

PRICING TRENDS

WESTERN EUROPEAN CUSTOMER SERVICES

INPUT

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SEPTEMBER 1988

PRICING TRENDS

WESTERN EUROPEAN CUSTOMER SERVICES

CPSE-RP
C.1
1988

AUTHOR	Pricing Trends - Western	
TITLE	European Customer Svcs. 1988	
DATE LOANED	BORROWER'S NAME	

PRO
DART

CAT. No. 23-108 PRINTED IN U. S. A.



Researched by
INPUT, LTD.
41 Dover Street
London W1X 3RB
England

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

**Customer Service Programme in Europe
(CSPE)**

***Pricing Trends—Western European
Customer Services***

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Abstract

This report presents and analyses trends in vendor pricing for both hardware and software customer service in Western Europe. The report provides a comparative analysis of the interrelation of pricing and user perceptions.

Pricing issues are identified and the activating mechanisms explained. Challenges and opportunities are discussed in terms of marketing strategies and creative approaches to cost reduction.

Additionally, interrelated pricing and profitability issues are identified and discussed, together with suggestions for rationalisation.



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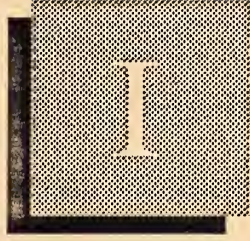
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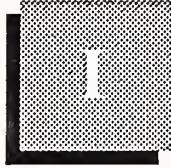
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Introduction





Introduction

Pricing Trends—Western European Customer Services has been produced by INPUT as part of the 1988 Customer Service Programme for Europe.

A

Objectives

This report aims to identify the major issues in customer service pricing and the factors impacting profitability:

- Focusing on the impact of recent vendor pricing activities on service revenue and profitability.
- Identifying changes in user perception of vendor pricing between 1987 and 1988.
- Analysing and discussing user attitudes in some depth to gain understanding of perceived user priorities related to service issues.
- Examining non-pricing factors that can influence profitability.

Additionally the report seeks to identify challenges and opportunities open to vendors, and to suggest strategic initiatives.

From this base of trends and perceptions a probable marketing strategy is discussed and creative opportunities open to vendors are identified.

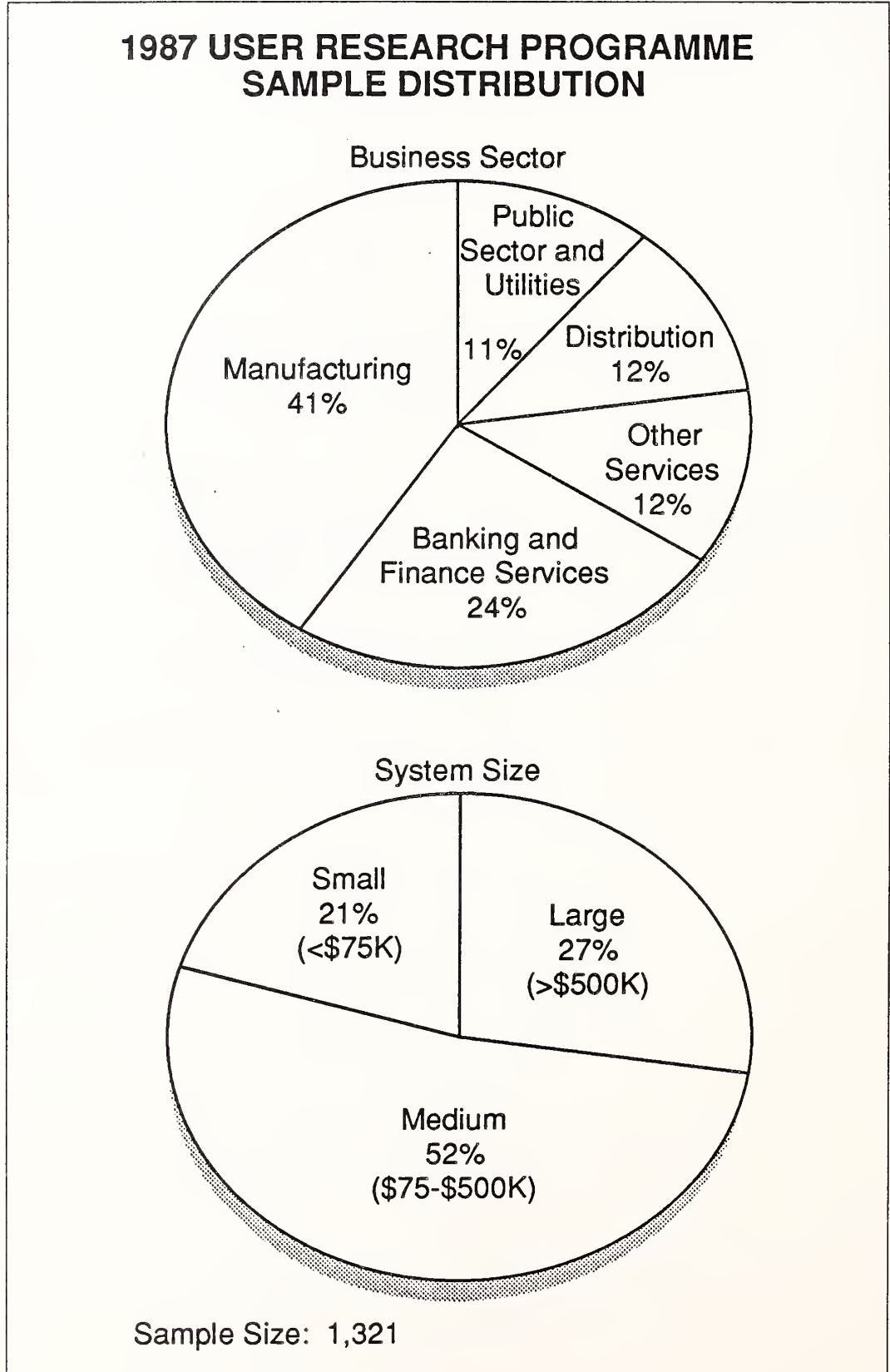
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Methodology

The database used in the completion of this report was extracted from a number of sources:

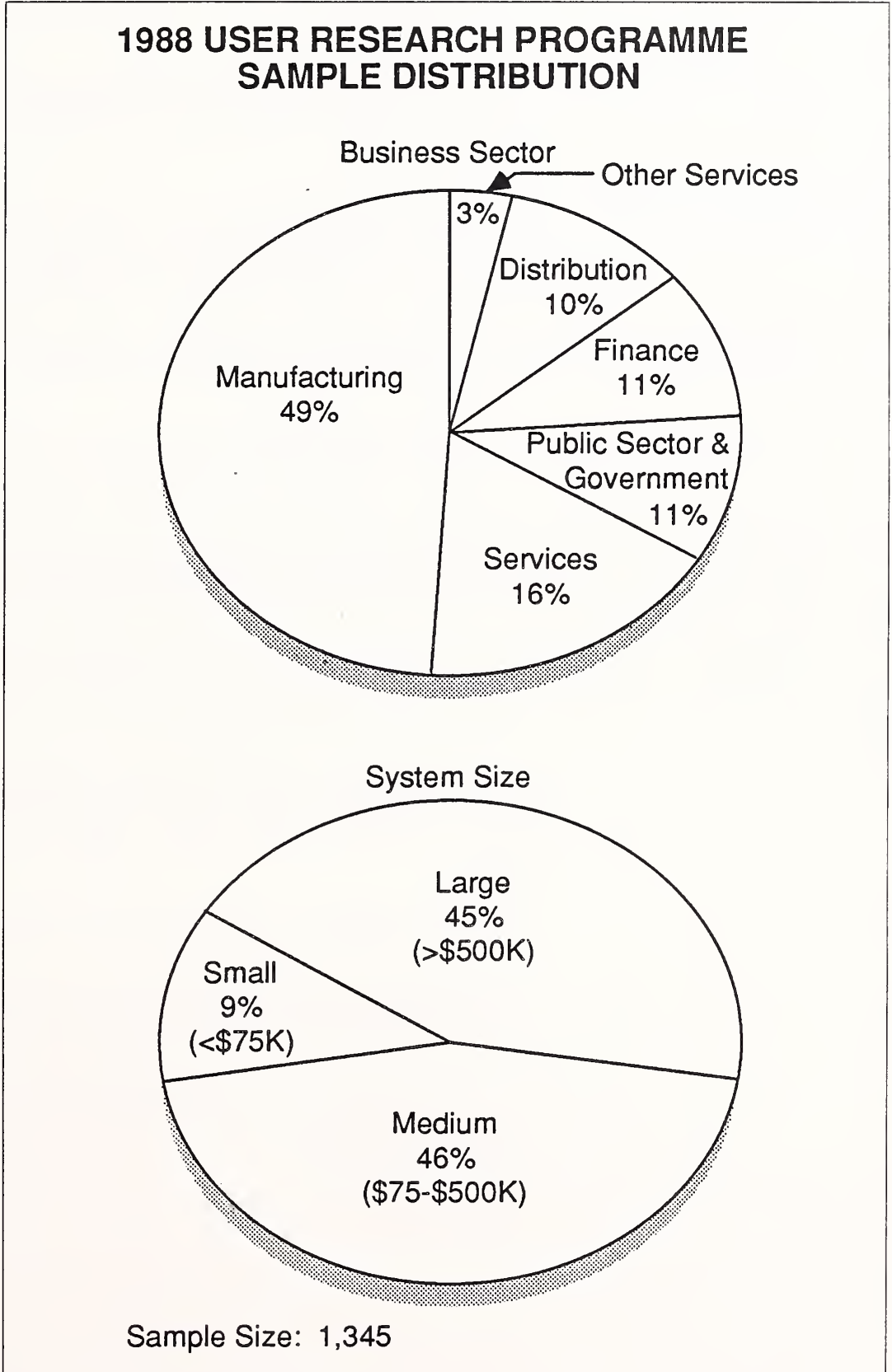
- INPUT 1987 user research programme of 1,321 interviews with computer users throughout Europe. The structure of this sample is shown in Exhibit I-1.

EXHIBIT I-1



- INPUT 1988 user research programme of 1,345 interviews with computer users throughout Europe. The structure of this sample is shown in Exhibit I-2.

EXHIBIT I-2



- Additional research was carried out during the second quarter of 1988, comprising:
 - 11 face-to-face interviews with major multinational computer equipment vendors
 - 3 face-to-face interviews with major multinational users representing a significant range of computer equipment.

C

Definitions

Data analysed in this report are in the main segmented by system size. System size is classified as the total installed (sales) value of the CPU and all attached local and remote peripherals, defined as follows:

- Large Systems, total value of greater than \$500K
- Medium Systems, total value between \$75K and \$499K
- Small Systems, total value of less than \$75K

All satisfaction and importance ratings are expressed on a scale of 0–10

- '0' represents very poor satisfaction or zero importance
- '10' represents total satisfaction or top importance

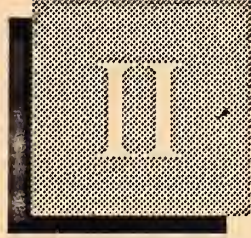
Satisfaction indices (ΔSI) represent the difference between the importance and the satisfaction ratings. Satisfaction indices are classified as follows:

- (1) Overfulfilled; satisfaction rating is greater than importance
- 0 completely satisfied; satisfaction and importance ratings are the same
- 1 concerns and worries; satisfaction rating lower than importance
- 2 real dissatisfaction
- 3 pain level

D**Report Structure**

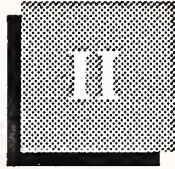
The report is structured in the following way:

- Chapter II is an Executive Overview emphasising the key points for the busy reader.
- Chapter III discusses the market environment and identifies various factors influencing this.
- Chapter IV is an analysis of user-perceived price increases segmented by vendor and system size, including an analysis of changes and trends between 1987 and 1988.
- Chapter V discusses user perspectives relating to satisfaction with service, user perception of the value of service, and price sensitivity.
- Chapter VI offers a focused approach to marketing strategies and develops a conceptual theme.
- Chapter VII assesses a number of creative opportunities available to service vendors.



Executive Overview





Executive Overview

Profitability is one of the key issues in Western European customer service. Views expressed by computer vendors can be encapsulated as follows:

- **Pessimism** that hardware service market growth has slowed to the point of approaching stagnation with a possibility of some decline in real terms.
- **Optimism** that the software service market is a growth area offering opportunities for the future.

INPUT's research does not support the optimism expressed by the computer vendors.

A

Profitability

1. Pricing Issues

INPUT's research has shown that there is little to differentiate between profitability in hardware and software services, in terms of price trends. However, market growth for software service (24%) is four times that for hardware service.

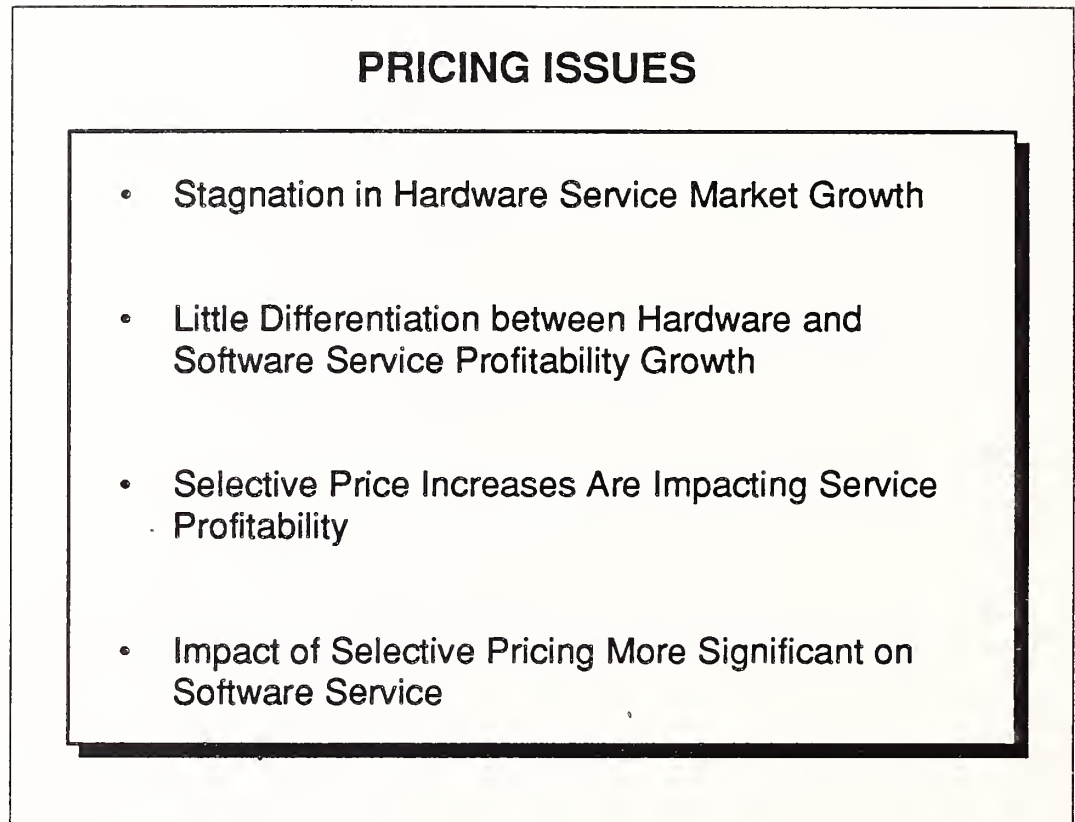
Profitability of customer service is impacted by annual price increases applying to only a proportion of customers.

- Typically only 54% of users receive annual price increases for hardware service.
- Typically only 44% of users receive annual price increases for software service.

These percentages reduce the overall average annual price increases very significantly.

Pricing issues are summarised in Exhibit II-1.

EXHIBIT II-1



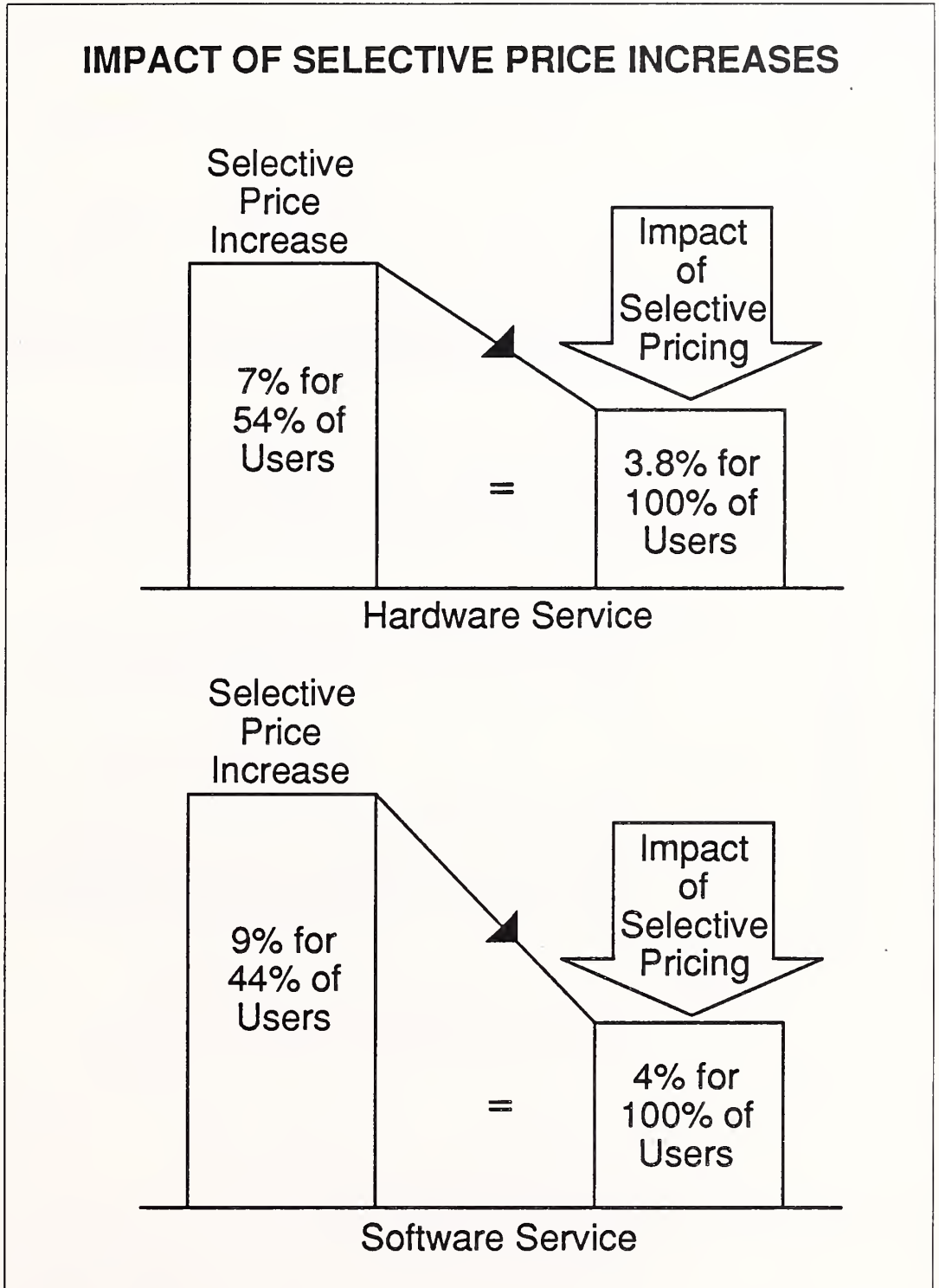
The effect of selective price increases is illustrated in Exhibit II-2.

2. Pricing Trends

Selective price increases cause distortions as illustrated by Exhibit II-2. The effect of these distortions is to:

- Reduce the profitability of service
- Neutralise differentials between software and hardware service prices
- Position overall price increases closer to or below inflation levels

EXHIBIT II-2

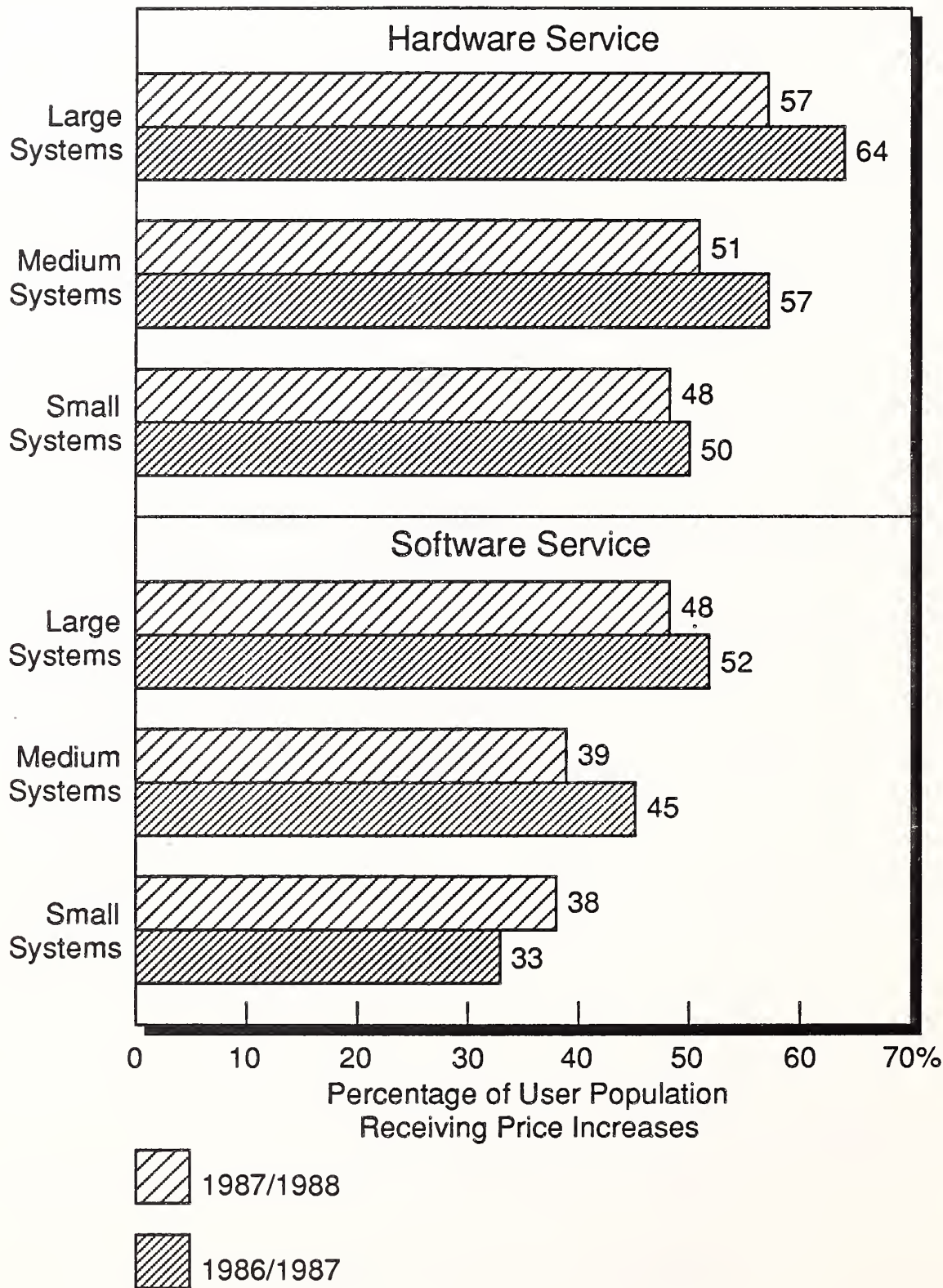


Trends in selective pricing are shown in Exhibit II-3.

- Apart from small systems software service the trend shows an overall decrease in the proportion of users receiving price increases.
- Software service is more impacted than hardware service.

EXHIBIT II-3

SELECTIVE PRICING TRENDS



Actual price trends look encouraging for software service. Hardware service trends are relatively static.

3. Challenges and Opportunities

Two major challenges face service management (See Exhibit II-4). These are:

EXHIBIT II-4



- Strategies to address the impact of selective pricing, and the reversal of trends.
- Dominance of hardware service on the service revenue stream identifies hardware service as the major profit opportunity.

Opportunities open to service management are:

- As shown in Exhibit II-5, large systems present the best profit opportunities even after adjustment for selective pricing.

EXHIBIT II-5

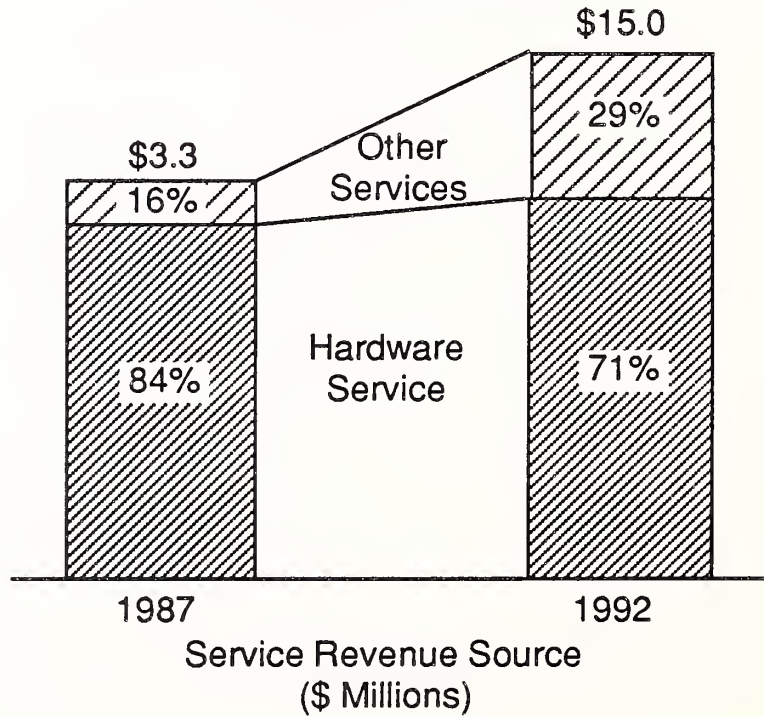
PROFIT OPPORTUNITIES

Large Systems

FUTURE PRICE INCREASE EXPECTATION	PERCENT		
	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
Hardware Service	4.4	3.5	3.1
Software Service	5.0	3.7	3.4

Notes: (1) User Expectation
 (2) Corrected for Selective Pricing

Hardware Service



- The dominance of hardware service shows that profit recovery from other sources is an unrealistic alternative.

B**The Importance of Service Price**

When asked to rate the importance of service price in INPUT's 1988 user survey, users rated this at a medium-high level of 8.0 on average. This rating indicates that price is important but less so than some other aspects of service.

A mix of service items relating to quality issues were rated higher, in the range of 8.5 to 9.5. The conclusion that INPUT draws from these ratings is that quality of service is more important than price.

A rating of 8.0 ranks service in 7/8th place, lower than the mix of service items making up quality. The indication from this ranking is that price is a less-sensitive issue than quality.

These issues are highlighted in Exhibit II-6.

EXHIBIT II-6

IMPORTANCE OF SERVICE PRICE

- Service Price Importance Rated at 8.0 on Scale of 0 to 10
- Service Price Ranks Lower Than Quality
- Satisfaction with Price Less Satisfactory

One slightly contradictory aspect is user ratings of satisfaction with price. Satisfaction indices of between 0.6 and 1.3 indicate that satisfaction with service prices is grouped around the concern level.

Asking users to rate satisfaction with service prices is a loaded question. Would users admit to being satisfied with service prices?

More probably user views reflect:

- A better quality of service could be supplied for the price.

- Service could provide better value for the money.
- There is a mismatch between user expectations of service and actual deliverable service.

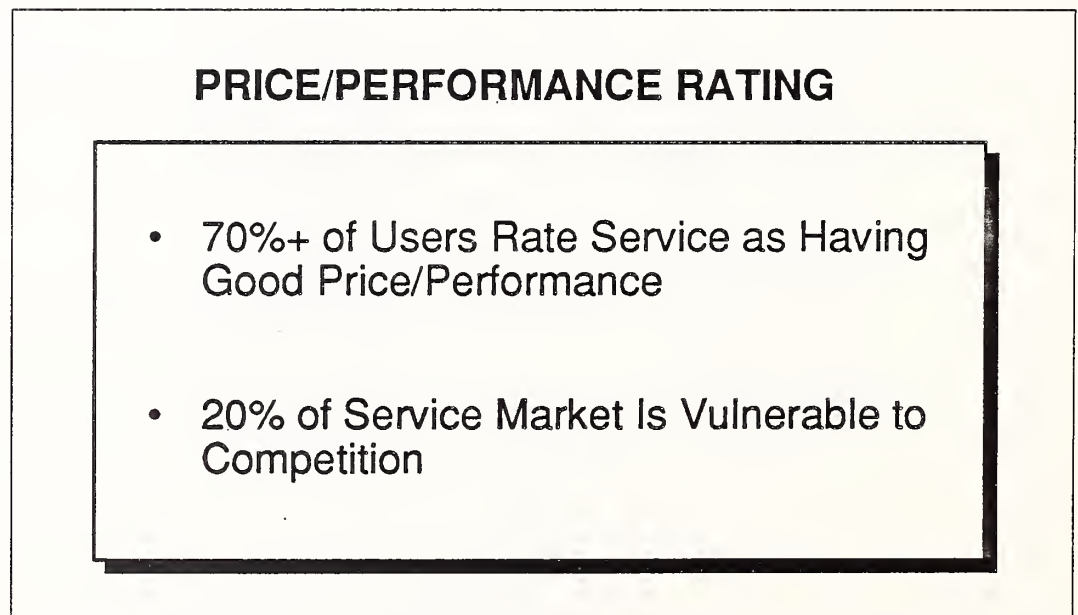
C**Service Value
Perceptions**

Over 70% of users consider that service can be valued in the following two categories:

- Good value
- Expensive but worth it

This is a good measure of the value users place on the service they receive from their vendors and has in part, influenced conclusions relating to user satisfaction with service prices.

The large proportion of users rating the value of service in these two categories is considered by INPUT to indicate that the significant majority of users perceive service to have a good price/performance ratio. (See Exhibits II-7.)

EXHIBIT II-7

Ignoring the proportion of users having no opinion of the value of service, leaves approximately 20% of users who perceive service as either:

- Expensive but not worth it or,
- Too expensive.

20% is considered to be a significant minority and a cause for concern.

Further, INPUT considers that this proportion of users is vulnerable to competitive approaches, most likely from independent maintenance companies. One significant observation made by INPUT is that this percentage is substantially larger than current TPM market penetration.

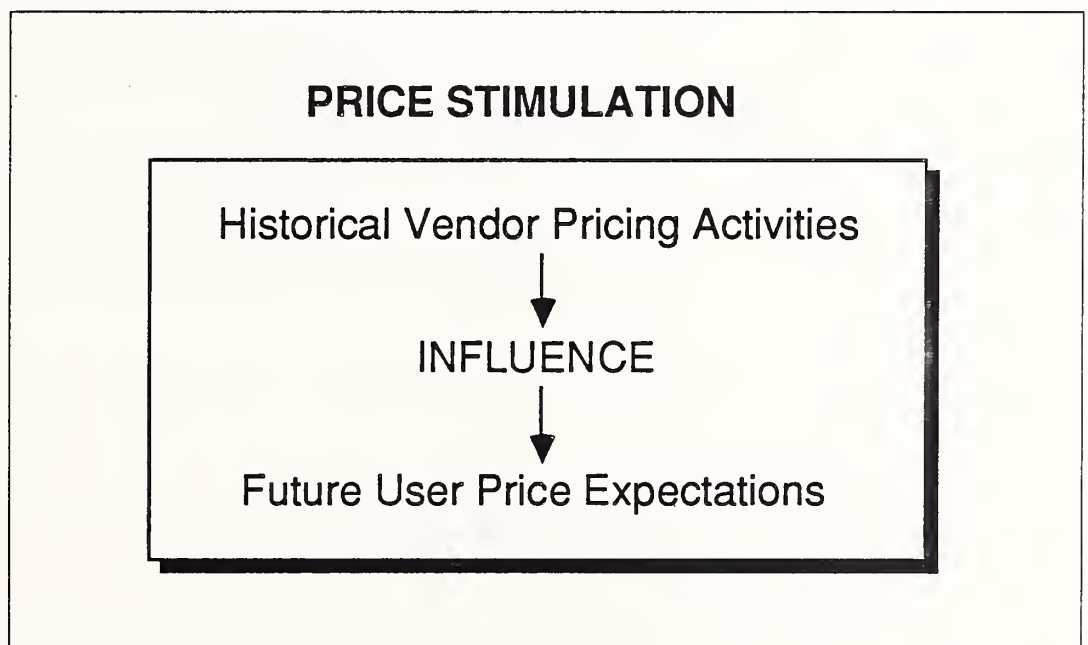
INPUT recommends that vendors adopt a very cautious approach in dealing with this segment of the market. In all probability this 20% is a highly price-sensitive segment.

D

Price Stimulation

Research analysis and the results show that vendor pricing activities can have a strong influence on future user expectations, as illustrated by Exhibit II-8.

EXHIBIT II-8



INPUT has noted the following characteristics:

- A price increase above user expectation level influences the user to similarly revise future expectations.

- A price increase matching user expectation can cause a downward revision of future expectations.
- A price increase lower than expectation can influence the user to similarly revise future expectations.
- Similar trends are exhibited for zero price increases and price reductions.

These observations do not, however, take into account any changes in customer satisfaction levels that may result. There is a risk of invoking a resignation factor.

Although vendors do carefully consider pricing policies, INPUT recommends that careful study of market research information and the psychology of pricing could add further dimension to marketing and pricing strategies.

E

User Preferences

INPUT's research shows that a significant majority of computer users have a preference for single-source service. This preference is stated by over 65% of users interviewed by INPUT.

More significantly, almost 90% of these users would prefer the main hardware vendor to be that single source of service. This preference is considered to be a substantial vote of confidence in the computer vendors who are presented with a major opportunity to develop single source service strategies.

A very small group (5%) of users showed a preference for TPM as a source of service.

Exhibit II-9 summarises this opportunity.

EXHIBIT II-9

CONFIDENCE IN COMPUTER VENDORS

- 65%+ of Users Show Preference for One-Vendor Service
- 85% - 89% Show Preference for Main Hardware Supplier

F**Management Opportunities**

In the course of research for this report INPUT has identified a number of creative service management opportunities, summarised in Exhibit II-10, recommending service vendors to:

EXHIBIT II-10

CREATIVE OPPORTUNITIES

- Decouple Service
- "Productize" Service
- Use Service Technology
- Reduce Dead Time

- Decouple service from the historical shackles of the past, and establish service as a standalone product and organisation. This can be achieved by:

- Raising service above the “add on” image.
- Freeing service from non-service-related financial burdens.
- Implementing realistic spare parts transfer prices.
- Freeing service from unfairly absorbing the cost of sales.

Part of the decoupling concept involves “productizing” service as a standalone item to be sold and marketed as a tangible entity. This is an opposing concept to service cost being a percentage of system price. Decoupling service as a product introduces greater flexibility of pricing, raising the image and profile.

Service automation through the implementation of existing technology has shown measurable improvements in cost efficiency in terms of:

- Significant productivity gains
- Improvements in communication
- Increases in accuracy of information
- Reduction in management involvement

Travelling time and multiple-site visits are nonproductive time. System-implemented technology can have a major impact on reducing nonproductive time through the medium of remote diagnostics, built-in health checks, and predictive maintenance.

G

Marketing Strategy

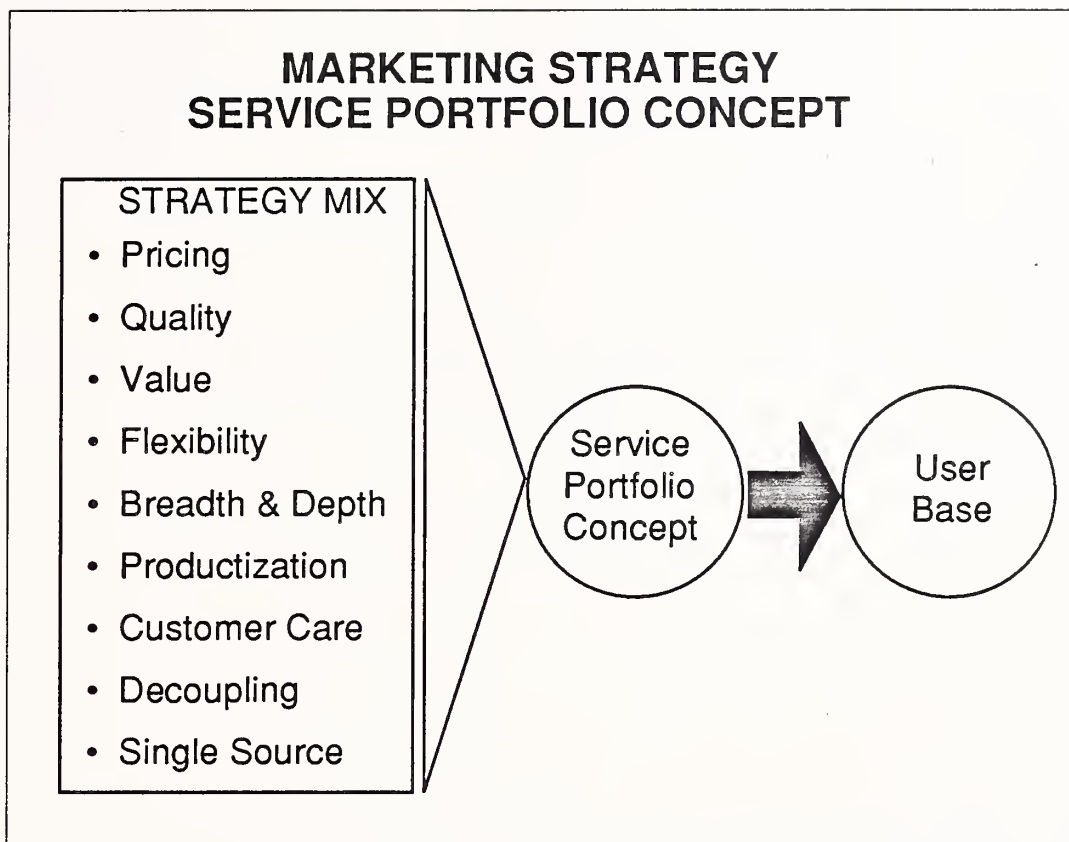
The Service Portfolio concept illustrated in Exhibit II-11 is a model developed by INPUT during the course of research for this report.

The Service Portfolio is an integrated marketing strategy concept. Contrary to appearances, it is not a “brochure.”

The objective of this concept is to combine the resources of the vendor as a strategic focusing of service capability on the user. Structure is based on identified customer needs, for example:

- Choice
- Flexibility
- Added value
- Pricing
- Total support

EXHIBIT II-11

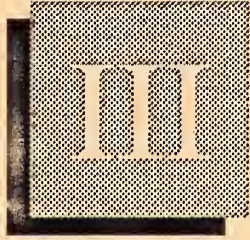


Taking into account the previously identified user confidence in the major vendors, the Service Portfolio is a good example of the direction that vendors are recommended to follow.

The Service Portfolio demonstrates the vendor's capability in such a way as to satisfy major user needs. In terms of marketing strategy this could be defined as a totality approach to market needs.

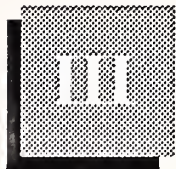
Quality of service rates higher in importance than price; the suggested approach enhances the quality of service and raises the image of the vendor.

An approach of "totality" would be very difficult for competitors to counteract.



The Market Environment





The Market Environment

A

Overview

The market for computer products is constantly expanding, with no signs of saturation as yet. Although in recent years specific markets have been through periods of relative stagnation due to a number of economic factors, these periods have been no more than temporary passes. The demand continues to grow and new markets are continually emerging.

Competitive environments and technological advancement have led to significant price reductions per unit of computer power. This has resulted in bringing computer power within the reach of a larger number of smaller users and the development of new markets. Additionally, in this complex multicomponent situation is a migration from centralised large mainframe computers to distributed services and networking, a situation aided by improvements in telecommunications.

These factors have and will continue to create an ever-increasing market for computer products. However, these very factors, whilst being instrumental in creating healthy and expanding computer services market, have also been responsible for increased pressure on computer service to be similarly competitive. Given that service is, at the present time, a significantly labour-intensive activity, a paradox begins to emerge:

- Computer systems are perceived as becoming progressively more reliable and apparently requiring less service attention.
- Distributed computing, networking and intralocal activities are resulting in computer systems per se becoming more and more complex. The result is that realisation of improved reliability in user terms is not necessarily in line with expectations.

- Criticality of computer systems to business operations is placing increasing demands on both hardware and software in terms of systems availability (or “up time”).

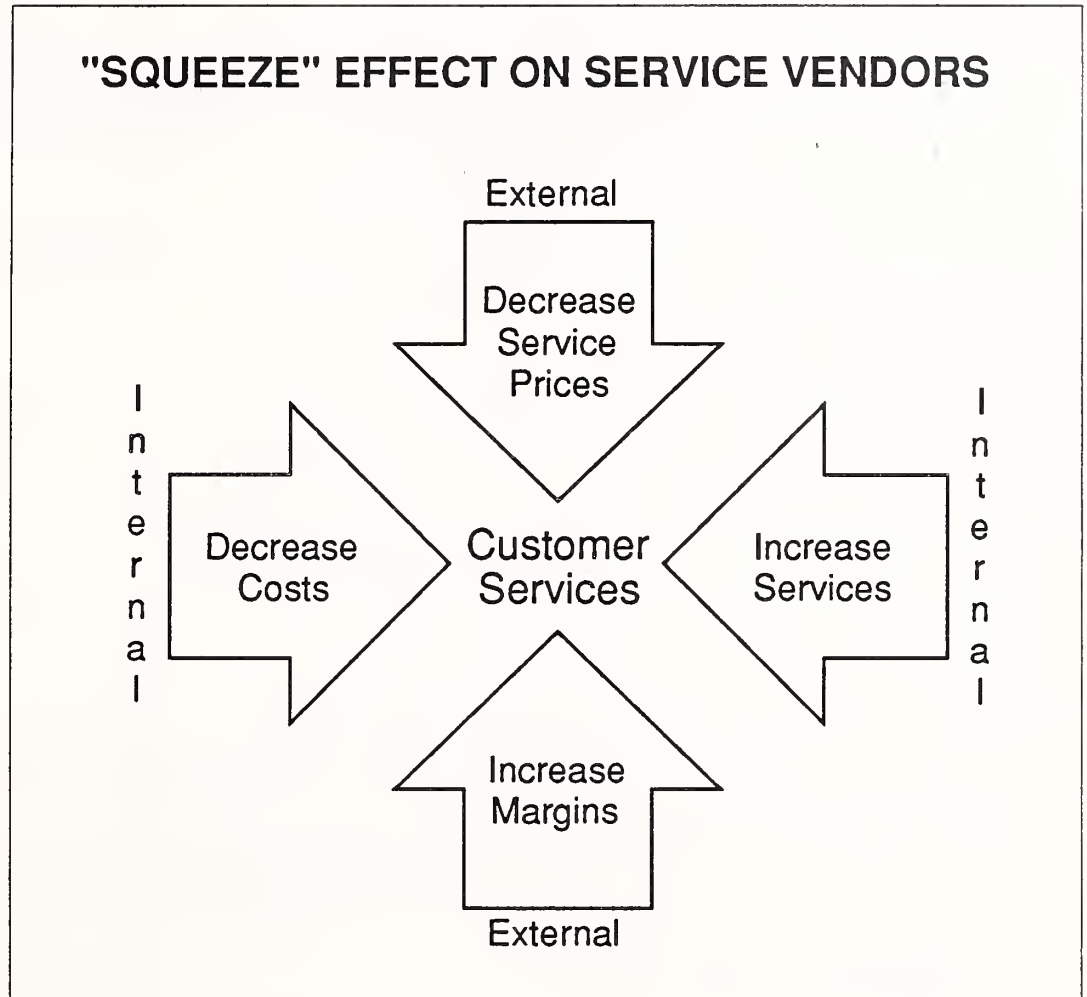
These are the factors behind a paradox facing computer vendors:

- Competitive market conditions are creating pressure on computer product prices and hence reducing profit margins.
- Vendors are looking to other sources of profit to offset margin reductions in other areas. Service is one such area.
- Users are placing pressure on service prices consistent with reductions in pricing of computer power. The situation is compounded by the emergence and growth of independent service companies in a large and expanding market.
- This scenario is of particular relevance to hardware maintenance but also includes, to a lesser degree, software service.

