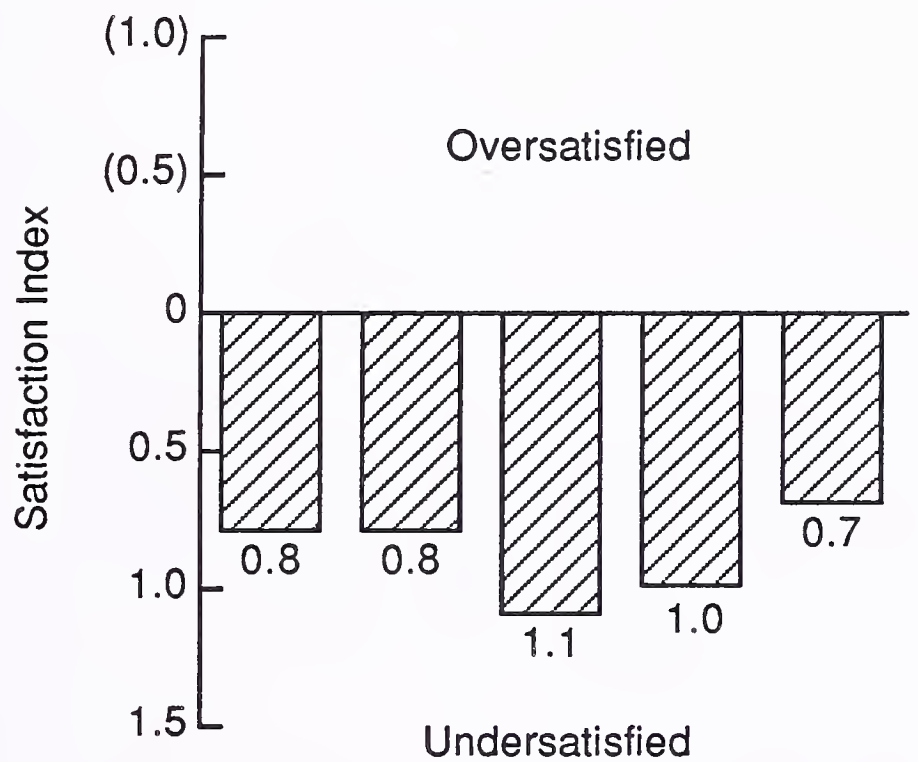


Year:	1987	1988	1989	1990	1991
Sample Size:	124	43	59	66	39

Exhibit VI-7

Systems Software Support Satisfaction Trends—Western Europe

IBM—Large Systems

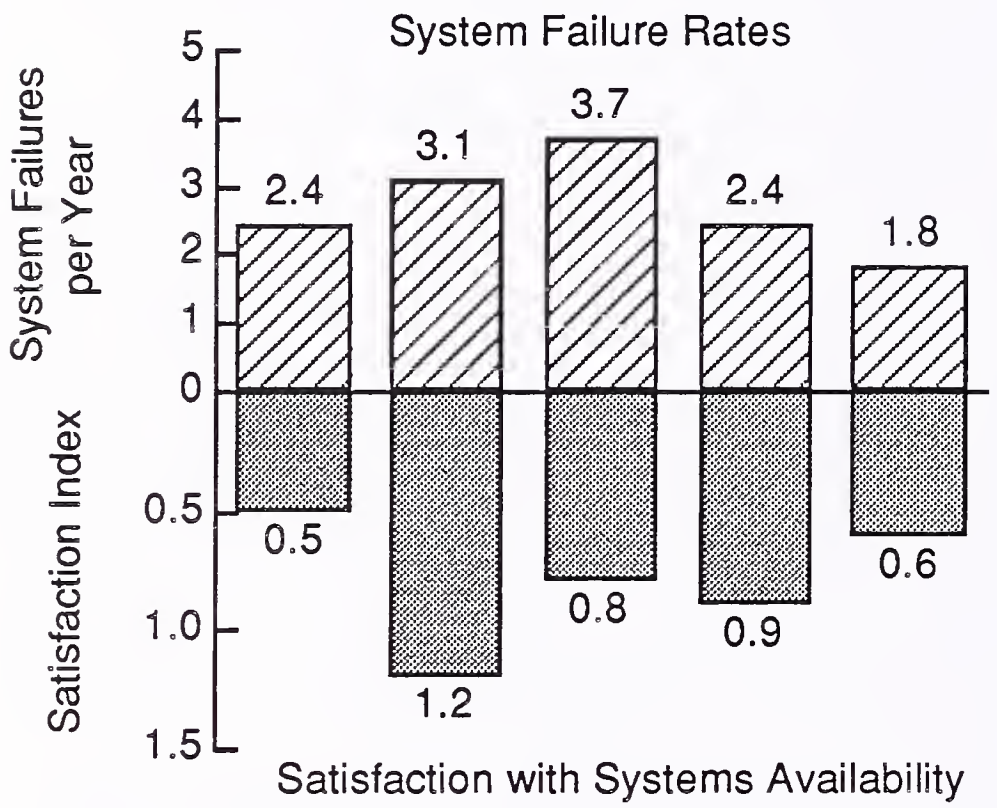


Year:	1987	1988	1989	1990	1991
Sample Size:	124	43	59	66	39

Exhibit VI-8

System Performance Trends in Western Europe

IBM—Large Systems

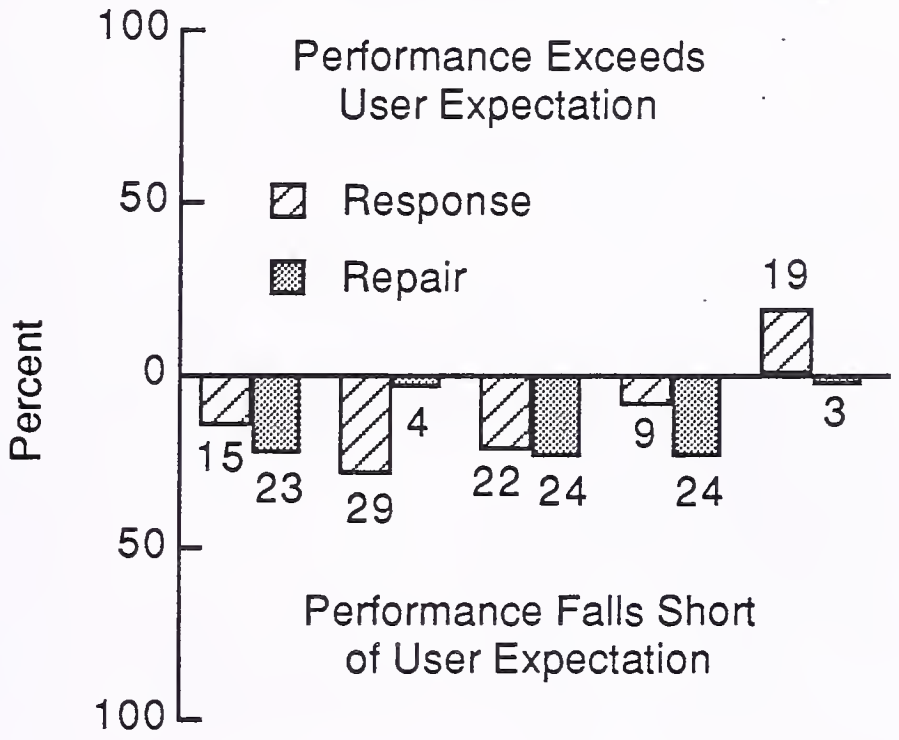


Year:	1987	1988	1989	1990	1991
Sample Size:	124	43	59	66	39

Exhibit VI-9

Hardware Service Response/Repair Time Trends in Western Europe

IBM—Large Systems

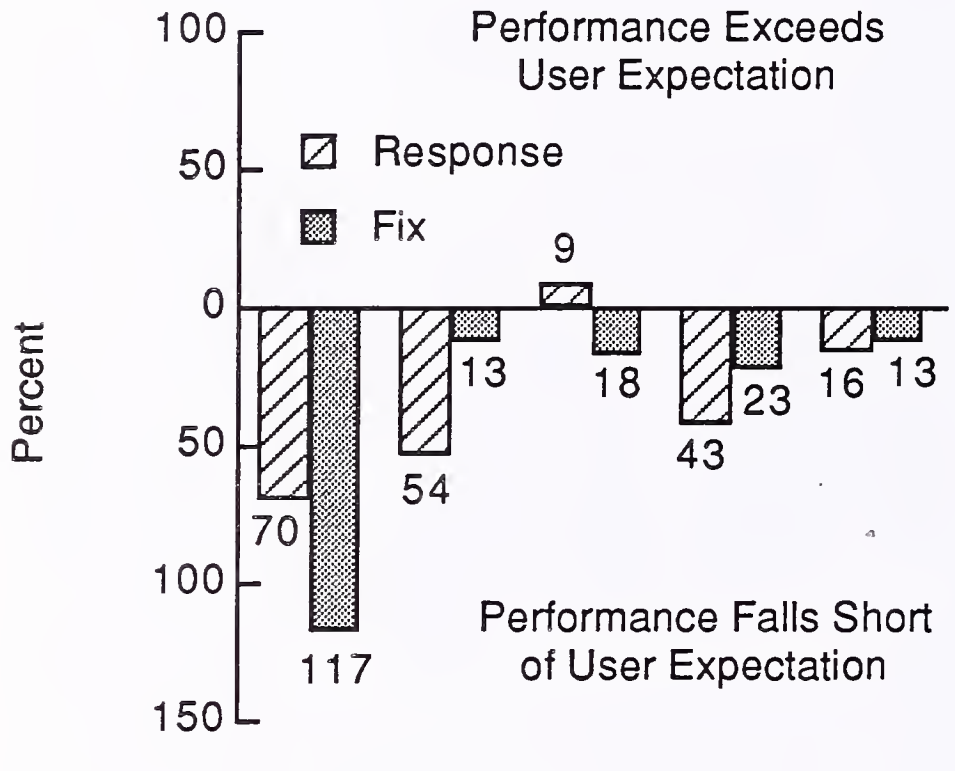


Year:	1987	1988	1989	1990	1991
Sample Size:	124	43	59	66	39

Exhibit VI-10

Systems Software Support Response/Fix Time Trends in Western Europe

IBM—Large Systems

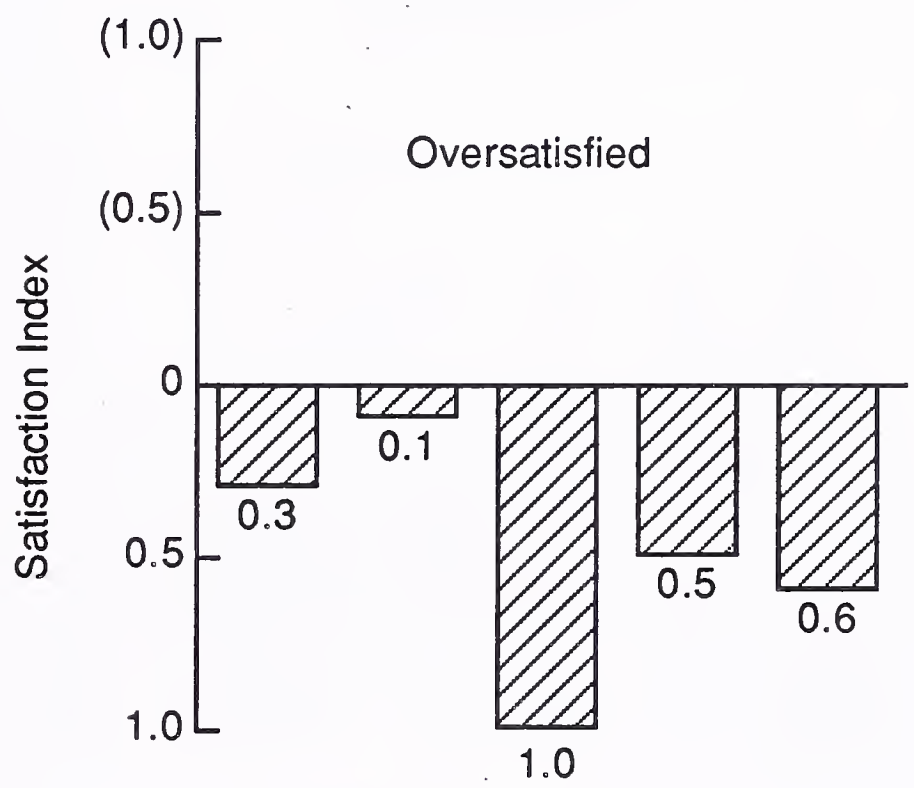


Year:	1987	1988	1989	1990	1991
Sample Size:	124	43	59	66	39

Exhibit VI-11

Hardware Service Satisfaction Trends
Western Europe

ICL—Large Systems