Due to the implantation of computers into business operations, their criticality is continually increasing. This is creating a continuing critical need for service in order for systems availability goals to be achieved, and the realisation of these goals at acceptable profit levels which is the difficulty facing vendors today. The “squeeze” effect on vendors is illustrated in Exhibit III-1.

It is INPUT’s opinion that equitable solutions to these difficulties are a critical component in the future development of the computer market.

EXHIBIT III-1

**B****Market Size**

The size of the European market for all computer products in 1987 is shown in Exhibit III-2 together with INPUT's forecasts for the 5-year average annual growth rate (AAGR) up to 1992. These figures clearly define both the opportunity and the challenge to computer vendors.

Western Europe is the second largest "country" market for computers and represents:

- 27% of the world market in 1987 and 25% in 1992
- 54% of the U.S. market in 1987, rising to 56% in 1992

The large size underlines the significance of the Western European market in worldwide terms.

EXHIBIT III-2

**EUROPEAN COMPUTER MARKET
(\$ Billions)**

	1987	1992	AAGR (Percent)
Computer Hardware	33	50	8.7
Maintenance	8	13	10.2
Data Comm Hardware	7	11	9.5
Data Comm Maintenance	1	2	14.9
Software	8	24	24.6
Computer Services	23	52	17.7
Total	80	152	13.7

Note, these forecasts are: (1) Rounded Numbers
(2) Inclusive of Inflation
(3) INPUT 1987 Estimates

The market size data forecast in Exhibit III-2 includes user expenditure forecasts for Customer Services. These forecasts are extracted and shown in two forms of analysis in Exhibits III-3 and III-4.

From studying Exhibit III-3 it is readily apparent that growth in hardware service is low at 6% AAGR. When inflation and anticipated price rises are taken into account, it emerges that based on current forecasts this market is relatively stagnant or even declining slightly. Nevertheless the hardware service market is the largest in revenue terms by a significant margin.

Growth in other service sectors is much healthier, averaging 24%. Whilst this is good cause for optimism amongst service vendors, the dominance of hardware service at 85% of service revenue sources will remain the largest source of income for a long time to come. Even in 1992 hardware remains a 70% portion of service revenue sources.

EXHIBIT III-3

**SERVICE SECTOR ANALYSIS
CUSTOMER SERVICE MARKET—
WESTERN EUROPE
USER EXPENDITURES
(\$ Billions)**

	1987	1992	AAGR (Percent)
Hardware Service	7.9	10.5	6
Software Service	0.9	2.8	27
Professional Services	0.4	1.2	24
Education and Training	0.2	0.4	21
Total	9.3	15.0	10

Note, these forecasts are: (1) Rounded Numbers
(2) Inclusive of Inflation
(3) INPUT 1987 Estimates

Reference to Exhibit III-4 more clearly defines the areas of low growth—Large Systems, Peripherals, and Data Comms. Other areas are forecast at more optimistic growth rates averaging 18/19%, a sector of the market that is also subject to the highest growth of sales volume in terms of hardware.

However, all considerations taken into account, the computer services market in Western Europe is a significant opportunity and revenue source for service vendors, and is expanding with a respectable growth rate.

EXHIBIT III-4

**SYSTEM SIZE ANALYSIS
CUSTOMER SERVICE MARKET—
WESTERN EUROPE
USER EXPENDITURES
(\$ Billions)**

	1987	1992	AAGR (Percent)
Large Systems (>\$500K)	2.8	4.0	7
Medium Systems	1.9	4.5	19
Small Systems (<\$75K)	0.7	1.6	18
Peripherals and Data Comms	3.9	4.9	5
Total	9.3	15.0	10

Note, these forecasts are: (1) Rounded Numbers
(2) Inclusive of Inflation
(3) INPUT 1987 Estimates

C**Market Dynamics**

The service market in Western Europe is dominated by computer product vendors to the extent of a 93% share in 1987, the remaining 7% being held by independent maintenance companies. Further, the three key "players" in this market (IBM, Digital, Unisys) had an estimated 46% share of the total market in 1987.

INPUT forecasts that independent maintenance in Europe is subject to an average annual growth rate of 15% between 1987 and 1992. This is higher than the overall service market growth rate of 10%; therefore, the market share held by independent maintenance companies will increase to 10% in 1992. However, independent maintenance companies are predominantly hardware-based and on this basis a growth rate of 18% is three times that for overall hardware growth (6%). Calculating market share on this pretext equates to 8% in 1987 and 14% in 1992 for hardware maintenance (INPUT 1987 forecasts).

Merger and acquisition activity among independent maintenance companies has caused much speculation. The major event in 1988 has been the continued expansion of the Granada group, which, through acquisition activities, has grown to an estimated \$100M European revenue base in independent maintenance, giving the newly formed group a good critical mass on which to base future activities and growth. Additionally this gives the Granada group an estimated 24% share of the UK independent maintenance market.

Vendor entry into independent maintenance has been led by Olivetti, which was awarded the largest contract to date in the UK. Other entry into independent maintenance by computer vendors is open to speculation; apart from Honeywell Bull and very recently IBM, none have yet openly declared their intentions. Most vendors are seriously considering entry, and most have a small revenue income from this source. The driving force providing impetus is twofold—firstly, the move towards single-source maintenance and secondly, a quest for protecting the current base against single-source competition. Other vendors are likely to follow Olivetti in acquiring independent maintenance companies.

Extended warranties and bundling of service into product prices are impacting market growth. The effect of this is to remove a proportion of service revenue from the open market. Market leaders, due to their position in the hierarchy, can play a dominant role in the event that service policies are restructured along these lines. These policies serve to compound other factors affecting market size.

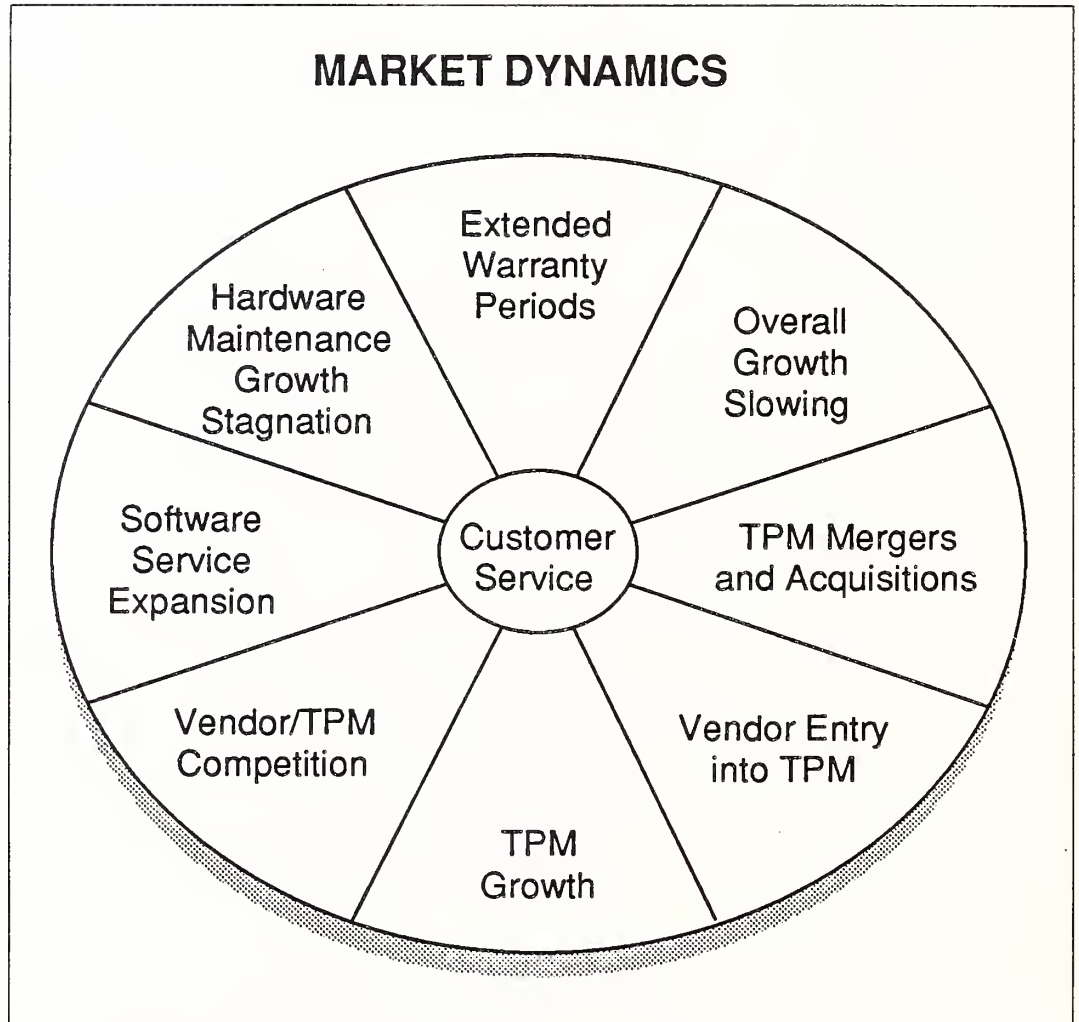
It has been thought that the major impact of pricing pressure is directed towards hardware service. However, studying the data presented in Chapters IV and V of this report does cast a degree of doubt on this hypothesis.

Pressure on hardware service pricing and lack of market growth do, however, have a more significant impact, specifically in terms of service profitability. For the service market to remain profitable, the hardware service, due to its dominant revenue, must also remain profitable.

Hardware service in 1987 accounted for 85% of service revenues, reducing to 70% in 1992 based on current market forecasts. Therefore, it would be unrealistic for a company to anticipate that shortfalls in hardware service will be counteracted by profit generation from other services.

An illustration of the factors influencing market dynamics is shown in Exhibit III-5. The absolute compounding effects of these factors is the environment that is dominating in the service market and the issues surrounding it.

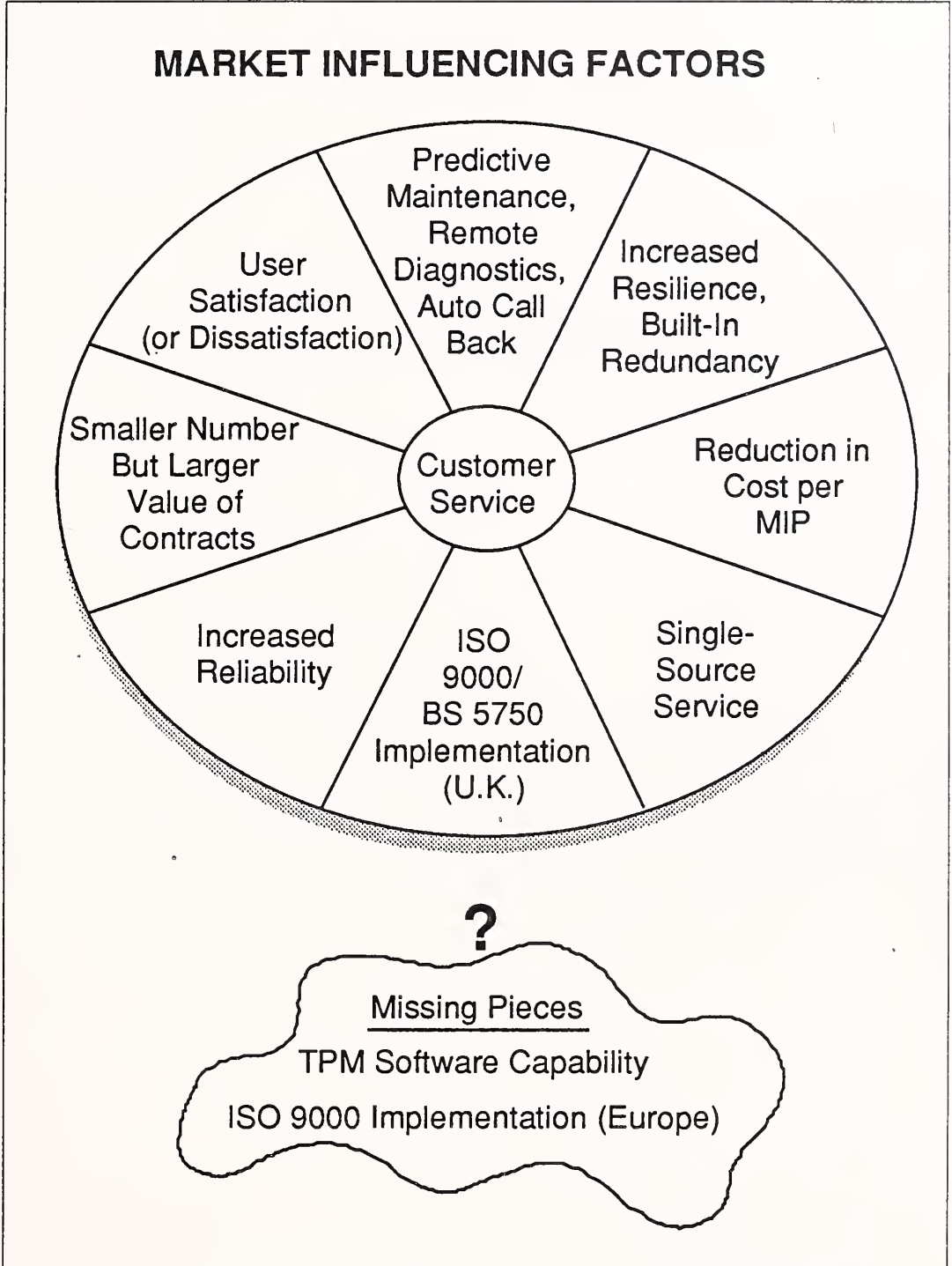
EXHIBIT III-5

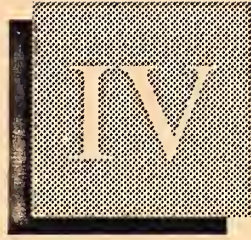


Factors influencing the market dynamics are shown in Exhibit III-6.

- ISO 9000/BSI 5750 has been a relatively significant success in the UK, but the likely impact on other European markets is unknown and unpredictable at present.
- TPM software service capability is a big question mark, certainly in the operating system environment. INPUT has doubts concerning the ability of TPM companies to bridge the gap with the computer vendors' capability, at least to achieve this alone.

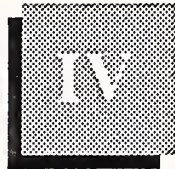
EXHIBIT III-6





Service Price Trends in Europe





Service Price Trends in Europe

A

General

The first section of this chapter contains an analysis based on INPUT's 1987 user research programme. The analysis is by vendor and system size to show:

- User perception of actual price increases received in 1986 for both software and hardware service
- Price increases anticipated by users for 1987 and 1988 for software and hardware service

The information contained within this first section is additional to that presented in the INPUT report entitled *Customer Service Pricing in Europe 1987* and published in October 1987. The analysis presented in this current study is an extension of that original analysis.

INPUT classifies system size according to the total installed value of the CPU and all attached local and remote peripherals based on the following criteria:

- **Small Systems**, less than \$75K in value
- **Medium Systems**, between \$75K and \$499K in value
- **Large Systems**, equal to or over \$500K in value

The second section of this chapter shows a comparable analysis of INPUT's 1988 user research programme, inclusive of three vendors who are dominant in the service sector. At the time of this study the 1988

research programme was not fully complete, but contained sufficient data to allow an accurate analysis of these companies to indicate the extent of any changes in user perceptions, attitudes and expectations between 1987 and 1988.

Variability in sample sizes throughout the analysis is due to a dependence on the number of users who are able or willing to respond to that specific aspect of the survey.

Inflation factors are inclusive in the data presented; these vary from country to country. Due to the analysis being on the basis of vendor and system size, but not country, it is not possible to assess the impact of inflation on the data presented.

Where user perception shows an expectation of above-average price increases, this indicates an opportunity for the vendor to take advantage without seriously impacting user satisfaction with service prices.

Users having expectation of below-average price increases should be treated with caution. Price increases higher than anticipated carry a risk of impacting user satisfaction and perhaps motivate a search for alternative sources of service.

B

Analysis of Service Price Trends in Europe by Vendor and System Size (1987 Research Programme)

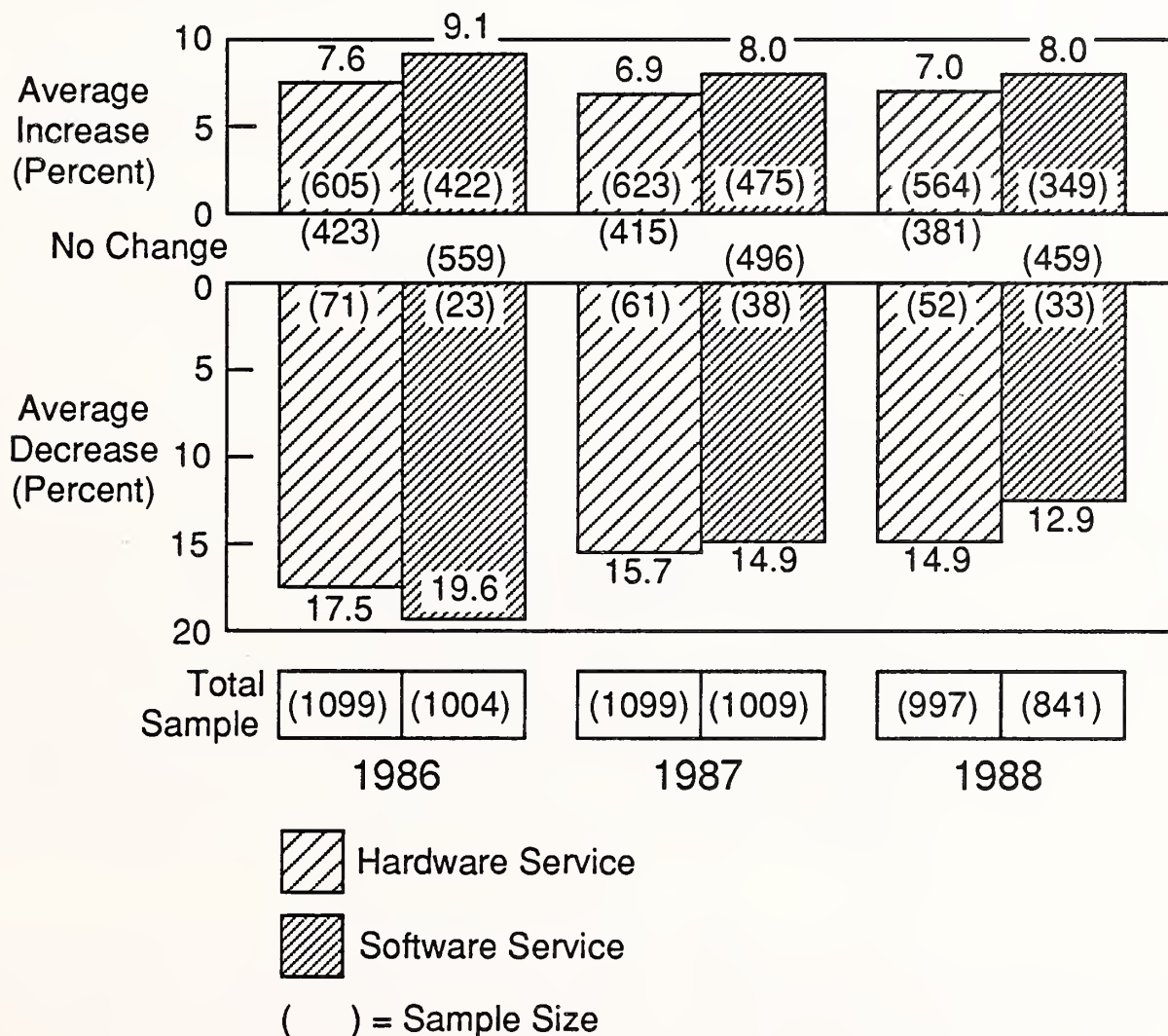
1. Europe Overall

Exhibit IV-1 shows the average price trends in Europe for all systems. Averages of this type need to be treated with caution as individual variability within the average is masked. There are, however, some important trends exhibited that generally, though not exclusively, show in the individual vendor/system size analysis.

- A very small number of users received or anticipate price reductions for service in absolute terms. The actual proportions are in the range of 6.5% to 5.2% for hardware service and 2.3% to 4.0% for software service. The percentage relating to hardware service is decreasing, whereas that relating to software service is increasing. The reason for these small percentages is likely to be due in part to special circumstances surrounding specific users and partly the very small numbers of users using surveys to make a statement. This last reason is attributed to the very small number of users, which in no way impacts the essential accuracy of the research.

EXHIBIT IV-1

SERVICE PRICE TRENDS EUROPE OVERALL—ALL SYSTEMS



- Of the remaining majority there are two dominant characteristics. First, 56% of users anticipate or expect an annual price increase for hardware service. Second, only 42% to 47% of users anticipate or expect annual price increases for software service. In simpler terms a larger proportion of users expect static prices for software service than for hardware service. The significance of this factor is sufficient to warrant continued observation.

- Taking into account the observations contained in the previous paragraph, a significant number of users have an expectation of regular annual price increases for service. This represents an opportunity for vendors.
- On average where expectations of yearly price increases exist, these are at a slightly higher level for software service than for hardware service.

To provide clarity on the meaning of these trends, two simple examples will suffice.

- If 60% of users receive an annual price increase for hardware service of 7%, this is equivalent to a price increase of 4.2% for all users. Or it is equivalent to a concomittent increase in the user service revenue base.
- If 45% of users receive an annual price increase of 9.5% for software service, this equates to a price increase of 4.2% for all users.
- Therefore, all aspects need to be taken into account when comparing price trends, not just the price differentials.

These factors have been averaged and delineated by system size in Exhibit IV-2. Data are presented in this form to provide a system size differentiation factor for quick reference. Clear differences between the three market segments—large, medium and small systems—are indicated.

There are therefore opportunities, dangers and risks in the pricing strategies adopted by vendors. All these factors need to be taken into account if the one is to be maximised and the others minimised. The most significant risk to service revenues is the high proportion of users with expectations that service prices will remain constant.

Further insight into this complex relationship is provided in Chapter V.

The second section of this chapter illustrates the changes in user perceptions and expectations between 1987 and 1988. Another way of expressing this is to consider convergence or divergence between reality and perception, and the way in which reality can influence changes in expectation.

EXHIBIT IV-2

SYSTEM SIZE DIFFERENTIATION FACTORS EUROPE OVERALL

	PERCENT		
	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
<u>HARDWARE SERVICE</u>			
Proportion of Users with Expectation of Regular Annual Price Increases	64	57	50
Proportion of Users with Expectation of Price Reductions	9	5	4
<u>SOFTWARE SERVICE</u>			
Proportion of Users with Expectation of Regular Annual Price Increases	52	45	33
Proportion of Users with Expectation of Price Reductions	6	3	2

Note: (1) The above figures have been rounded and averaged to provide an indication of market segment differentiation.

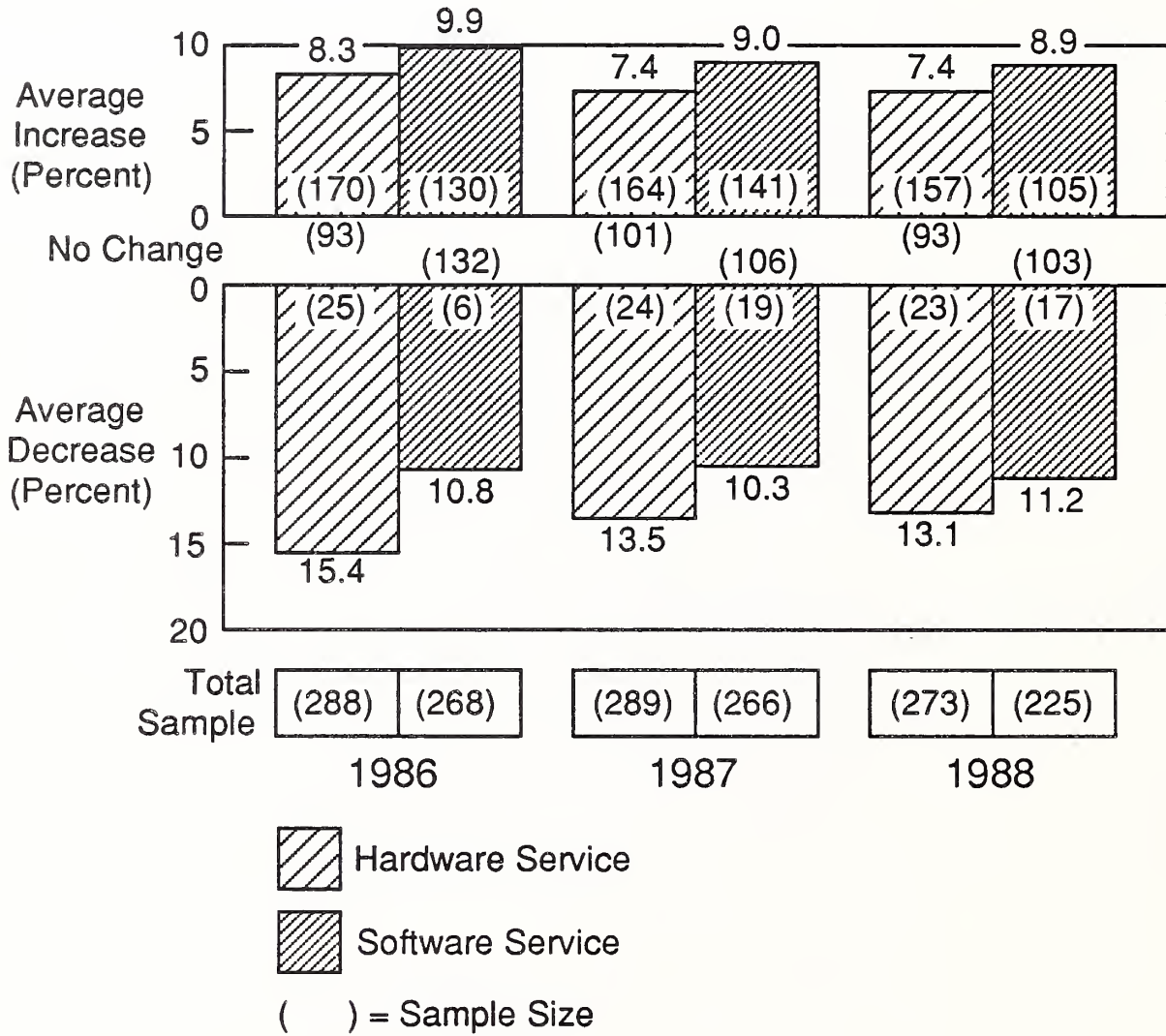
(2) Source of data is INPUT's 1987 user survey.

(3) Sample Size: 1,321.

User-anticipated price trends for Europe (overall) in the large-system sector are shown in Exhibit IV-3.

EXHIBIT IV-3

SERVICE PRICE TRENDS EUROPE OVERALL—LARGE SYSTEMS



- The number of users receiving or expecting price reductions for hardware service is approximately 8.5%, whereas the corresponding data for software service show 2.2% in 1986 (actual) and 7.5% in 1988 (expectation).

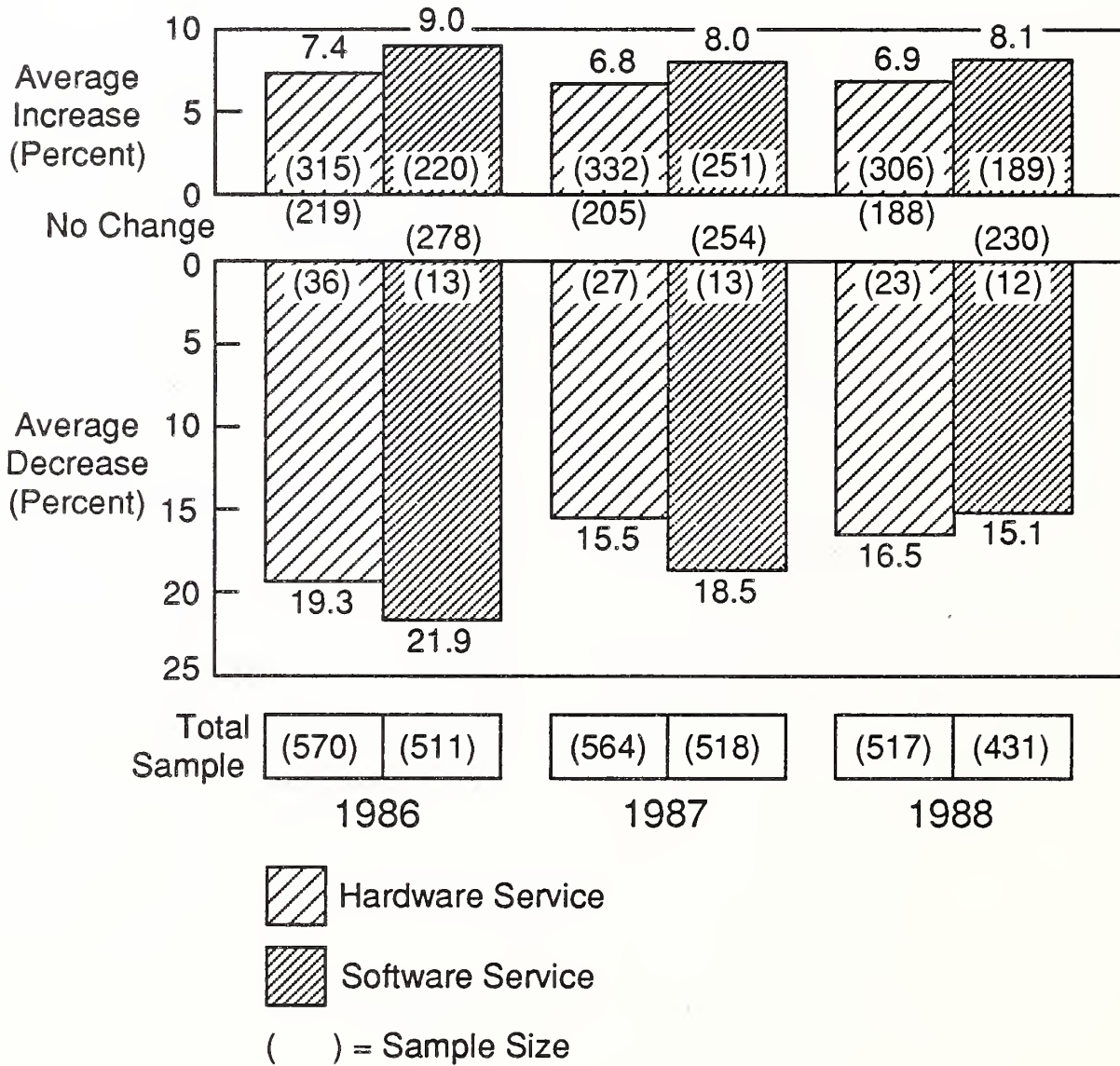
- In general terms 58% of large-system users, an above average percentage, anticipate an annual price increase for hardware service. The comparable figure for software service was 50%, rising to 57% in 1987 and returning to the 50% level in 1988, again slightly higher than the overall average.
- The significant number of users with expectations of annual price increases represents an opportunity for large-system vendors. The expectation is that annual software service price increases will be slightly higher than those for hardware service.

The European overall analysis for medium-sized systems is shown in Exhibit IV-4.

- The number of users anticipating price reductions is smaller. For hardware service this was 6.3% in 1986, but falling to approximately 4.5% in 1987. Software service holds constant over the time period at 2.5% to 2.8%. These figures are below the overall average.
- The number of users expecting an annual price increase for service is significant and substantially reflects a similar situation to that for large systems.
- One slight difference is that a smaller number of users expect software service prices to continue rising on an annual basis, a level close to the overall average of 43% to 48%.

EXHIBIT IV-4

SERVICE PRICE TRENDS EUROPE OVERALL—MEDIUM SYSTEMS

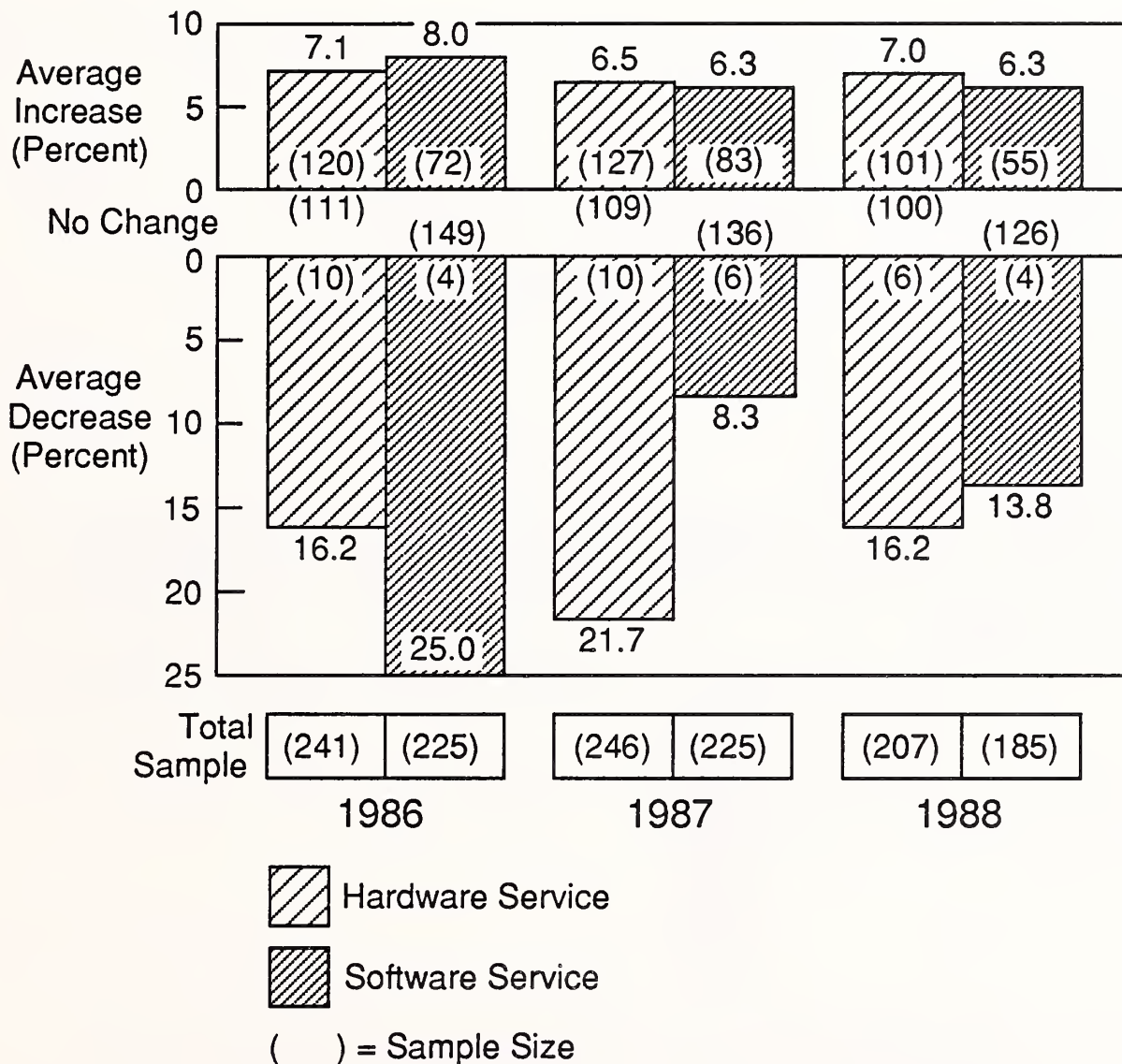


- Medium-sized systems continue to follow the trend of opportunity for vendor pricing.

The analysis of Europe overall for small systems as shown in Exhibit IV-5 indicates some significant departures from previously discussed trends.

EXHIBIT IV-5

SERVICE PRICE TRENDS EUROPE OVERALL—SMALL SYSTEMS



- Anticipated price increases for software service are lower than average, but even more significant is that a much lower percentage of users anticipate regular annual price increases. The corollary is that a more significant proportion expects prices for software service to remain constant. Only 30% to 37% of users expect annual increases, compared to the average of 43% to 49%. The corresponding data for hardware service are also below the overall average at 49% to 52%.

- The proportion of users expecting reductions in service prices is lower than average: 4.2% to 2.9% and decreasing for hardware service; fairly consistent for software service in the range 2.0% to 2.7%.

2. Concurrent

The data showing user expectations relating to service price trends for Concurrent users are shown in Exhibit IV-6 and IV-7.

EXHIBIT IV-6

**SERVICE PRICE TRENDS
CONCURRENT—MEDIUM SYSTEMS**

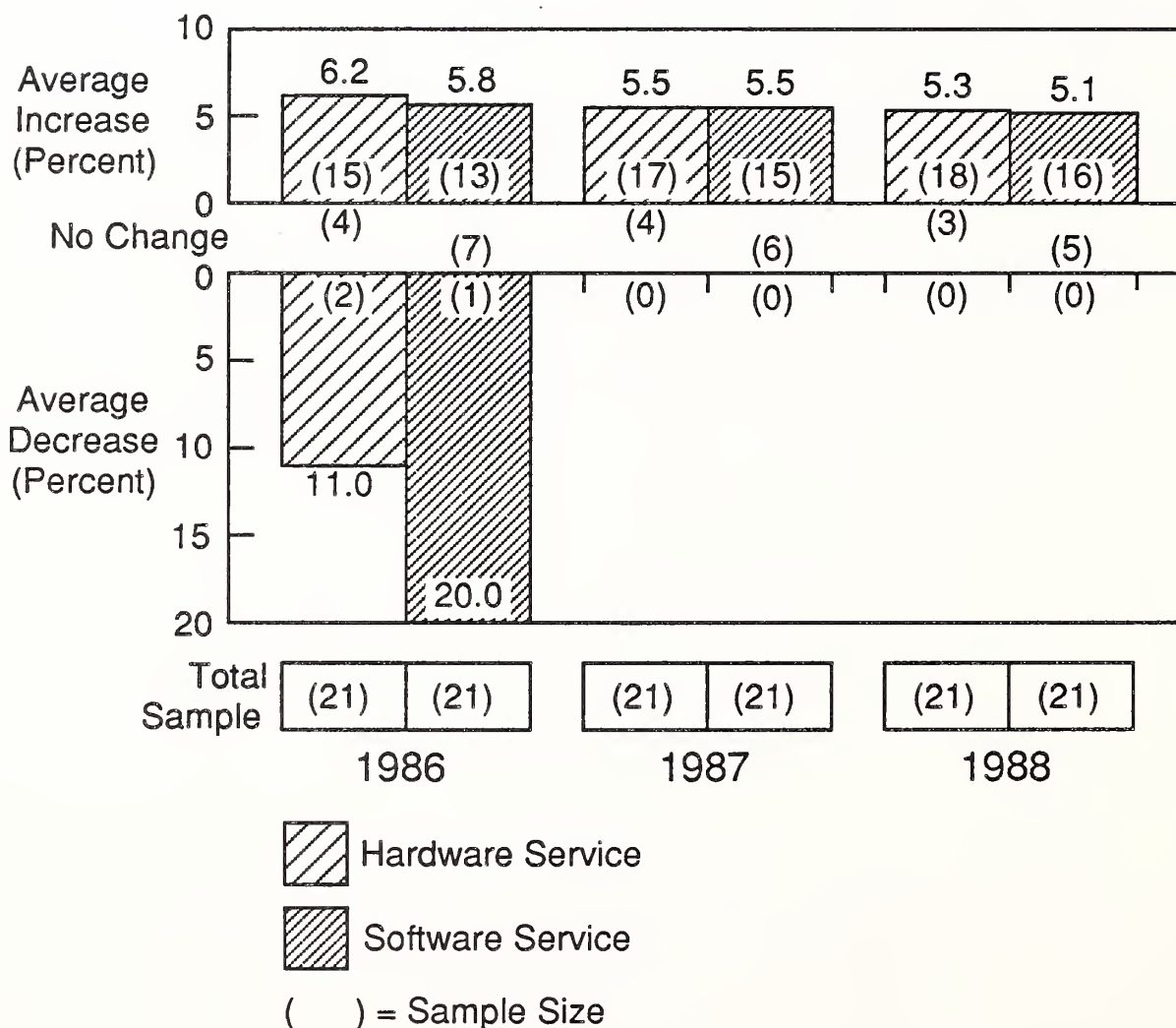
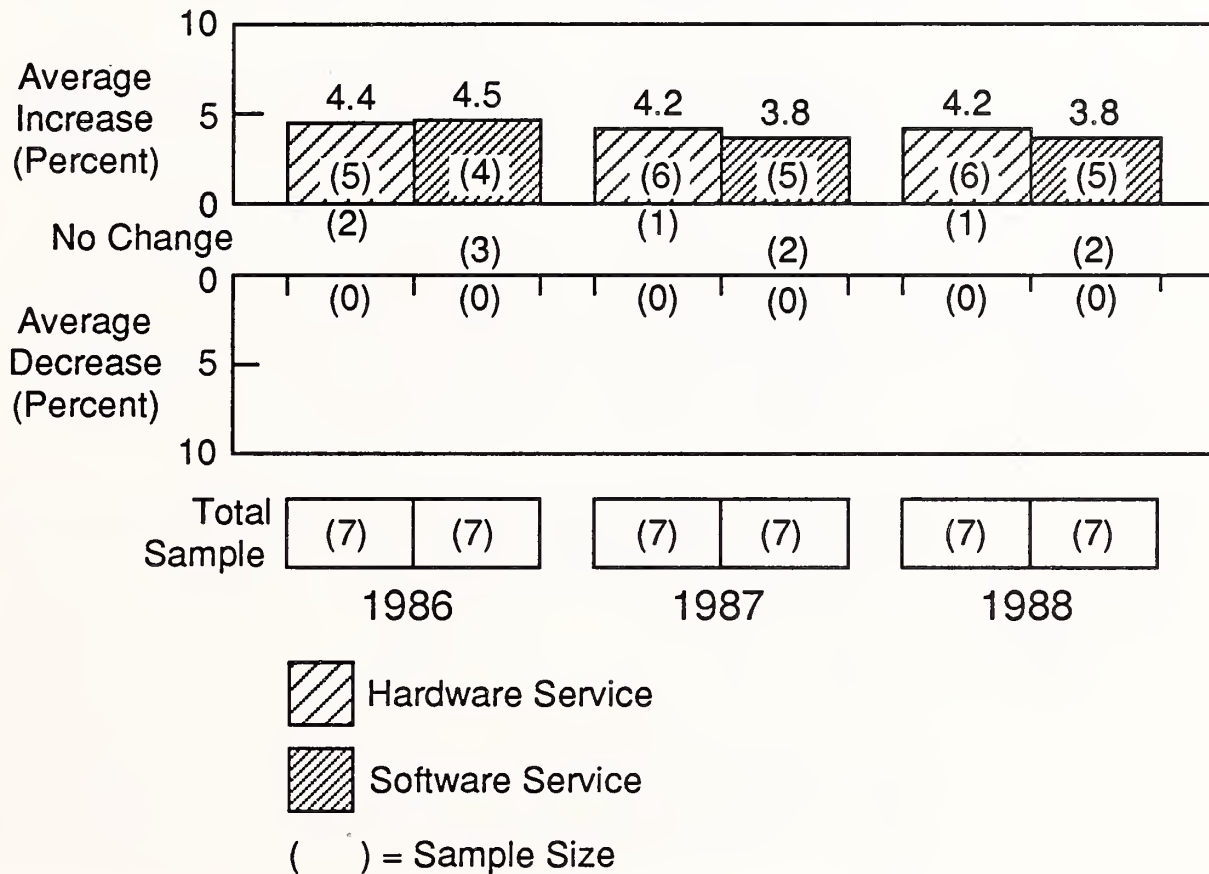


EXHIBIT IV-7

SERVICE PRICE TRENDS CONCURRENT—SMALL SYSTEMS



- Medium-sized systems show a departure from the European average, and also from the trends exhibited by most other vendors. Although expectations of regular annual price rises is higher than average, price increases in absolute terms are lower, bringing these close to (or below) inflation levels. The sample available for analysis referred only to the UK installed base.
- Users anticipating price decreases is zero in 1987 and 1988.
- The trend of price rise expectation is downward, whereas in the main other vendors are holding relatively constant.