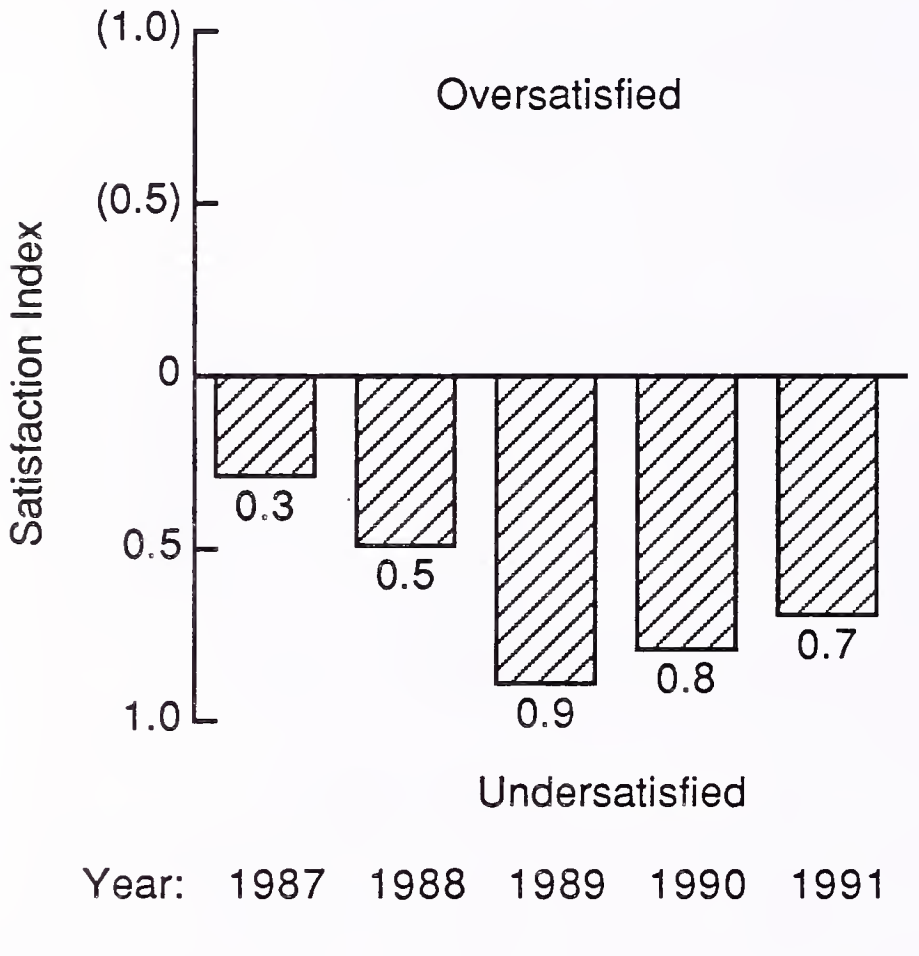


Year:	1987	1988	1989	1990	1991
Sample Size:	56	82	49	45	22

Exhibit VI-12

Systems Software Support Satisfaction Trends—Western Europe

ICL—Large Systems

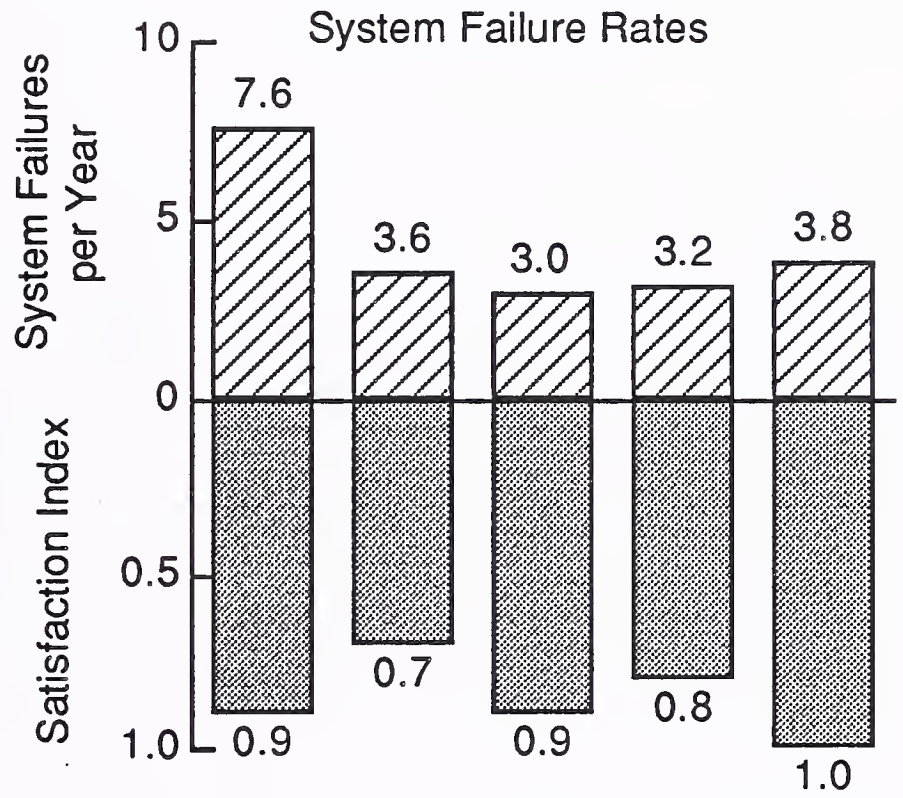


Year:	1987	1988	1989	1990	1991
Sample Size:	56	87	49	45	22

Exhibit VI-13

System Performance Trends in Western Europe

ICL—Large Systems

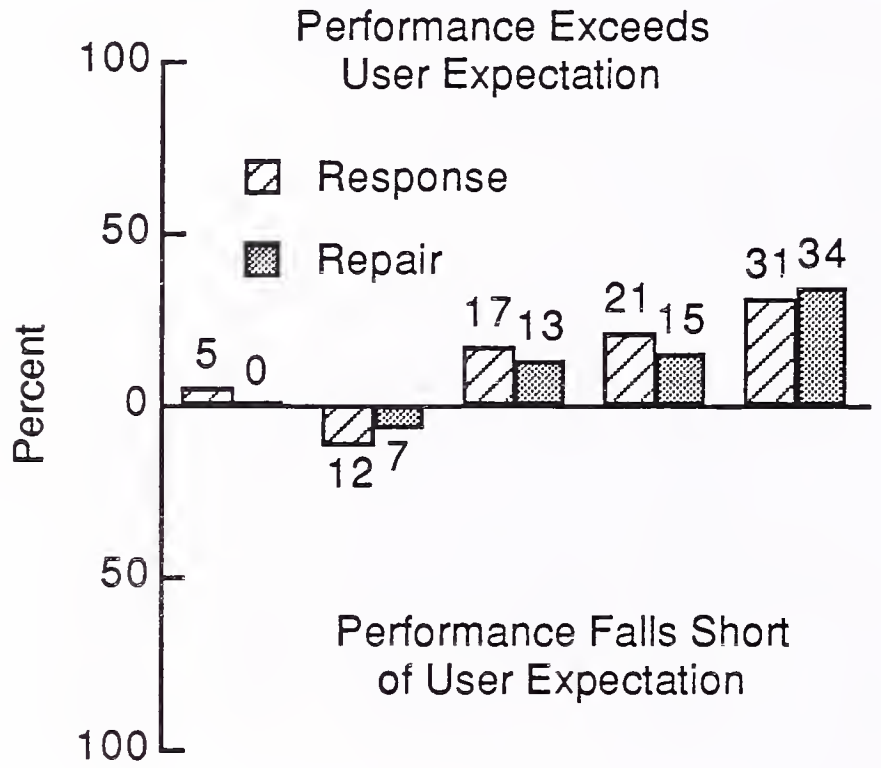


Year:	1987	1988	1989	1990	1991
Sample Size:	56	82	49	45	22

Exhibit VI-14

Hardware Service Response/Repair Time Trends in Western Europe

ICL—Large Systems

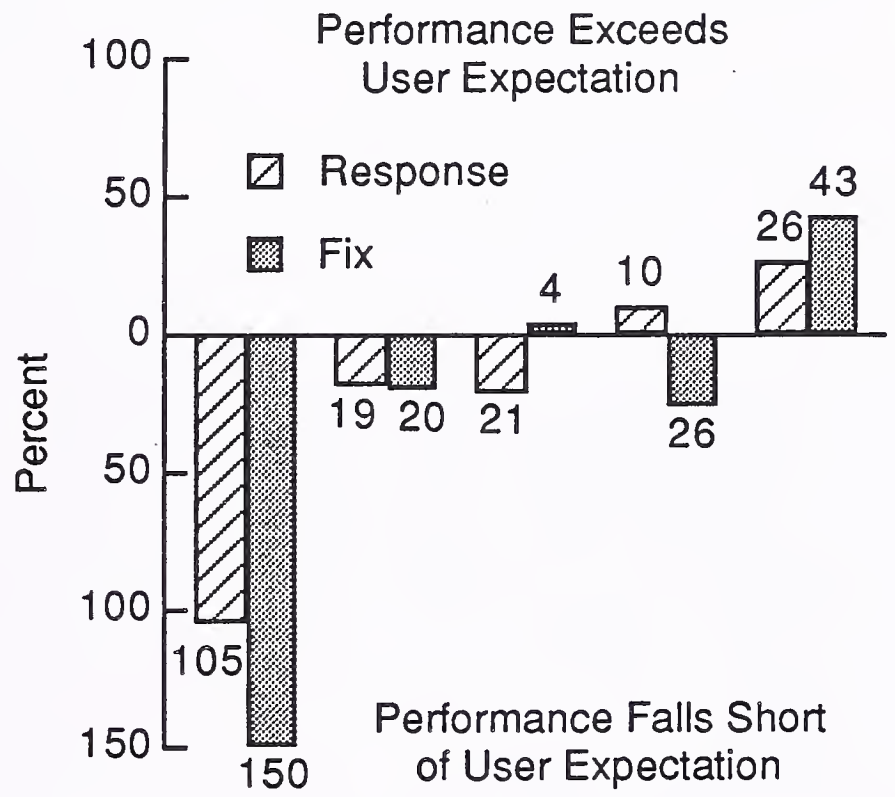


Year:	1987	1988	1989	1990	1991
Sample Size:	56	82	49	45	22

Exhibit VI-15

Systems Software Support Response/Fix Time Trends in Western Europe

ICL—Large Systems

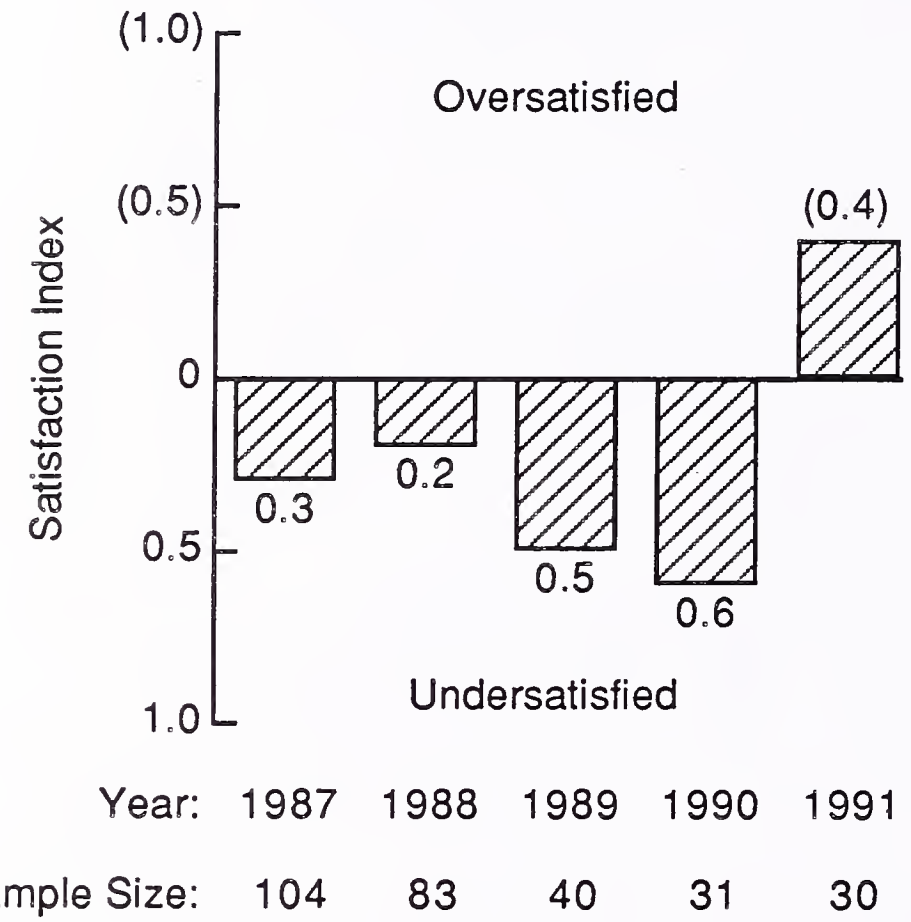


Year:	1987	1988	1989	1990	1991
Sample Size:	56	82	49	45	22

Exhibit VI-16

Hardware Service Satisfaction Trends
Western Europe

Digital—Medium Systems