- For users of small systems the expectation is for even lower annual price increases, although the level is slightly more consistent with time.
- User expectation of price increases is below current and projected UK inflation levels. Initial reaction, although speculative, indicates a need for a precautionary re-evaluation of policies and strategies. The fact that analysis does not take account of absolute pricing does not reduce the impact of “real” price erosion.
- The sample size available for small systems is smaller, but consistency with medium systems and overall trends appears to confirm the validity of the data.
- Initial thoughts that departure from averages could be biased by the UK sample are only partly substantiated. Significant departure from averages at a UK country level do not start to seriously impact until 1988, when overall European averages start to rise slightly.
- Further explanations could be that Concurrent is operating in a particularly price sensitive market segment, or that specific policies and strategies are transparent to the analysis.

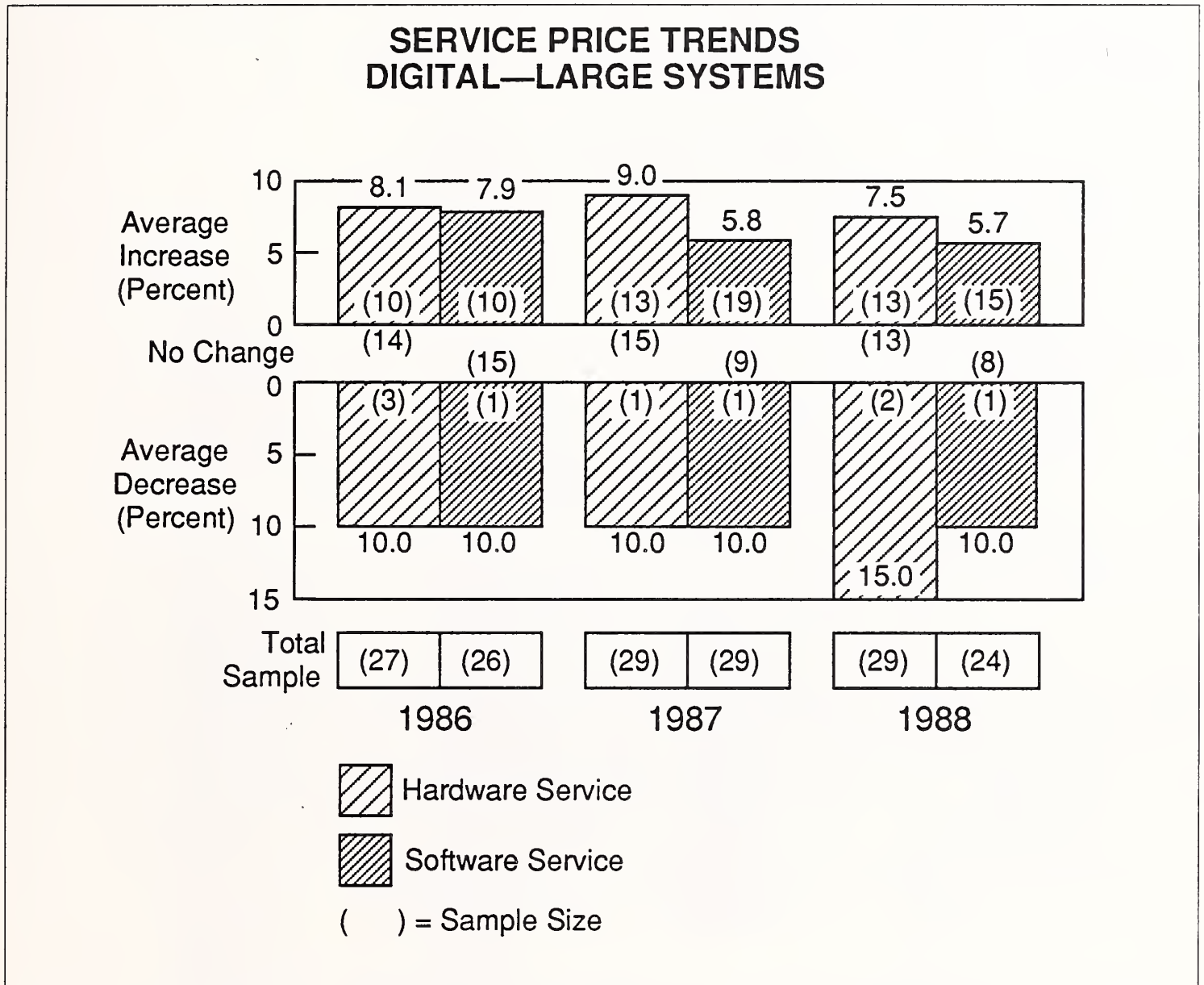
3. Digital

Service price trends as perceived and anticipated by Digital users are shown in Exhibits IV-8 to IV-10. The significance of this particular set of data is strengthened by the vendor's position as one of the market leaders.

Digital large-systems price analysis shows some typical trends and some departures from averages, as illustrated by Exhibit IV-8.

- User expectancies of price increases for hardware service do not vary appreciably from the overall average for large systems, except in 1987 when the anticipated rise was 9% compared with the average of 7.4%.
- Anticipated rises for software service are significantly below the average by three percentage points. The trend is, however, similar to the average, in showing a slight decrease.
- The number of users with expectations of a decrease in price is below average for both service sectors. Software is relatively constant compared with the average, which shows a rising characteristic.

EXHIBIT IV-8

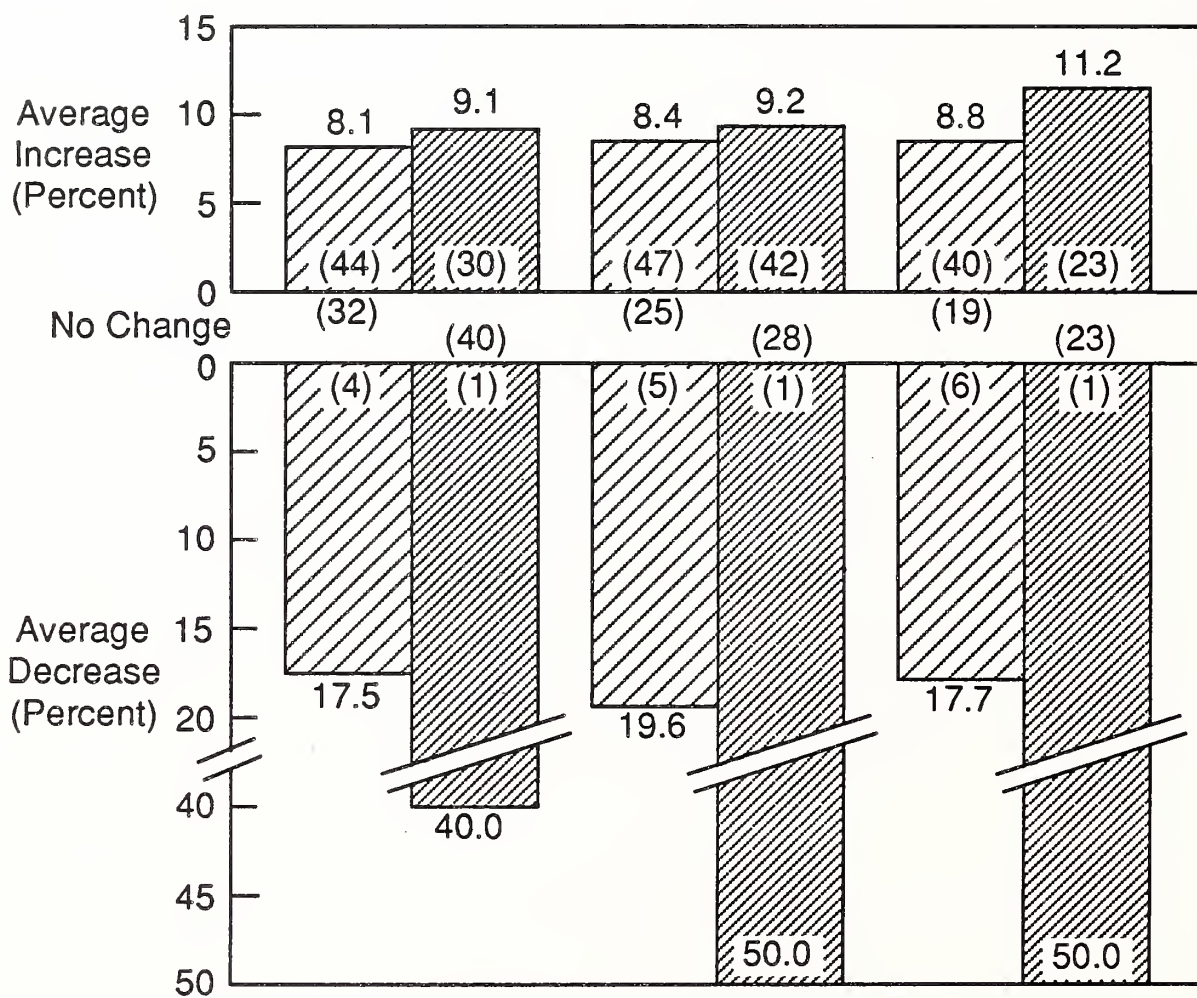


- A much lower percentage of users than average, 45% compared with 58%, have an expectation of continued annual price rises for hardware service. The corresponding analysis for software service, although showing a below-average figure for 1986, indicates an expectation in 64% of users for annual price increases during 1987 and 1988.
- These trends are considered significant, bearing in mind the market position occupied by Digital.



Medium systems data are shown in Exhibit IV-9. This data shows some very significant departures from the overall medium systems averages.

EXHIBIT IV-9

SERVICE PRICE TRENDS DIGITAL—MEDIUM SYSTEMS



Total Sample	(80)	(71)	(77)	(71)	(65)	(47)
	1986		1987		1988	

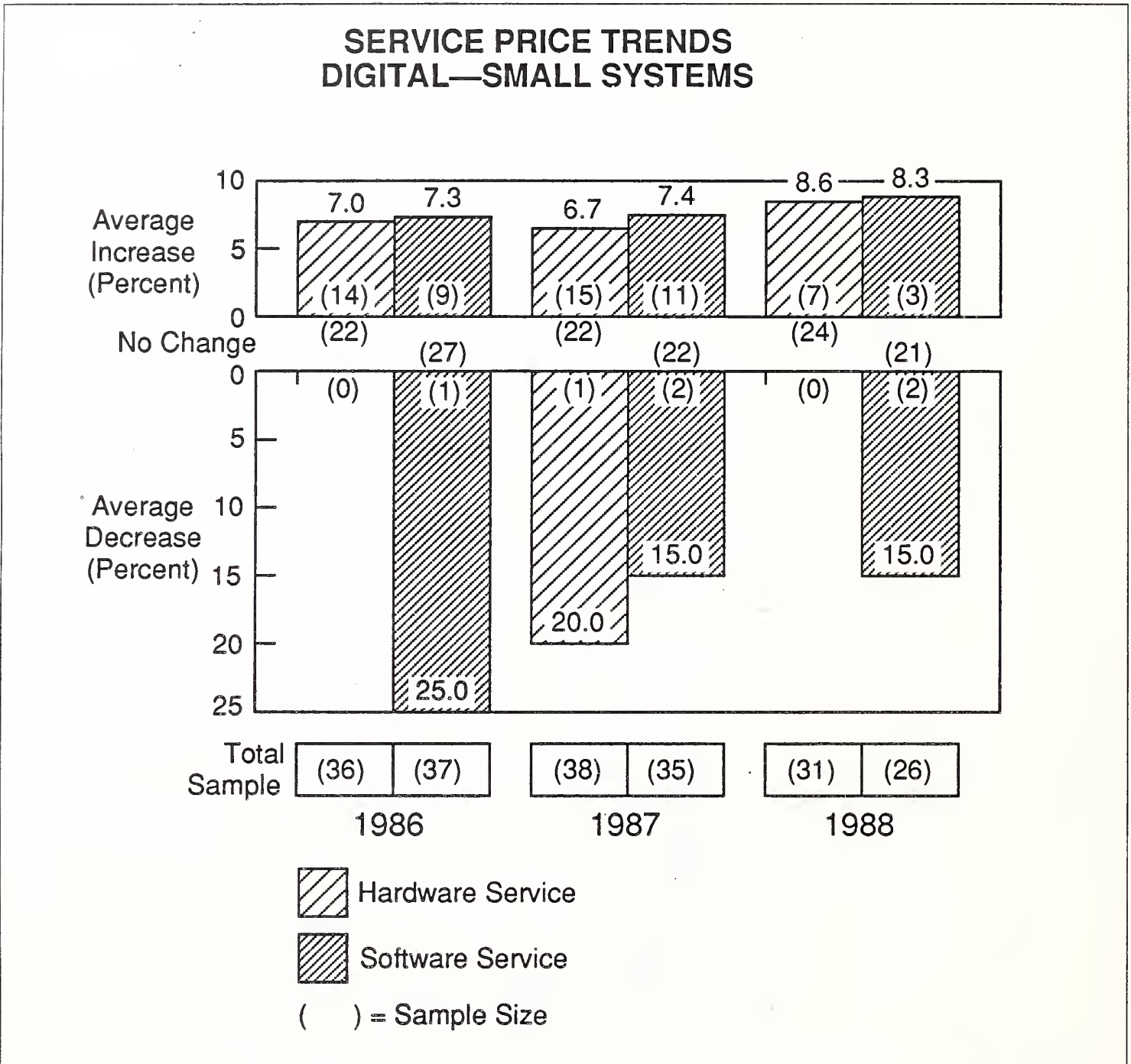
 Hardware Service
 Software Service
 () = Sample Size

- User expectation is that both hardware and software service prices show an increasing annual trend. For example, reported 1986 actual increases are not too far removed from the overall average, whereas 1988 shows that the hardware service price rise is anticipated at 8.8% (average 6.9%) and software service at 11.2% (average 8.1%).
- The number of users expecting price decreases is very small and in both cases close to the average. However, the data showing price decreases do not appear particularly realistic unless special circumstances are involved.
- Again the significance of these trends is important. The vendor may be able to capitalise on this level of expectation in the user population.
- The proportion of users anticipating prices remaining constant is similar to the overall medium systems average.

Data relating to user expectation regarding small systems are shown in Exhibit IV-10. Departures from the overall averages for small systems are indicated, but in a more complex manner.

- The trend for annual price increases for both service aspects shows an increasing trend in terms of user expectation. This trend compares with the overall average, which is fairly constant for hardware service, but declining for software service.
- Price increases in 1986 are below average, but by 1988 expectation is above average for hardware service at 8.6% (average 7.0%) and for software service at 8.3% (average 6.3%).
- The more complex side of this analysis is that a much smaller proportion of users anticipate regular annual service price increases. For hardware service this percentage is 40%, reducing to 22% in 1988 and compared with an overall average in the region of 50% for small systems. Software service is slightly lower than average in 1986 and 1987, but in 1988 reduces to 12%, compared with the overall average for small systems of 30%.
- This last observation is significantly different to the overall market trend and as such is very important. It may be early warning of change or could be an opportunity for a marketing and communication solution.

EXHIBIT IV-10



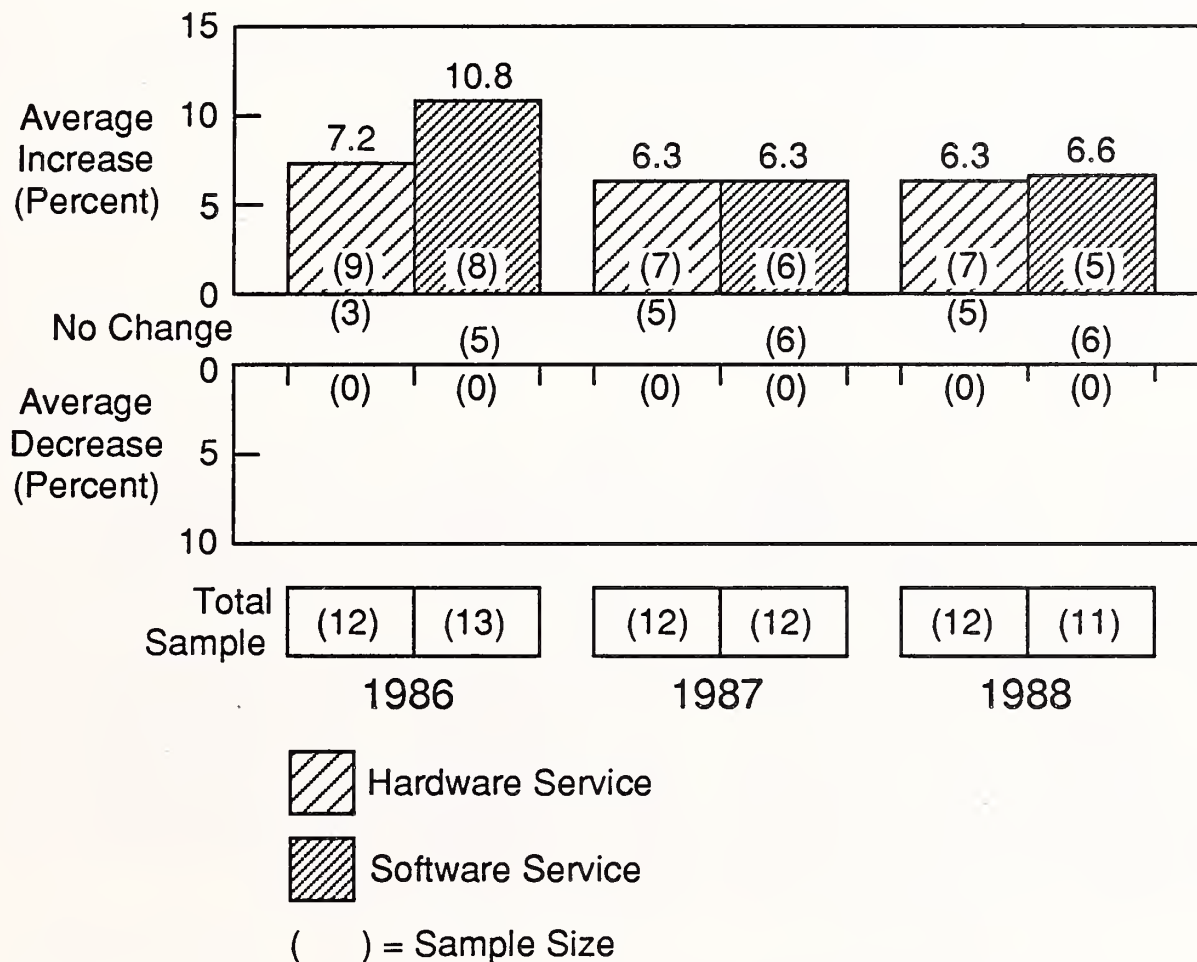
4. Hewlett-Packard

The data relating to user expectations of price trends is shown in Exhibits IV-11 to IV-13. Certain aspects of the analysis are very interesting.

Large-system service price trends are shown in Exhibit IV-11 and show certain departures from the overall averages for large systems.

EXHIBIT IV-11

SERVICE PRICE TRENDS HEWLETT-PACKARD—LARGE SYSTEMS



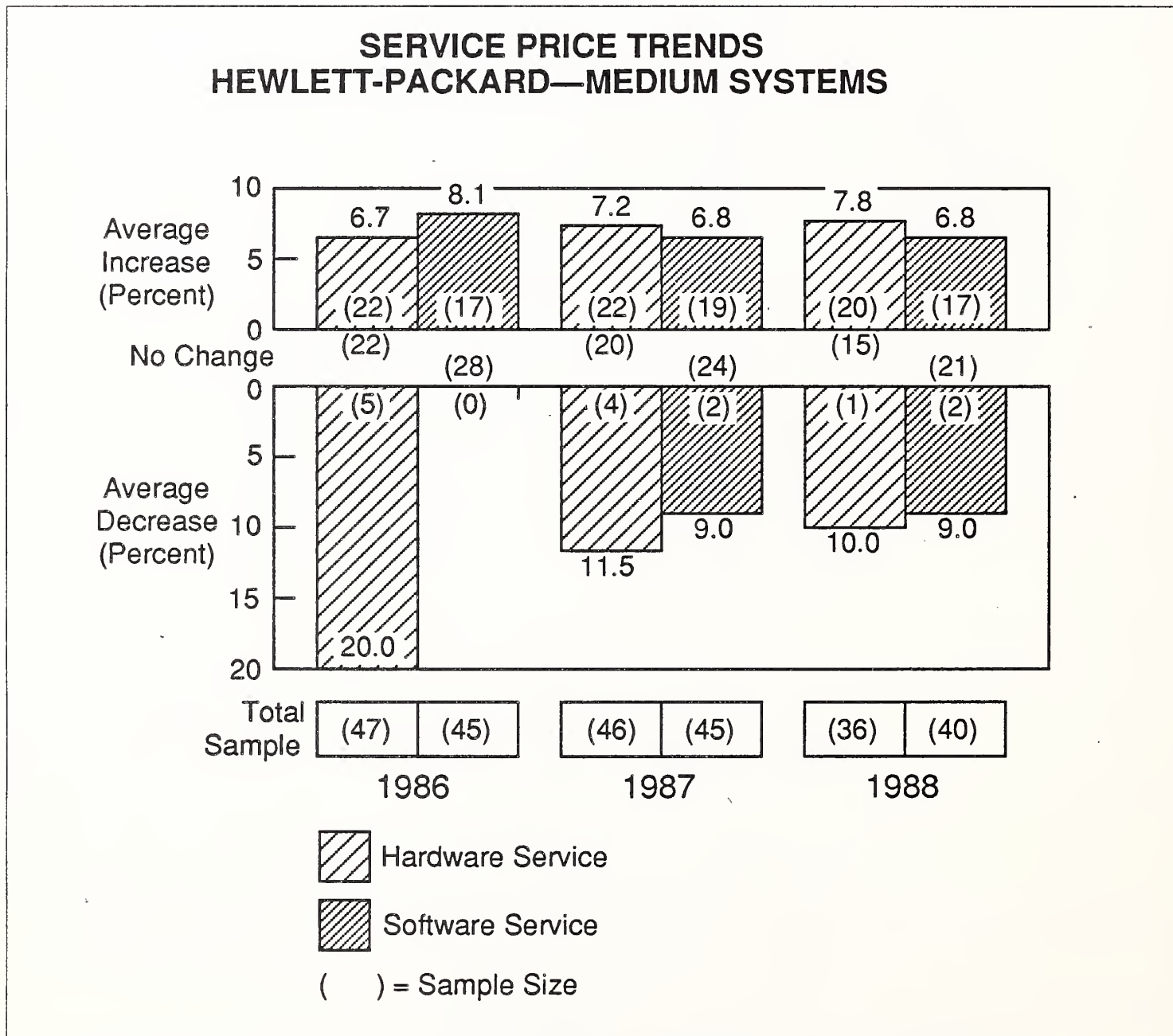
- The first and most obvious observation is that no users report having received or anticipate receiving a price reduction for either hardware or software service.
- In 1986 price increases for hardware service were below average by one percentage point, whilst those for software service were one percentage point above average. However, by 1988 user expectation of price increases is below average 6.3% for hardware service (average 7.4%) and 6.6% for software service (average 8.1%).
- The proportion of users reporting hardware service price increases was above average in 1986 at 75% (average 59%); in subsequent years user

expectation shows this reducing to slightly below the overall average for large systems. The trend for software service more closely matches the average.

- More than 50% of users have an expectation of regular annual price increases for service.

Medium systems price trends are shown in Exhibit IV-12.

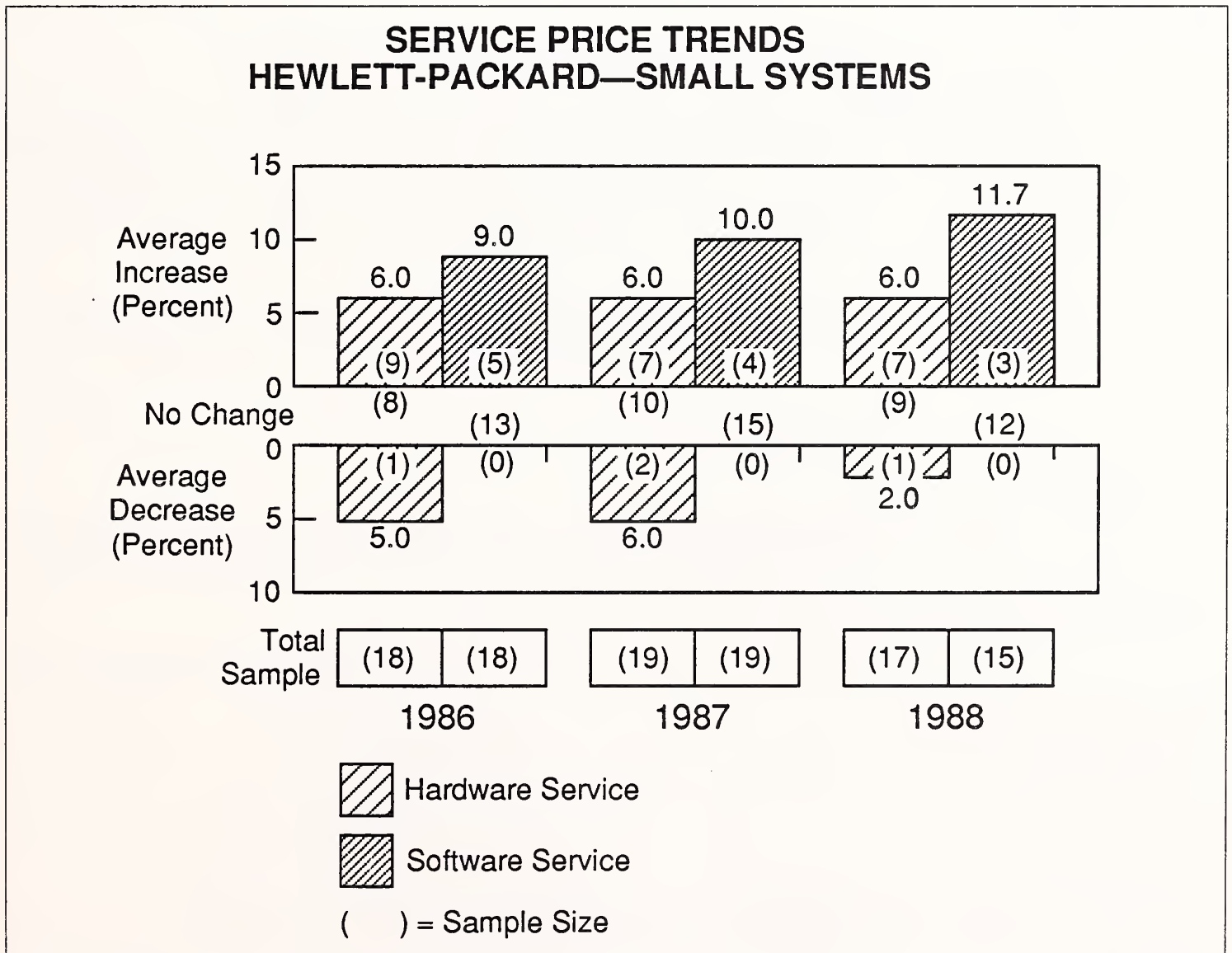
EXHIBIT IV-12



- The user expectation is that price rises on an annual basis for medium-sized systems will be at a slightly higher level than for large systems. These figures show an increasing above-average trend for hardware service, but a decreasing below-average trend for software service. For example, 1988 shows an expectation of a 7.8% increase for hardware service compared with the medium systems average of 6.9%, while for the same year software service shows 6.8% (average 8.1%).
- As a balance to the previous observation, the proportion of users anticipating annual price increases for hardware service is below average, 49% to 56%, compared with a 59% average.

Analysis relating to small systems is shown in Exhibit IV-13 and shows significant departure from the overall average for small systems.

EXHIBIT IV-13



- Reported price increases and expectations of users show an above-average and increasing price trend for software service by a significant minority of users. This observation is balanced by a significant majority expecting current price levels not to change, and by zero users expecting a price decrease. Further, the proportion with expectation of price increases is declining, from 28% in 1986 to 20% in 1988. This is well below the overall average for small systems.
- The expectation of hardware price increases indicates a below-average figure, both in terms of the proportion of users (39% compared with 50%) and the level of price increase anticipated (6.0% compared with 6.5/7.0%).

5. Honeywell Bull

The analysis for Honeywell Bull users is shown in Exhibits IV-14 to IV-16.

Data relating to large systems are shown in Exhibit IV-14.

- User reports and expectations show a below-average decreasing trend in hardware service price increases. Expectations for annual price increase are significantly below average, in 1988 5.4% compared to 7.4%.
- The proportion of users expecting annual price increases compares well with the overall average for large systems (in the region of 63%).
- The proportion of users anticipating price reductions is close to half the average at 3/4%.
- Observations relating to software service indicate that the proportion of users anticipating regular annual price increases is significantly below average, 37% compared with 51%.
- No users anticipate or expect any price reductions for software service.

EXHIBIT IV-14

SERVICE PRICE TRENDS HONEYWELL BULL—LARGE SYSTEMS

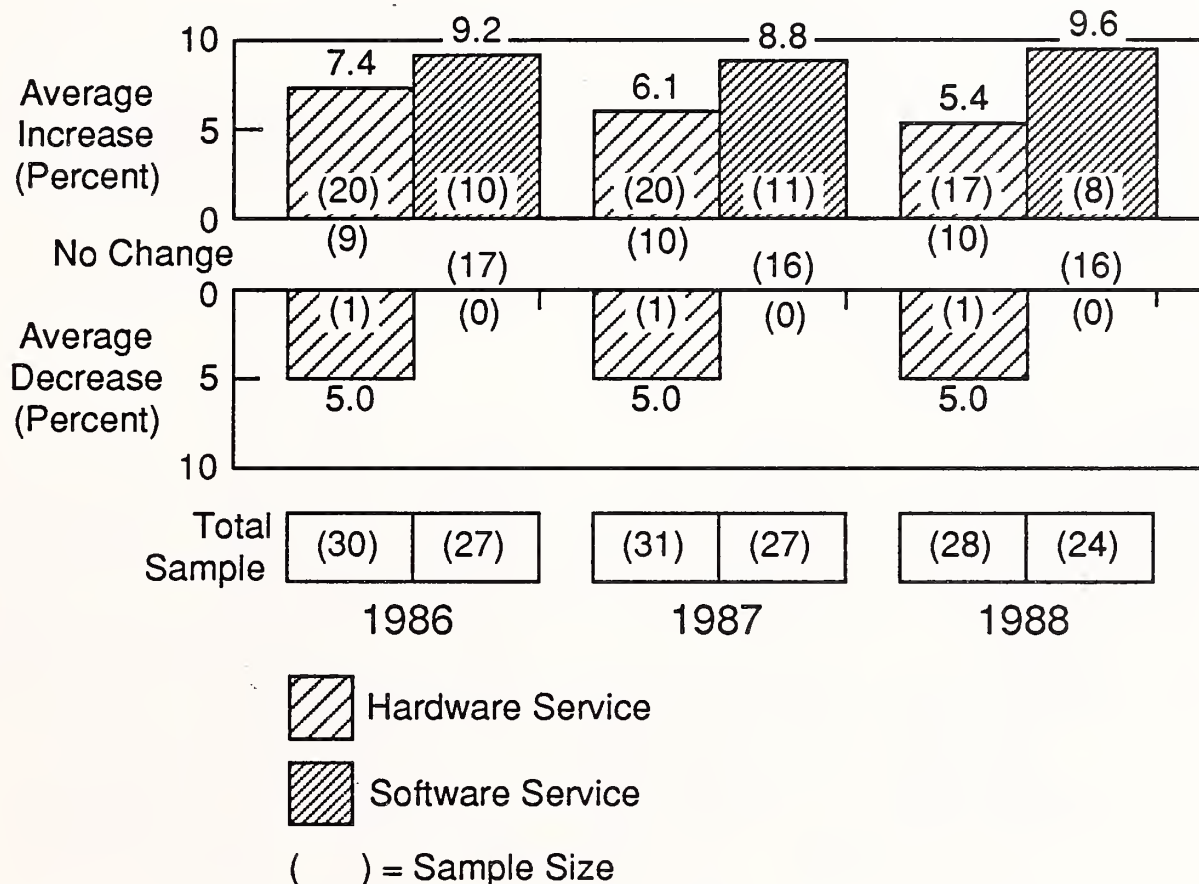
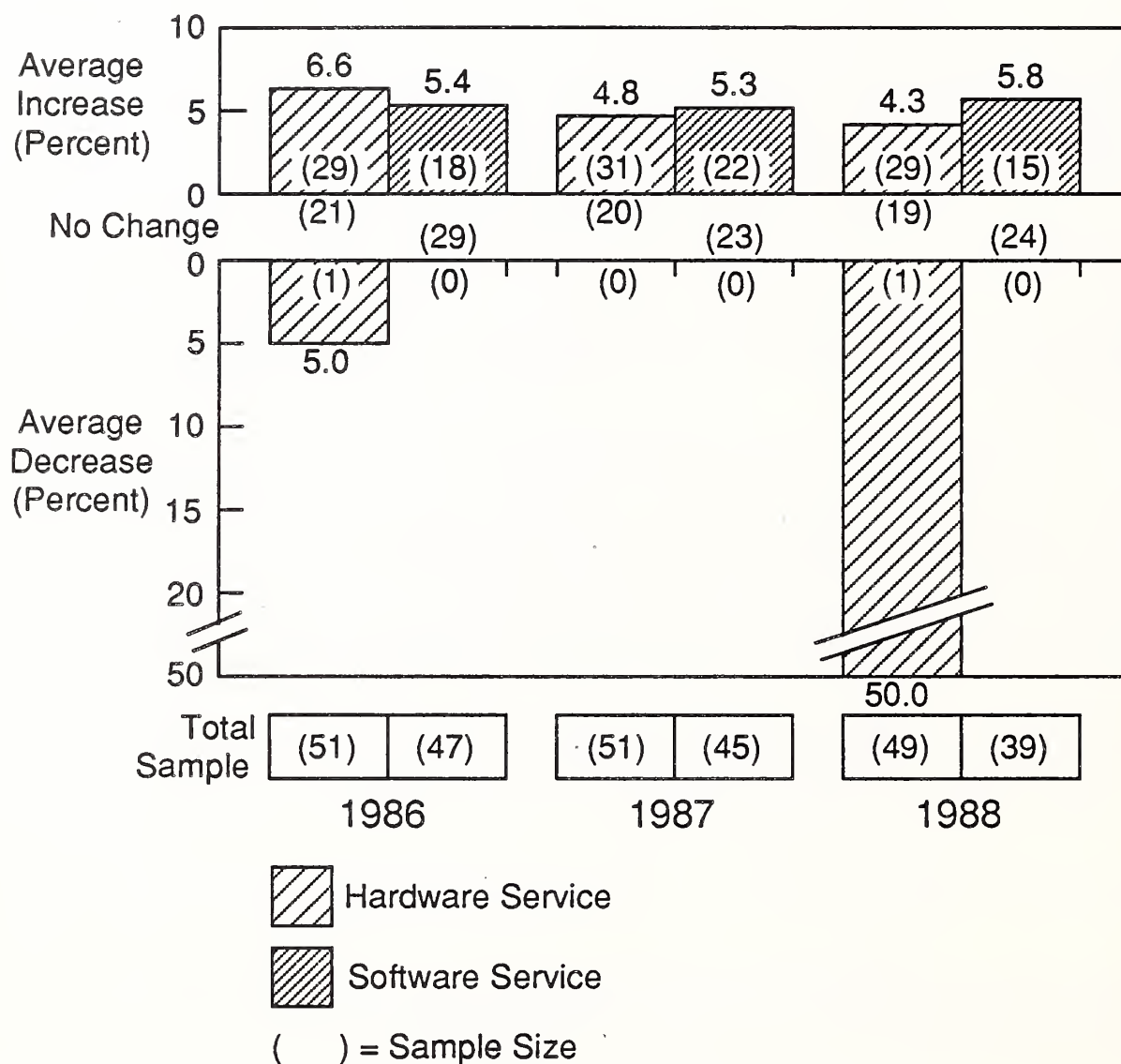


Exhibit IV-15 relates to medium systems and shows some significant departures from the overall average for medium systems.

- The number of users receiving or anticipating service price reductions is very close to zero.
- User anticipation is that hardware service price increases are following a decreasing downward trend in addition to being significantly below average for medium systems. For example, 1988 shows 4.3% compared with the average of 6.9%.
- Software service price increase expectation, although relatively constant, is also significantly below average, 5.8% in 1988 compared with

EXHIBIT IV-15

SERVICE PRICE TRENDS HONEYWELL BULL—MEDIUM SYSTEMS



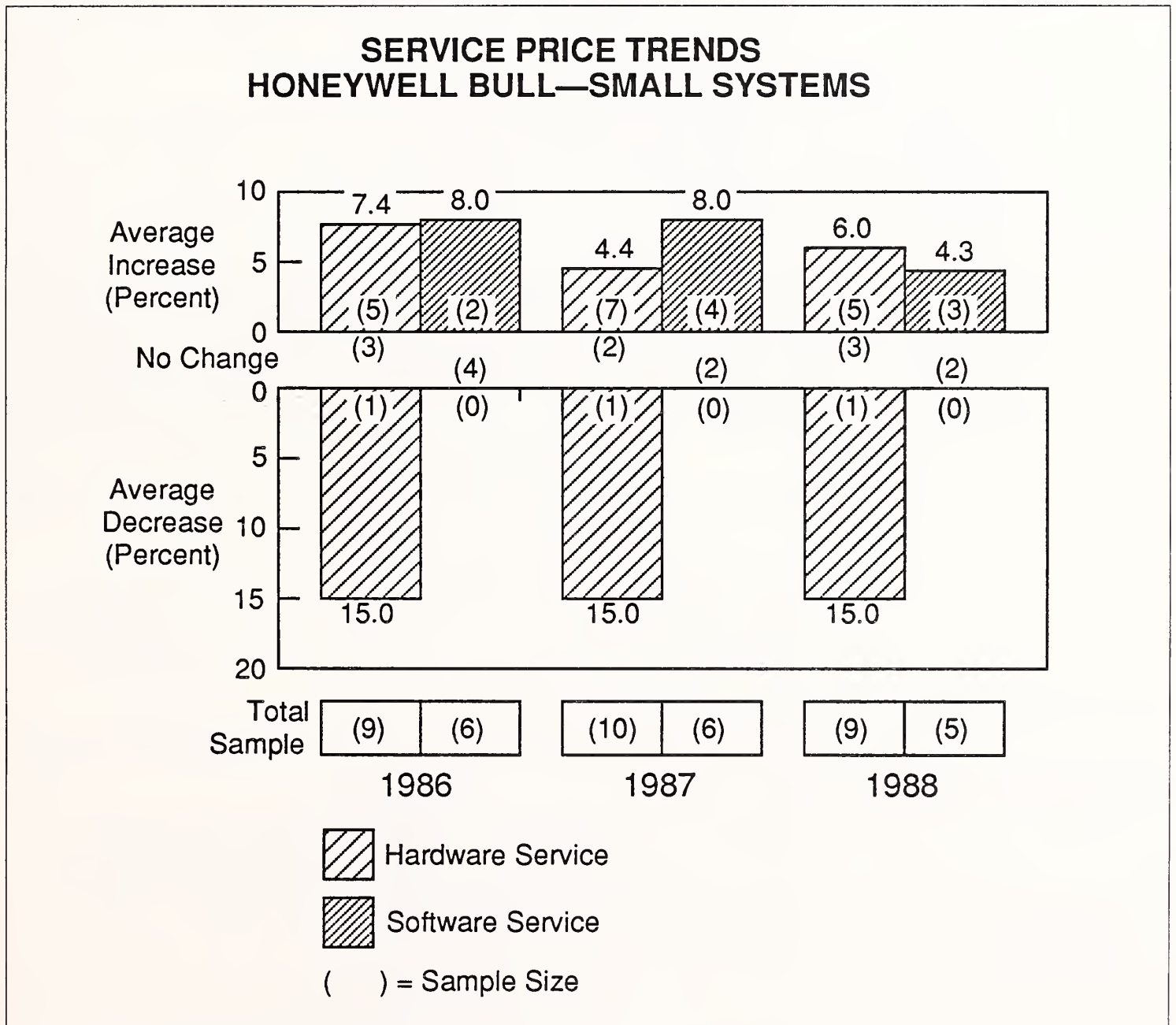
the average of 8.1%. Additionally the proportion of users anticipating regular annual software service price increases is also below average by ten percentage points.