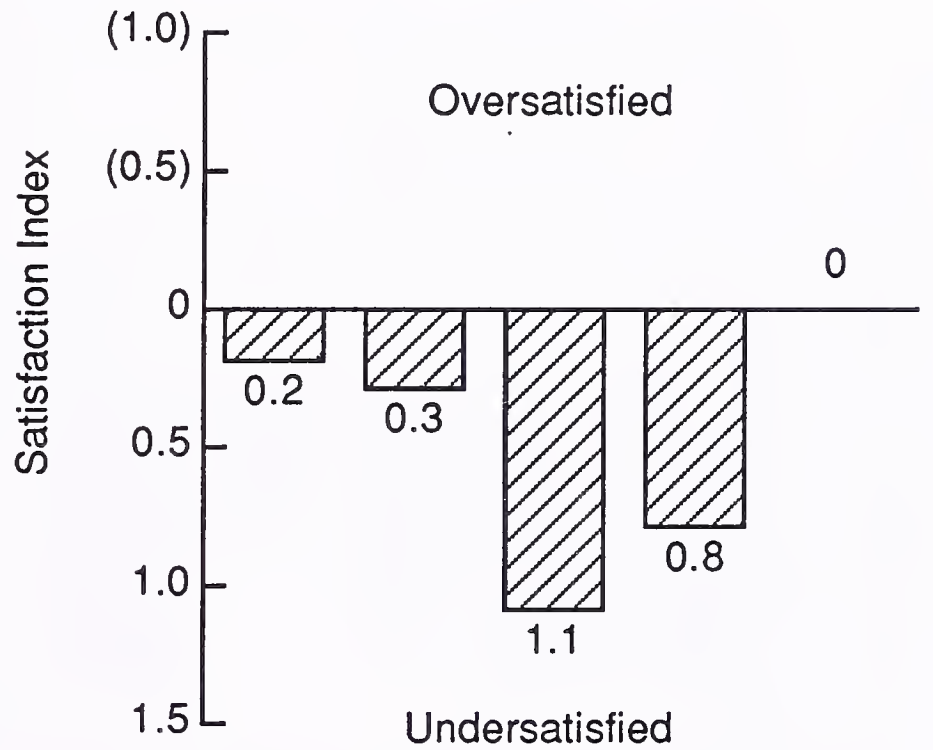


Year:	1987	1988	1989	1990	1991
Sample Size:	104	83	40	31	30

Exhibit VI-17

Systems Software Satisfaction Trends
Western Europe

Digital—Medium Systems

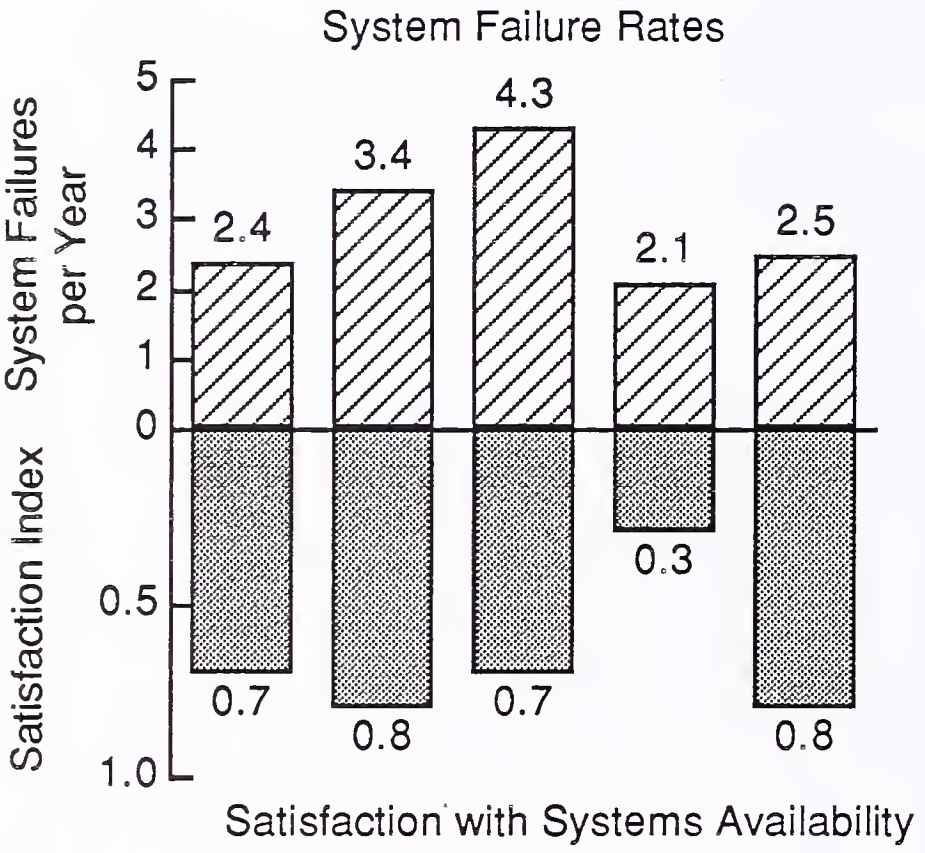


Year:	1987	1988	1989	1990	1991
Sample Size:	104	83	40	31	30

Exhibit VI-18

System Performance Trends in Western Europe

Digital—Medium Systems

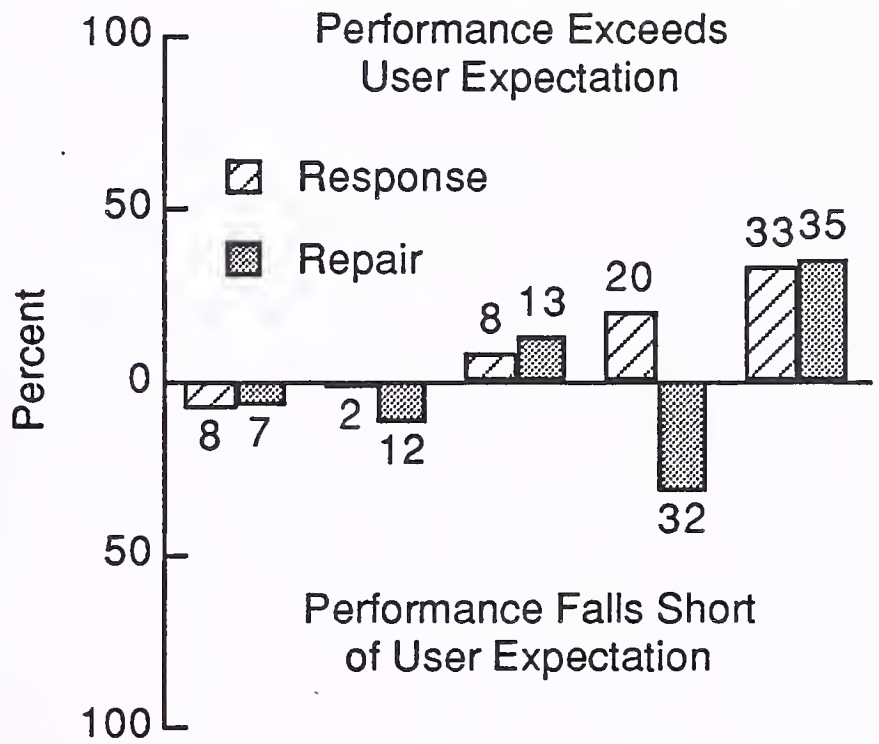


Year:	1987	1988	1989	1990	1991
Sample Size:	104	83	40	31	30

Exhibit VI-19

Hardware Service Response/Repair Time Trends in Western Europe

Digital—Medium Systems

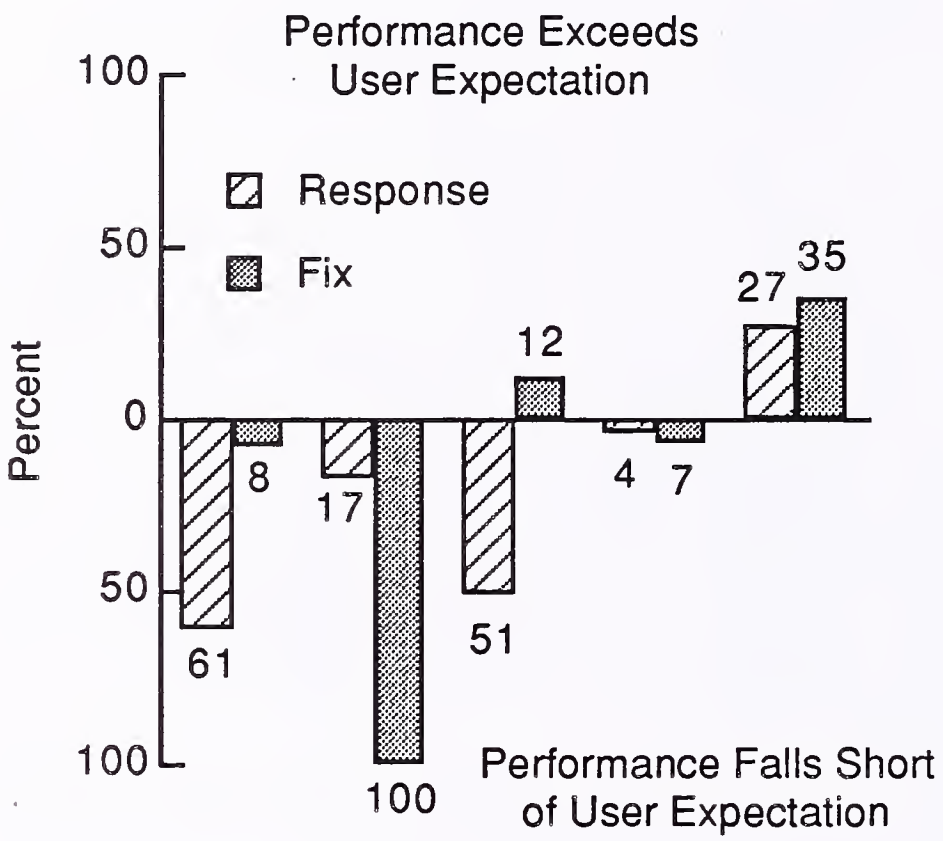


Year:	1987	1988	1989	1990	1991
Sample Size:	104	83	40	31	30

Exhibit VI-20

Systems Software Support Response/Fix Time Trends in Western Europe

Digital—Medium Systems

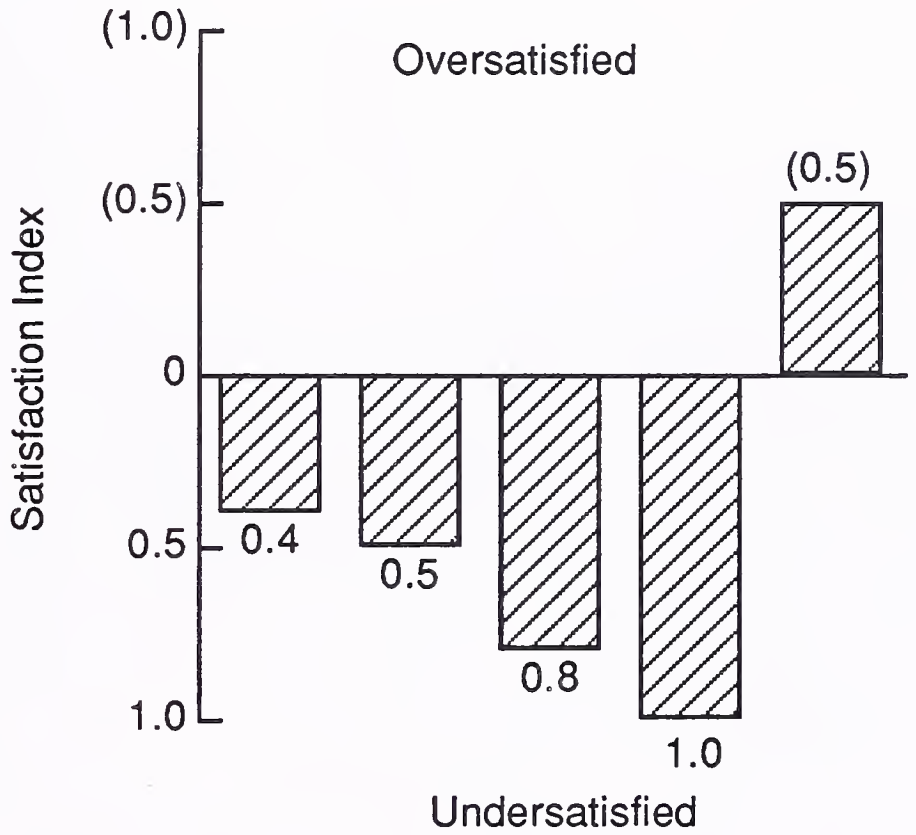


Year:	1987	1988	1989	1990	1991
Sample Size:	104	83	40	31	30

Exhibit VI-21

Hardware Service Satisfaction Trends
Western Europe

ICL—Medium Systems

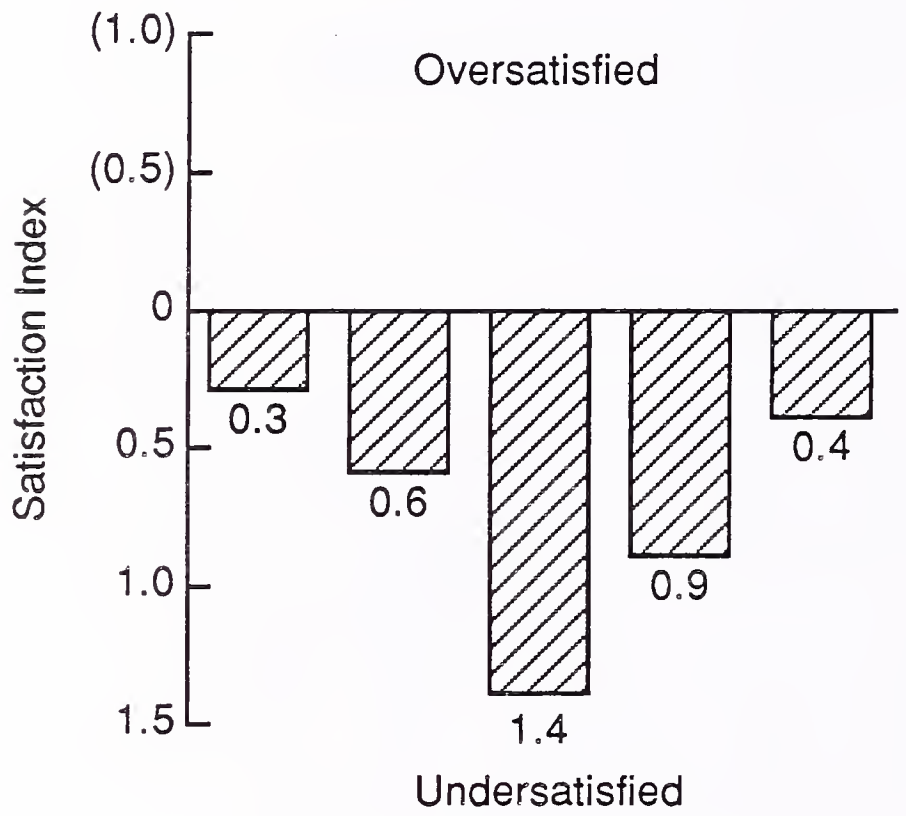


Year:	1987	1988	1989	1990	1991
Sample Size:	103	80	55	107	49

Exhibit VI-22

Systems Software Satisfaction Trends
Western Europe

ICL—Medium Systems

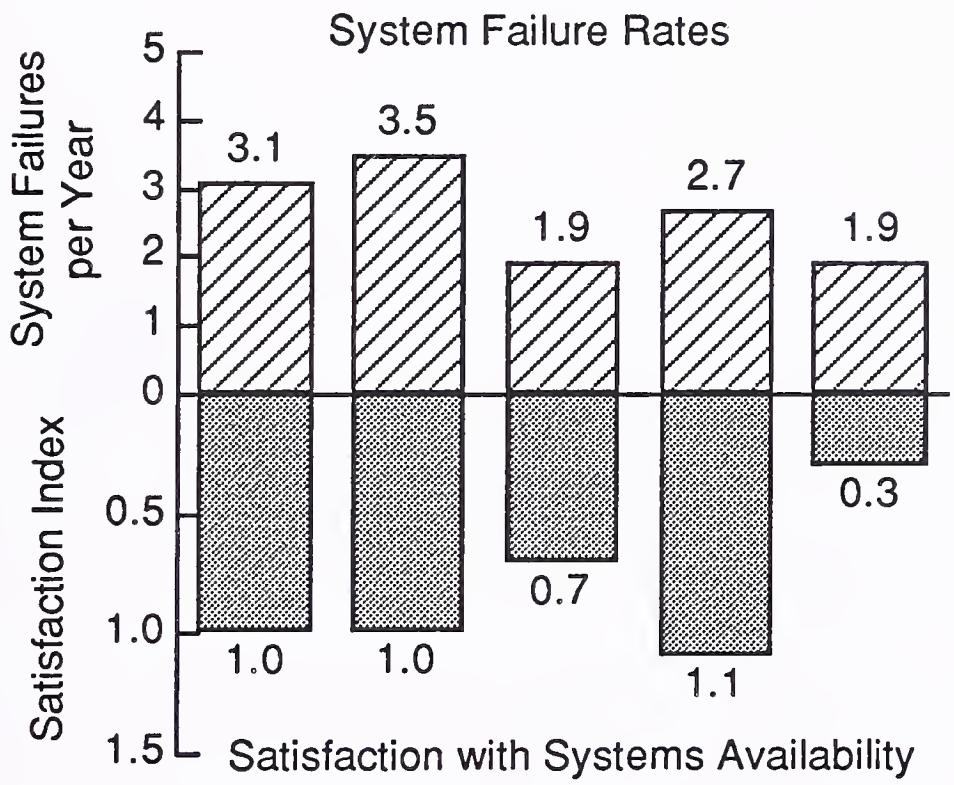


Year:	1987	1988	1989	1990	1991
Sample Size:	103	80	55	107	49

Exhibit VI-23

System Performance Trends in Western Europe

ICL—Medium Systems

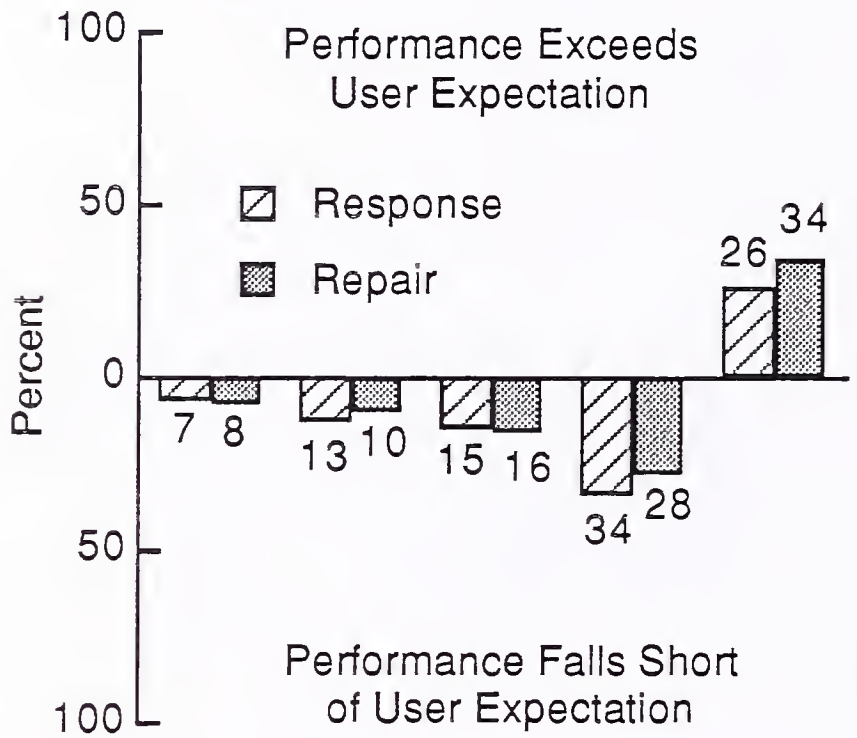


Year:	1987	1988	1989	1990	1991
Sample Size:	103	80	55	107	49

Exhibit VI-24

Hardware Service Response/Repair Time Trends in Western Europe

ICL—Medium Systems

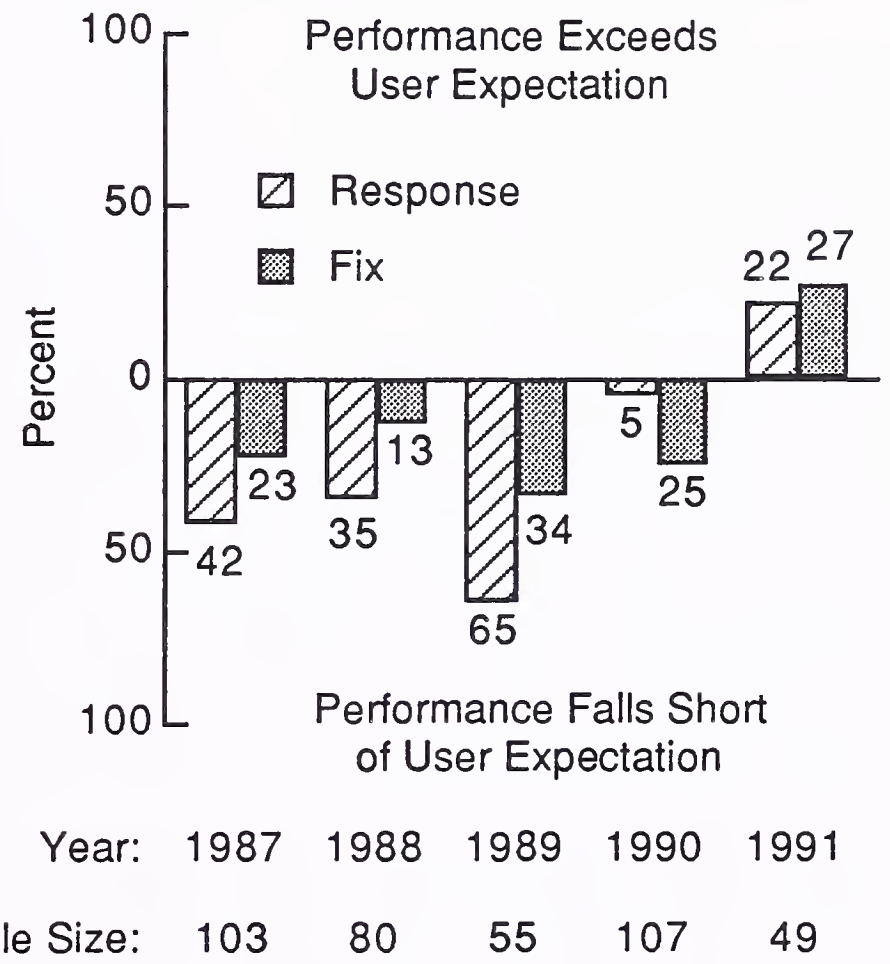


Year:	1987	1988	1989	1990	1991
Sample Size:	103	80	55	107	49

Exhibit VI-25

Systems Software Support Response/Fix Time Trends in Western Europe

ICL—Medium Systems

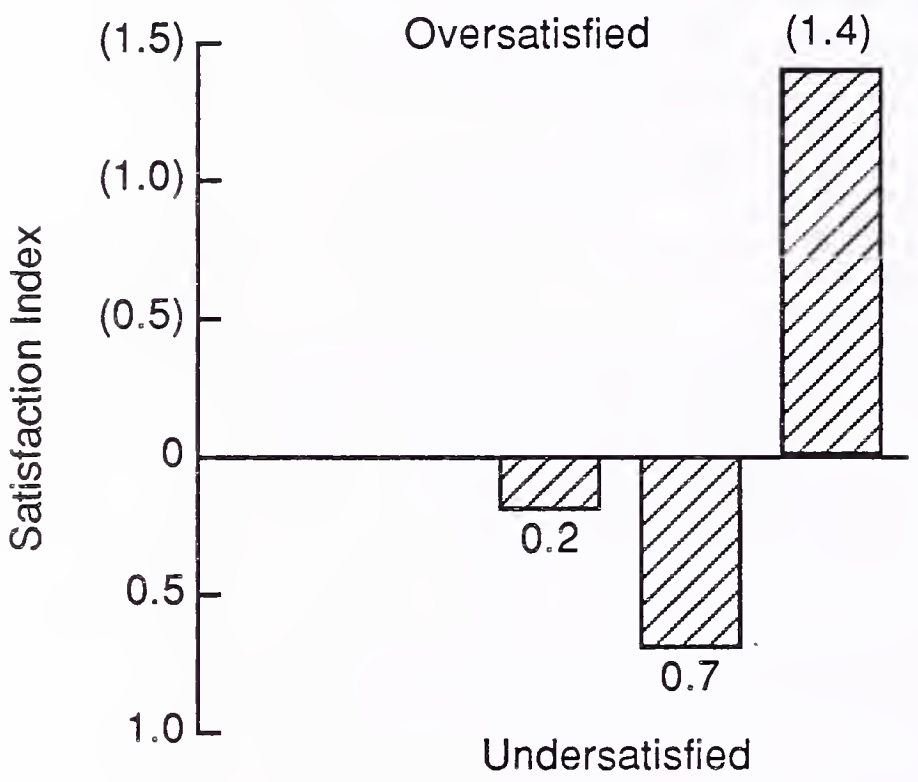


Year:	1987	1988	1989	1990	1991
Sample Size:	103	80	55	107	49

Exhibit VI-26

Hardware Service Satisfaction Trends