- Analysis shows that user perception of annual price increases for service is close to inflation levels (below in some countries). This indicates the possibility of “real” price erosion, a factor supported by the actual data reported for 1986.

- An opportunity for a marketing or communication solution is indicated.

Data relating to Honeywell Bull small systems are shown in Exhibit IV-16. The sample size available is relatively small, which may explain some slight irregularity in the statistics. However, previous data relating to Honeywell Bull large- and medium-sized systems tend to confirm the validity of the small-systems data.

EXHIBIT IV-16



- The data indicates a user expectation that annual price increases for service will show a decreasing downward trend. The trend will be more pronounced for software service than hardware service.
- 1986 reported actual price increases are very close to the overall European averages for small systems; subsequent years, however, show user perception of declining price increases. One exception is the perceived price increases for software service in 1987.
- One balancing factor is that the proportion of users anticipating regular annual price increases is above average, significantly so for software service at 60/67%, compared with the average of 33% for small systems.
- A further balancing factor is that there are no indications that users expect price reductions for software service.

6. IBM

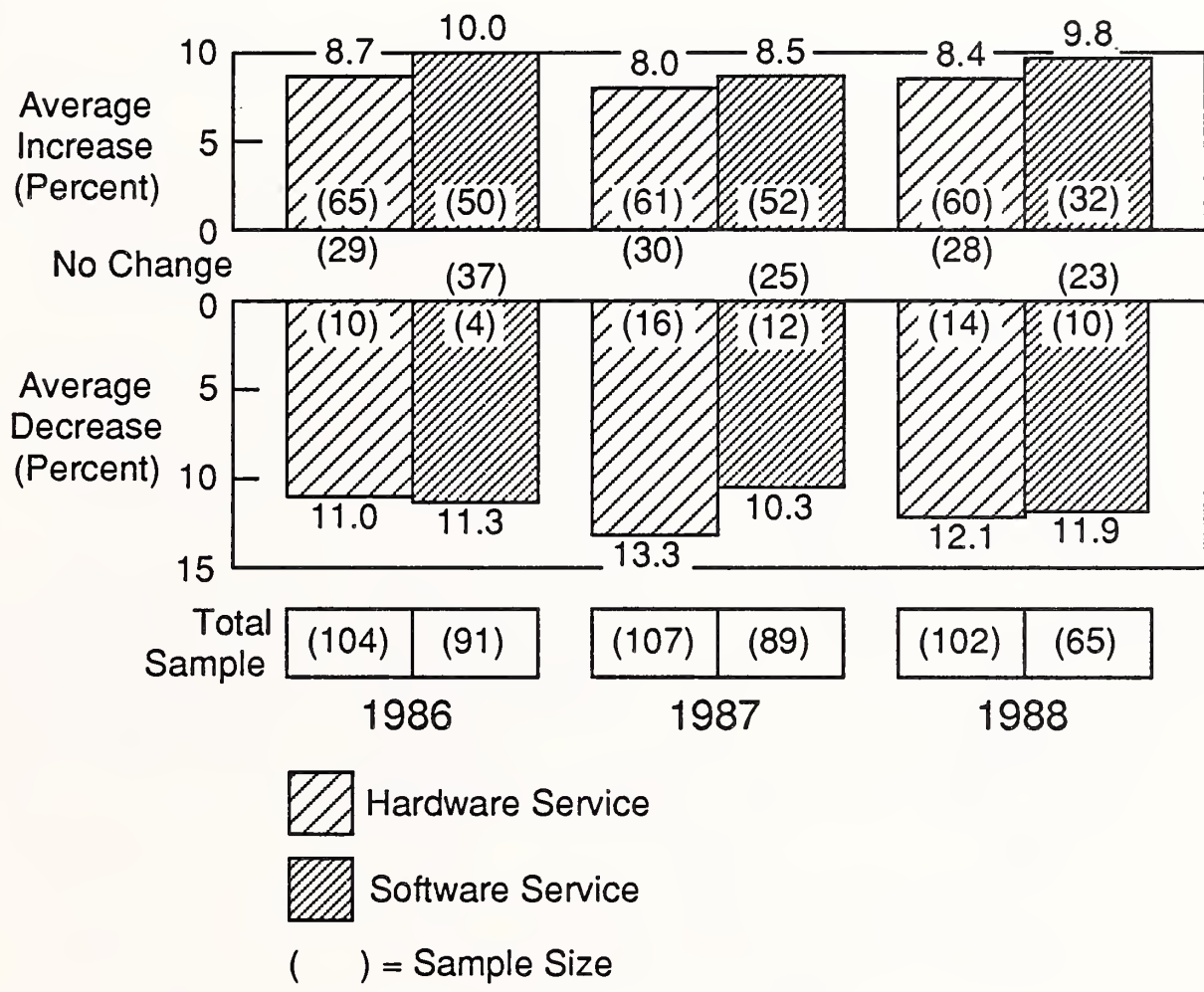
Data relating to IBM users are presented in Exhibits IV-17 to IV-19. IBM occupies a leading position in the market and as such has a strong influence in terms of trends and standards. The exposure that IBM obtains in the industry can have an influence among the non-IBM user community.

Exhibit IV-17 shows the service price trend for IBM large-systems users.

- The data show a user expectation of regular annual service price increases at a relatively consistent level. Comparative averages for Europe overall show a slight decline. IBM users have an expectation of price increases one percentage point above the average in 1988.
- The proportion of users expecting regular annual price increases is above average, slightly more so for software service than for hardware.
- The number of users anticipating price reductions is significantly above average for both hardware and software service. Further, this proportion is increasing on an annual basis towards 15% in 1988, almost twice the average.

EXHIBIT IV-17

SERVICE PRICE TRENDS IBM—LARGE SYSTEMS

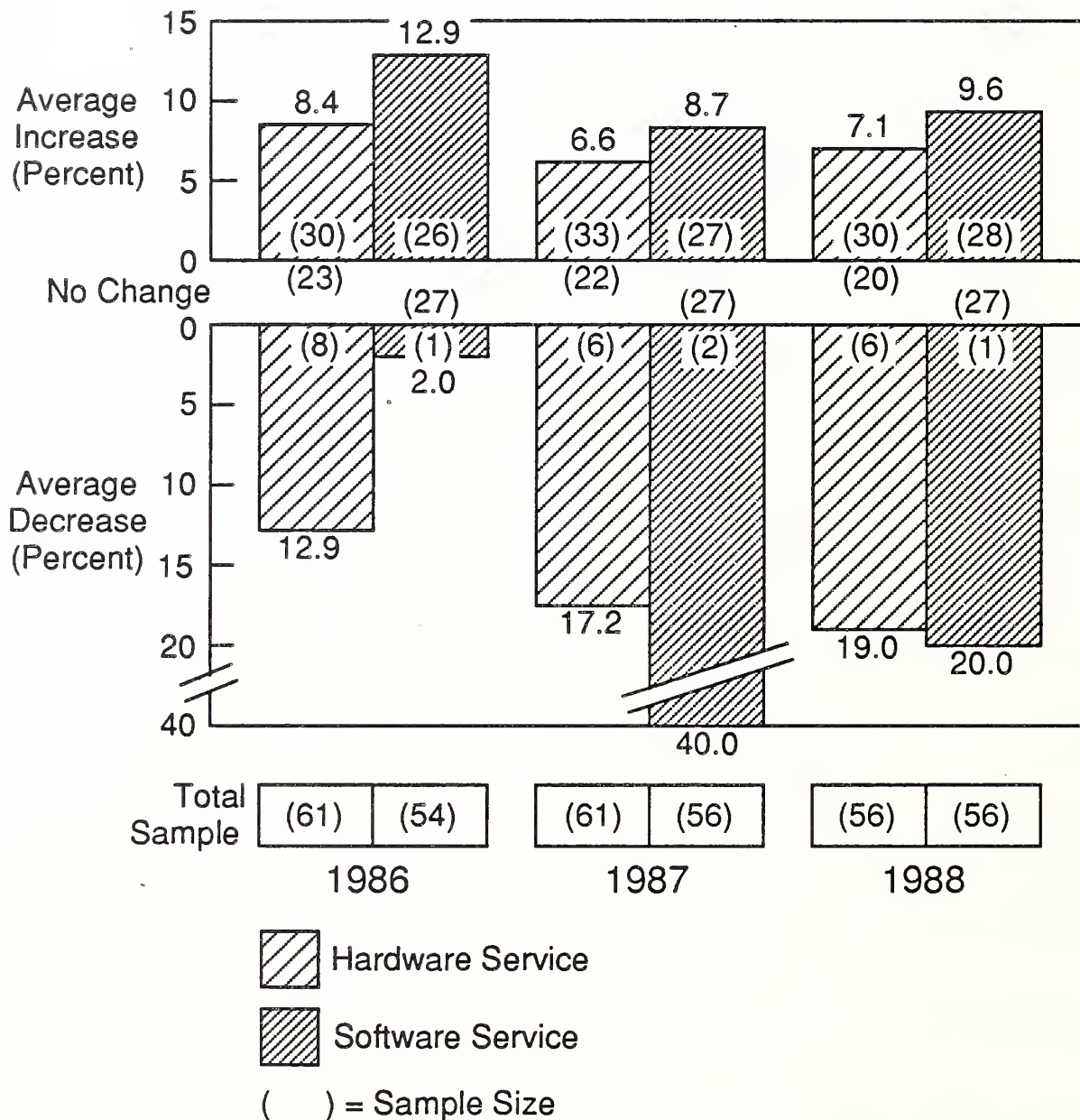


Data relating to IBM medium systems users are shown in Exhibit IV-18.

- Apart from reported price increases in 1986, IBM users' anticipation of hardware service price trends is comparable with the overall European average for medium systems.
- User perception of software service price trends indicates anticipation of above-average annual price increases. This is especially significant in reported actual price increases for 1986—12.9% compared with an average of 9.0%.

EXHIBIT IV-18

SERVICE PRICE TRENDS IBM—MEDIUM SYSTEMS



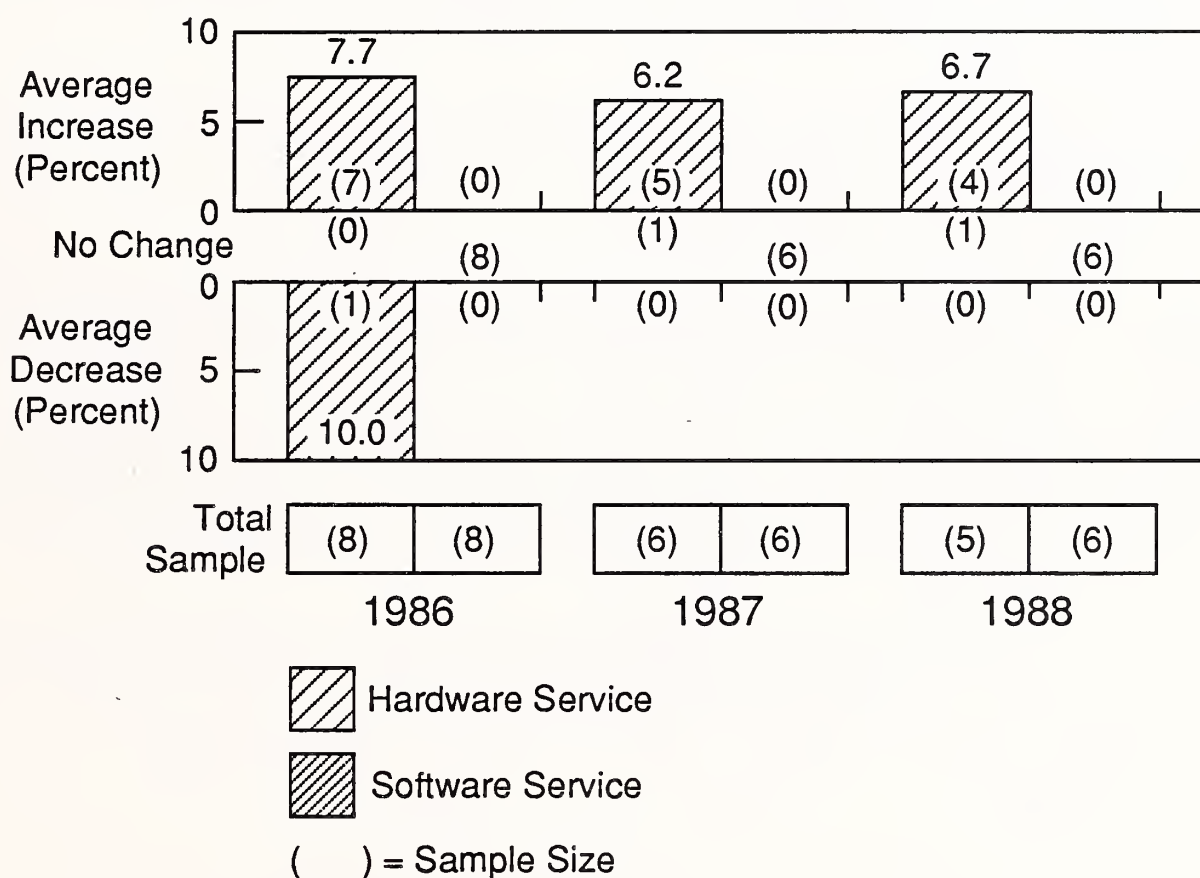
- The proportion of users anticipating price decreases for hardware service is significantly above average—11% in 1988 compared with an average for medium systems of 4.5%.

- The proportion of users anticipating regular annual price increases for both hardware and software service is slightly below average.

IBM small-systems data are shown in Exhibit IV-19.

EXHIBIT IV-19

SERVICE PRICE TRENDS IBM—SMALL SYSTEMS



- Analysis shows that the user expectations of hardware service price trends is comparable with the overall European average for small systems.
- The proportion of users expecting regular annual price increases for hardware service is very high, but reducing slightly with time. For example, in 1988 this expectation is 80% of users, compared with the average of 49% for small systems.

- The number of users anticipating price decreases for service is very close to zero.
- Analysis shows that all users surveyed reported consistent prices for software service, together with an expectation that this situation would remain in the future. One explanation is that IBM small-systems software service is bundled, probably with the software license.

7. ICL

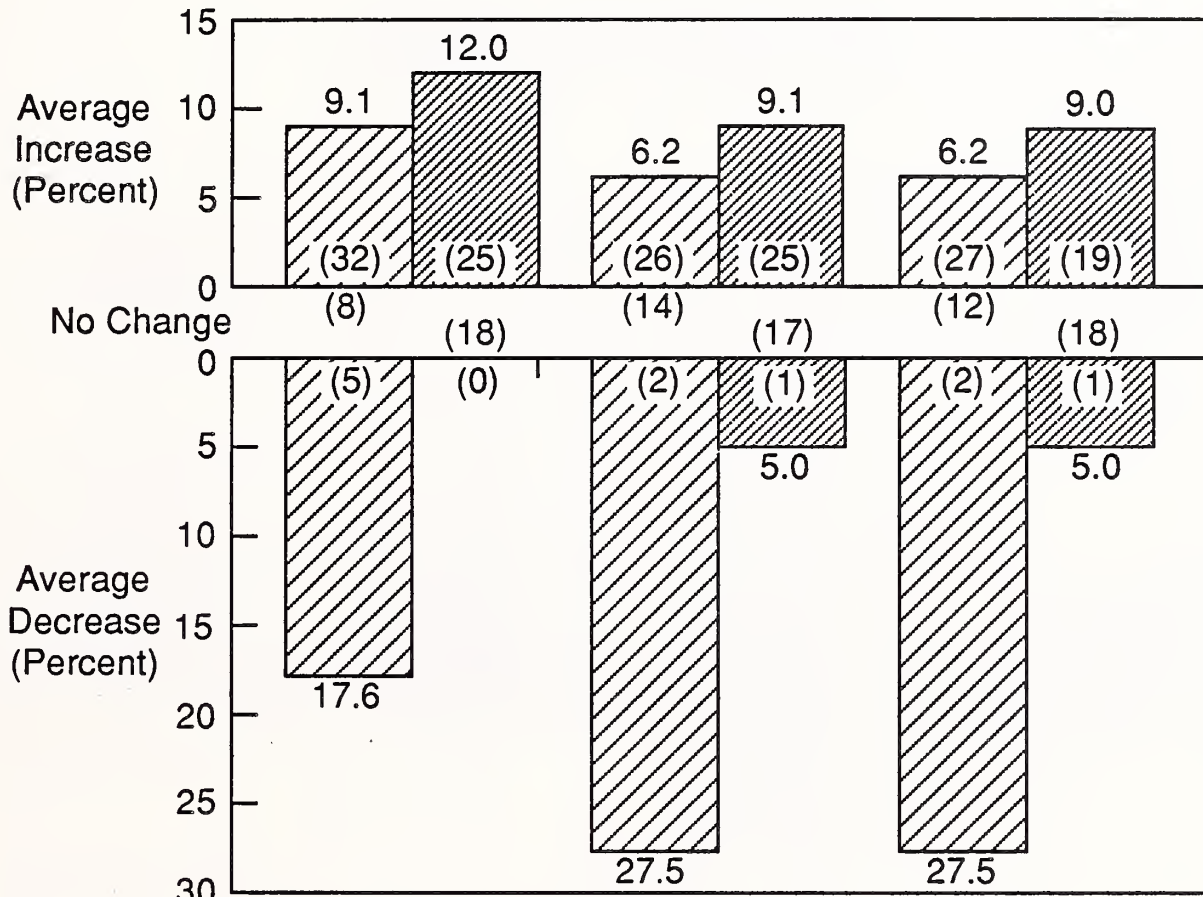
Analysis of ICL user expectations is shown in Exhibits IV-20 to IV-22. The sample available for this analysis is weighted towards France and the UK.

ICL large-system price increase data are shown in Exhibit IV-20; these data are comparable with the overall European averages in many areas.

- The major difference is that hardware price increases show a marked decline in terms of user expectation. The average user-anticipated annual price increase is below average, 6.2% compared with 7.4% in 1987 and 1988.
- Although reports of price decreases in 1986 are above average, subsequent years show that the proportion of users expecting price reductions is significantly below average by a factor of two.
- Price reductions anticipated by a very small minority of users are substantial related to hardware service. Possibly these reflect hopes rather than anticipations.

EXHIBIT IV-20

SERVICE PRICE TRENDS ICL—LARGE SYSTEMS



Total Sample (45) (43) (42) (43) (41) (38)

1986

1987

1988

 Hardware Service

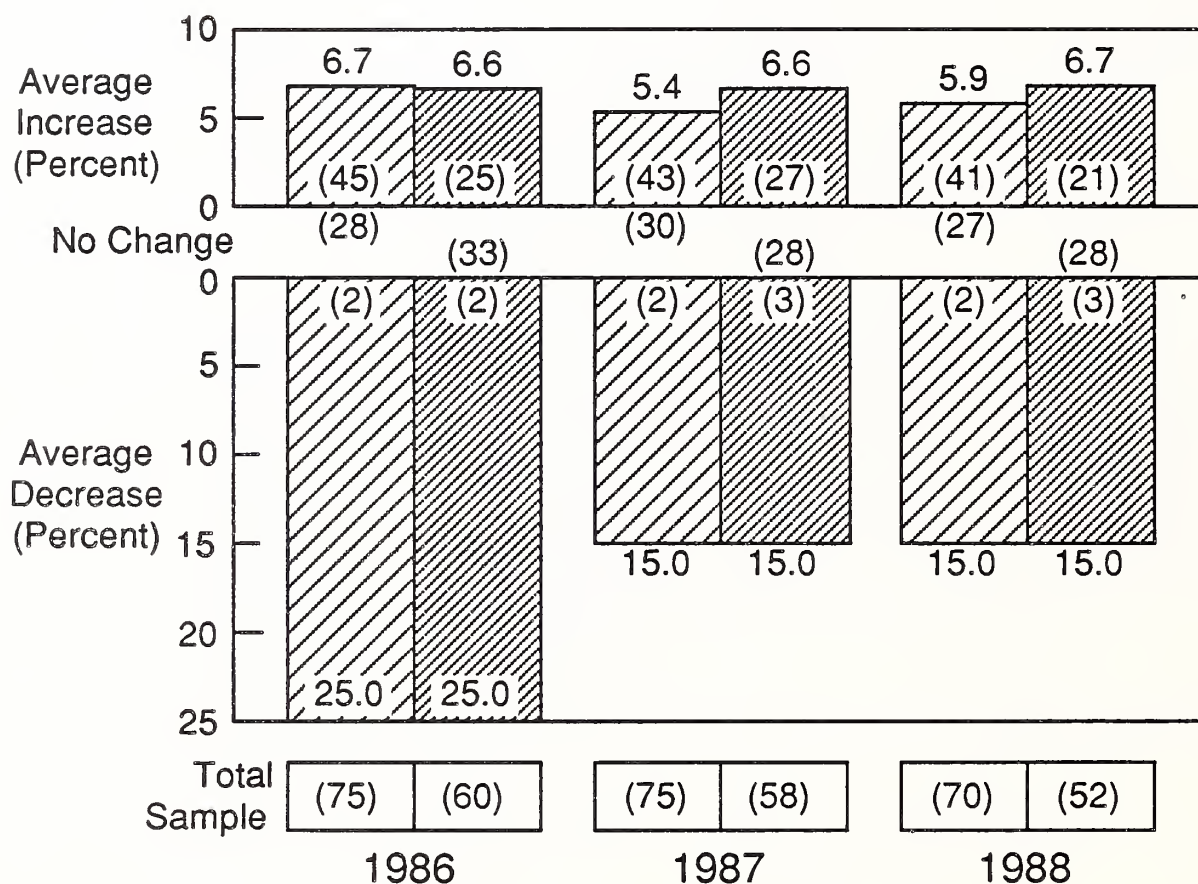
 Software Service



() = Sample Size

User expectations of price trends relating to ICL medium systems are shown in Exhibit IV-21; the trends exhibited show a significant departure from the overall European medium-systems averages in one area.

EXHIBIT IV-21

SERVICE PRICE TRENDS ICL—MEDIUM SYSTEMS



 Hardware Service
 Software Service
 () = Sample Size

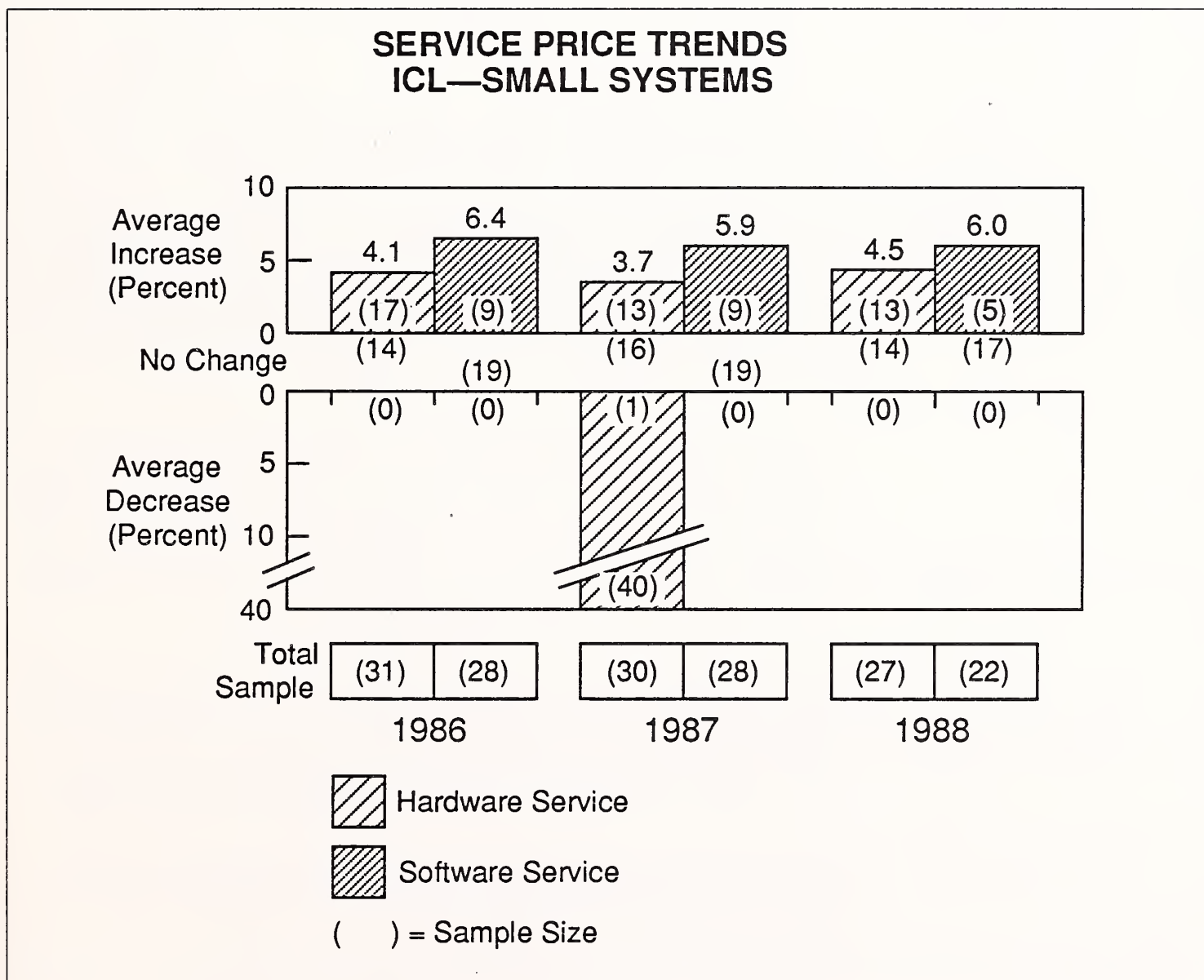
- User expectation of the trend in annual price increases is significantly below average, including actual data reported for 1986. This trend applies to both hardware and software service; for example, 6.6% was

the reported price increase for software service in 1986, compared to a medium-systems overall European average of 9.0%.

- A slight balancing factor is that users anticipate consistent software service annual price increases. The comparable trend for hardware service prices shows a decline.
- The number of users anticipating decreases in service prices is below average for hardware service, above average for software service.

Data relating to ICL small-system price trends is shown in Exhibit IV-22.

EXHIBIT IV-22



- Trends relating to annual service price increases show a below-average user expectation. Particularly significant are the expectation trends for hardware service, which are below inflation levels.
- Further, the proportion of users anticipating regular annual price increases for software service falls below the average in 1988.
- The data, on information available, would seem worthy of further investigation by the vendor. There appears to be a serious risk of “real” price erosion.
- A balancing effect is provided, to a degree, in that virtually zero users anticipate price reductions. One user shows anticipation of a significant price reduction at a level that may or may not be credible.

8. ITL

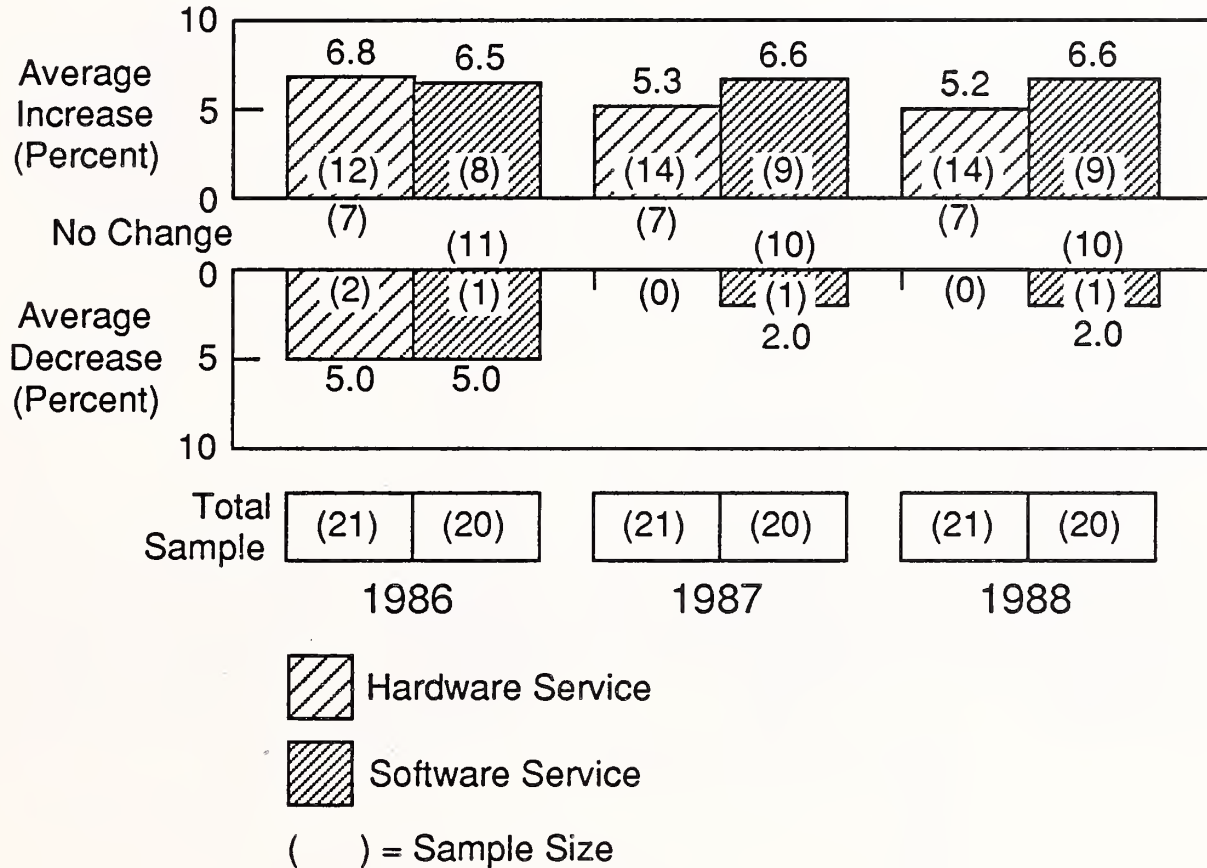
Service price trend data for ITL is shown in Exhibits IV-23 and IV-24. The sample available for analysis relates solely to the UK.

The expectation of ITL medium-system users shows some significant departures from the overall European averages. The limitation of the available sample to the UK may have influenced these trends, but at the same time the UK in terms of major computer markets is one of the higher-inflation countries.

- User expectation in terms of annual service price increases shows a trend that is below the overall European average. Hardware service is a more significant departure from average and is showing decline. User expectations are close to or below inflation levels. For example, hardware service indicates a user expectation of price increases in 1988 of 5.2% compared with the average of 6.9%.
- User expectation for reductions in hardware service prices in 1987 and 1988 is zero. On the other hand, admittedly for a small sample, the proportion of users anticipating software service price reductions is above average, although the reductions in absolute terms are small.
- Explanations could be that ITL is operating in a competitive market segment or an area that is price sensitive. Alternatively, contract negotiation may contain other provisions.

EXHIBIT IV-23

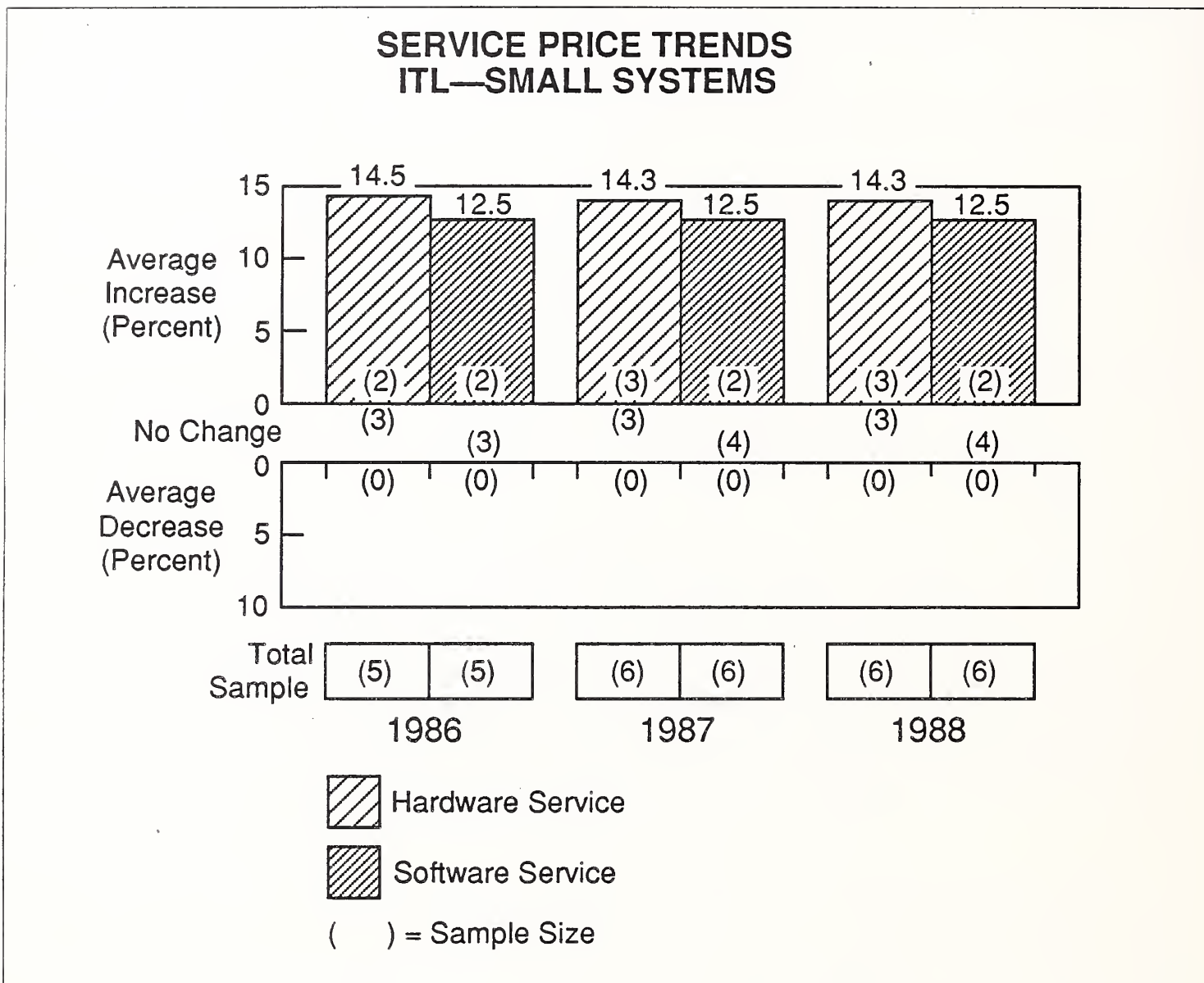
SERVICE PRICE TRENDS ITL—MEDIUM SYSTEMS



Data relating to ITL small-system users are shown in Exhibit IV-24 and reflects a very different situation. The sample available for analysis was, however, quite small.

- Data indicates a major opportunity for ITL to increase service prices. The user expectation is for substantial increases in prices for both hardware and software service, twice the average level anticipated by small-system users.
- Further opportunities are shown by the absence of any users in the sample expecting price decreases.
- This represents a very positive opportunity on which the vendor could capitalise.

EXHIBIT IV-24



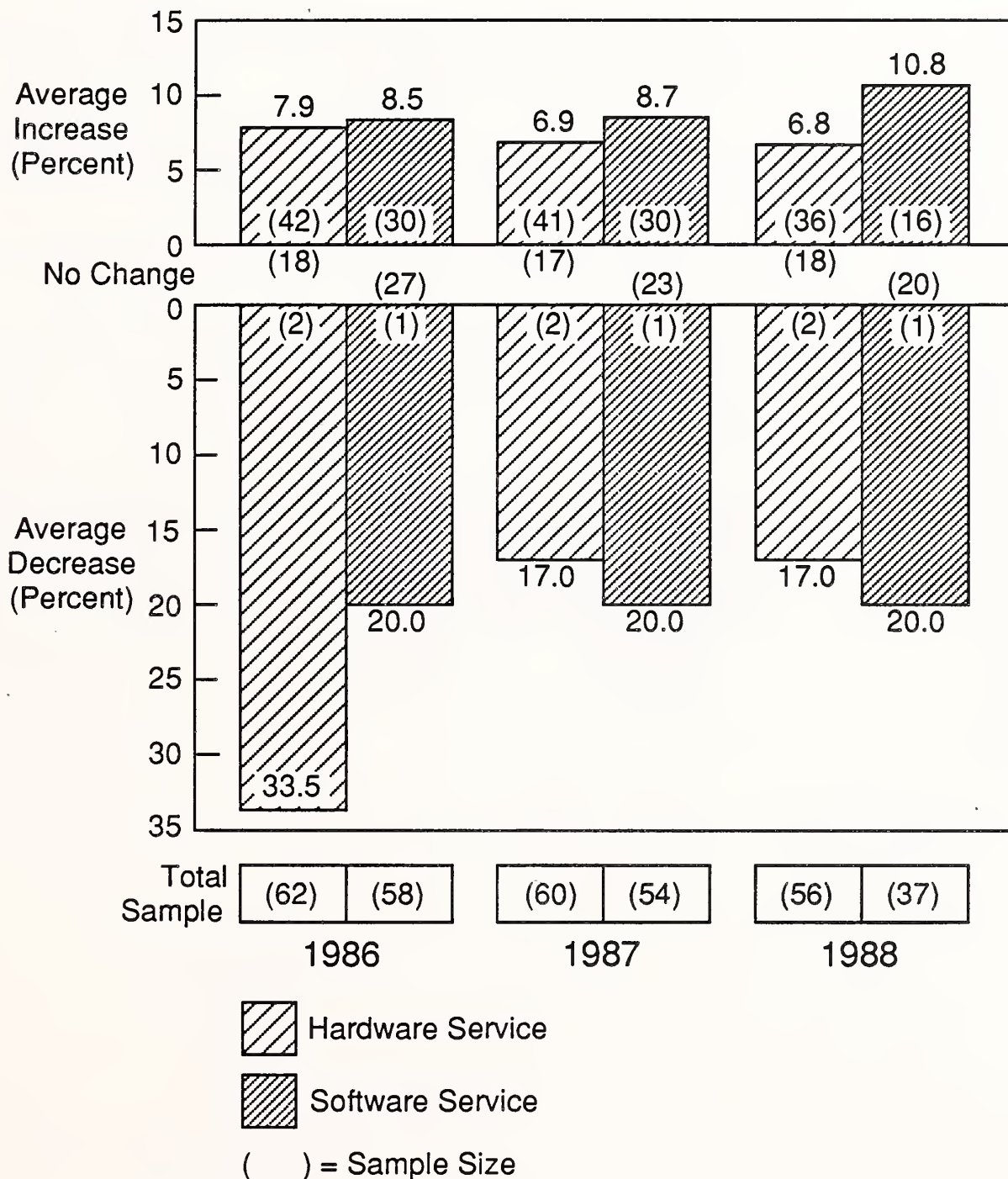
9. NCR

Data relating to NCR user perceptions of service price trends are shown in Exhibits IV-25 and IV-26.

Medium-system user expectation is shown in Exhibit IV-25. With the exception of software service, the analysis is relatively similar to the European averages for medium systems.

EXHIBIT IV-25

SERVICE PRICE TRENDS NCR—MEDIUM SYSTEMS



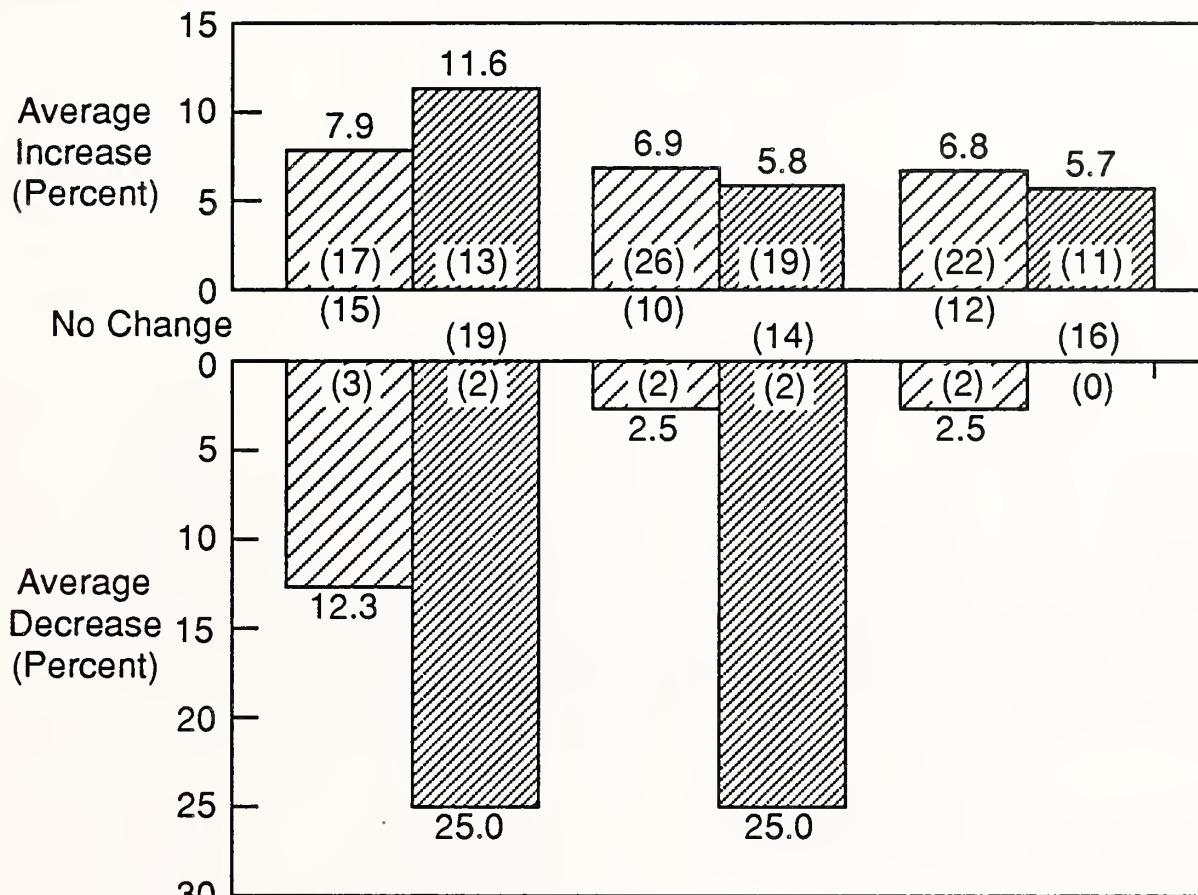
- With the exception of 1986 actual reported price increases, NCR users anticipate above-average annual price increases for software service, with an increasing upwards trend. An example is 1988 where the users' expectation is for software service price increases of 10.8%, compared with the overall average of 8.1%.
- The proportion of users anticipating regular annual price increases for hardware service is above average.
- User expectations related to software service prices indicate an opportunity for NCR.