Western Europe

Stratus—Medium Systems

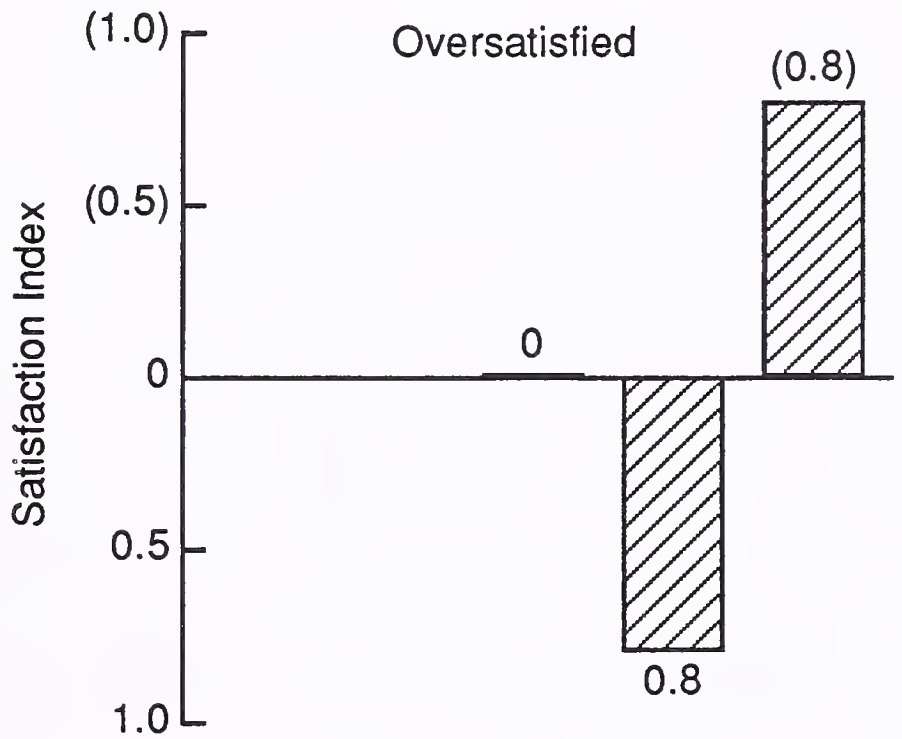


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	Nil	23	40	53

Exhibit VI-27

Systems Software Satisfaction Trends
Western Europe

Stratus—Medium Systems

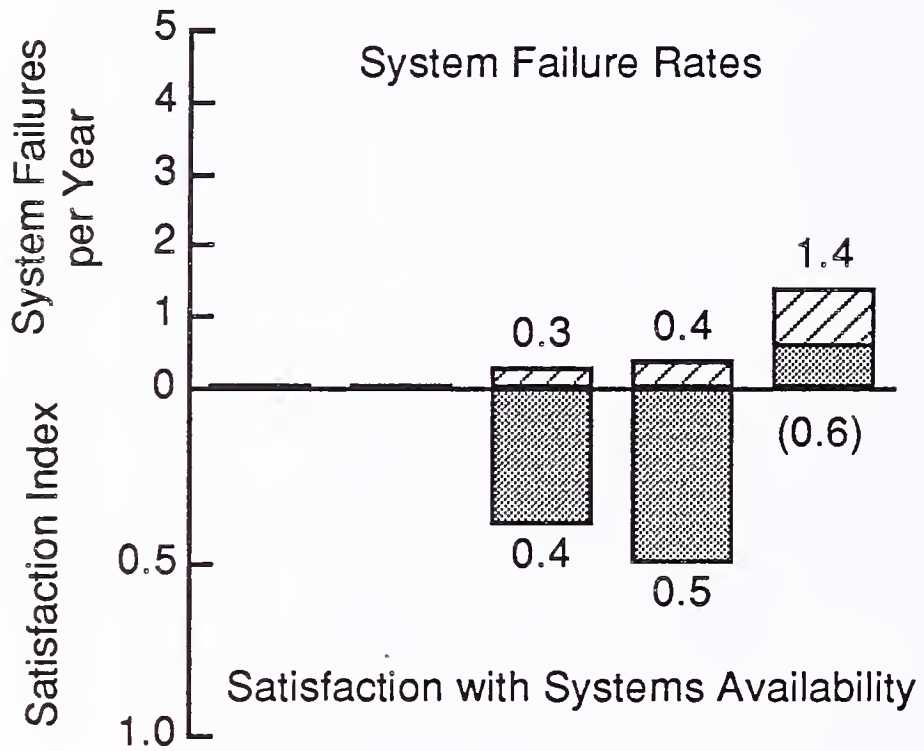


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	Nil	23	40	53

Exhibit VI-28

System Performance Trends in Western Europe

Stratus—Medium Systems

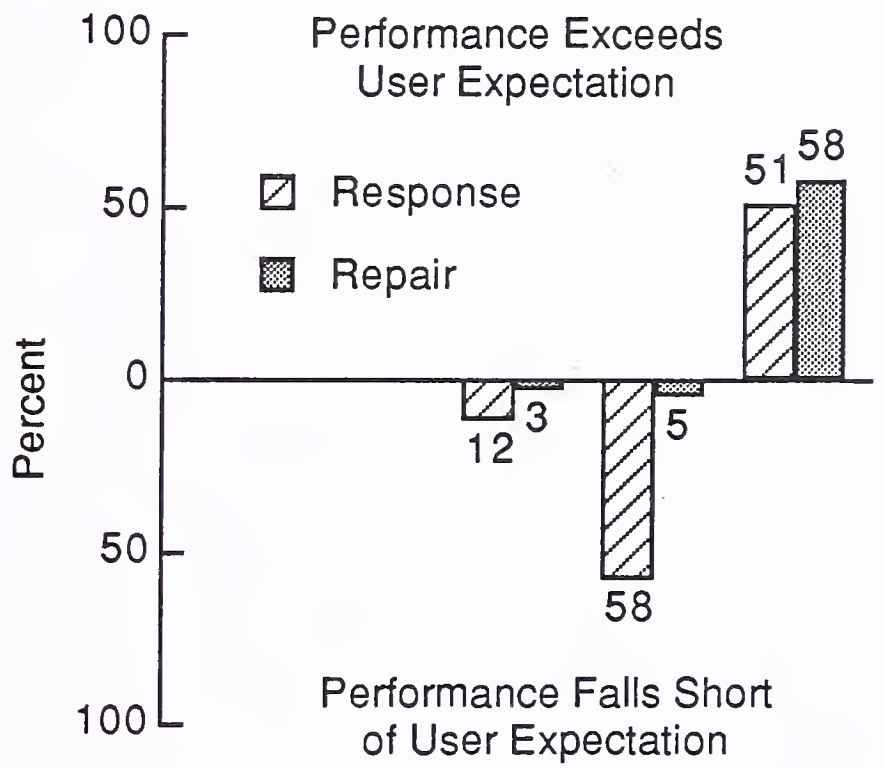


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	Nil	23	40	53

Exhibit VI-29

Hardware Service Response/Repair Time Trends in Western Europe

Stratus—Medium Systems

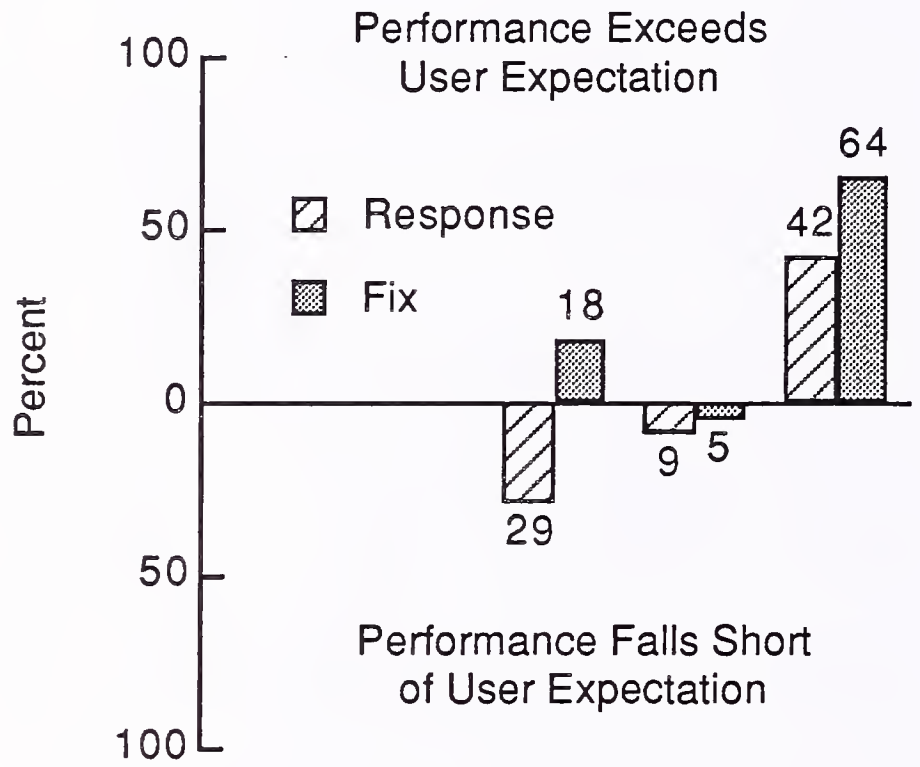


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	Nil	23	40	53

Exhibit VI-30

Systems Software Support Response/Fix Time Trends in Western Europe

Stratus—Medium Systems

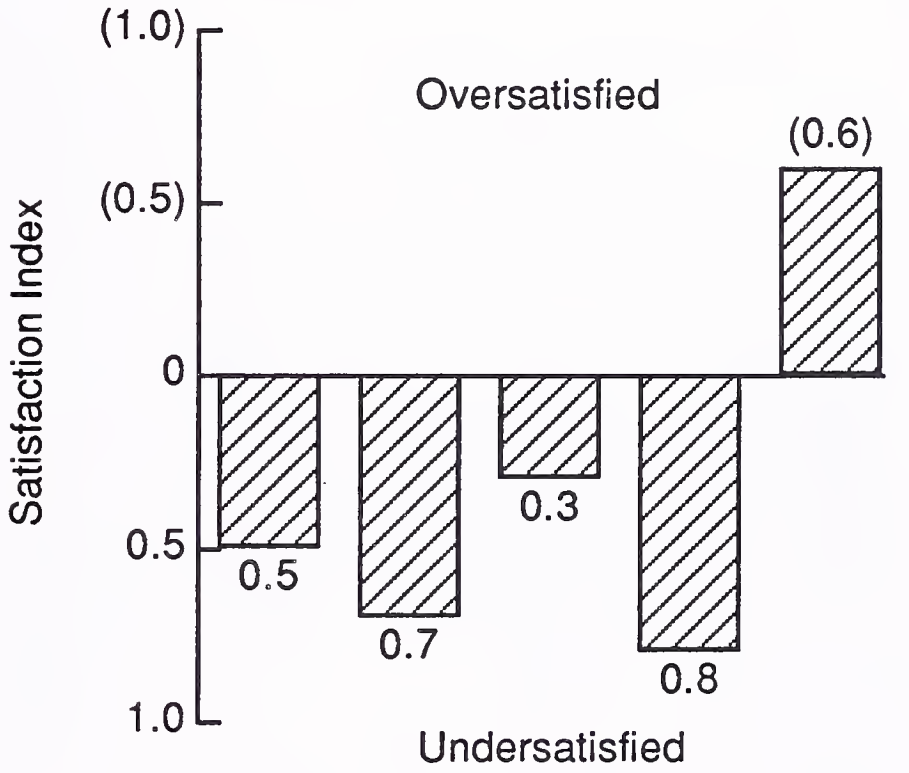


Year:	1987	1988	1989	1990	1991
Sample Size:	Nil	Nil	23	40	53