Data relating to NCR small-system users are shown in Exhibit IV-26.



- User expectation of hardware service price increases indicates a decline compared with the overall small-systems average. However, the price increase level anticipated in 1988 is relatively close to the average.
- The proportion of users anticipating regular annual price increases is significantly above average for both hardware and software service. For example, the figure for software service in 1988 is 41%, compared with an average of 30%.

EXHIBIT IV-26

SERVICE PRICE TRENDS NCR—SMALL SYSTEMS



Total Sample	(35)	(34)	(38)	(35)	(36)	(27)
	1986		1987		1988	

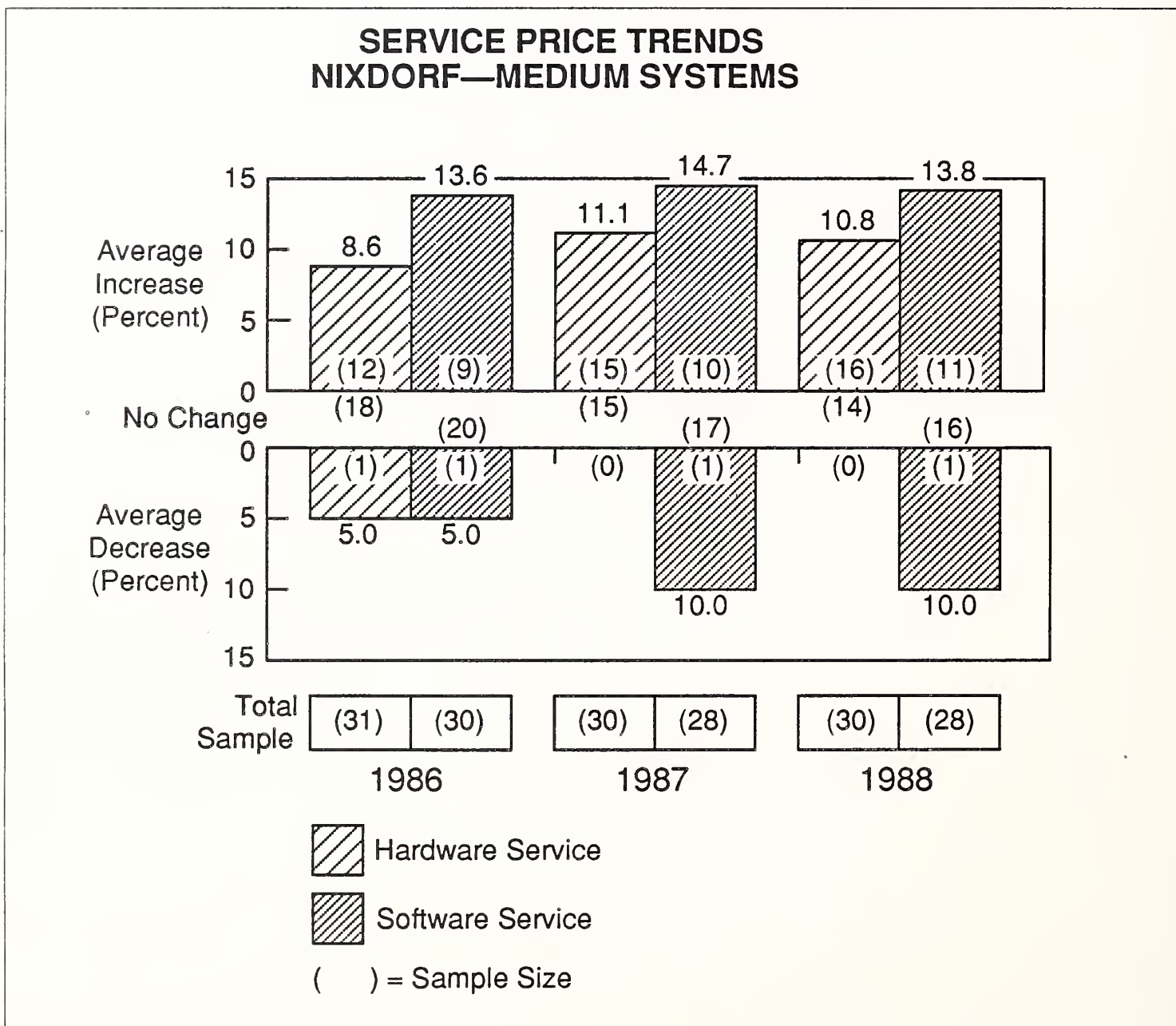
 Hardware Service
 Software Service
 () = Sample Size

10. Nixdorf

The Nixdorf user perception of service price trends is shown in Exhibits IV-27 and IV-28.

Nixdorf medium-systems user perception shows significant departure from the overall European medium-systems averages, as illustrated by Exhibit IV-27.

EXHIBIT IV-27



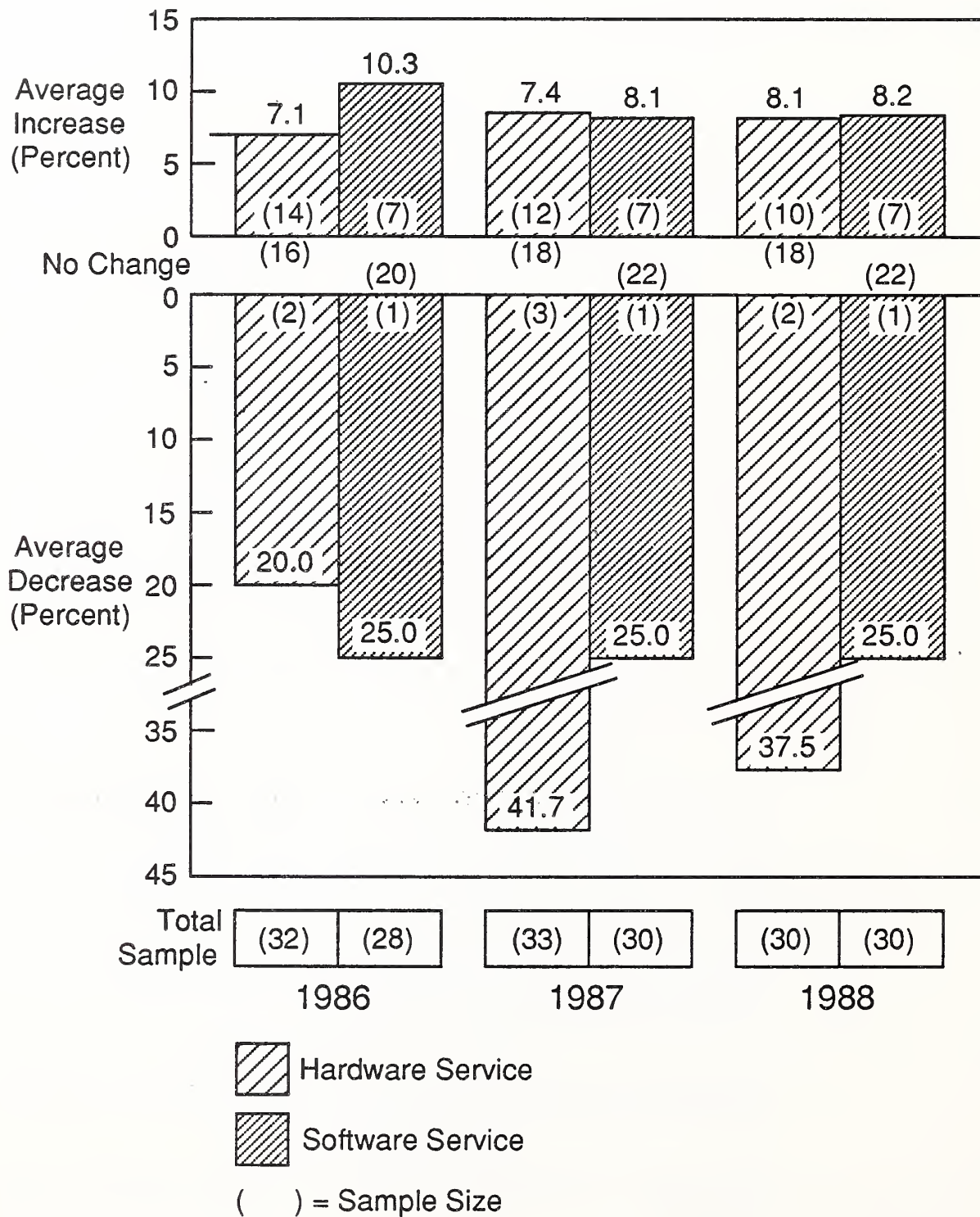
- Hardware service price increases anticipated by users show an increasing trend and above-average levels of increase. In 1988 the expectation is for price increases averaging 10.8%, compared with the average of 6.9%.
- Expectations relating to software service show an even more significant departure. For example, the anticipated increase in 1988 is 13.8%, compared with the average of 8.1%. Further, users anticipate regular annual software service price increases in the region of 14% over the time period covered by the analysis.
- A slight balancing effect is shown by a below-average number of users anticipating regular annual price increases for software service.
- The proportion of users expecting price reductions for hardware service is virtually zero.
- The analysis indicates an opportunity for Nixdorf to capitalise on users' expectations.

User price trend expectations relating to small systems is shown in Exhibit IV-28; this exhibit also shows a departure from the overall European averages for small systems. This departure is less marked than that indicated in the medium-systems analysis.

- Hardware service prices show an anticipated increasing trend and are slightly above average. For example, 1988 indicates 8.1%, compared with the average of 7.0%.
- User expectation indicates a similar decline to that shown in the average for small systems, but the anticipated level of price increases is above average, by almost two percentage points in 1988.
- Balancing these trends is an expectation by a lower-than-average proportion of users anticipating regular annual price increases, for both hardware and software service.
- In addition, the proportion of users expecting price reductions for hardware service is above average.
- The analysis indicates the possibility of a slight opportunity for Nixdorf.

EXHIBIT IV-28

SERVICE PRICE TRENDS NIXDORF—SMALL SYSTEMS

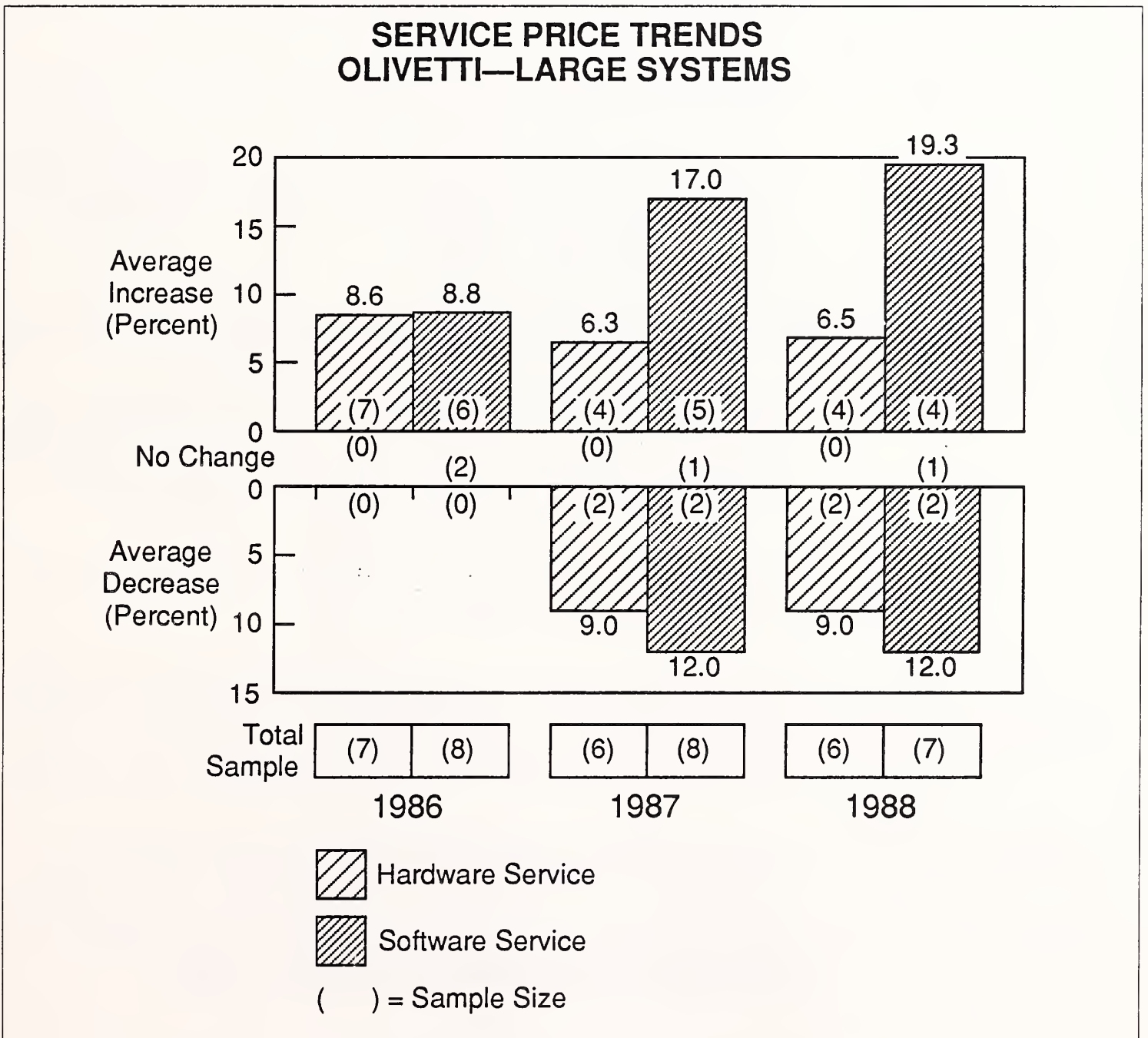


11. Olivetti

Expectation and perception relating to Olivetti users is shown in Exhibits IV-29 to IV-31.

Large-system price trend analysis is shown in Exhibit IV-29. This analysis indicates some very significant departures from the overall European averages for large systems; the sample size available for analysis was, however, slightly small.

EXHIBIT IV-29

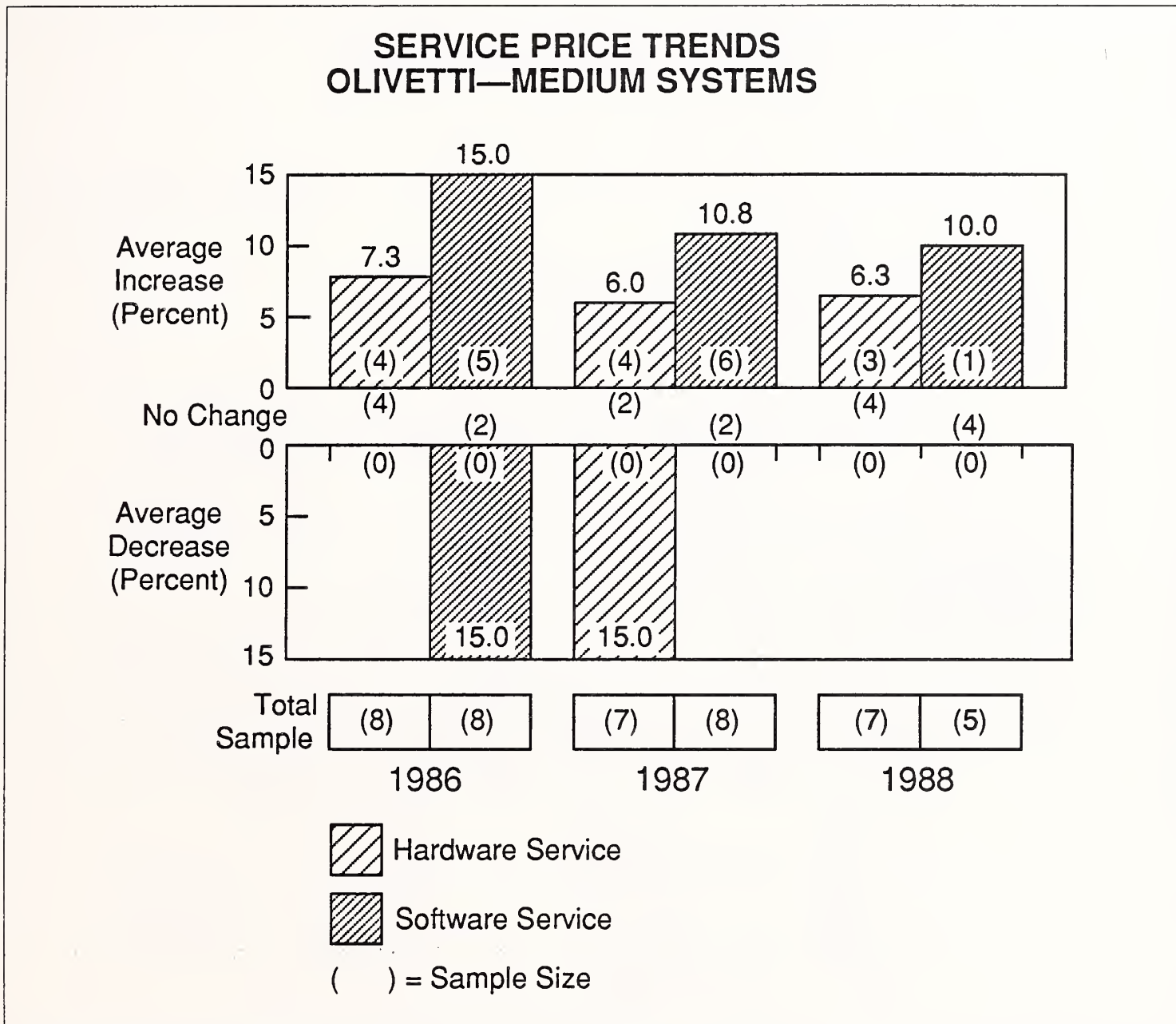


- The user expectation is that annual price increases for software service will be extremely large compared with the average for large systems in the years 1987 and 1988. Further, during the time period covered by the analysis the trend is significantly upward.
- The proportion of users anticipating regular annual increases for hardware and software service is above average but decreasing steeply towards the overall average in 1988.
- Expectation related to price increases for hardware service is quite different. Anticipated increases are below average and showing a slight downward trend. For example, in 1987 user expectation was for a price increase of 6.3%, compared with the average of 7.4%.
- The data presented indicate an opportunity for Olivetti to take advantage of user perceptions relating to software service prices. The decline and level of hardware service price increases appears to indicate a need for further investigation, especially important due to the available sample being biased towards Italy and taking into account inflation levels in that country.

Olivetti medium-systems analysis is shown in Exhibit IV-30 and indicates a very different situation than for large systems.

- User expectation of software service price increases is above average, significantly so for actual 1986 reported increases. However, the level of perceived increases does show a declining trend toward 10% in 1988, compared with the overall average for that year.
- Perception of hardware service price indicates slightly below-average increases, which are to a degree consistent.
- The proportion of users anticipating regular annual price increases for software service is above average in 1986 and 1987, but shows a sharp decline in 1988 to 20% (compared with the average for medium systems of 43%). Hardware service shows a less-extreme decline in 1988.
- If the decline in users anticipating regular annual price increases for software service can be arrested, this could represent a moderate opportunity for Olivetti. The perception of users regarding hardware service price increases may need further investigation; previous remarks concerning sample bias and inflation levels are also relevant.

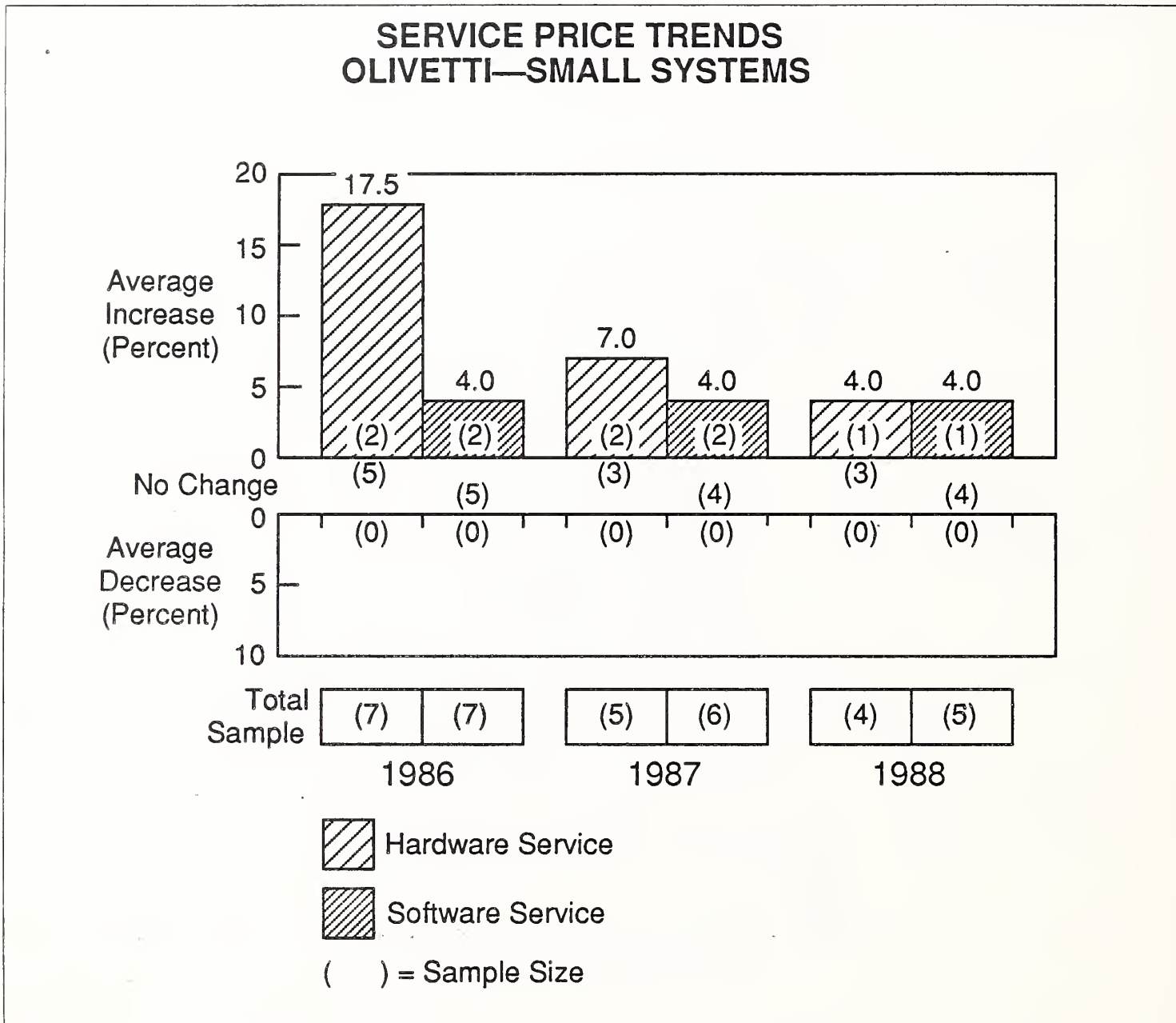
EXHIBIT IV-30



Data related to user perceptions of service price trends for Olivetti small systems are shown in Exhibit IV-31. This again shows a different perspective.

- Actual and user-anticipated price increases for software service are low, the level being below inflation and indicating “real” price erosion.
- Hardware service price increases are anticipated by users as declining to levels similar to that for software service.

EXHIBIT IV-31



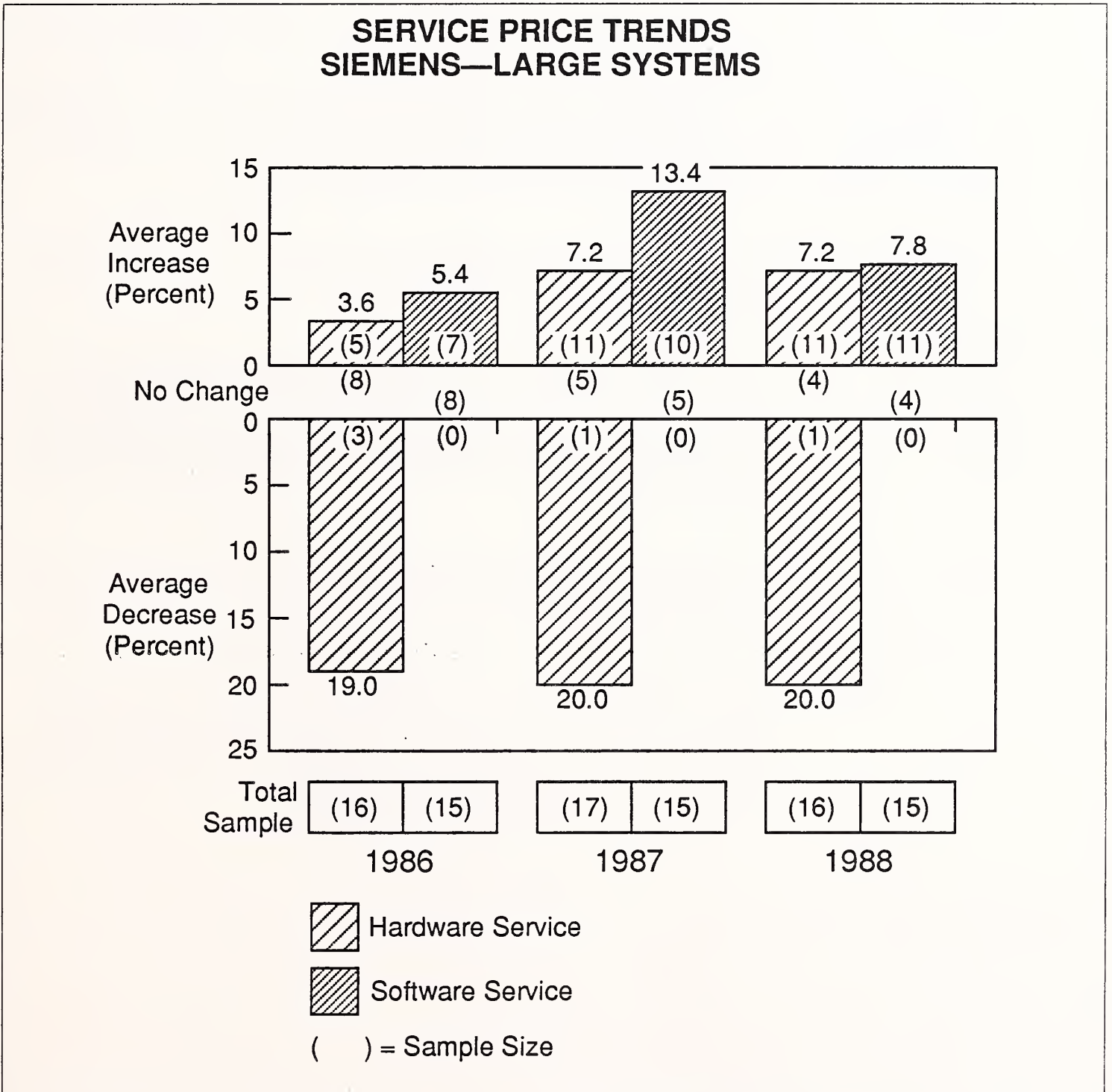
- The proportion of users expecting regular annual price increases for service is also below average, significantly so in 1988. For example, hardware service shows 25% of users anticipating an annual price increase in 1988, compared with the average for small systems of 49%.
- It would appear that the situation for small systems needs further investigation by the vendor to prevent erosion of price in “real” terms. However, there could be explainable reasons transparent to the analysis. The fact that zero users anticipate price reductions does provide a small balancing factor.

12. Siemens

Data relating to service price expectation of Siemens users is shown in Exhibits IV-32 and IV-33.

The analysis for Siemens large-systems users is shown in Exhibit IV-32.

EXHIBIT IV-32



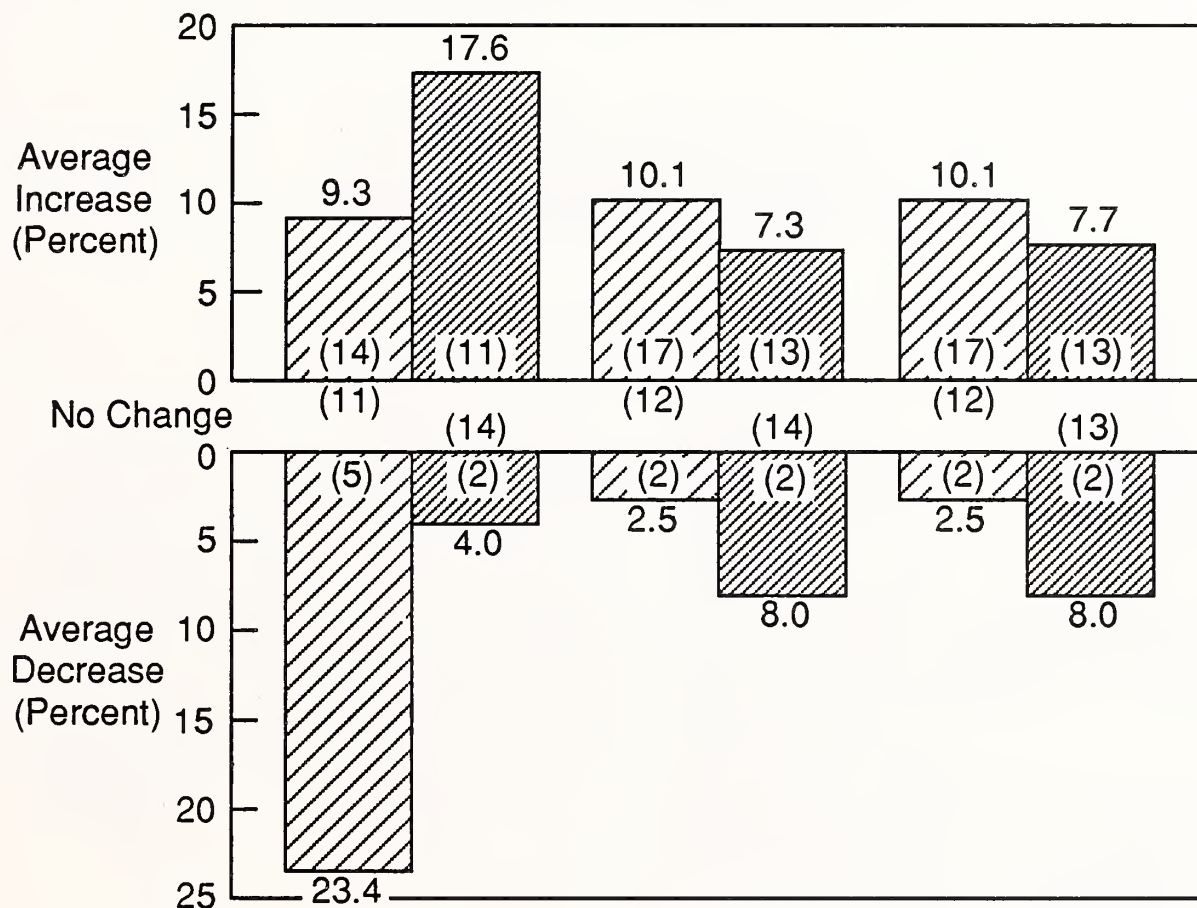
- Price increases for service reported by users for 1986 were extremely low compared with the average for large systems. Subsequently, anticipated price increases for hardware service are close to the average.
- Data indicate that users expected a relatively large price increase for software service in 1987, but below average in 1988. The percentage was 7.8, compared with the average for medium systems of 8.9%.
- Zero users have an expectancy of price decreases for software service.
- One possible conclusion is that stabilising the variability of anticipated price increases could represent an opportunity for Siemens. Opportunities are further confirmed considering that the sample available was biased towards Germany, where inflation is relatively low.

Data relating to Siemens medium-systems users is shown in Exhibit IV-33, and indicates significant departures from the overall European averages for medium systems.

- In 1986 users reported receiving extremely high price increases for software service. However, in 1987 and 1988 the user expectation is that these will be much lower, slightly lower than the overall average for medium systems. For example, 7.7% in 1988 compared with the average of 8.1%.
- Having received a reported price increase of 9.3% for hardware service in 1986 (average 7.4%), the user expectation is that this will increase in 1987 and 1988 to 10.1%, which compares with an average of 8.0%.
- User expectations regarding hardware service annual price increases indicates an opportunity for Siemens. The extremely large price rise for software service in 1986 may have resulted in a hardening of user attitudes to price increases in subsequent years.

EXHIBIT IV-33

SERVICE PRICE TRENDS SIEMENS—MEDIUM SYSTEMS



Total Sample	1986	1987	1988
	(30) (27)	(31) (29)	(31) (28)

Hardware Service

Software Service

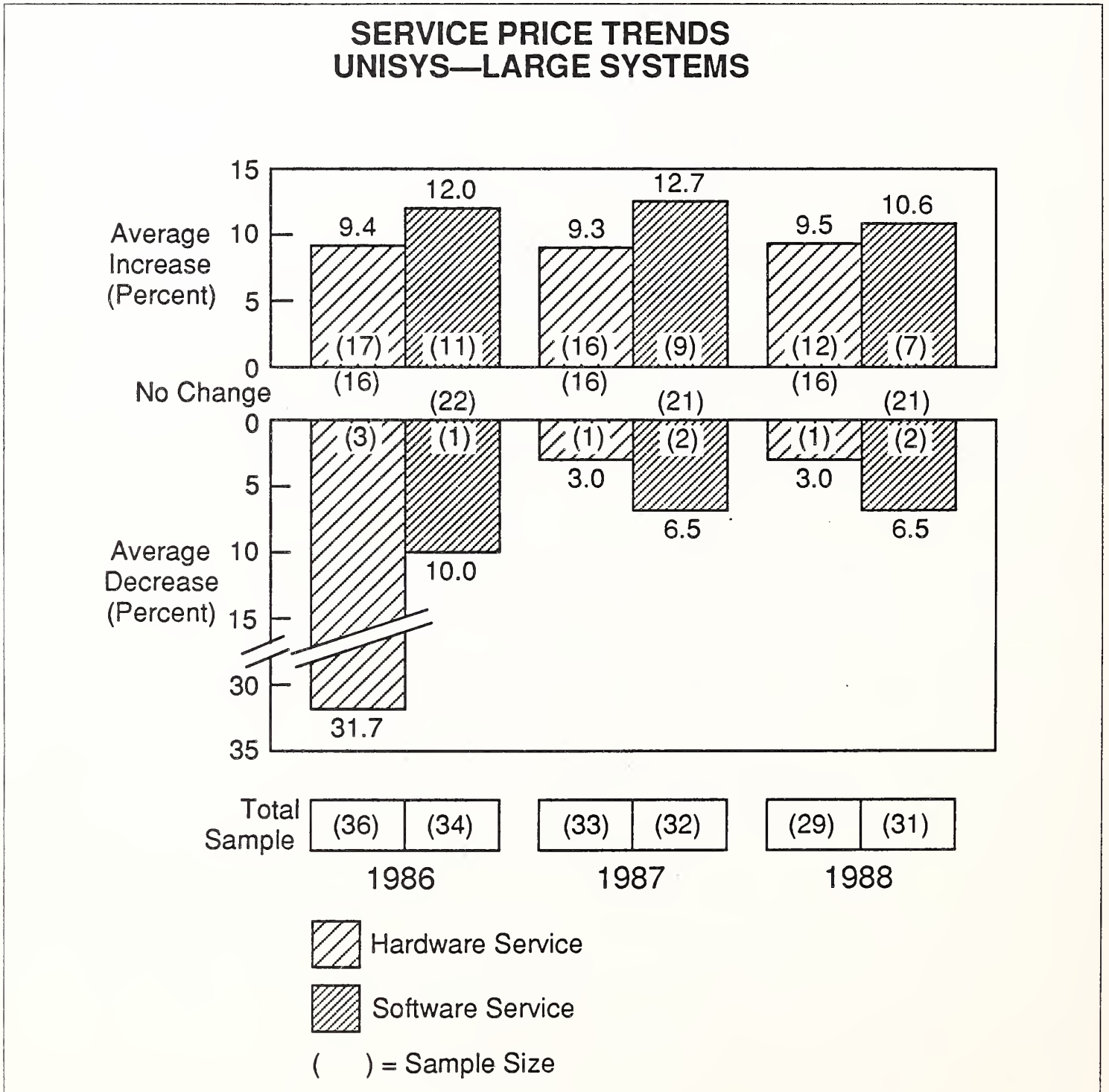
() = Sample Size

13. Unisys

Unisys user perceptions of service price trends are shown in Exhibits IV-34 to IV-36.

The analysis for large systems is presented in Exhibit IV-34. This shows a departure from average in some areas.

EXHIBIT IV-34



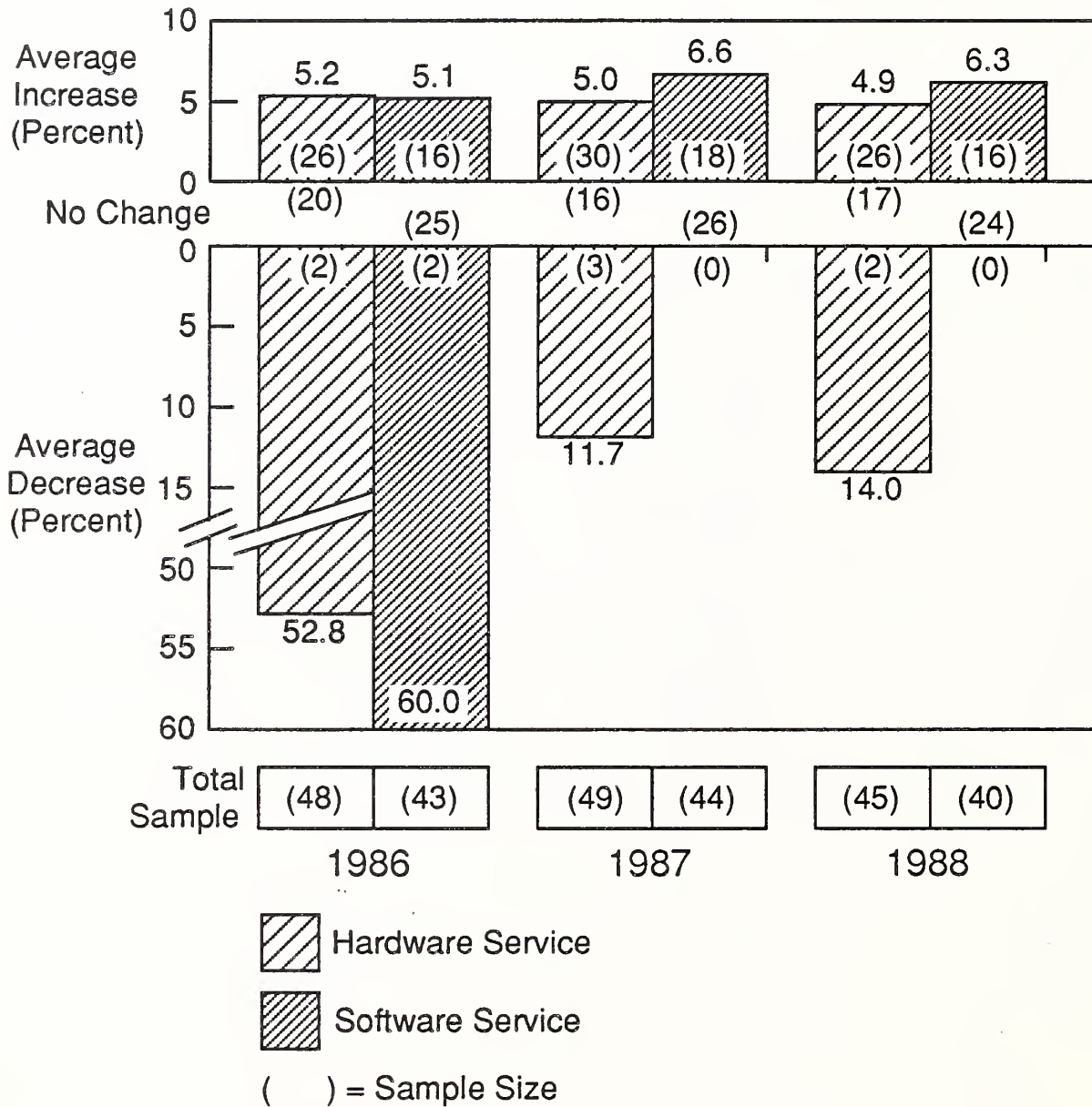
- Reported price increases and user perceptions of future price increases are above the overall average for large systems (more so for software service, for example 10.6% in 1988 compared with the average of 8.9%).
- Users anticipate regular annual price increases for both software and hardware service at a relatively constant above-average level.
- Nevertheless, the proportion of users anticipating regular annual price increases is significantly below the overall average for large systems. For example, 23% of users anticipate an annual software price increase in 1988, compared with the average of 50%.
- Unisys appears to have an opportunity for above-average annual price increases for service with some customers. The low proportion of customers anticipating regular annual price increases may cause concern, or may be in part responsible for the above-average increases anticipated by what is a significant minority of users.

Data relating to user anticipations of medium-system price trends are shown in Exhibit IV-35. The situation here is quite different to that shown for large systems.

- Reported and future perceived regular annual price increases for both hardware and software service are significantly below the overall average for medium systems. For example, users anticipate a price increase of 4.9% in 1988 for hardware service, compared with the average of 6.9%.
- The proportion of users anticipating regular annual price increases for both hardware and software service compares well with the overall average for medium systems, except that in 1987 and 1988 the proportion related to software service is below average.
- Trends could indicate the need for further investigation by Unisys; there appears to be a risk of “real” price erosion. Perhaps the low price increases reported in 1986 have produced a “mind set” amongst users that creates unfortunate preconceptions.

EXHIBIT IV-35

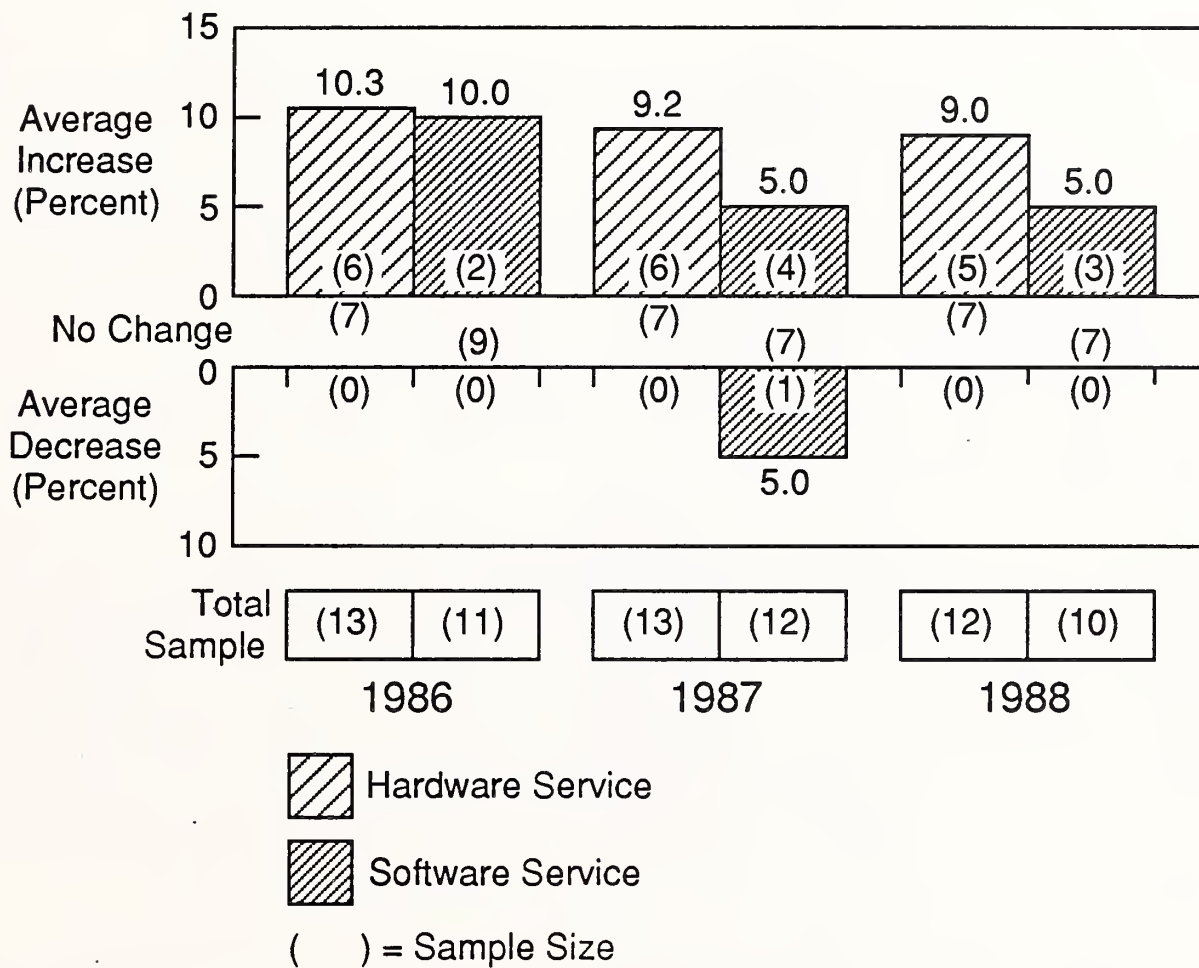
SERVICE PRICE TRENDS UNISYS—MEDIUM SYSTEMS



Analysis of small-systems user price trend expectations is shown in Exhibit IV-36. A number of departures from the overall European averages for small systems are indicated.

EXHIBIT IV-36

SERVICE PRICE TRENDS UNISYS—SMALL SYSTEMS



- Reported price increases for hardware service in 1986, and user expectations of subsequent price increases, show an above-average trend, which also indicates a perception that future price increases will be at a consistent annual level.
- With the exception of 1987, user expectations are for below-average price increases for software service. For example, the expectation was 5% in 1988, compared to the overall European small-systems average of 6.3%.
- A balancing factor is that virtually zero small-systems users have any expectation of price decreases.

- User perceptions relating to hardware service price trends indicate a possible opportunity for Unisys to achieve above-average price increases. The user-anticipated trend in software service prices could signify the need for investigation; there appears to be a risk of real price erosion.

14. Wang

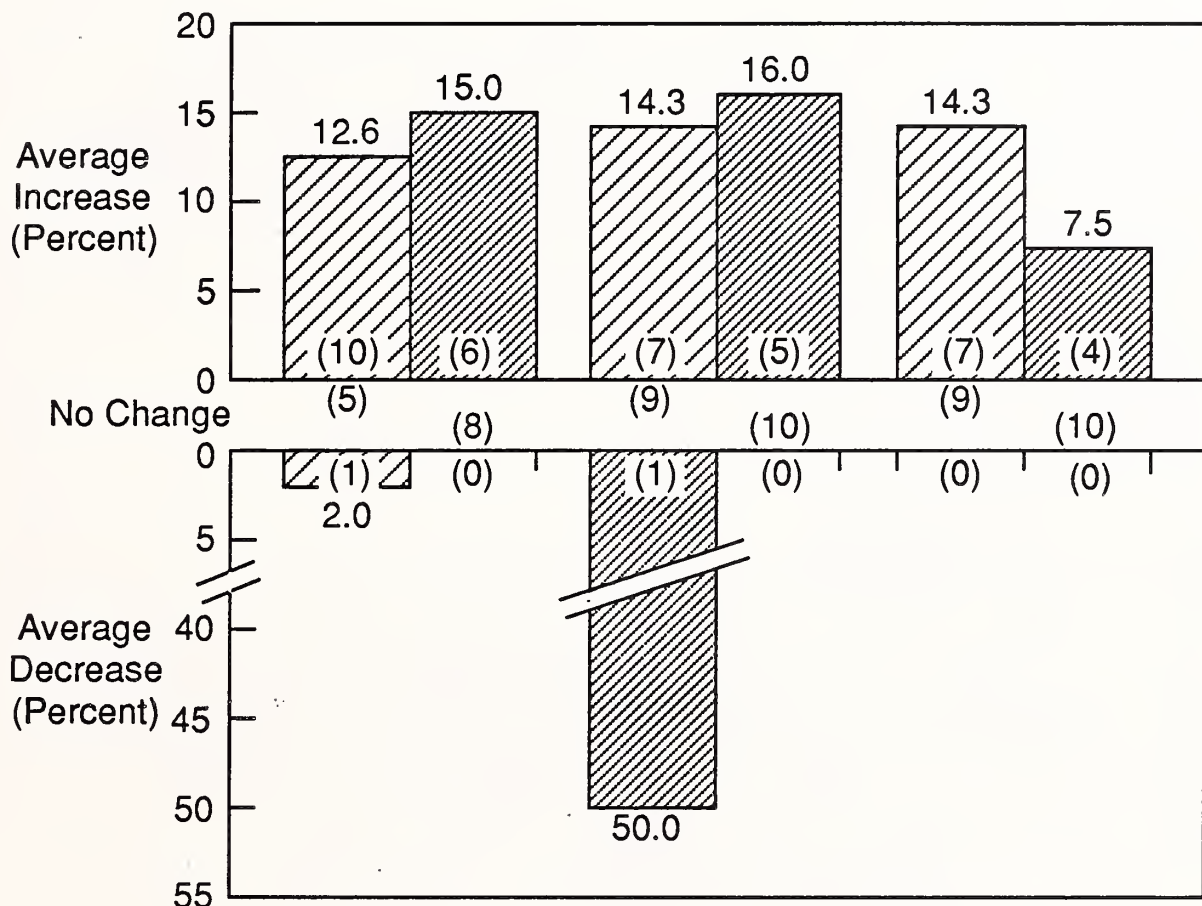
Analysis of Wang user-perceived trends is shown in Exhibits IV-37 and IV-38.

Data relating to Wang medium systems are presented in Exhibit IV-37; trends show a significant departure from the overall European averages for medium systems.



- The number of users anticipating a decrease in the price of service is virtually zero.
- User expectations of price increases for hardware and software services indicate levels substantially above the overall European average for medium systems. An example is shown in the data for 1987, which indicate a user expectation of twice the average for software service.
- Balancing this is a below-average expectation of regular annual price increases for software and hardware service. For example, user expectations in 1988 show that only 29% anticipate price rises for software service, compared with the average of 43%.
- Whilst an opportunity exists for Wang to capitalise on this expectation to maximise service revenues, there is a risk that users may realise the significant departure of price increases from those of other vendors. One result could be an increase in dissatisfaction, or stimulation of a search for other sources of service.

EXHIBIT IV-37

SERVICE PRICE TRENDS WANG—MEDIUM SYSTEMS



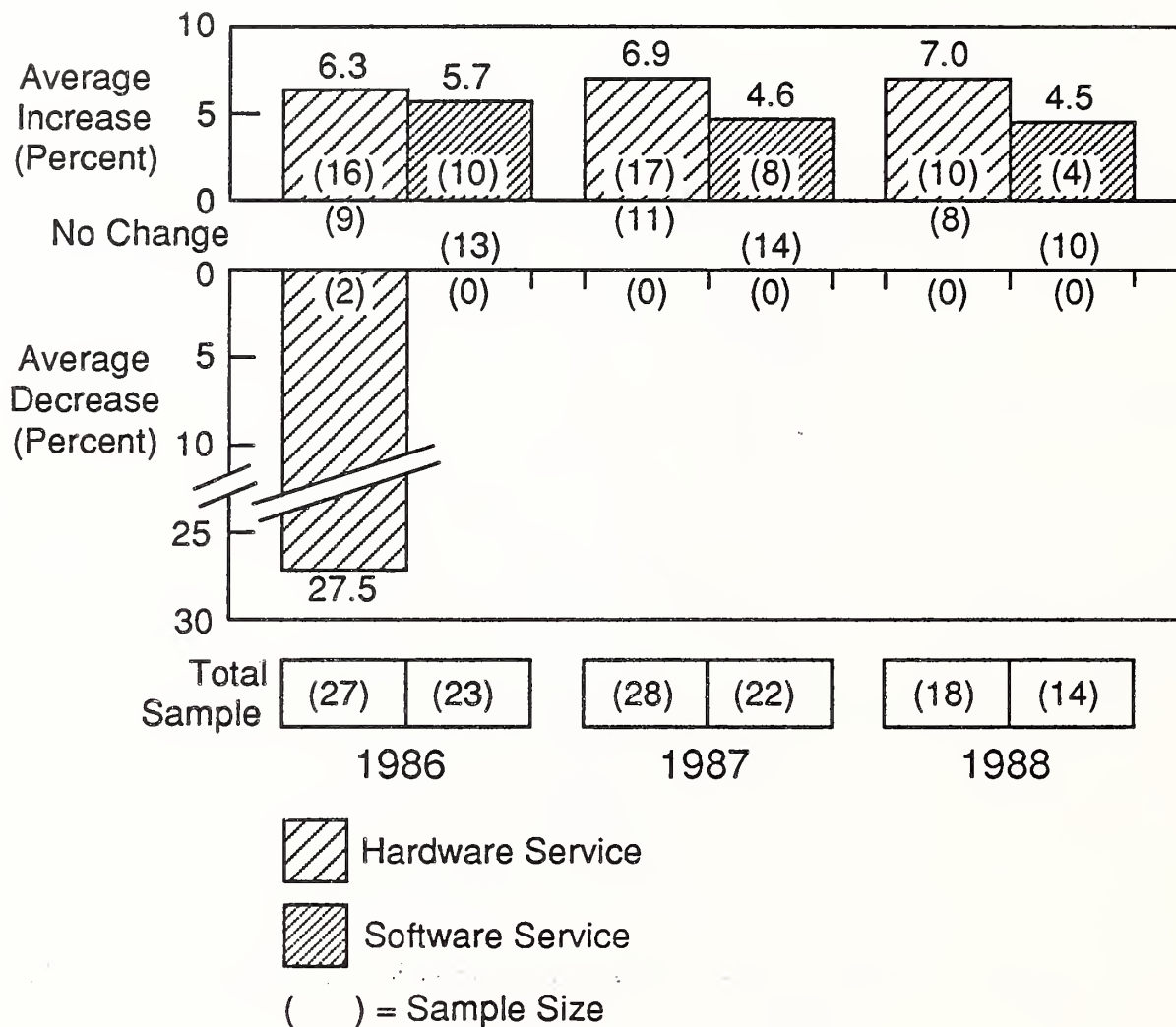
Total Sample	(16)	(14)	(17)	(15)	(16)	(14)
	1986		1987		1988	

 Hardware Service
 Software Service
 () = Sample Size

Corresponding data for Wang small-system users are shown in Exhibit IV-38. The trends for small systems are very different.

EXHIBIT IV-38

SERVICE PRICE TRENDS WANG—SMALL SYSTEMS



- Expectations of software service price increases are for levels significantly below average. For example, increases are expected to be 4.5% in 1988 compared with the average of 6.3%.
- Anticipation of the level of hardware service price increases is closer to the overall European average for small systems.
- The proportion of users who expect regular annual price increases for hardware service is above average (56% in 1988 compared with the overall average of 49%).

C

Changing User Perceptions of Service Prices—1987 to 1988

This section of the report analyses changes in user perception and expectation relative to service prices. These are changes that have resulted from experience of 1987 vendor-pricing activity and have influenced future expectations.

Also included are data indicating how actual 1987 service price trends matched previous user expectations.

The data presented are produced from INPUT's 1988 user research programme and based on 1,345 interviews completed to date.

As previously, the analysis is by vendor and system size and relates to Europe overall and three of the major market leaders.

Variability in individual sample sizes is caused by slight variations in the number of users who were willing or able to answer the questions.

Analysis of Europe overall shows averages indicating general trends, although within these averages individual vendor data are more variable.

1. Europe Overall

The first part of the analysis for Europe overall is shown in Exhibit IV-39. The data contained in this analysis shows 1988 trends relative to 1987 in a similar presentation to that used in Exhibit IV-2. Information from Exhibit IV-2 is overlaid to highlight changes in trends.

The data shown in Exhibit IV-39 have been rounded and averaged to show trend markers more clearly.

A number of significant trends are clearly indicated:

- Differentiation factors between system sizes are still defined but the differentiation between medium and small systems is significantly less marked.
- The proportion of users anticipating or expecting regular annual price increases for both software and hardware service has reduced, except for small-system users, where an upward trend in software service is shown.

EXHIBIT IV-39

SYSTEM SIZE DIFFERENTIATION FACTORS CHANGES, 1987-1988 EUROPE OVERALL

	PERCENT		
	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
	Future 1987	Future 1987	Future 1987
<u>HARDWARE SERVICE</u>			
Proportion of Users with Expectation of Regular Annual Price Increases	57 Trend ↓ 64	51 Trend ↓ 57	48 Trend ↓ 50
Proportion of Users with Expectation of Price Reductions	13 Trend ↑ 9	13 Trend ↑ 5	15 Trend ↑ 4
<u>SOFTWARE SERVICE</u>			
Proportion of Users with Expectation of Regular Annual Price Increases	48 Trend ↓ 52	39 Trend ↓ 45	38 Trend ↑ 33
Proportion of Users with Expectation of Price Reductions	6 Trend → 6	5 Trend ↑ 3	6 Trend ↑ 2

Note: (1) The above figures have been rounded and averaged to provide an indication of changes and trends in market segment differentiation.

(2) Source of data is INPUT's 1987 and 1988 user surveys.

- The proportion of users expecting regular annual price increases for software service is lower than the corresponding figure for hardware service.
- The proportion of users expecting hardware service price reductions has increased significantly. Corresponding figures for software service show a much less significant change.

Detailed information relating to this analysis is shown in Exhibits IV-40 to IV-42. All three exhibits show similar trends, though in differing degrees.

The exhibits are presented as follows:

- Hardware and software service are shown separately.
- Each illustration shows a comparison of:
 - User expectation of changes in service price in 1987, compared with actual changes in 1987 prices as reported by users
 - User expectation of future (1988) price changes as anticipated in 1987, compared with the revised expectation in 1988

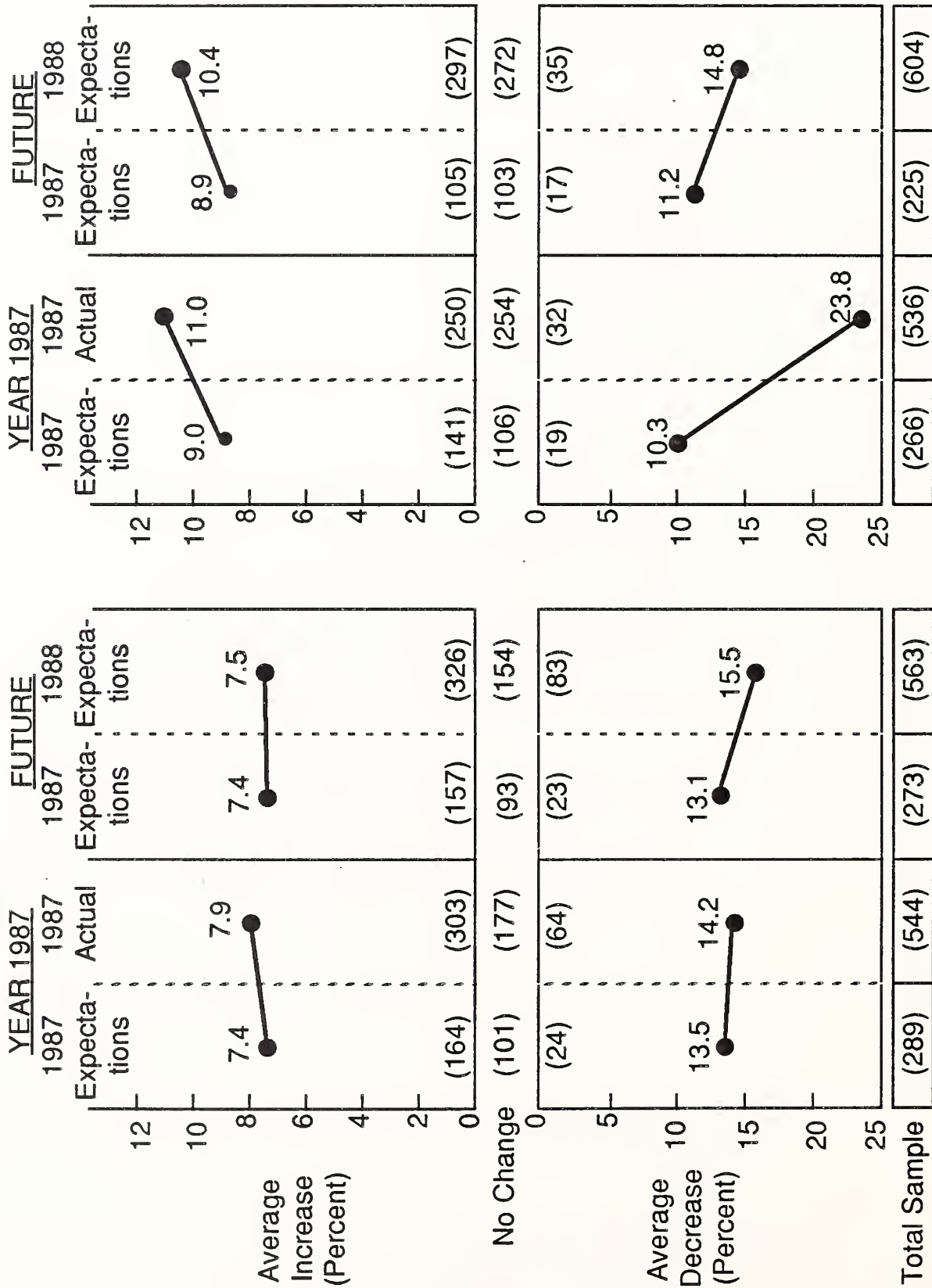
Trends shown by Exhibits IV-40 to IV-42 are very significant.

- In all cases actual reported price increases were in excess of those previously expected by users, in some cases significantly so. For example, Exhibit IV-42 shows an expectation of a 6.3% increase for software service in 1987 relative to small-systems users. The actual reported price increase is 11.7%.
- The number of users reporting price decreases for service increased above the level of expectation; the levels of price decrease were also higher than expected.
- Of greater significance, future expectation of price increases has followed a similar trend, although not necessarily to the same degree.

This last point is very significant as an illustration of how perceptions are influenced by actualities. Further, it indicates how vendors can, with care, influence perceptions and create opportunities.

EXHIBIT IV-40

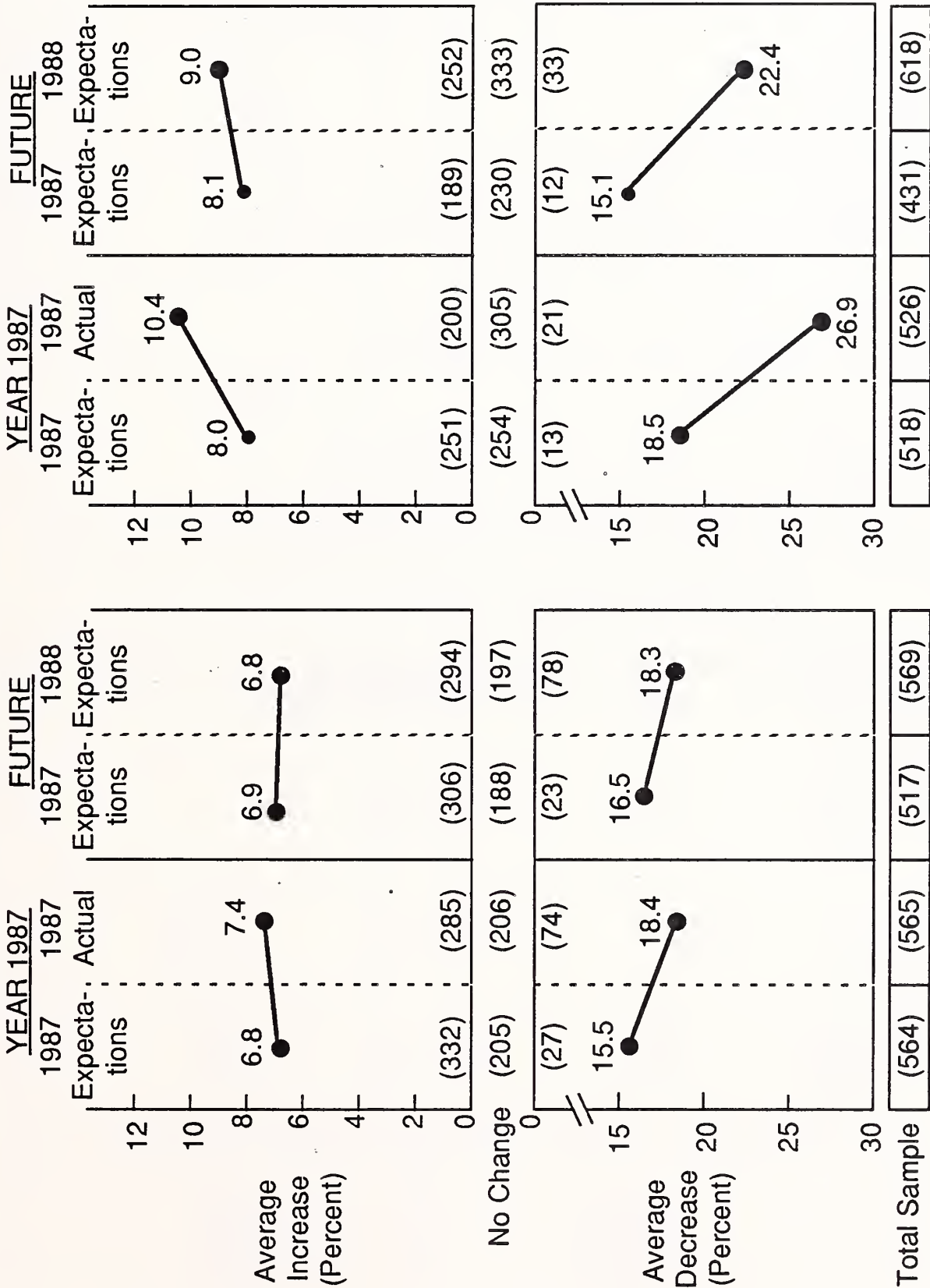
**CHANGES 1987 TO 1988
EUROPE OVERALL—LARGE SYSTEMS**



Source of Data: 1987 and 1988 INPUT Surveys

EXHIBIT IV-41

**CHANGES 1987 TO 1988
EUROPE OVERALL—MEDIUM SYSTEMS**

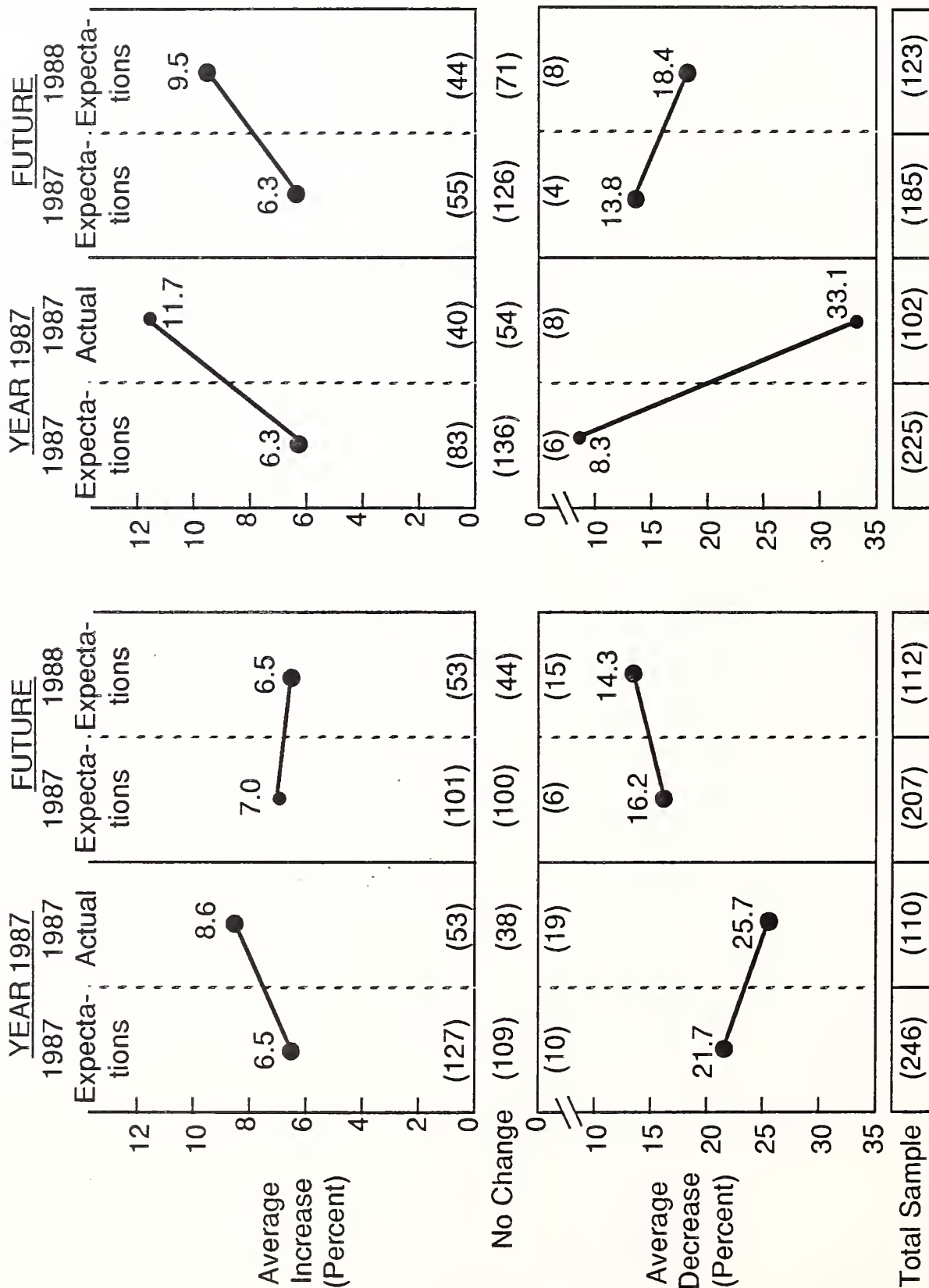


Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

EXHIBIT IV-42

CHANGES 1987 TO 1988
EUROPE OVERALL—SMALL SYSTEMS



Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

Although it is necessary to take account of individual variability within these averages, the graphic illustration provides supporting data for the psychology of pricing strategies. To ignore these trends can be indicative of missed opportunities.

2. Digital

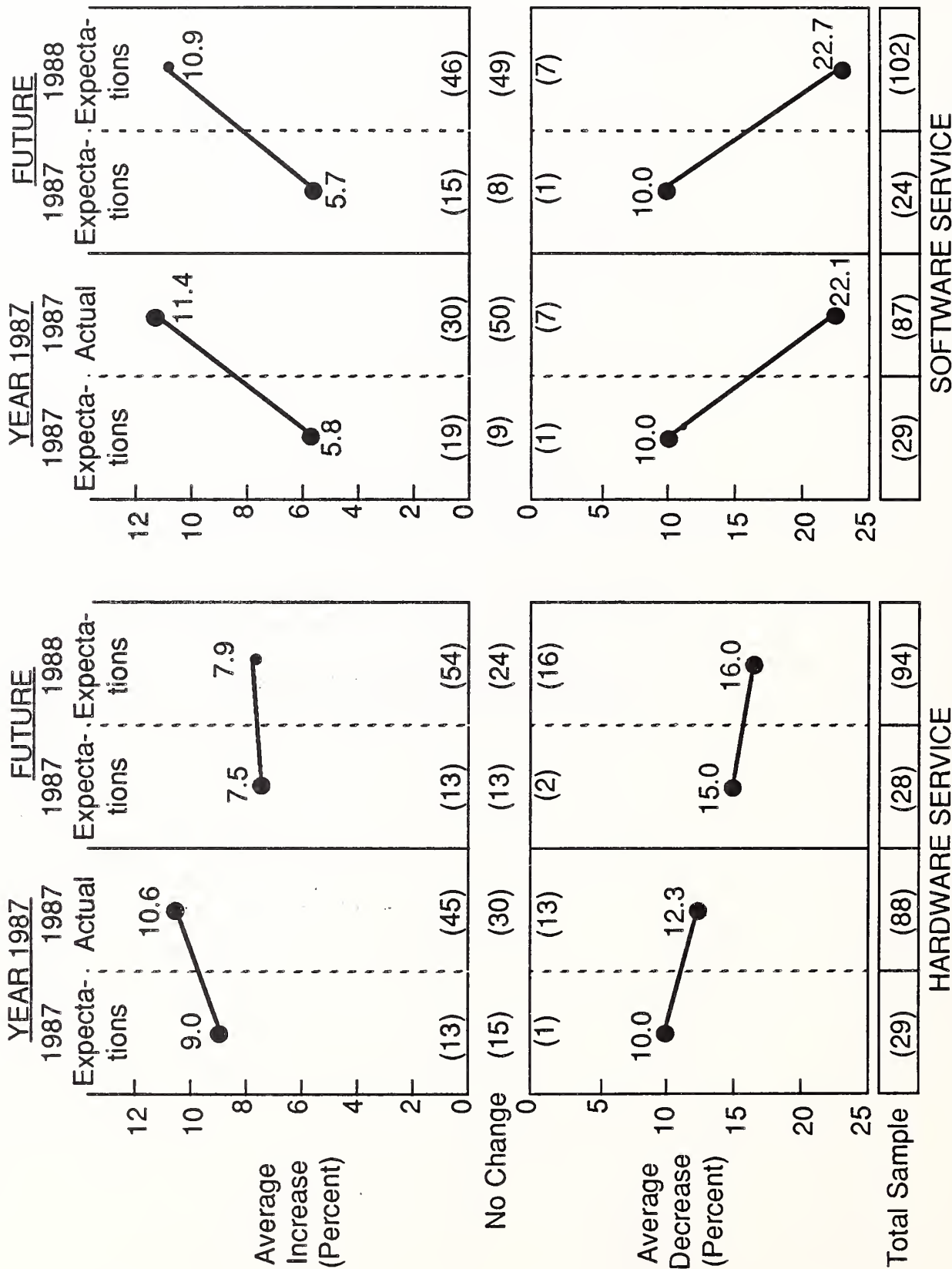
Data relating to Digital users are shown in Exhibits IV-43 to IV-45.

Large-systems data are illustrated in Exhibit IV-43, and are considered by INPUT to be a classical example of previous comments.

- Price increases for hardware service exceeded expectations by a moderate margin. The result is a modest revision of future price increase expectations.
- Price increases for software service were reported as being substantially above expectation. More interesting is that the expectation of future price increases shows a similar substantial revision, indicating a significant opportunity for Digital to capitalise on this expectation with a low risk of impacting user satisfaction with price.
- Users reporting price reduction and corresponding future perceptions show similar matching trends.

EXHIBIT IV-43

**CHANGES 1987 TO 1988
DIGITAL—LARGE SYSTEMS**



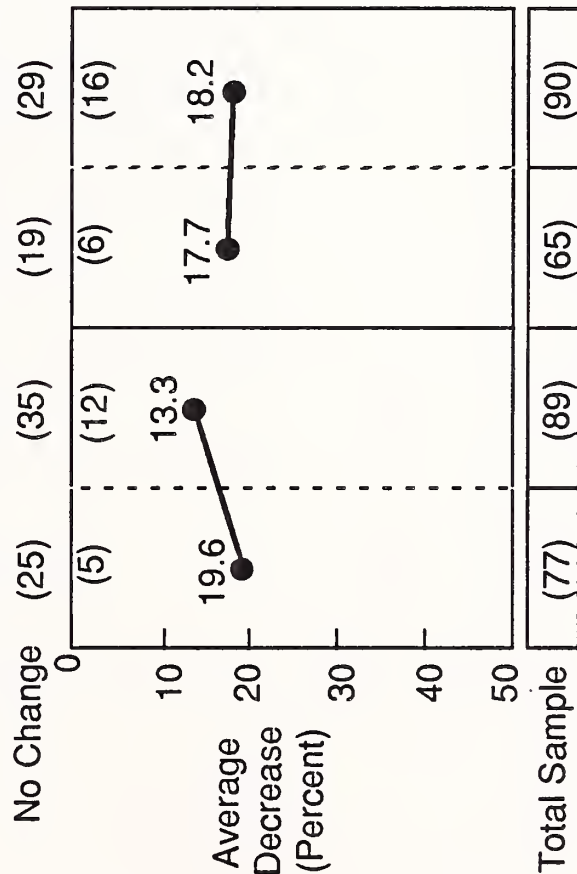
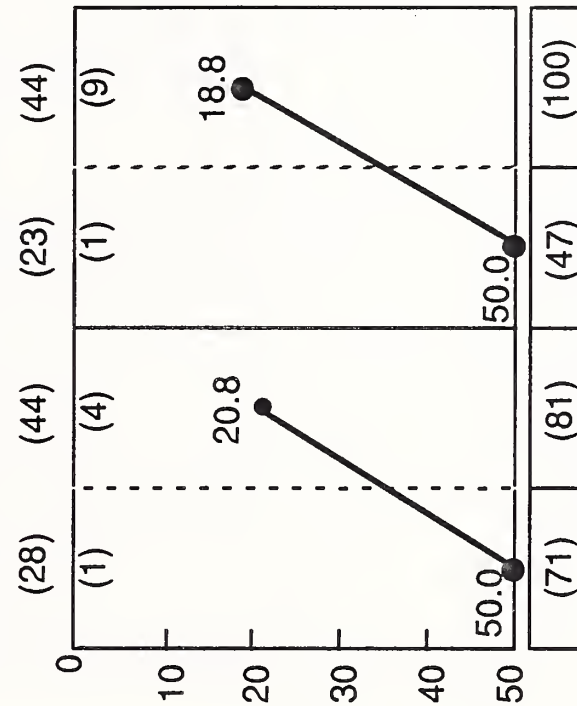
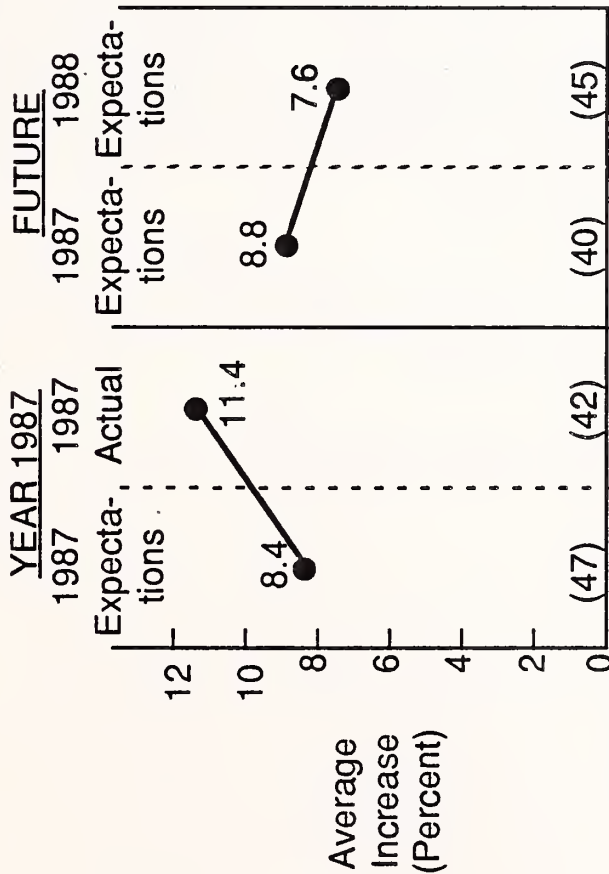
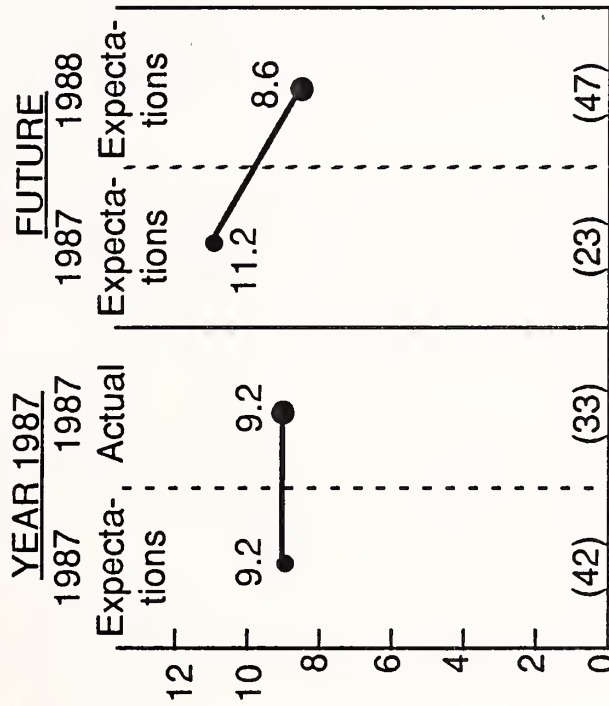
Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

Medium systems data shown in Exhibit IV-44 indicate a different situation.

EXHIBIT IV-44

**CHANGES 1987 TO 1988
DIGITAL—MEDIUM SYSTEMS**



SOFTWARE SERVICE

HARDWARE SERVICE

Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

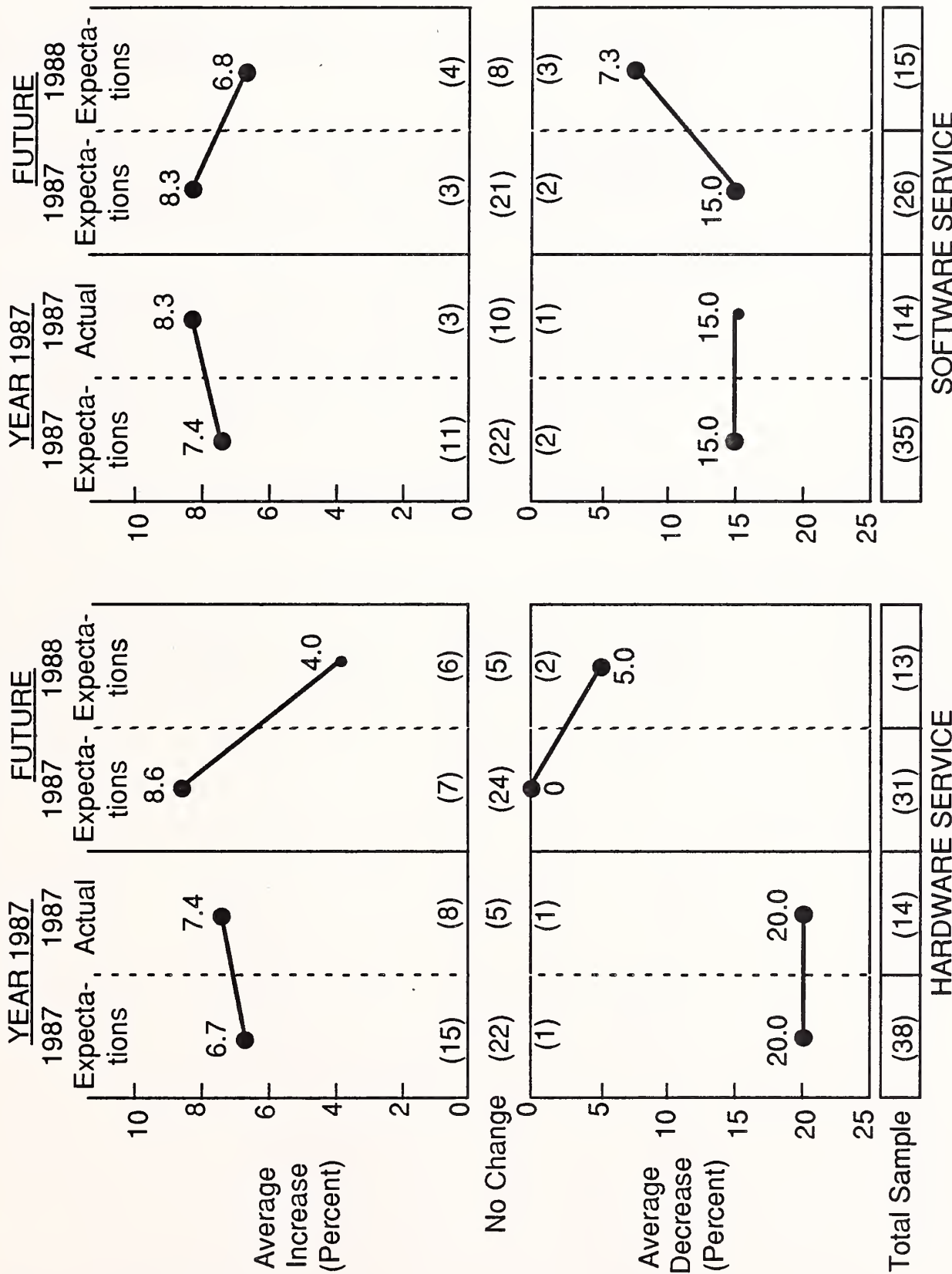
- Price increases reported for hardware service in 1987 were significantly above the level expected. The result for future expectations is, however, the inverse of what might have been expected. One explanation is the reaction by users to the 1987 increase, or that having received a significant increase, users anticipate less-severe subsequent increases because any deficiencies have now been corrected.
- Software service price increases reported for 1987 were in line with expectations. Interestingly this has resulted in future expectations being revised downwards, in fact to match fairly closely the actual 1987 level. Perhaps this could be considered an example of matching user expectations undermining potential future opportunities.
- Study of this data will underline the need for caution when developing pricing strategies and emphasise how important research of user attitudes can be in guiding and shaping strategies.