Exhibit VI-31

Hardware Service Satisfaction Trends
Western Europe

Digital—Small Systems

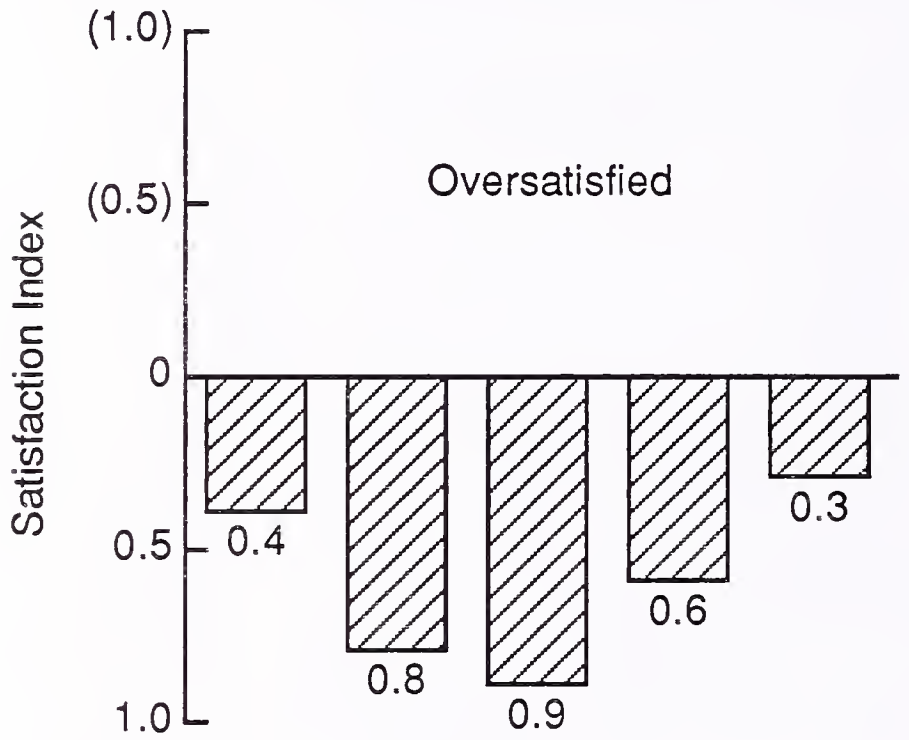


Year:	1987	1988	1989	1990	1991
Sample Size:	52	53	40	29	34

Exhibit VI-32

Systems Software Satisfaction Trends
Western Europe

Digital—Small Systems

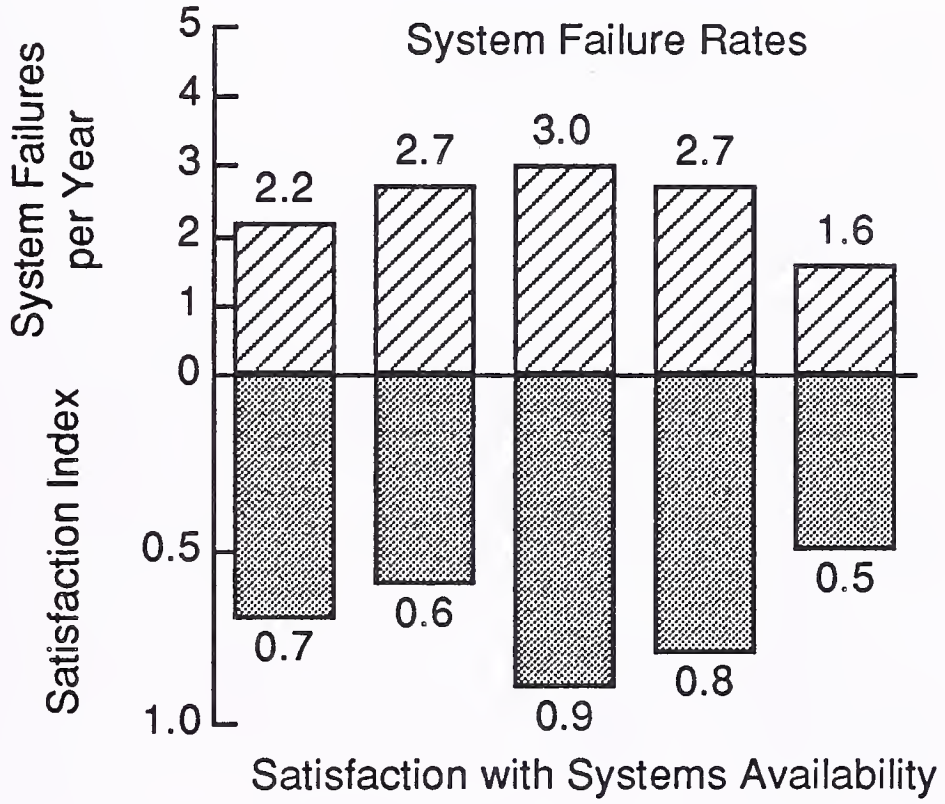


Year:	1987	1988	1989	1990	1991
Sample Size:	52	53	40	29	34

Exhibit VI-33

System Performance Trends in Western Europe

Digital—Small Systems

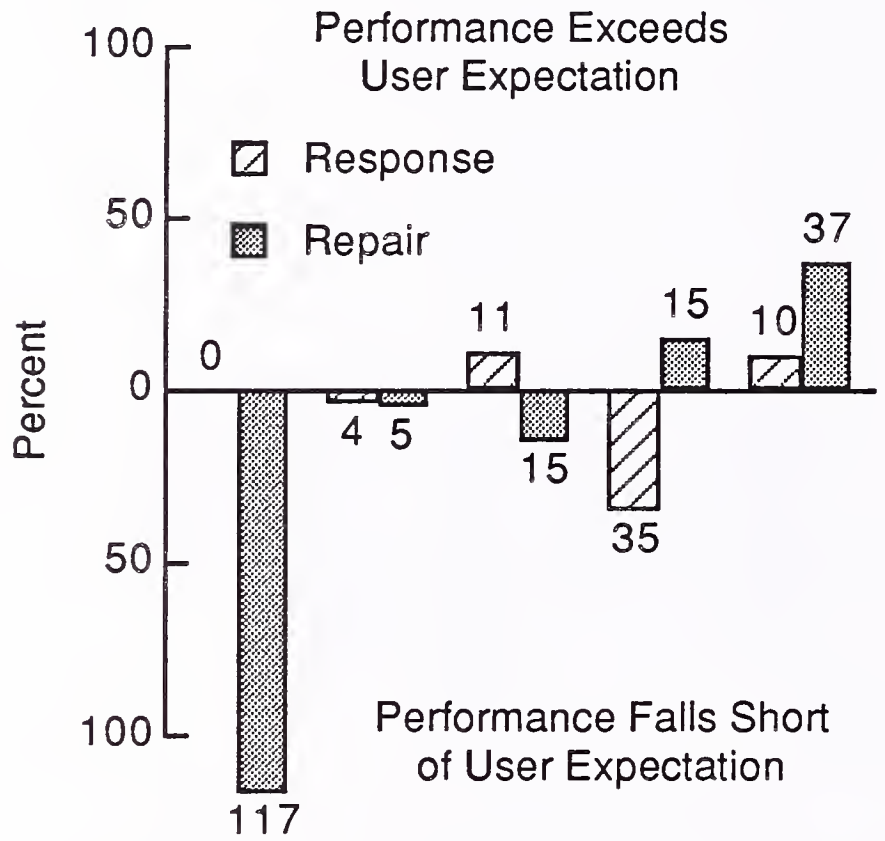


Year:	1987	1988	1989	1990	1991
Sample Size:	52	53	40	29	34

Exhibit VI-34

Hardware Service Response/Repair Time Trends in Western Europe

Digital—Small Systems

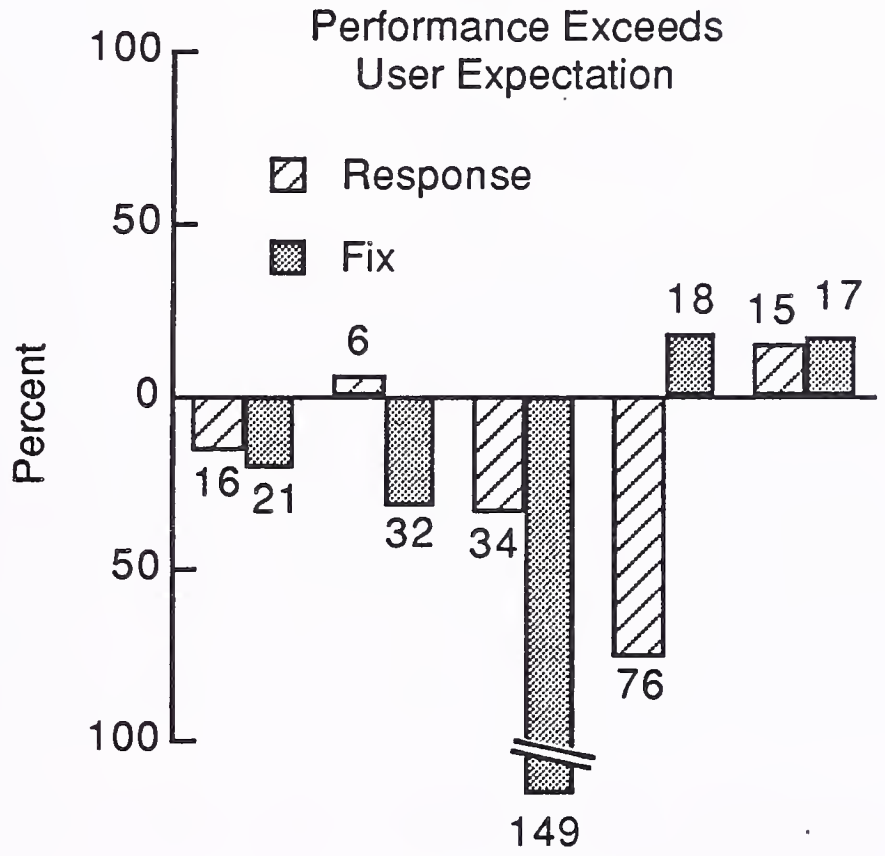


Year:	1987	1988	1989	1990	1991
Sample Size:	52	53	40	29	34

Exhibit VI-35

Systems Software Support Response/Fix Time Trends in Western Europe

Digital—Small Systems



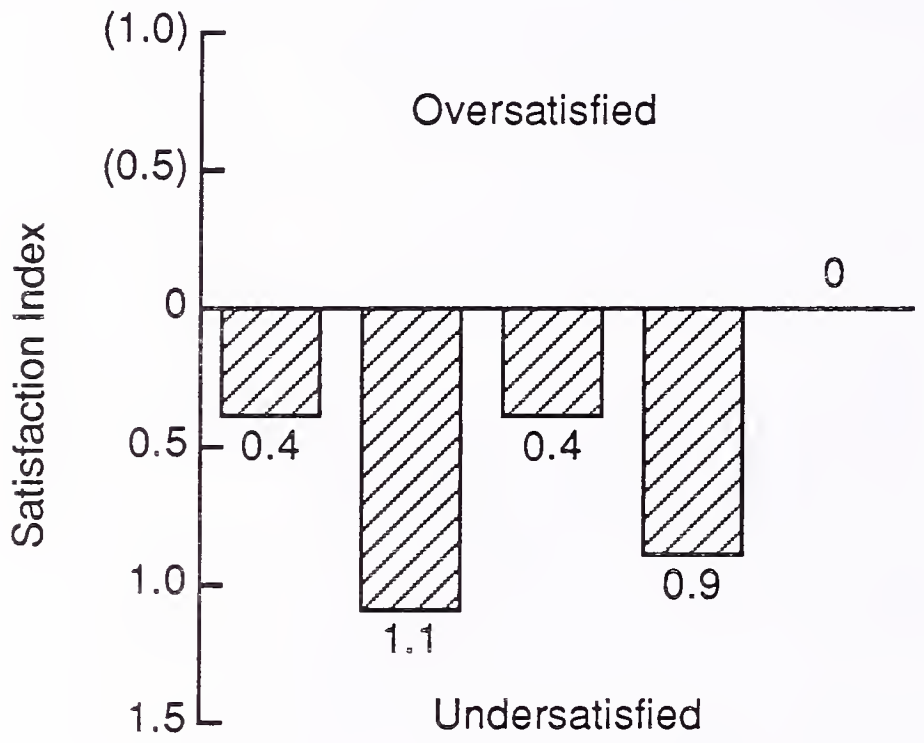
Performance Falls Short of User Expectation

Year:	1987	1988	1989	1990	1991
Sample Size:	52	53	40	29	34

Exhibit VI-36

Hardware Service Satisfaction Trends
Western Europe

ICL—Small Systems

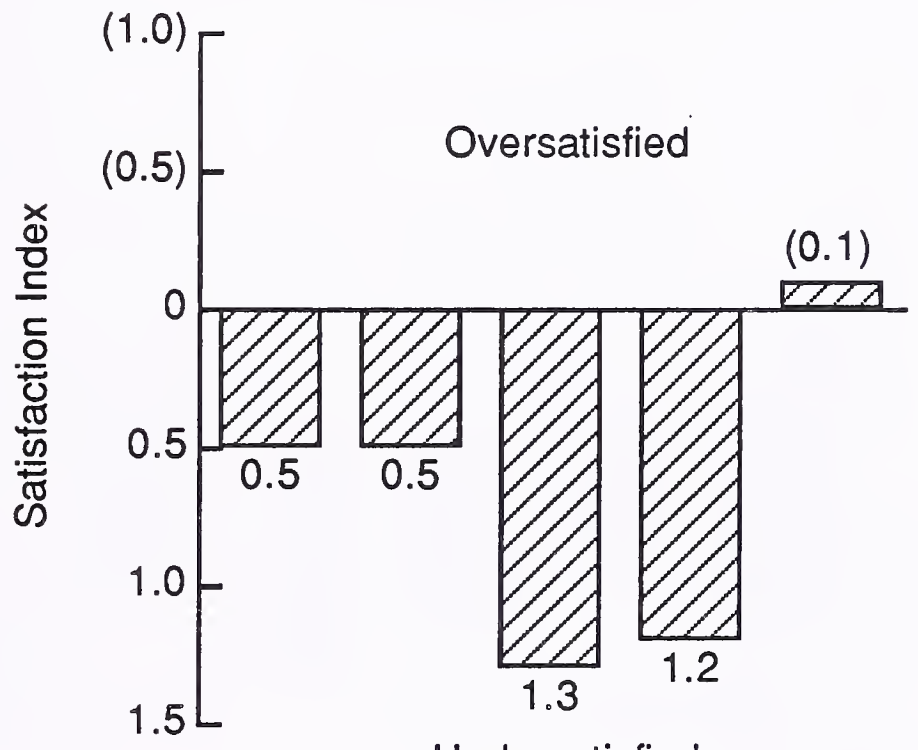


Year:	1987	1988	1989	1990	1991
Sample Size:	38	41	81	46	20

Exhibit VI-37

Systems Software Satisfaction Trends—Western Europe

ICL—Small Systems

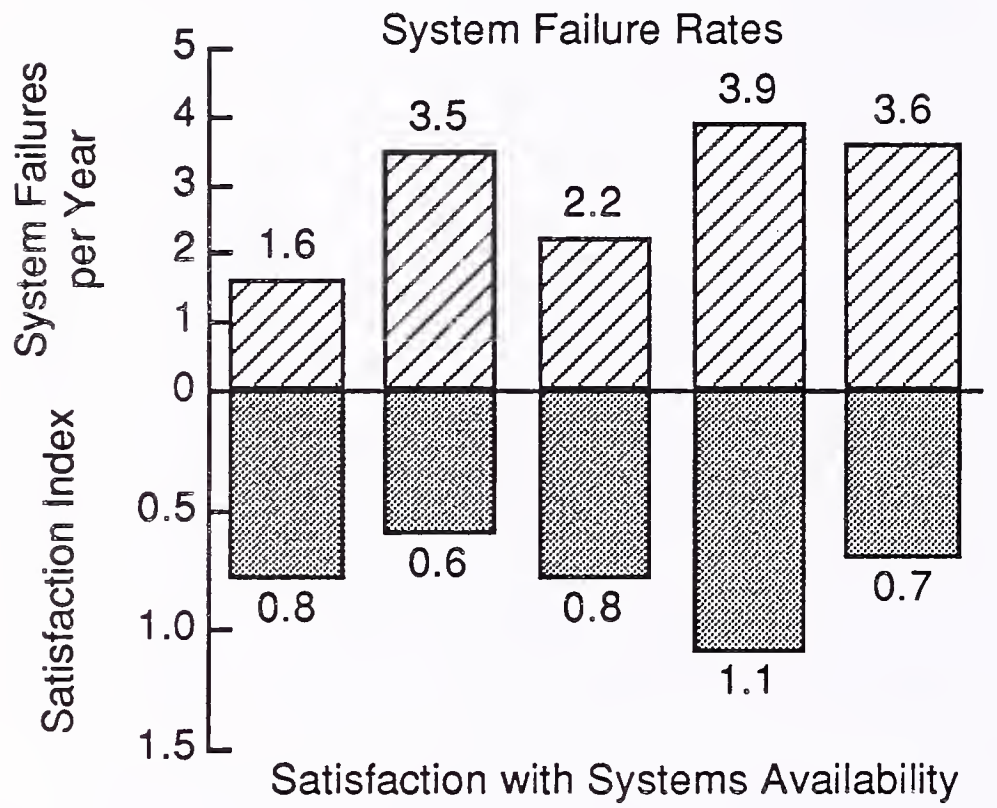


Year:	1987	1988	1989	1990	1991
Sample Size:	38	41	81	46	20

Exhibit VI-38

System Performance Trends in Western Europe

ICL—Small Systems

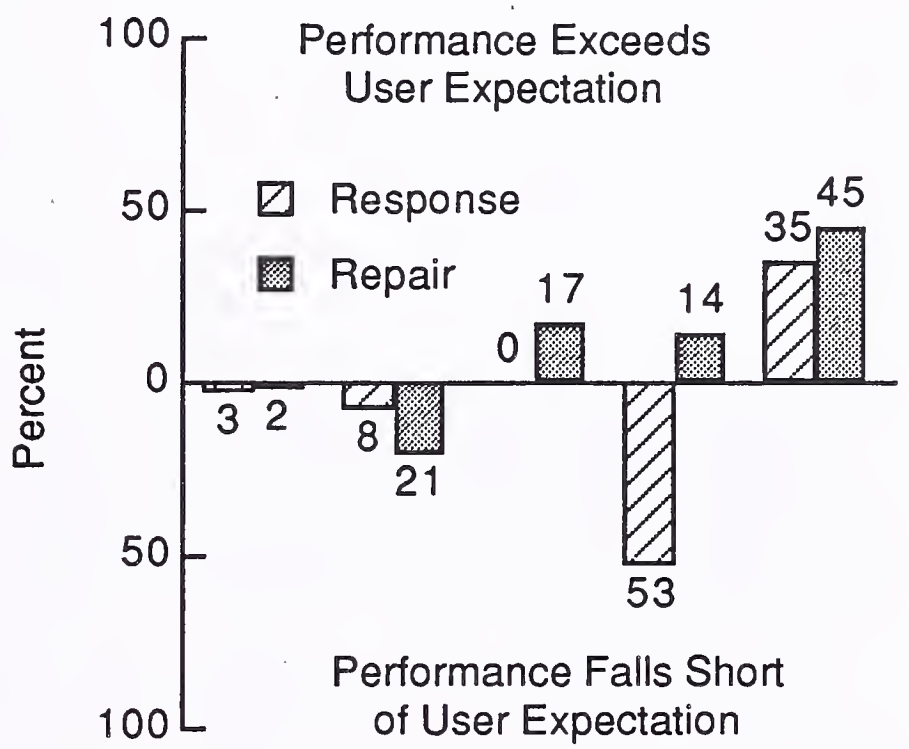


Year:	1987	1988	1989	1990	1991
Sample Size:	38	41	81	46	20

Exhibit VI-39

Hardware Service Response/Repair Time Trends in Western Europe

ICL—Small Systems

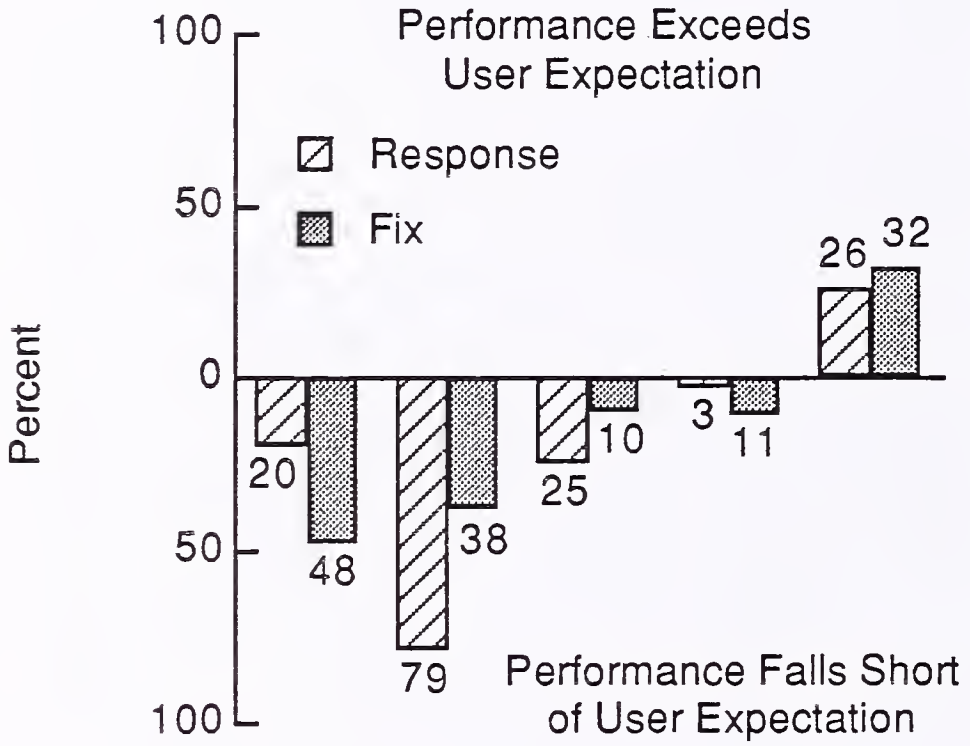


Year:	1987	1988	1989	1990	1991
Sample Size:	38	41	81	46	20

Exhibit VI-40

Systems Software Support Response/Fix Time Trends in Western Europe

ICL—Small Systems

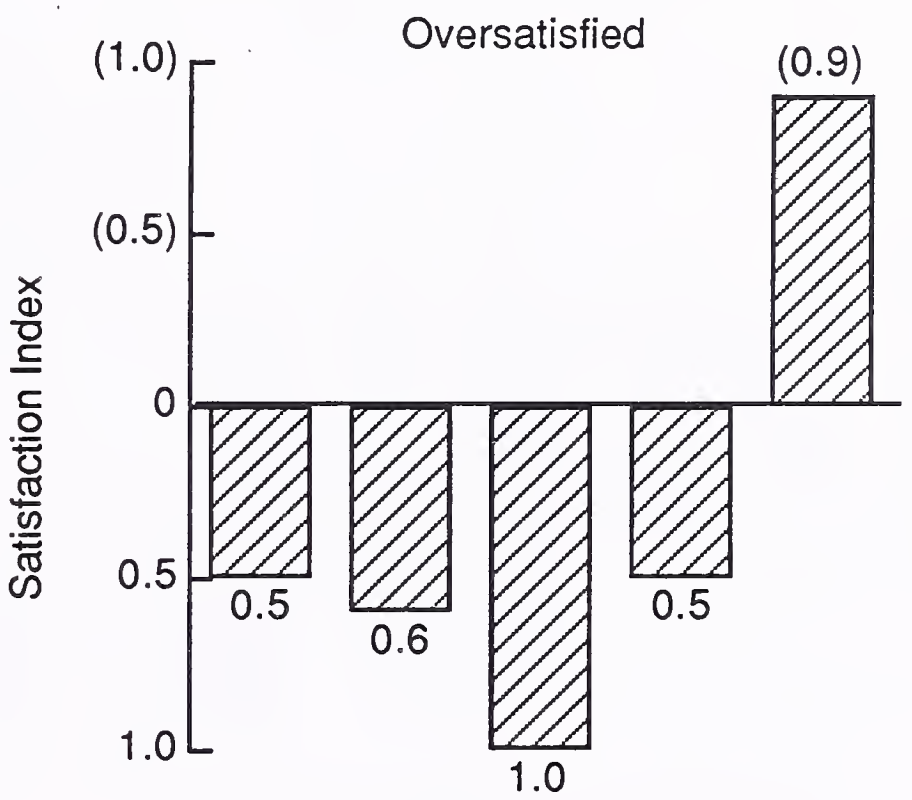


Year:	1987	1988	1989	1990	1991
Sample Size:	38	41	81	46	20

Exhibit VI-41

Hardware Service Satisfaction Trends
Western Europe

Unisys—Small Systems

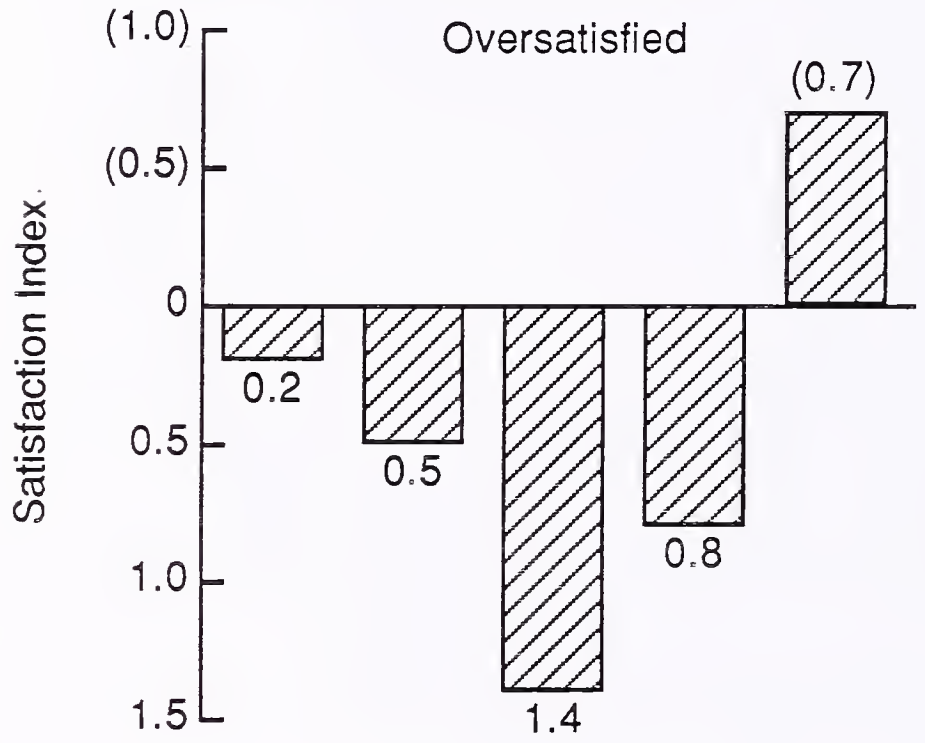


Year:	1987	1988	1989	1990	1991
Sample Size:	14	49	20	17	31

Exhibit VI-42

Systems Software Satisfaction Trends—Western Europe

Unisys—Small Systems

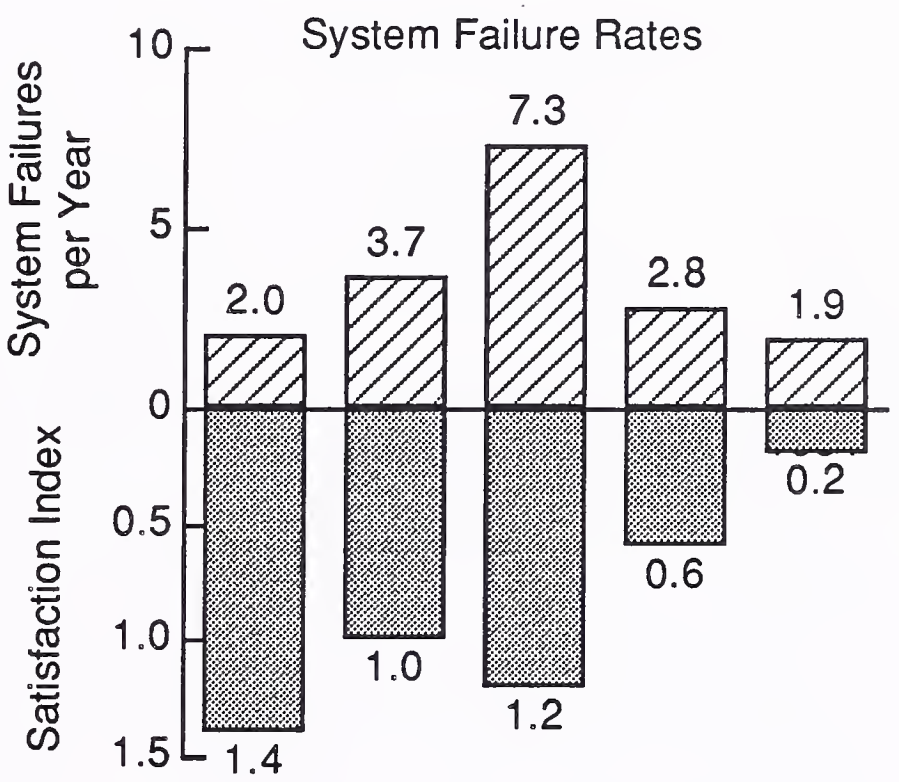


Year:	1987	1988	1989	1990	1991
Sample Size:	14	49	20	17	31

Exhibit VI-43

System Performance Trends in Western Europe

Unisys—Small Systems



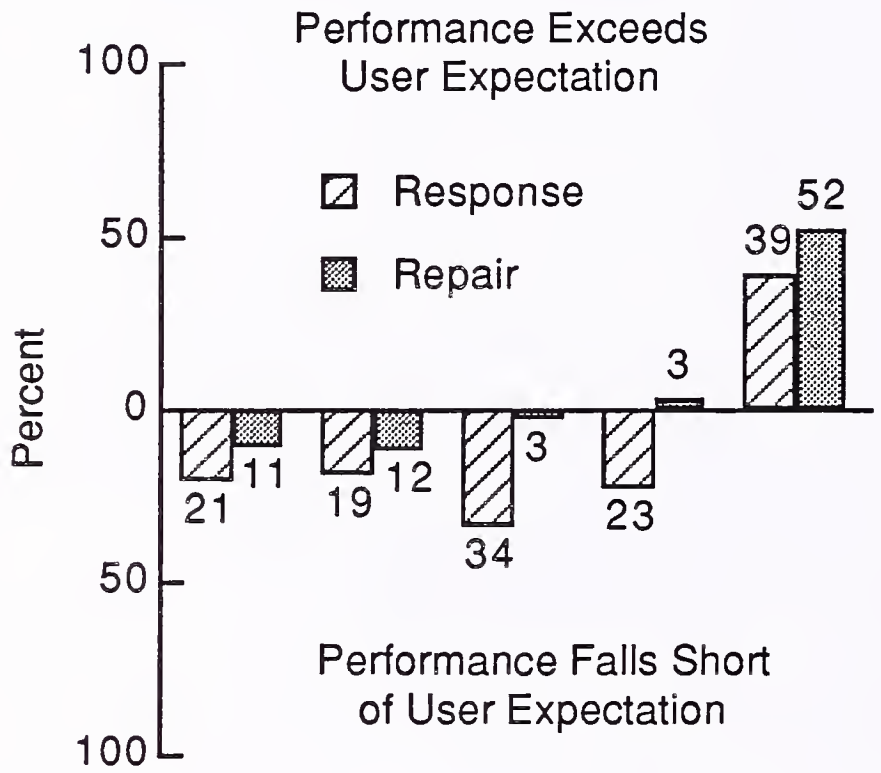
Satisfaction with Systems Availability

Year:	1987	1988	1989	1990	1991
Sample Size:	14	49	20	17	31

Exhibit VI-44

Hardware Service Response/Repair Time Trends in Western Europe

Unisys—Small Systems

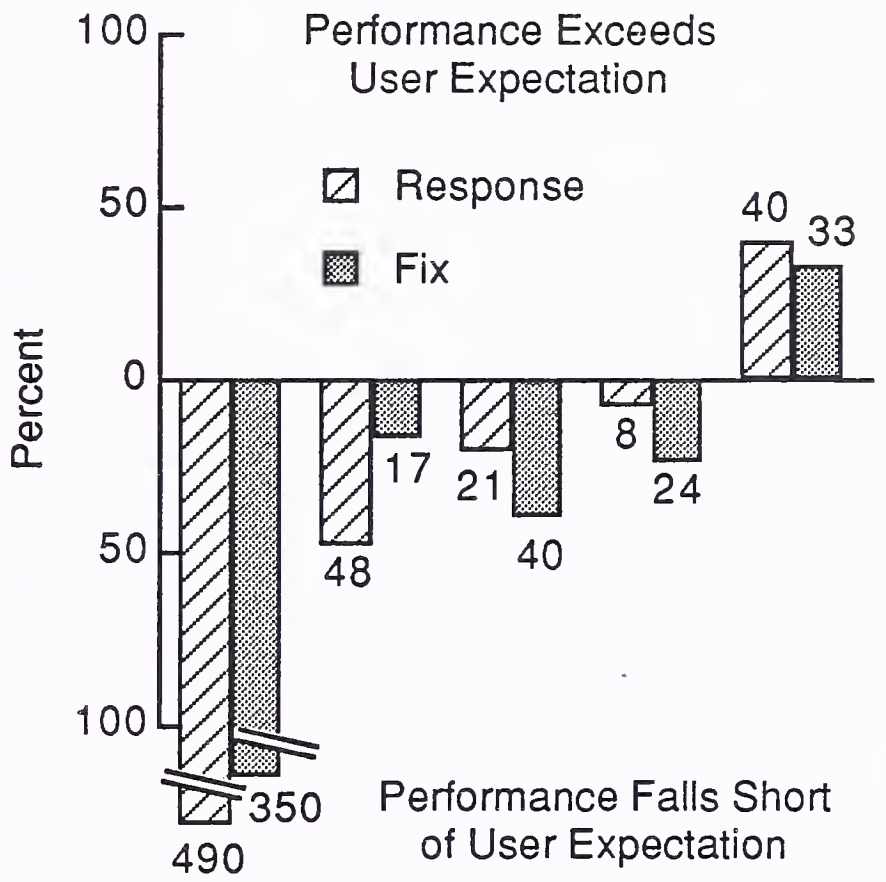


Year:	1987	1988	1989	1990	1991
Sample Size:	14	49	20	17	31

Exhibit VI-45

Systems Software Support Response/Fix Time Trends in Western Europe

Unisys—Small Systems



Year:	1987	1988	1989	1990	1991
Sample Size:	14	49	20	17	31

Appendix A

INPUT 1991 Computer User Survey 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	1
• Transportation	1
• Utilities	1
• Banking and Finance	1
• Insurance	1
• Government (including education)	1
• Services	1
• Other/Don't Know	1

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.)

b) 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

b) 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
- Don't know/other 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 >
- Availability of spare parts >
- Routine visits >
- Hardware and software changes >

INTERVIEWER PROMPTS

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 that you are fully satisfied.

- Importance ☐
- Satisfaction ☐

9a) Would you prefer all hardware maintenance and systems software support to be provided by one service vendor at each site? If yes, what would your interest level be on a scale of 0 to 10 (0 = Low, 10 = High)

(Circle answer)

- Yes 1
- No 1
- Don't know 9
- Level of interest ☐

(If the respondent answered YES, ask:)

b) 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 you 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 ☐

ll. 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?

    - Failures per year ☐

    And what percentage of these system failures are due to:

    Hardware ☐ %

    Systems software ☐ %

    Applications software ☐ %

    Other (ie, power failure) ☐ %

    (Please check that percentages add up to lOO.)

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 **HARDWARE 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 go through a list of five aspects of hardware maintenance and ask you to give both an **IMPORTANCE** and a **SATISFACTION** rating for each (scale 0-10, 0 = Low, 10 = High).

	Importance	Satisfaction
• 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, 0 = Low, 10 = High).

- 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 1990?

- 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, 0 = Low, 10 = High)

- 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 Systems 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