Data shown in Exhibit IV-45 relate to small systems and illustrate some interesting exceptions.

- Both hardware and software service show opposing trends when comparing actual reported price increases with changes in future expectations. This discrepancy could well be due to information in possession of users that does not show in research. Or it could be that users feel the vendor is responding to pressure on service pricing, or this pressure is showing in the research data.
- If user expectations indicated are of significance, it is that the vendor needs to approach the situation very carefully, otherwise user satisfaction could be seriously impaired.
- The data show a need for great caution by the vendor.

EXHIBIT IV-45

**CHANGES 1987 TO 1988
DIGITAL—SMALL SYSTEMS**



Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

3. IBM

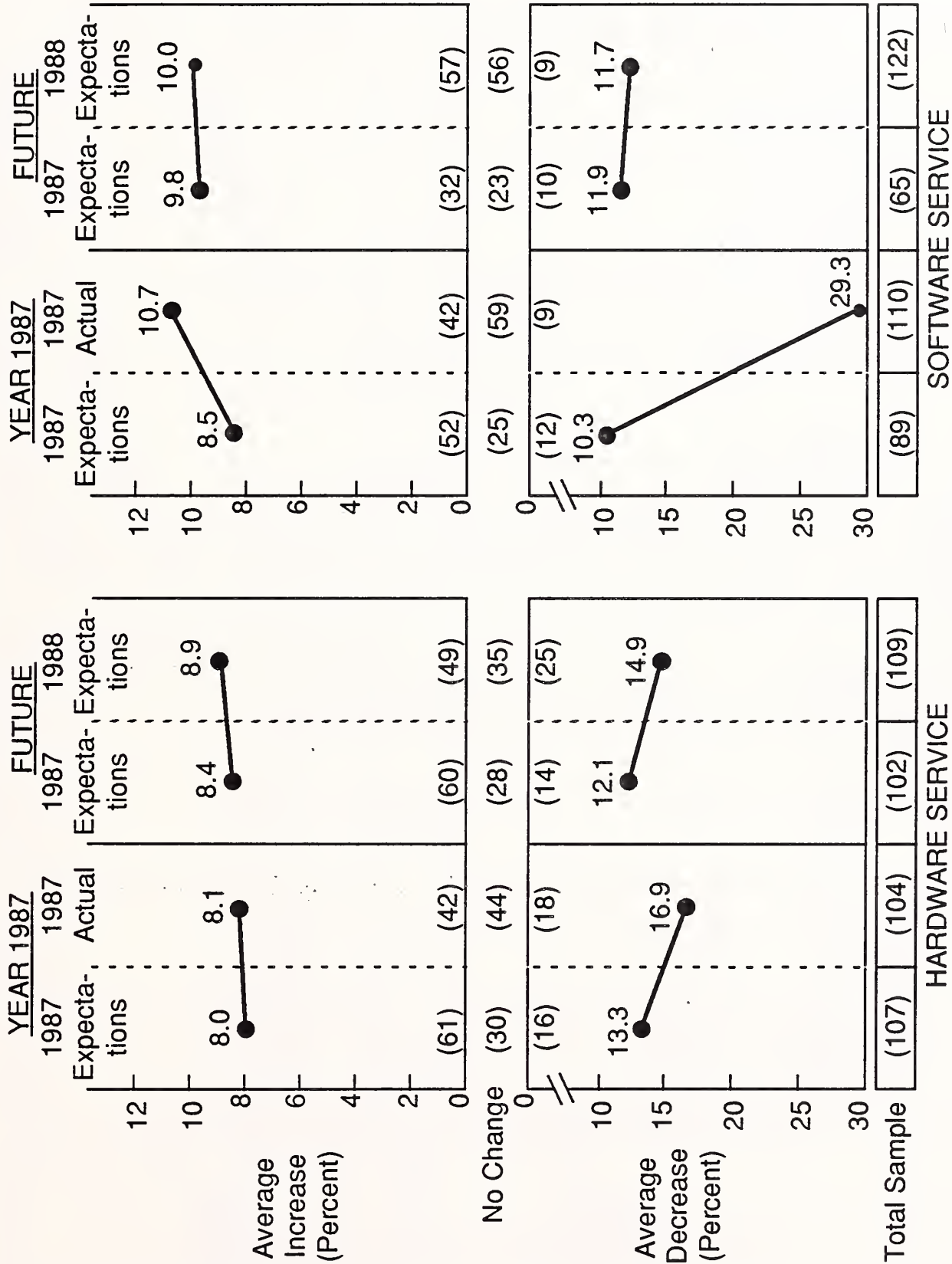
IBM user data are illustrated in Exhibits IV-46 to IV-48.

The large-systems data shown in Exhibit IV-46 mostly follow a clear pattern.

- Users reported a 1987 software service price increase in excess of expectation by a significant margin. The result is a slight upwards revision in future expectation, to more closely match the 1987 actual.
- Hardware service price increases reported by users in 1987 were very close to matching expectations. Surprisingly, this has resulted in a modest upwards revision of future expectations, which may reflect a user perception that the vendor used 1987 as a consolidation period prior to a slightly more significant price increase in 1988.
- IBM has, based on user expectations, a modest opportunity for higher price increases for hardware service in 1988.

EXHIBIT IV-46

**CHANGES 1987 TO 1988
IBM—LARGE SYSTEMS**



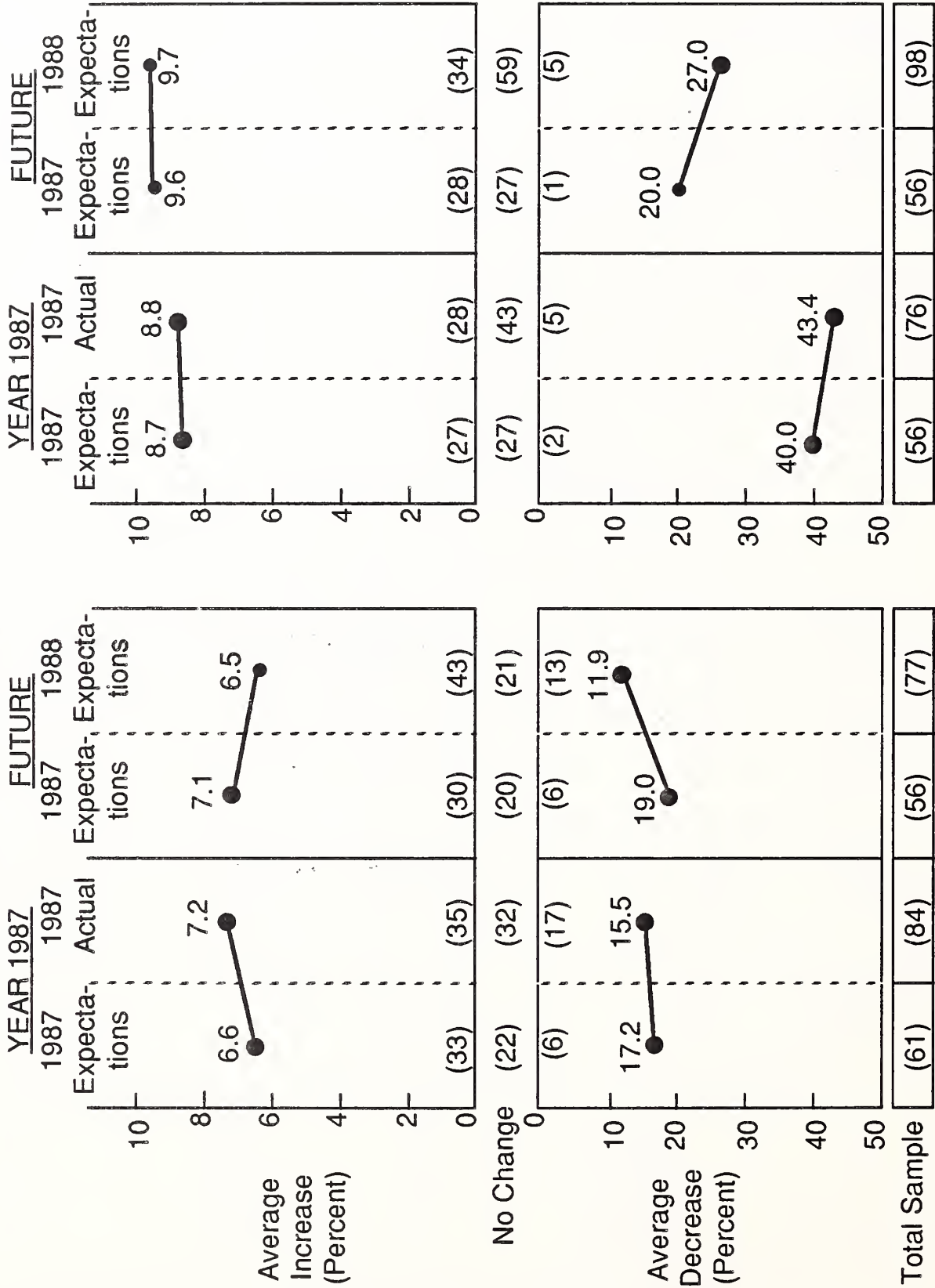
Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

Exhibit IV-47 shows data relating to IBM medium-system users, and indicates a good degree of continuity:

EXHIBIT IV-47

**CHANGES 1987 TO 1988
IBM—MEDIUM SYSTEMS**



Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

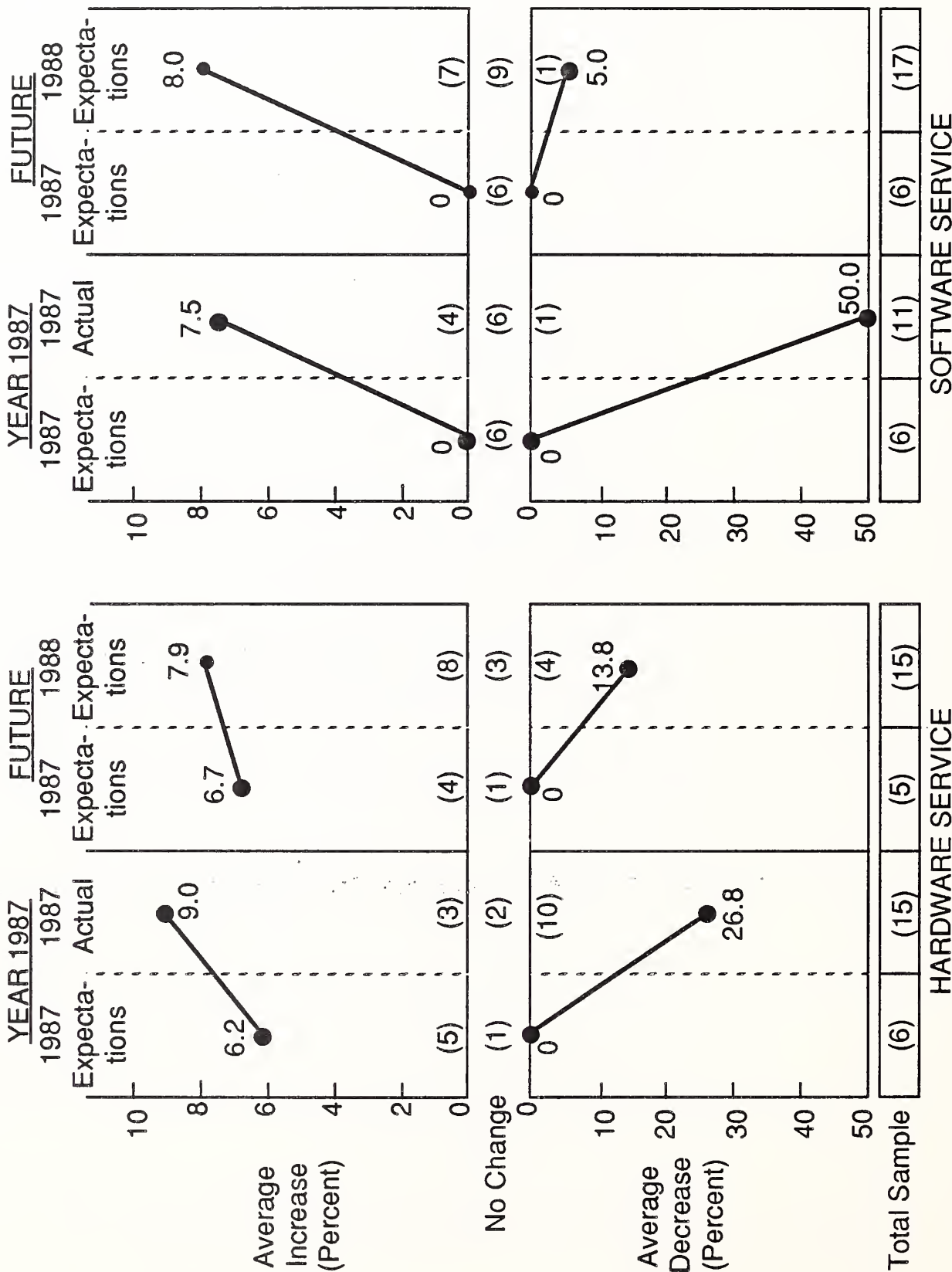
- Price increases for software service reported by users for 1987 indicate a good match between expectations and actual. There is a slight upwards revision of future expectations but, of greater interest, the level of expectation remains higher than the reported 1987 actual. This could represent a modest opportunity for the vendor.
- The proportion of users receiving price increases for software service fell in 1987. Following this trend, future expectation has been similarly revised.
- Conversely, the proportion of users receiving or expecting price increases for hardware service has remained more constant. An increase in expectation is noted for 1988. This could indicate an opportunity for IBM to commence reversing the trend of an increasing number of users anticipating constant prices.
- Relating reported price increases for hardware service in 1987 with future expectation shows opposing trends. An above, expectation increase in 1987 has reversed future expectations to the 1987 level. This could be a mild indication that IBM needs to be cautious regarding future hardware pricing policy; there may be a risk of impacting user satisfaction levels.
- Further support for the above comments is shown by the number of users reporting or expecting reductions in service prices.

Data relating to small systems are shown in Exhibit IV-48. These show interesting and also classical trends.

- All service price increases reported for 1987 show the level of price increases to be above expectation, significantly so for software service.
- Previous data have shown that zero increases for software service were reported in 1986, and that the future expectation for price increases was also zero. Research for 1988 shows a substantial upwards revision in that trend. Reported price increases for software service in 1987 were substantially in excess of expectations and resulted in a similar substantial revision of future expectations.
- Hardware service shows similar, but much less substantial, trends. A similar revision in future expectations has resulted.

EXHIBIT IV-48

**CHANGES 1987 TO 1988
IBM—SMALL SYSTEMS**



Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

- Software service trends could indicate a change in policy by the vendor. Acceptance of this change by vendors is indicated by the upward revision in expectation. Further checks on IBM small-system users show no indication of deterioration in service price satisfaction levels.
- Therefore, a possible opportunity exists for the vendor to capitalise on the change in user perceptions.

4. Unisys

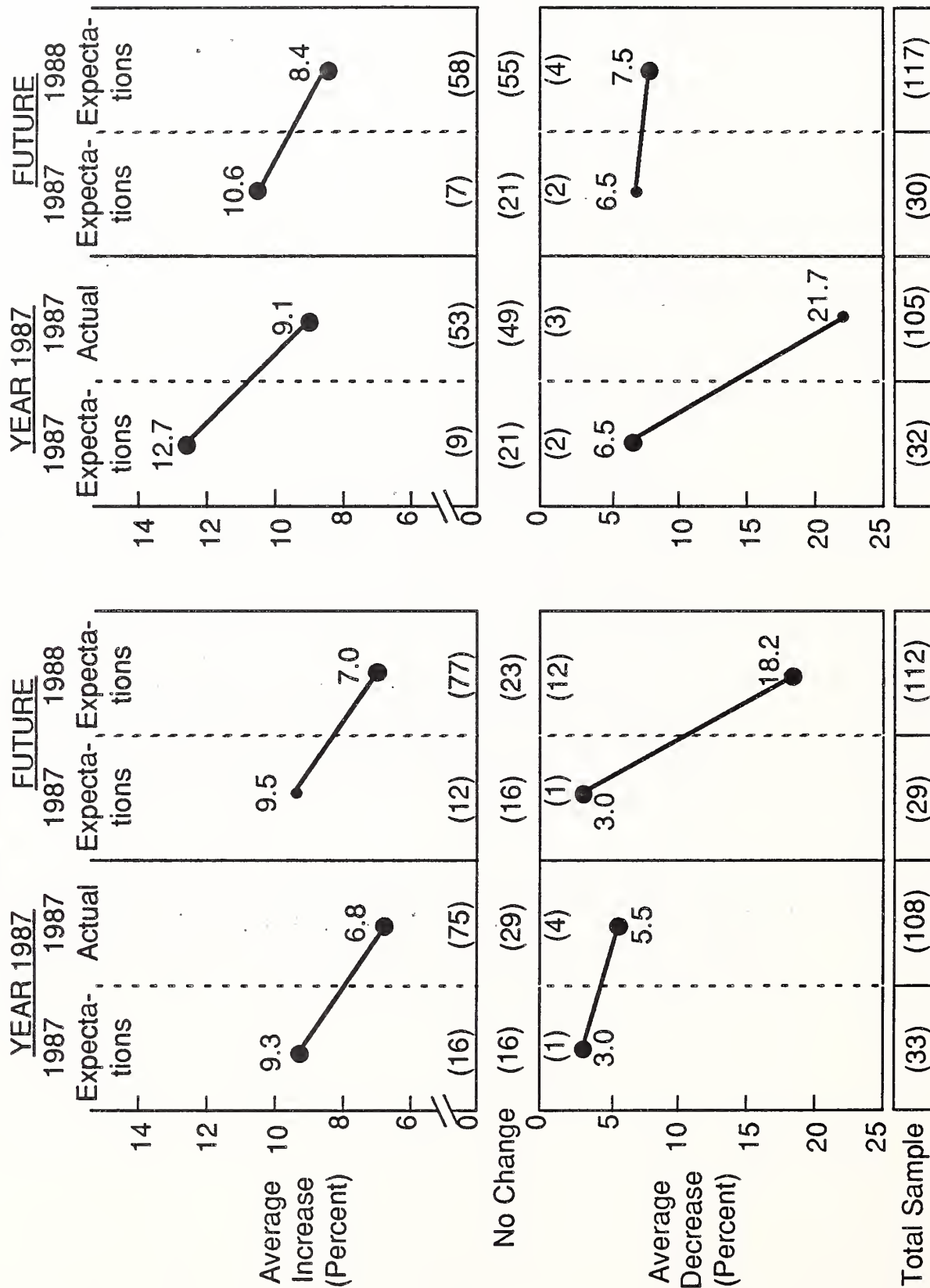
Data collected from a survey of Unisys users are shown in Exhibits IV-49 to IV-51.

Analysis of large-system data is shown in Exhibit IV-49, indicating a number of trends:

- In all instances, reported price increases for 1987 were lower than anticipated by users—significantly so.
- Having received lower than expected price increases in 1987, user expectations of future price increases have been similarly revised downwards.
- The proportion of users reporting or anticipating price increases for services has increased significantly. For example, in terms of future expectation, this proportion has increased from 23% to 50% for software service.
- Possible explanations are that the vendor may have realised service prices were excessive, or may be responding to pressure from users. Conversely, the trends may indicate a lost opportunity in 1987 and erosion of future opportunities.

EXHIBIT IV-49

**CHANGES 1987 TO 1988
UNISYS—LARGE SYSTEMS**



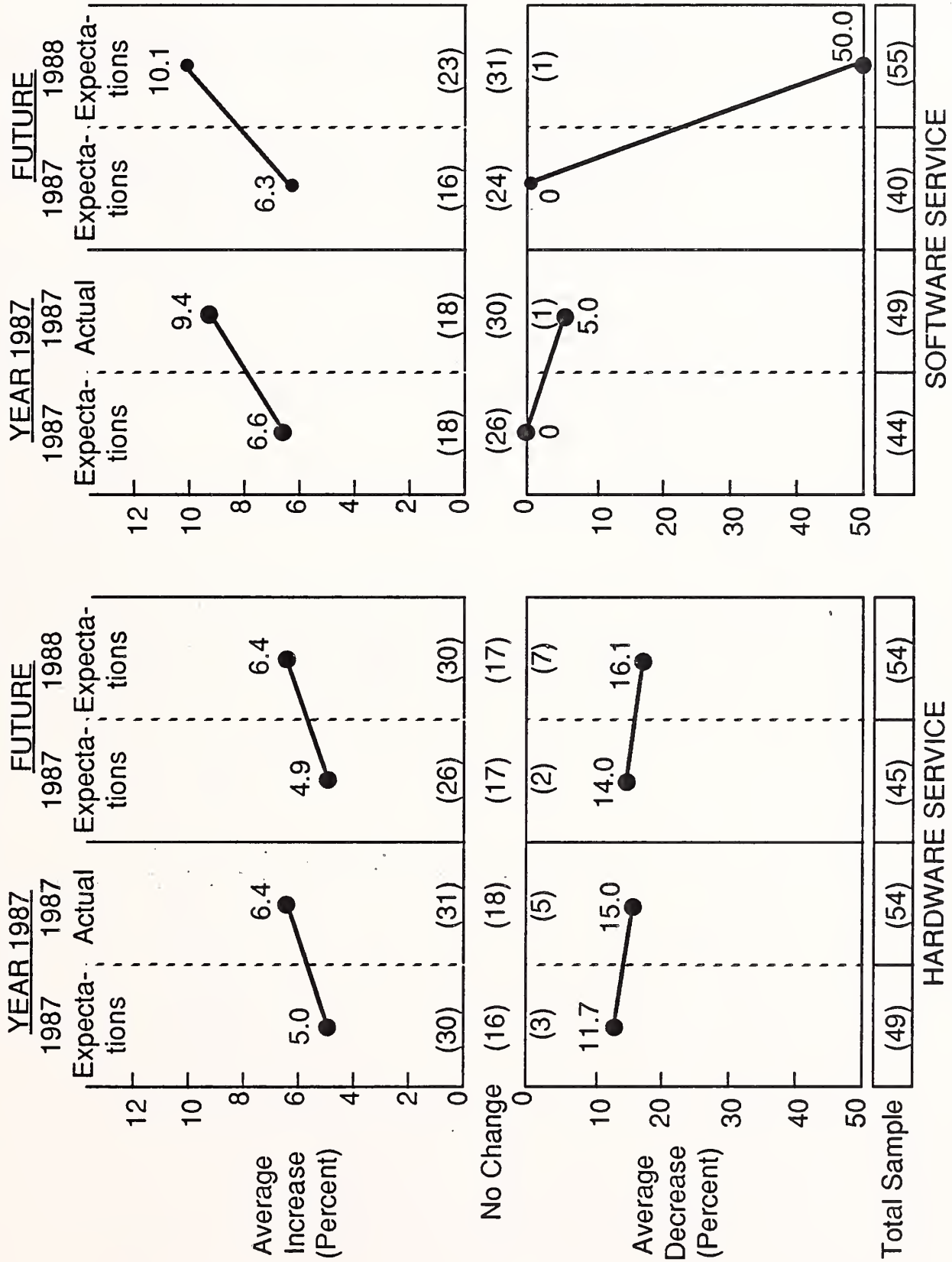
Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

Medium-systems data are shown in Exhibit IV-50 and illustrate a classical trend:

EXHIBIT IV-50

**CHANGES 1987 TO 1988
UNISYS—MEDIUM SYSTEMS**



Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size

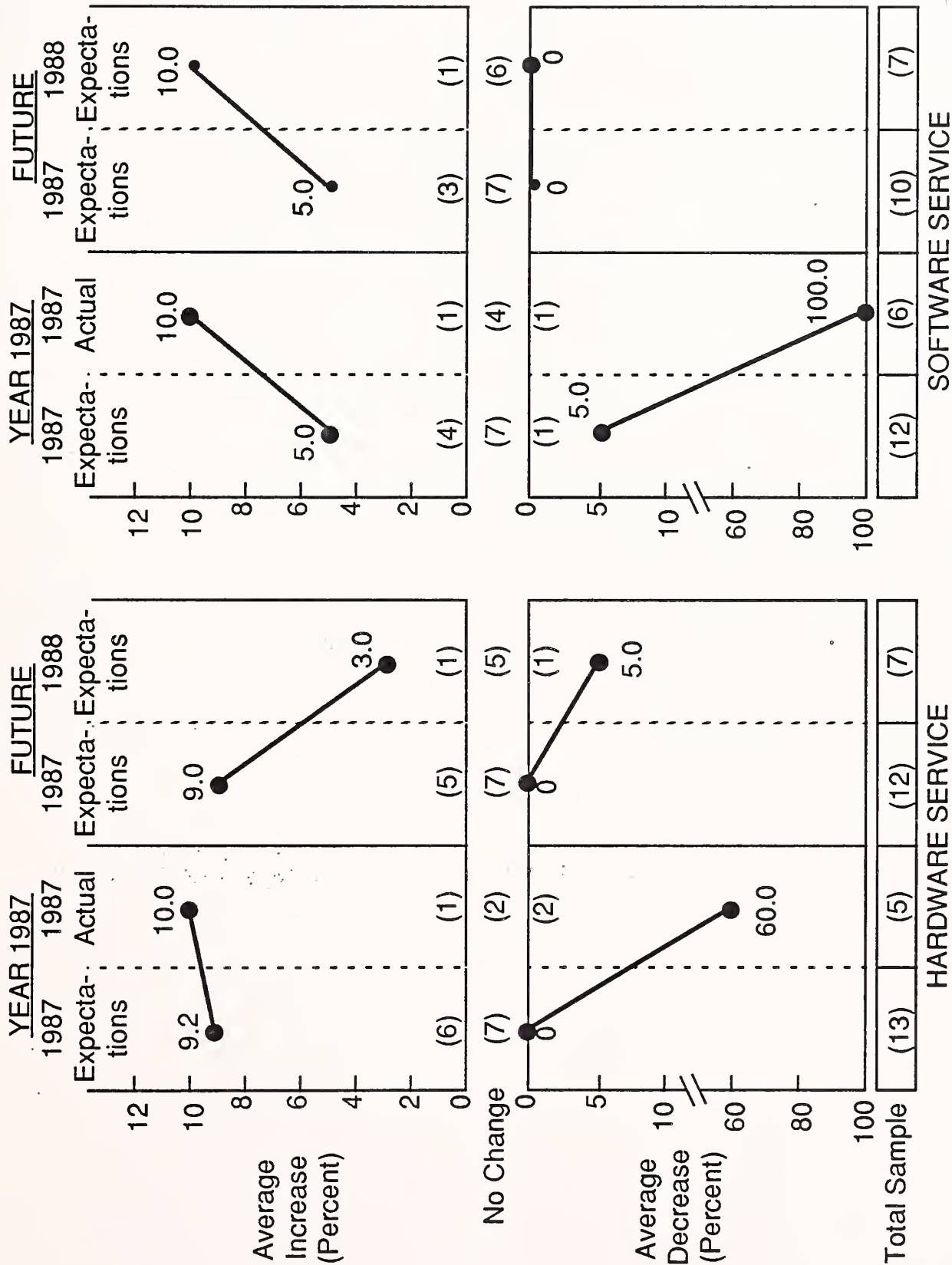
- Hardware and software service price increases reported for 1987 were significantly in excess of user expectation. This increase has resulted in a similar upward revision in future expectations.
- The proportion of users receiving or anticipating regular annual price increases remains relatively constant.
- Provided that the 1987 price increases have not seriously impacted user satisfaction, Unisys has created a possible opportunity for 1988. This opportunity should be approached with caution.

Data relating to Unisys small-system users are shown in Exhibit IV-51.

- The pattern of trends is similar to that shown for medium systems. However, the sample size relating to price increases is considered too small for analysis.
- Data shown are included on the grounds of completeness.

EXHIBIT IV-51

**CHANGES 1987 TO 1988
UNISYS—SMALL SYSTEMS**



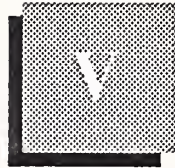
Source of Data: 1987 and 1988 INPUT Surveys

() = Sample Size



User Perceptions of Service in 1988





User Perceptions of Service in 1988

A

General

All 1,345 user interviews completed to date in INPUT's 1988 survey have been used in compiling the data presented in this section of the report.

This area of research is primarily targeted at providing a measure of the relative priorities and perspectives as seen by users in comparing several important aspects of computer system service performance. The goal is to give an insight into how these various elements interrelate with the price paid for service.

A number of different measurement approaches have been used, resulting in both agreement and disagreement when relating service price, performance, and importance factors.

B

Importance of Service Price

The first measure of user priorities is illustrated in Exhibits V-1 to V-3. These exhibits are segmented by system size and show an importance ranking of six aspects of computer service performance relevant to critical needs in terms of "system up time".

Data show that system availability is rated very highly by all users on average. Consistent with this high rating is the relatively high importance placed by users on elements that relate to system availability—such as service response, repair/fix times and the operating system.

Two additional elements included in this ranking are the importance placed by users on the price of hardware and software service. In all cases these items are ranked lower in importance than elements that affect the availability of the system.

EXHIBIT V-1

IMPORTANCE RANKING OF SERVICE PRICE LARGE SYSTEMS

RANK	ITEM	IMPORTANCE
1	Systems Availability	9.5
2	Hardware Service Response Time	9.1
3	Hardware Service Repair Time	9.0
4	Operating System	9.0
5	Software Service Response Time	8.5
6	Software Service Fix Time	8.5
7	Hardware Service Price	8.3
8	Software Service Price	8.1

Note: (1) Figures have been rounded.

(2) Importance is rated on a scale of 1 to 10, where 10 is very important.

Sample size = 604.

Further study of the data presented in Exhibits V-1 to V-3 will show that importance ratings are generally ranked by users in a manner that indicates that importance is independent of system size. INPUT suggests the following possible conclusions:

- As perceived by users, criticality of the system as an integral part of the user's business is generally independent of system size.

EXHIBIT V-2

IMPORTANCE RANKING OF SERVICE PRICE MEDIUM SYSTEMS

RANK	ITEM	IMPORTANCE
1	Systems Availability	9.3
2	Hardware Service Repair Time	9.0
3	Hardware Service Response Time	9.0
4	Operating System	8.9
5	Software Service Fix Time	8.6
6	Software Service Response Time	8.6
7	Hardware Service Price	8.2
8	Software Service Price	7.9

Note: (1) Figures have been rounded.

(2) Importance is rated on a scale of 1 to 10,
where 10 is very important.

Sample size = 618.

- Hardware failure is considered a more critical factor than software failure. This conclusion is slightly less so in small-systems applications. One reason for this phenomenon is the likelihood that large- and medium-systems users are more able to support the operating system software using internal resources. Small-system users are possibly less self-sufficient in the area of software support.
- Take account of the criticality of systems availability and other factors identified. An opportunity for service vendors to focus on the need for premium-quality service is identified.

EXHIBIT V-3

IMPORTANCE RANKING OF SERVICE PRICE SMALL SYSTEMS

RANK	ITEM	IMPORTANCE
1	Systems Availability	9.4
2	Hardware Service Repair Time	8.9
3	Operating System	8.8
4	Hardware Service Response Time	8.7
5	Software Service Response Time	8.6
6	Software Service Fix Time	8.6
7	Hardware Service Price	8.0
8	Software Service Price	8.0

Note: (1) Figures have been rounded.

(2) Importance is rated on a scale of 1 to 10,
where 10 is very important.

Sample size = 123.

- Lower importance ratings given by users to service price can be interpreted as price's having a lower sensitivity. A lower sensitivity to service price indicates a further opportunity for vendors to focus on quality of service. High-quality service can be an important factor in benefitting more-favourable pricing policies.

Discussions with major multinational users confirmed the importance of "quality" as a service entity. There were minor disagreements in the relative ranking given to items such as engineer skill and responsiveness;

C

Service Price/
Performance

INPUT's 1988 user research survey asked respondents the following question related to software and hardware service pricing:

- Which of the following statements reflects your views on service pricing?
 - Good value
 - Expensive but worth it
 - Expensive but *not* worth it
 - Too expensive

User responses are illustrated in graphic form in Exhibits V-4 to V-6 in relation to software/hardware support and system size.

These presentations of the data provide two measures of users' views:

- The relationship of the proportion of users who consider price/performance to be good and those who consider price/performance less than satisfactory.
- The proportion of users who are relatively satisfied with the service they receive and those who are dissatisfied.

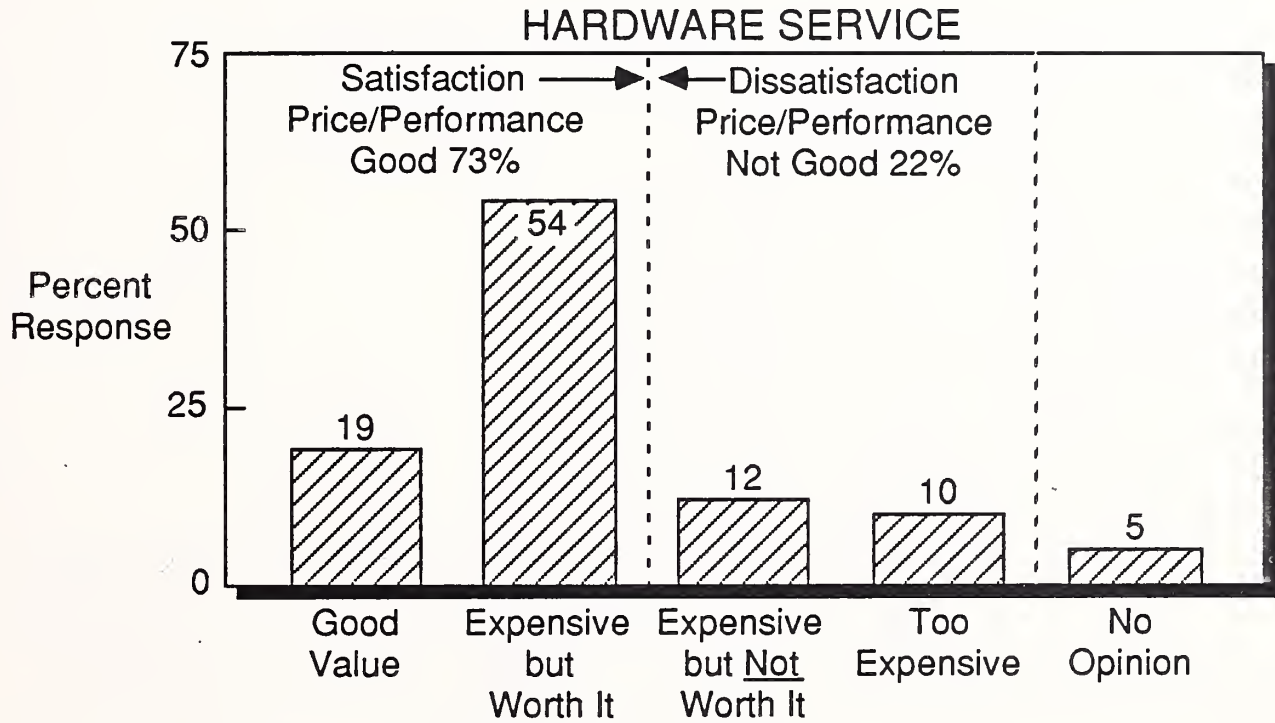
A significant majority of users (68% to 75%) are considered by INPUT to hold the view that the price/performance of service is good. INPUT also concludes that this percentage of users is relatively satisfied with the perceived value they receive. The sample used included computer vendors and a small proportion of TPM companies.

A further conclusion drawn by INPUT is that, in cases where price/performance is rated as good, there is a high perceived value attached to service. The converse is also true. Users with the view "expensive but worth it" indicate an awareness that the service is expensive, but that the value of that service at the very least compensates for the price charged. This is further confirmation of the need for "quality" and "value" and that users are in the majority prepared to pay for these aspects.

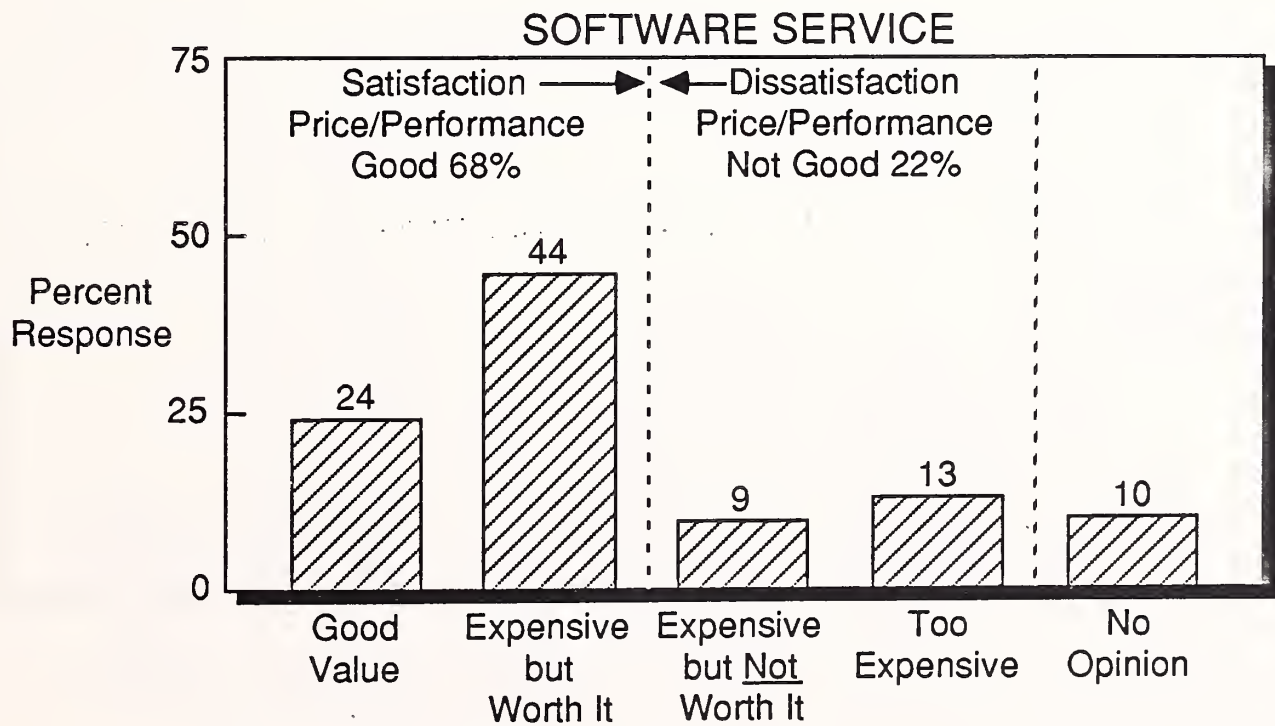
A significant minority of users (16% to 22%) hold the view that price/performance of service is not satisfactory, indicating a dissatisfaction

EXHIBIT V-4

USER VIEWS ON PRICE/PERFORMANCE OF SERVICE LARGE SYSTEMS



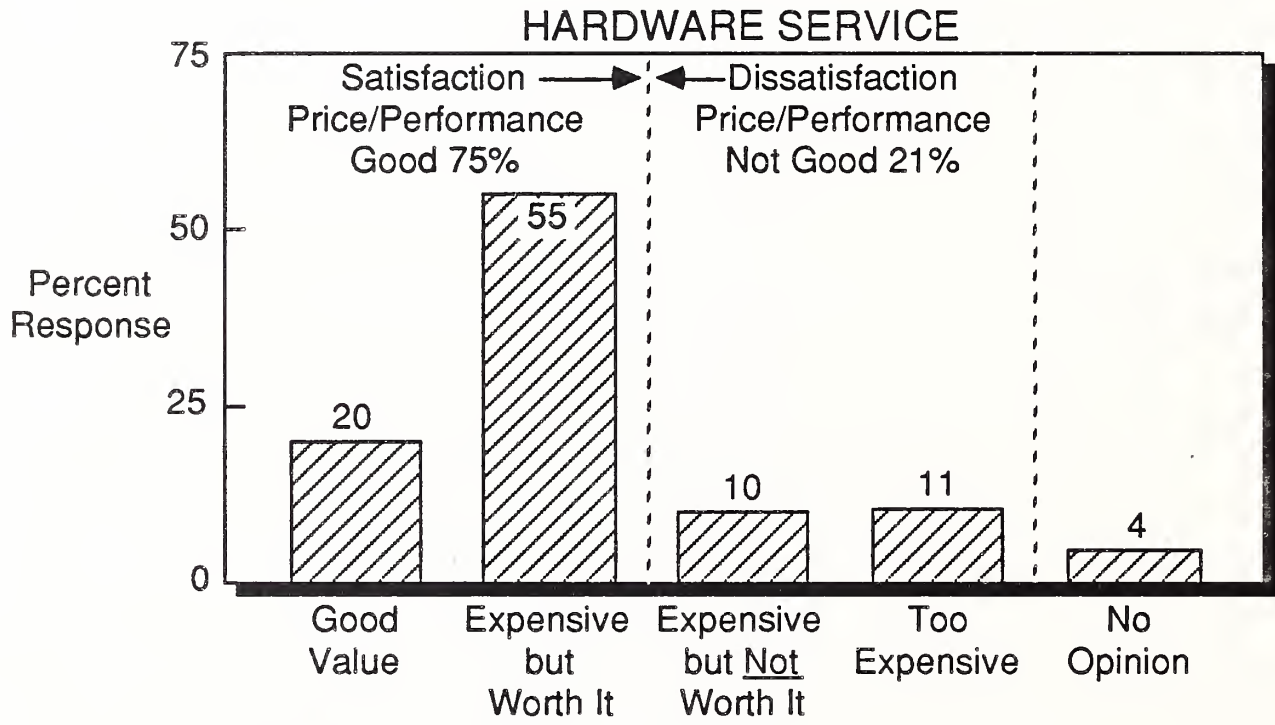
Sample Size = 604.