- Don't know/other 9

21. What is your rating for the **IMPORTANCE** of systems software support to your business and what is your satisfaction with your vendors 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 now 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, 10=High)

	Importance	Satisfaction
• Engineer Skills	☐	☐
• Documentation	☐	☐
• Software Installations	☐	☐
• 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 ☐
- Satisfaction ☐

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 1990?

- 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, 10=High)

- 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. 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 O to 10 where O = no interest, 5 = average interest and 10 = must have.

(Please circle appropriate answer and give LOI rating.)

	Currently Contracted	Require	LO1
• 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	
• Network Management	1	1	
• Disaster Recovery	1	1	
• Facilities Management	1	1	
• Problems Management	1	1	
• Applications Software Support	1	1	

F Networks

30. a) Does your company currently have a network installed.
(Please circle appropriate answers).

- Yes 1
- No 1

b) If you do not currently have a network installed do you intent to install one in the future, and in what time frame will this most likely take place
(please circle appropriate answers).

- Intent: Yes 1
  No 1
- Time Frame: 1 year 1
  2 years 1
  3 years 1
  4 years 1
  5 years 1

If the respondent answered YES to question 30 a) proceed, if not thank them for their time and conclude the interview.

The following section of the questionnaire applies to **CURRENT USERS OF NETWORKS ONLY**. Are you the correct person to answer these questions or should we approach one of your colleges?

Name of colleague: _____

Telephone No: _____

31. a) Which type of network do you have installed?
(Please circle appropriate answers multiple answers are allowed).

LAN (Local area network)	1
WAN (Wide area network)	1
Propriety (ie IBM, DEC)	1
Standard open network	1

b) How many **TERMINALS** are connected to your network and how many **USERS** do you have. (Please circle appropriate answer.)

	No of Terminals	**No of Users**
• 1-10	1	1
• 11-100	1	1
• 101-500	1	1
• 501-1,000	1	1
• 1,000+	1	1

c) Which type of **OPERATING SYSTEMS SOFTWARE** does your network use?
(Please circle appropriate answers,
multiple answers are allowed.)

Novell	1
3 Com	1
Propriety (IBM, DEC etc)	1
Other/don't know	1

32. **WHO SERVICES** the various parts of your network? (Please circle appropriate answers.)

a) Network Equipment (multiple answers allowed)

Service Vendor	File Server Equipment	Terminals	Communications Equipment
Hardware Manufacture	1	1	1
TPM	1	1	1
Dealer/ Distributor	1	1	1
Own Company	1	1	1
Other/ Don't Know	1	1	1

b) Network Software (multiple answers allowed)

Service Vendors	Operating Systems Software	Applications Software
Hardware Manufacturer	1	1
Software Product Vendor	1	1
Value-Added Reseller (VAR)	1	1
Own Company	1	1
Other/Don't Know	1	1

c) Who **MANAGES** your network operations?

- Own Company 1
- Hardware Manufacturer 1
- Independent Service Vendor 1
- Other/don't know 1

33. I would now like to go through a list of five aspects of network service or performance and ask you to give both an **IMPORTANCE** and **SATISFACTION** rating for each on a scale of 0-10 (10 = High).

	Importance	Satisfaction
• Network Equipment Maintenance	☐	☐
• Network Operating Systems Software Support	☐	☐
• Network Applications Installations	☐	☐
• Network up-time	☐	☐
• Network User Response Time	☐	☐

34. What sort of **APPLICATION** is your network used for and what is the extent of the network? (Please circle appropriate answers, multiple answers allowed.)

- Electronic Mailing/Messaging 1
- Financial Transactions 1
- Video Text 1
- Voice Communications 1
- On Line Transaction Processing (OLTP) 1
- File Transfer 1
- Access to Managed Network Services (MNS) 1
- Inter Company Level 1
- Pan European Level 1
- Global Level 1
- Other 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.

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