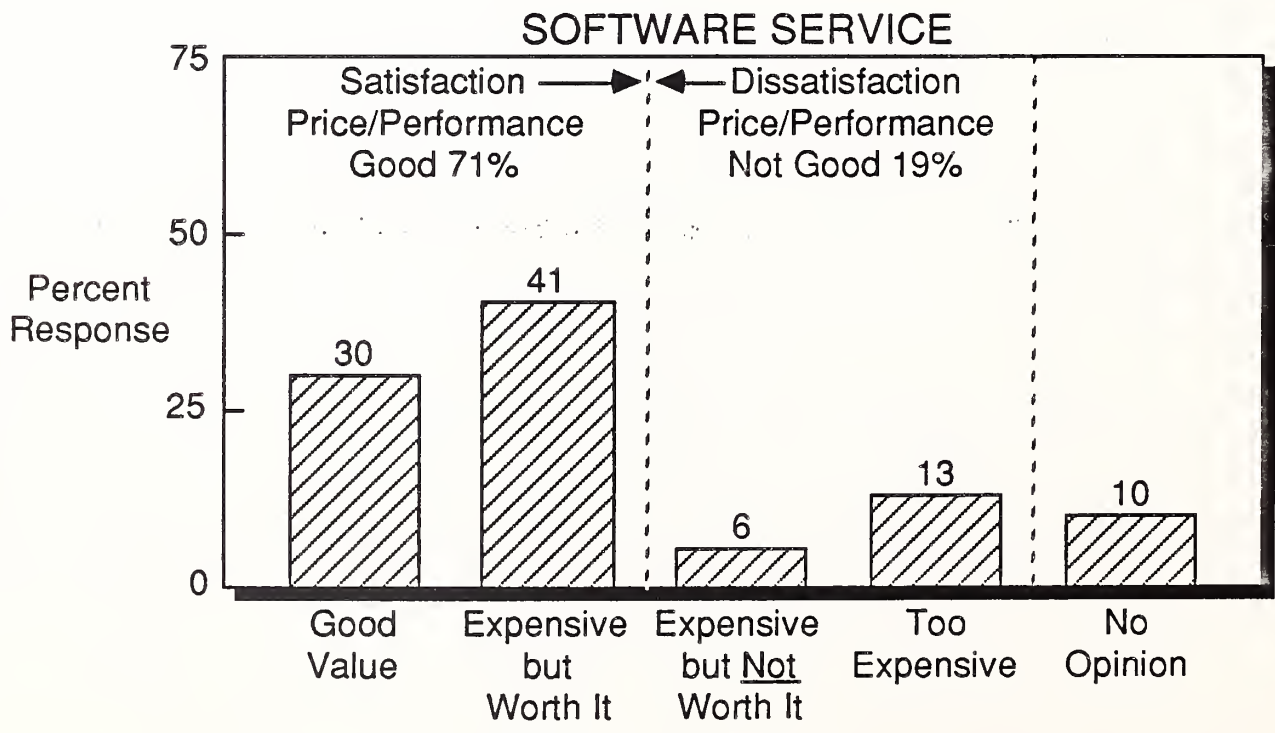
Sample Size = 601.

EXHIBIT V-5

**USER VIEWS ON PRICE/PERFORMANCE OF SERVICE
MEDIUM SYSTEMS**



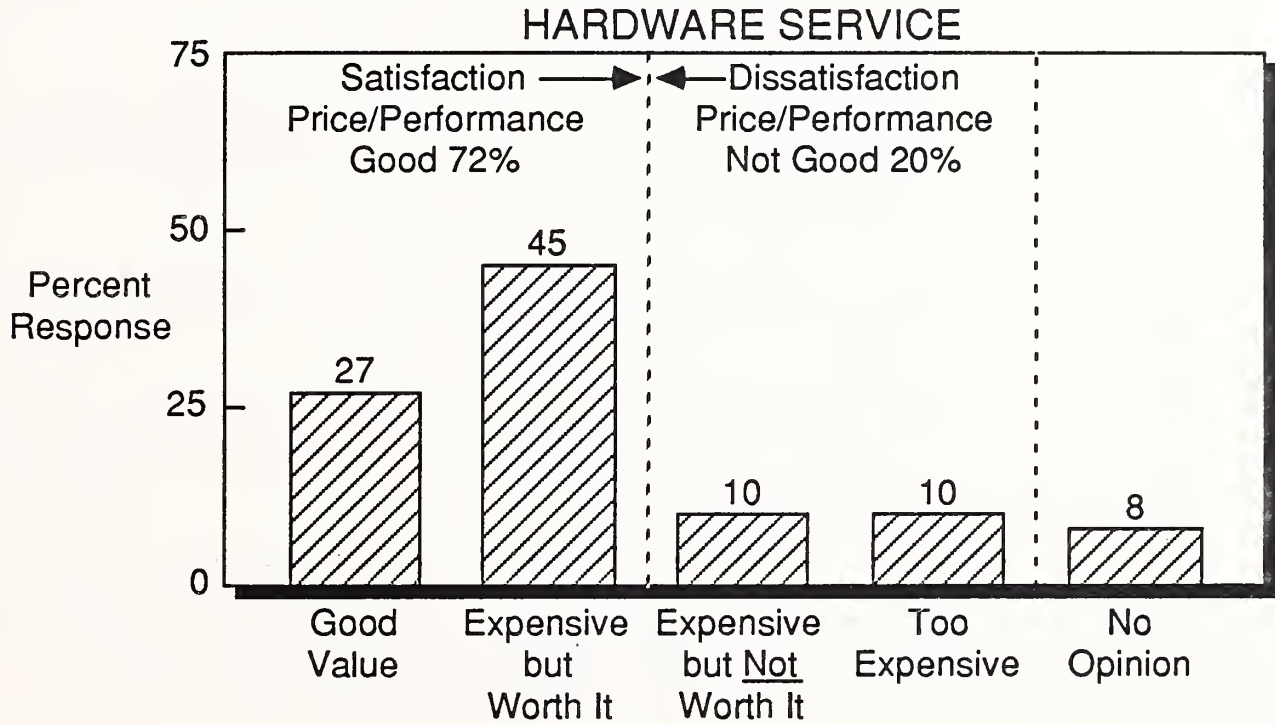
Sample Size = 618.



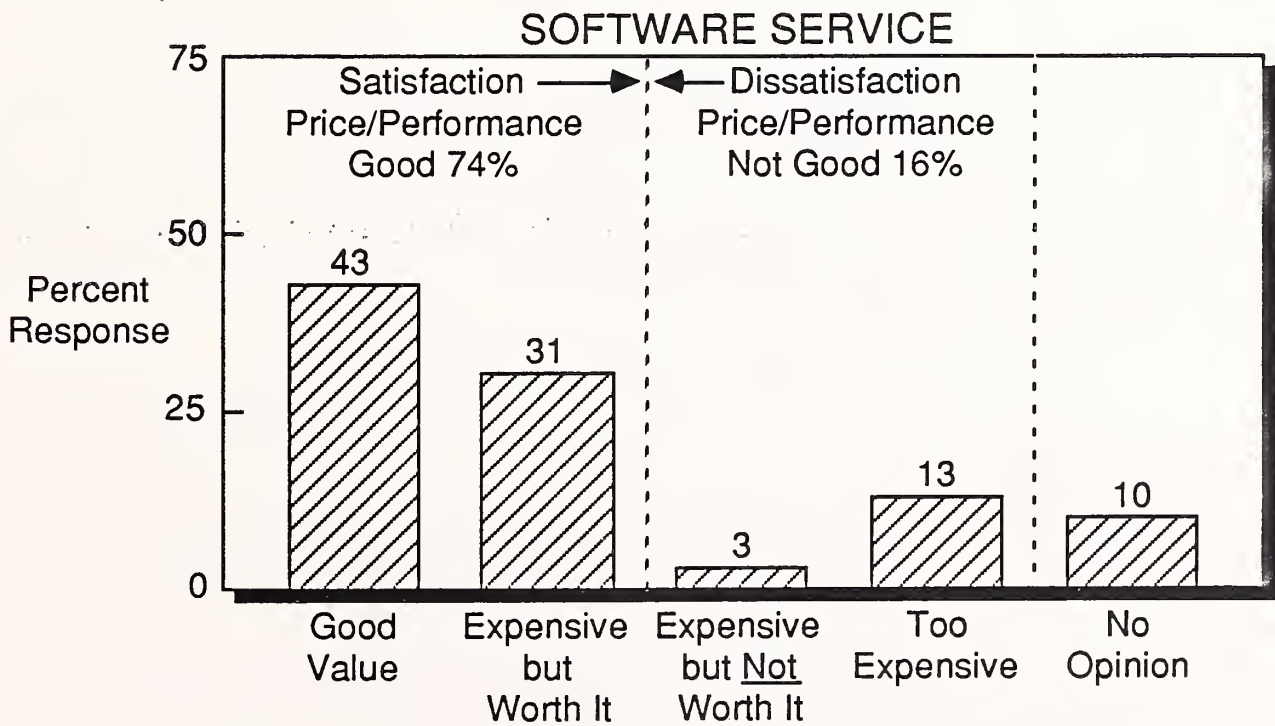
Sample Size = 609.

EXHIBIT V-6

USER VIEWS ON PRICE/PERFORMANCE OF SERVICE SMALL SYSTEMS



Sample Size = 123.



Sample Size = 118.

with service. In simple terms service is not satisfactory and is perceived as having a low value.

Part of the reason for this view is likely to be users' having computer systems in noncritical applications where systems availability is less important. Other explanations could include:

- The views of some users who do not enter into formal service contracts and use service on an ad-hoc basis. This approach usually results in slow response and relatively high prices.
- Users who do not consider a service contract necessary until the system fails. Then it is an emergency.
- Users who have failed to appreciate the importance of the computer system until it fails and then realise that inadequate protection has been provided.

Given some of the reasons for users' believing that service has a poor price/performance, the proportions of this minority indicate a need for further analysis. INPUT offers the following observations:

- The proportion is much higher than current TPM penetration of the market. Therefore this could provide a measure of the market size available for TPM penetration.
- Computer vendors are the most significant source of service by a considerable margin. Therefore the larger proportion of users with the view that service has a poor price/performance ratio are aiming this view at computer vendors. This proportion is therefore a measure of the risk factor in the TPM's penetrating the vendors' service revenue base.
- The number of users indicating a view that price/performance is poor provides a measure of the proportion of users who are price sensitive.

These factors are very important in a number of situations. One practical example was confirmed in a timely interview with a major user.

- If a user is dissatisfied with service to the point where dissatisfaction becomes an issue, stimulation is provided to start considering alternatives.

- Typically issues can concern:
 - Excessive service pricing
 - The vendor being seen to be taking advantage of a particular situation
 - Lack of vendor flexibility
 - Exposure of undesirable pricing policies
- One alternative open to the user is to investigate competitive alternatives. This opens the door to independent or TPM suppliers.
- Once that “door” is open and competitive considerations are discussed, price can then become an issue.
- For the main vendors, once price becomes an issue, the only way to retain or recover business is to compete.

The high proportion of users who fall with the majority of views on service should encourage vendors of the relative merits of providing quality service with a high perceived “value”. The provision of premium service to users requiring premium service and who are less sensitive to price (within constraints) indicates an opportunity for combating price erosion.

One exception to the general trends shown in Exhibits V-4 to V-6 is small-systems software service. Here 43% of users perceive service as a good value, a very high figure. One likely explanation is that the software on small systems tends to be more standardised. Also standard operating systems such as UNIX are relatively stable and mature, indicating that software is much less of a problem on small systems. Therefore support is easier and less is required.

D

Satisfaction with Service Price

During 1988 INPUT’s user survey set out to establish the importance of various aspects of service and satisfaction relative to importance. One question asked users to rate the importance of hardware and software service prices and their satisfaction rating for prices.

The results are tabulated in Exhibit V-7. These results indicate a degree of disagreement with previous data analysed in this chapter.

EXHIBIT V-7

SATISFACTION WITH SERVICE PRICE

		IMPORTANCE	SATISFACTION	△
Large Systems	Hardware Service	8.3	7.0	1.3
	Software Service	8.1	7.0	1.1
Medium Systems	Hardware Service	8.2	6.9	1.3
	Software Service	7.9	7.1	0.8
Small Systems	Hardware Service	8.0	6.8	1.2
	Software Service	8.0	7.4	0.6

Note: (1) Importance is rated on a scale of 1 to 10, where 10 is very important.

(2) A satisfaction rating lower than the importance rating indicates a level of dissatisfaction.

(3) '△' Represents the difference between importance and satisfaction ratings.

1.0 indicates concern level

2.0 indicates real dissatisfaction

Whilst previous analysis has shown that, in INPUT's opinion, the significant majority of users perceive that the price/performance of service is good, the majority of these fall in the category: "Expensive but worth it".

One interpretation of this response is that although price/performance is considered good, and hence the value of service is also considered good, the user feels that the value factor retains a margin for improvement. Similar-quality service could be provided at a more attractive price.

A further explanation could be related to price increases in 1987 being in excess of those anticipated by users and to a general reaction by users, with a consequential revision of user expectation of future price trends. The degree of this phenomenon is illustrated in quantifiable terms in Exhibits IV-40 to IV-42.

The vast majority of people, let alone computer users, when invited to give views on satisfaction with anything, have a tendency to find a need for improvement. Therefore the results must be judged in context.

A dissatisfaction index (Δ) of 0.5 would give no cause for alarm. An index of 1.0 suggests a degree of concern, but greater than 1.0 is more significant. Users in this category are voicing an opinion that value per unit price of service still allows for improvement. These users value the service received but believe they are paying highly for the privilege.

Reference to Exhibits IV-2 and IV-39 will show that a higher proportion of users anticipate regular annual price increases for hardware service than for software service. Exhibit V-7 shows that the highest dissatisfaction indices relate to hardware service prices. The issue in contention is whether these trends indicate a resignation factor in the users' perception, and if so, how much.

Even with a resignation factor vendors should be optimistic, provided the value of service remains visible. Humans tend to have resignation factors where price increases are concerned; it is part of human nature. Although in truth the reliability of hardware in particular has improved very significantly, the complexity of today's computer systems is such that users may not actually realise that improvement in overall system terms. Therefore addressing the resignation factor is a marketing and communication issue. Reducing service prices at the expense of quality to improve user satisfaction will most likely produce negative results.

Vendors must continually strive to provide the quality of service that users require. Manipulating prices is not necessarily considered by INPUT to be a suitable mechanism. Methods of changing perception are better handled by fiscal means: marketing, promotion, demonstration, communications and education.

INPUT has previously put forward the concept of building bridges to narrow the gap between the vendor and the user. Communication with users will likely indicate that some other issue besides price is the cause. Further, communication will likely reveal that the expectation of users is poorly understood. Insufficient understanding by the user of the level of service available, and what is considered "normal", is a relatively common occurrence. Previous INPUT research and reports provide more than enough evidence to support this diagnosis. An example is excellent service resulting in high levels of user dissatisfaction due to misunderstandings.

However this does not release a vendor from making all efforts to ensure that levels of service provided meet standards.

E

User Service Preferences

Exhibit V-8 shows that a significant majority of users have a preference for one-vendor or single-source service. This preference is stated by 65% to 67% of users and is essentially independent of system size.

Face-to-face interviews with major users did indicate a degree of cynicism concerning single-source service. These were very large installations where a single source would probably result in a degree of subcontracting by the service vendor. Subcontracting is considered by some users to be a palliative that does not provide the degree of security attached to true single-source service.

Cynicism aside, the high level of preference reported indicates an opportunity for service vendors to add value by providing a one-vendor source of service. A number of major vendors have declared strategies in this direction under a number of guises. The real umbrella title is the term *system management*.

The opportunity presented by single-source service should provide encouragement to computer vendors. Although one of the factors identified by INPUT in favour of TPM companies is that users perceive them as a route to single-source service; TPM companies will likely struggle with software support—more so on more complex systems. Computer vendors are ideally positioned to provide a true single source of service.

Further encouragement to vendors is provided in that, of the 65% preferring a one-source vendor, 85% to 90% of those show a preference for the service to be provided by their main hardware supplier.

EXHIBIT V-8

USER PREFERENCES FOR SINGLE-SOURCE SERVICE

		PERCENT		
		LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
Preference for "One Vendor" Service (Hardware & Software)		65	65	67
Who That Vendor Should Be	Main Hardware Supplier	89	89	84
	One of the Hardware Suppliers	6	4	5
	TPM	4	5	9
	Other	1	2	2

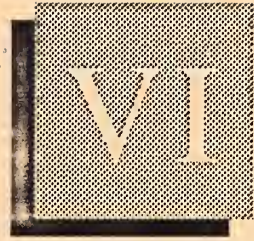
Note: Figures have been rounded.

Sample Size = 1,345.

The only significant deviation in the trend is shown in small systems where the preference for the main hardware supplier is lower and for the TPM higher. Previous remarks concerning standardised software may have an influence on this preference.

Preference for other than the main hardware supplier is very low, which could be taken as a vote of confidence in the computer vendors and in the service users believe these vendors can and do provide.

A further distortion in measurement of service value can arise through an organisational dichotomy. Different sections or departments in a user's company are likely to apply different measures. The commercial departments are most likely to measure services purely on price, with departmental objectives of aggressive purchasing aimed at cost savings. Operational departments most likely measure efficiency and quality of service. These measures are not necessarily, and aren't in all probability, compatible. INPUT does not consider that this situation influences the survey results but nevertheless it is a possible consideration.



Service Marketing Strategies





Service Marketing Strategies

A

Scenario in Today's Market

Discussions with computer vendors identified a general degree of perspective polarisation that can be encapsulated briefly as follows:

- Pessimism that hardware service market growth has slowed to the point of approaching stagnation or a possibility of some decline in real terms.
- Optimism that the software service market is a growth area offering opportunities for the future.

Research conducted by INPUT in 1987 and 1988 does not support the vendor perspectives presented above. Analysis of data in section IV of this report provides support evidence. It is upon this evidence that marketing strategies should be refined.

However, it is necessary to qualify the current situation as seen by INPUT from its programme of user research.

- The data presented in section IV is based on user anticipation and expectation. Whilst this does not prevent vendors from following a different course of action, user perception is a powerful force.
- INPUT agrees with the views that the hardware service market is subject to low growth and possible stagnation/decline in real terms.
- INPUT agrees with the optimism concerning software service market growth.

- The area of disagreement, based on user perceptions, concerns profitable growth of software service in real terms.

The key for continued profitability of service lies in changing user perceptions without creating a situation of conflict and dissatisfaction, hence providing a clear route to profitable service and customer satisfaction. The mechanism to bring about this change lies within, and is dependent on, the vendors' service marketing strategies.

Exhibit VI-1 demonstrates the problem in clear terms. The issue at stake is not the level of price increases for service that users anticipate, but the proportion of users having the expectation that service prices will remain constant. The impact of this user perception is to reduce the overall real growth in the service revenue base. Exhibit VI-1 reflects the impact of 1988 user perceptions on future price changes.

The view presented in Exhibit VI-1 illustrates the impact when vendor pricing activities match current user perceptions. Also, this view is presented assuming that current service product ranges remain unchanged.

Further evidence to support this view of revenue base growth is provided by the proportion of users reporting "no-change" in service prices in 1986 (1987 INPUT user research programme) and 1987 (1988 INPUT user research programme). Refer to Exhibit IV-39 to confirm these trends.

The message indicated by Exhibit VI-1 is clear:

- *If* vendor activities in service pricing match user expectation (it is a big *if*), then taking into account the no-change proportion, effective price increases are dangerously close to or below inflation levels.
- *But* vendor activities do not necessarily match user expectation, as shown by reference to Exhibits IV-40 to IV-42. These exhibits show that on average (for Europe) price increases exceeded user expectation. However, balancing this is the data contained in Exhibit IV-39, which show that the proportion of users receiving or anticipating price increases is declining. Further, user dissatisfaction with service prices is possibly, in part, a reaction to 1987 price trends.

Impact of the no-change proportion on user service price expectation is, to a degree, system size dependent: medium- and small-sized systems are affected more.

EXHIBIT VI-1

**EQUIVALENT SERVICE REVENUE BASE GROWTH/
EFFECTIVE PRICE INCREASES BASED ON
USER EXPECTATIONS IN 1988 AND THE FUTURE**

	PERCENT		
	LARGE SYSTEMS	MEDIUM SYSTEMS	SMALL SYSTEMS
HARDWARE SERVICE			
Proportion of Users Anticipating Constant Prices	27	34	40
Proportion of Users Anticipating Price Increases/Average Anticipated Price Increase	7.5 58	6.8 52	6.5 47
Equivalent Growth in Existing Revenue Base, or Effective Price Increase	4.4	3.5	3.1
SOFTWARE SERVICE			
Proportion of Users Anticipating Constant Prices	45	54	57
Proportion of Users Anticipating Price Increases/Average Anticipated Price Increase	10.4 49	9.0 41	9.5 36
Equivalent Growth in Existing Revenue Base, or Effective Price Increases	5.0	3.7	3.4

Note: Percentages have been rounded.

Total Sample Size = 1,345.

Source of Data: 1988 INPUT user research programme.

The difference between user perceptions of the future and the activities of computer vendors is the gulf that exists between the two.

Analysis shows that there is little difference between the hardware and software service markets in terms of price increases. However, there are two major differences:

- The hardware service market is much larger and will dominate service revenues for the foreseeable future.
- The software service market is much smaller but the growth is significant.

Software service within the context of this report is only that portion of software service that relates to the operating system.

B

The Vendor/User Gulf

The challenge facing computer service is one of profitability. One of the key areas in which this can be addressed is marketing and marketing strategies. The marketing need is to bridge the gap between user expectations and vendor needs to retain profitability of service. This gap is called the vendor/user gulf.

In order to close this gap vendors need to raise the profile of service in terms of stimulating user need. Stimulation can be achieved by application of appropriate marketing strategies aimed at promoting:

- Quality
- Value of service
- Value-added services
- The need for service relative to the criticality of computers to the user's business
- The concept of customer care
- Communication with the user
- Service as a standalone product, as opposed to a consequential add-on that is no more than a necessary evil

Marketing is not just an external activity; it needs to be internal to a company as well.

A good marketing strategy is one that not only commands a share of mind with customers, but also with the vendor's senior management.

Closing the vendor/user gulf is a two-way process—the vendor should take appropriate steps to optimise the internal situation as well as the external. For example, it may be unrealistic to conceive a strategy that involves actions to increase the profitability of service by increasing user prices when:

- Internal costs are unfairly loaded with overhead cost distribution and recovery.
- Service margins are burdened with product-problem-related costs.
- Service is expected to directly contribute to recovery of nonservice-related investment.

Bridging the gulf between the vendor and the user means using marketing as a communication and promotional tool, both internally and externally:

- To create a need and stimulate a healthy market demand and environment
- To create an environment in which the performance of service can be measured accurately

C

Learning from Others

There is much to learn from the experiences of industries outside the computer community. The motor industry is one good area to study. The motor industry has developed a high level of expertise in devising attractive service-oriented packages and achieved success with these through the medium of marketing.

The computer industry could benefit by taking note of some of these techniques. Some years ago the motor industry realised the potential dangers of improved reliability on service revenues, together with the increasing criticality of product availability for use on demand. This sounds like a familiar situation.

Also, the motor industry realised, late, the impact of third-party activities by companies specialising in the look-alike essential spare parts and service markets. An article in the *Financial Times*, 22 August 1988 described how Ford is setting up service sites to revolutionise the way it sells and services cars as part of a vision of the motor trade in the 1990s. Part of the strategy is to regain business lost to fast-fix and discount chains in terms of service and replacement parts.

Further, the impact of advancing technology fuelled fears for the future viability of services:

- Remote and predictive diagnostic techniques
- Reduced servicing requirements
- Software/Finance solutions to hardware and service-related issues
- Greatly improved performance per unit price

In a situation somewhat familiar to that of the computer industry, the motor industry addressed these issues with a marketing drive approach based on:

- Peace of mind
- Security
- Freedom from risk
- Integrity
- Safety
- Customer care

In addressing these issues the motor industry sold a product that was labelled either extended warranty or insurance. In fact the real product was an extended service contract, for a price, that could be bolted on to the existing warranty. It was marketed as an extended warranty but the validity of that warranty was dependent on regular service at appropriate intervals by a source approved by the banker. The servicing was at extra cost.

A further trend within the motor industry was to change the concept of sparing from the component level to the replaceable-module level. This trend is already well developed within the computer industry. Increases in the cost of spares and margins have resulted.

The computer industry could develop a similar approach with extended warranties conditional on regular approved servicing.

One must learn from others, study examples and history of similar situations in other industries.

D

The Marketing Approach

Service vendors need to consider the marketing approach to address the needs of the vendor and the market. Market strategies need to be devised on an individual company basis—that is, appropriate to the needs of that company and its market environment. The classical approach to marketing identifies four key factors that make up marketing strategy:

- Product
- Place
- Price
- Promotion

The marketing of service is similar in many ways to the marketing of a product. The first necessary realisation is that service is a “product” that needs to be promoted, packaged and sold.

The strength of the marketing plan that supports the strategy is dependent on the accuracy, depth of knowledge and understanding of the marketplace. It is imperative that the marketing approach be based on knowledge, not just feelings. Therefore, collection of data, market research, market surveys and competitive information are critical issues.

INPUT has identified some of the critical elements relating to service within the computer industry that can benefit from a more marketing-oriented approach. These elements are:

- Productisation of service
- Stimulation of market growth
- Improved customer satisfaction
- Increased profitability of service
- Visible customer care
- Higher perceived value of service
- Added-value image
- Communication

Some observations that INPUT has collated from studying the market and conducting interviews with vendors and users are as follows:

- Bundling of service, although it has some attraction to vendors, effectively reduces the market size by removing that part from the open market. Users prefer a visible service package.
- Extended warranties have a similar impact as bundling in that they remove a portion of the open market. Additionally, users are aware that nothing is actually free.
- Free service, warranty or bundling have a lower perceived value than services for which the user pays. Visible payment for service enhances the perceived value.
- If service is visible, chargeable and profitable, the vendor is more highly motivated and responsive to customer needs.
- There is a clear communication problem between vendors and users. This lack of communication leads to dissatisfaction with service and manifests itself in situations where a user is receiving good service but indicates poor satisfaction. Users need to understand clearly the details of the deliverable service to preclude any mismatch between reality and expectations.
- Customer satisfaction can be adversely affected by lack of flexibility and inadvertent (or otherwise) exposure of previously hidden or masked details. There is a need for understanding customer needs and communicating clearly.

One method of addressing a high proportion of these issues is to develop a strategy that includes an element of choice for the customer and also provides the customer with clear visibility of service deliverables. A further advantage of this type of strategy is that it also highlights to the customer:

- Quality
- Added value
- Comprehensive coverage
- Flexibility
- A service product
- Decoupling of service
- The concept of total care
- Enhancement of the vendor's capability

One concept that could form a critical element of service marketing strategy is to approach the market with a "Service Portfolio". The name is relatively unimportant; the concept is the key.

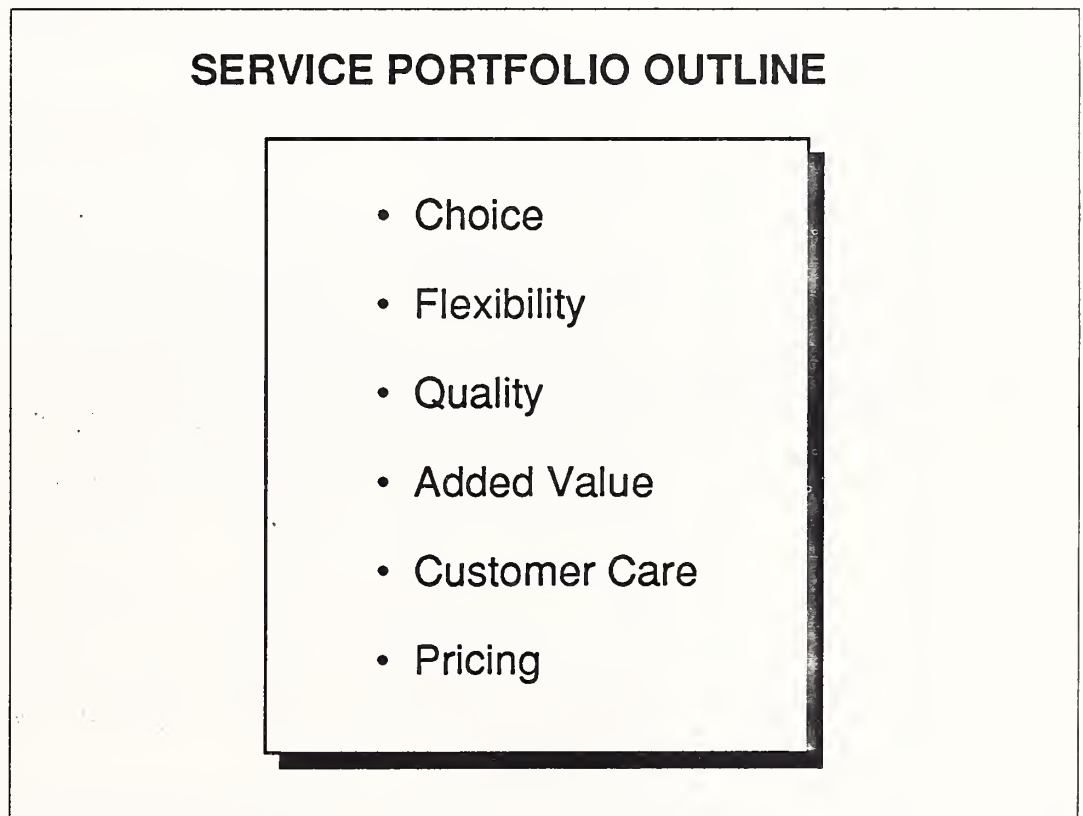
E

The Service Portfolio

This concept is but one element of a total marketing strategy, but nevertheless is capable of providing a workable solution to many of the needs previously identified by INPUT and highlighted by user research.

The Service Portfolio is neither a document nor a brochure; it is a marketing concept and strategy. Exhibit VI-2 is a brief outline of a Service Portfolio concept. In more detail the portfolio can:

EXHIBIT VI-2



- Demonstrate the vendor's capability and the range of service products available to the user.
- Offer a high degree of choice to the user, including a "mix and match" approach to service needs.
- Contain the flexibility the user needs to cover a wide variety of service requirements.

- Define in clear terms the degree and level of service deliverables, dependent on the user's choice.
- Include a structured and segmented approach to pricing strategies, which can form part of a larger rostrum.
- Imply customer care through depth, choice and flexibility, together with well-defined entitlements and recognition of need.
- Enforce the quality element through recognition of needs and understanding of user requirements.
- Recognise the relative criticality of system components as defined in the user's terms and address service needs relative to this.
- Achieve the "productisation" of service as an entity by raising the profile and image of service as a value-added standalone product.

The concept of the "Service Portfolio" as envisaged by INPUT is illustrated in Exhibit VI-3. The concept aims to focus the service capability of the vendor in an all-embracing marketing strategy to provide solutions to users' needs and problems. Individual modules within the portfolio concept are multidimensional in order to more flexibly provide for customer needs and allow realistic choices. An example of a service module is shown in two-dimensional form in Exhibit VI-4.

As previously stated, the Service Portfolio may appear to be, and could be, a brochure but it is not. It is a marketing strategy and as such it contains one additional feature yet to be discussed. This feature is an important ingredient of pricing strategy, namely the psychological element of choice.

- When faced with the range of choice offered by the "Service Portfolio" strategy, there is a reason to believe that user choice will lean towards the premium end of the spectrum. The reasoning is based on the premise that few customers will consider the more basic offering to be appropriate to their needs.
- Bias towards premium offerings allows pricing strategies to come into play and hence attract improved profitability based on the real needs of quality service. INPUT research indicates that emphasis is placed by users on quality above price. See Exhibit V-1 as an example.

EXHIBIT VI-3

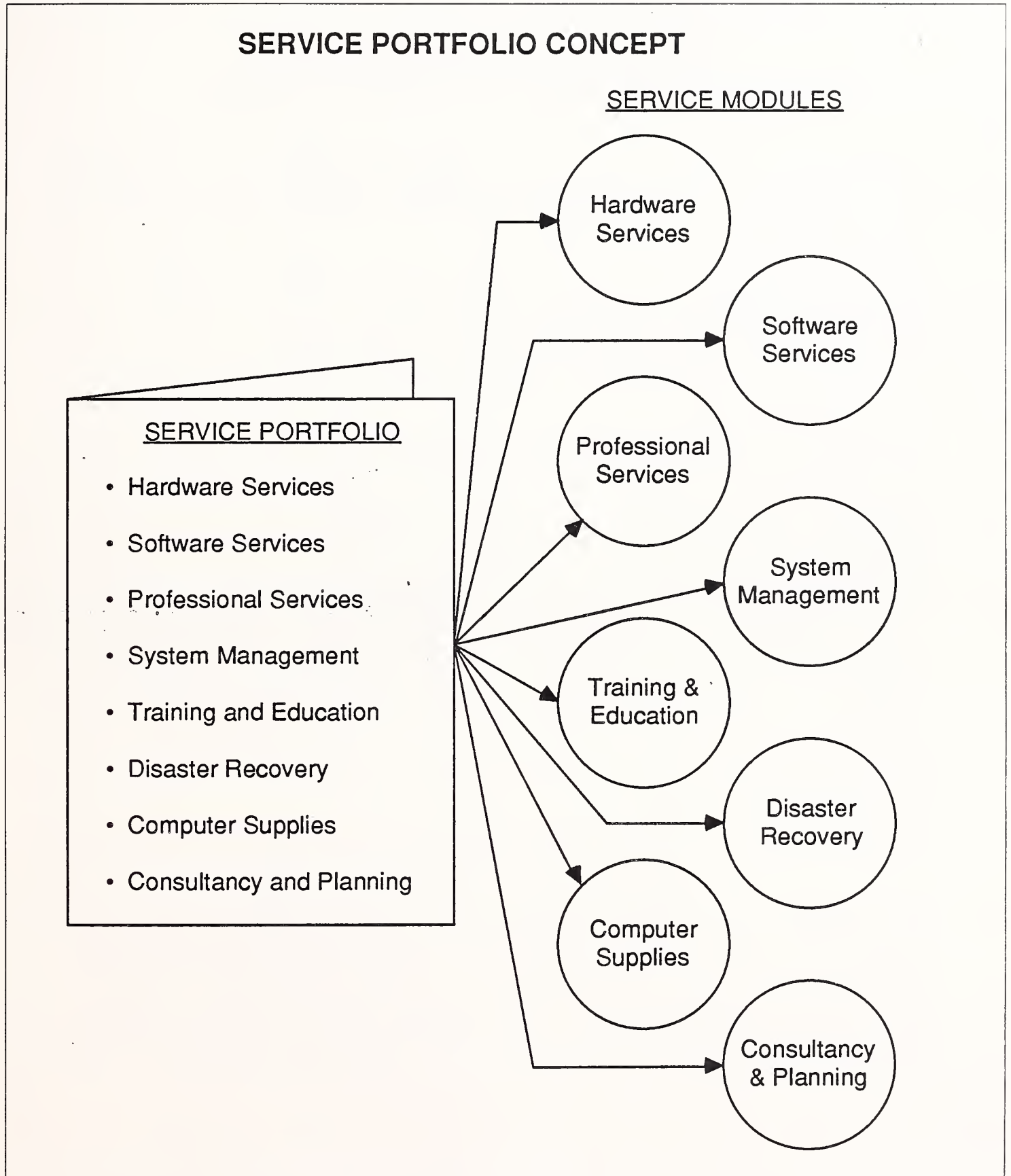


EXHIBIT VI-4

SERVICE PORTFOLIO CONCEPT HARDWARE SERVICE MODULE EXAMPLE

ITEM	SERVICE LEVEL				
	Platinum	Gold	Silver	Blue	Green
CPU	●				
Storage Peripherals			●		
Data Comms	●				
Terminals			●		
Personal Computers					●
Environment		●			
Printers			●		
VDUs					

SERVICE COVER	SERVICE LEVEL				
	Platinum	Gold	Silver	Blue	Green
Parts	●	●	●		
Labour	●	●	●	●	
On-Site Engineer	●	●			
On-Site Parts	●				
Response Time	Immediate	Immediate in Core Time	4 Hours	8 Hours	24 Hours
Core Time	24 Hours	8 Hours	8 Hours	8 Hours	8 Hours
Help Line			●	●	●
Out of Hours Premium		Small	Yes	Yes	Yes
"No Claim" Bonus			●	●	



- In this way pricing is included as a strategic element in the Service Portfolio. Pricing is based on its value in use and serves as a means of providing real value to both the vendor and the user.

To redefine the vendor/user gulf as discussed previously in this chapter:

- Users expect better perceived value from service.
- Vendors are looking to maintain or improve profit margins from service.

The concept of the Service Portfolio strategy approach is to provide a marketing solution to this seemingly conflicting situation. Achievement of the solution is obtained by capitalising on the perceived needs of the computer user community and providing service that is more:

- Efficient
- Effective and both flexible and profitable
- Visible
- Valuable



Creative Opportunities





Creative Opportunities

Analysis presented in this report has provided evidence to support the erosion of hardware service prices and revenue in real terms. Further, the analysis has, in certain respects, provided evidence contradictory to the optimism amongst vendors relative to the software service market.

The data presented and analysed are based on user perceptions and expectations. These factors must be taken into account, but at the same time one must also take into consideration the high degree of importance that must be given to perception.

Data have shown that there are opportunities to influence prices but the degree of flexibility is limited, at least in the short term. Prices and market growth will likely respond to stimulation through marketing and promotional activities, especially the hardware service market. This will, however, be a longer-term activity; overnight changes are not possible without a risk of impacting user satisfaction.

Taking into account the dominance of hardware service as a revenue stream, stimulation of this specific market is likely to yield a more positive and critical return. Research analysis has shown that, in user-perceived terms, there is little to choose between price increase levels once these have been normalised for the no-change element.

Marketing or promotional activities will need to be based on promoting the value or added value of service and emphasise quality and need aspects.

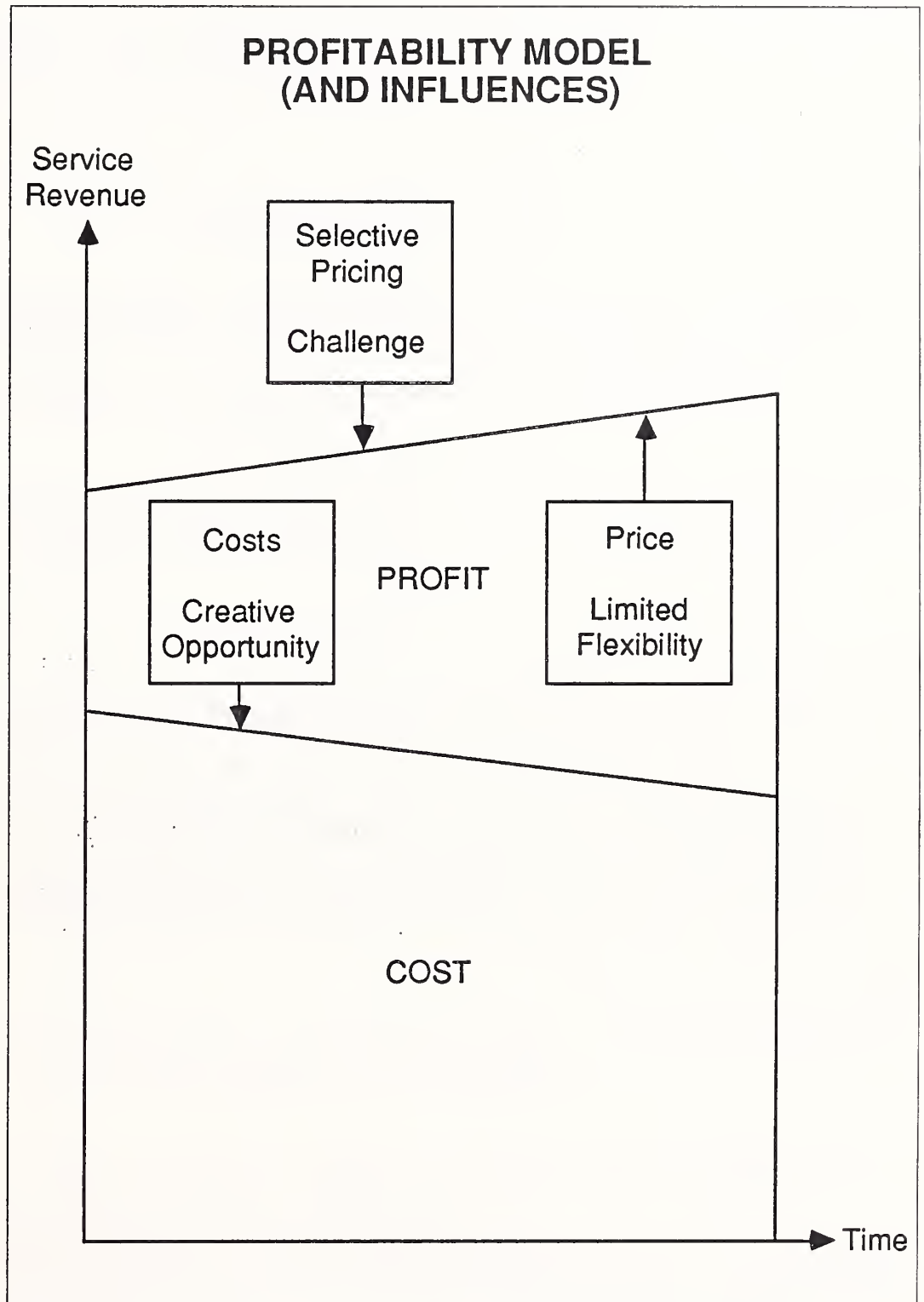
Therefore, activities to improve service revenue and profitability, through marketing and pricing strategies, should be supplemented by activities to

improve the efficiency of service. Improving the cost-effectiveness of service is an area of creative opportunity, in terms of both improving efficiency and also by creative reorganisation and restructuring of the service entity to shed the remaining traces of historical shackles.

Exhibit VII-1 is a very simple model illustrating the potential in adopting a radical approach. Many vendors have made significant improvements in efficiency but these are to varying degrees masked by both historical and unnecessary burdens of organisational distortion—to the extent of some vendors being unable to measure the real profitability and efficiency of service.

In order to conform to the requirements suggested in Exhibit VII-1, a number of areas of current organisational structure should be examined and reviewed.

EXHIBIT VII-1



The list shown by Exhibit VII-2 indicates some of the major areas in which the efficiency and profitability of service is being restrained. These factors vary significantly from vendor to vendor.

EXHIBIT VII-2

**FACTORS INHIBITING THE EFFICIENCY
AND PROFITABILITY OF SERVICE**

- Service is often seen as an "unwanted" but necessary activity.
- Service is often expected to absorb the costs of both manufacturing and design-related problems.
- Service is normally expected to absorb a proportion of the cost of sales.
- Service often carries the burden of non-service-related investment recovery.
- Resistance to technology-related service investment.
- Unrealistic transfer prices for spare parts.
- Service often carries unfairly proportioned overhead cost recovery.

A**Decouple Service**

Decoupling service is a generic term used to suggest freeing service from historical and organisational restraints.

One should decouple service:

- As a standalone product to be promoted, marketed and sold, as any other product. The productisation of service is mentioned previously.
- As an entity, separate from the product add-on image that exists externally and internally.
- Organisationally within the company, such that it stands alone in terms of fair financial burdens allowing true measurement of efficiency and profitability.

- From the burdens of absorbing nonservice-related:
 - Overhead costs
 - Investment costs
 - Cost of sales
 - Manufacturing and design-related costs
 - Disproportionate mark-ups on spare parts

Radical change is likely to meet with strong resistance. Organisation structures are often based on convenience and political phenomena covering a wide variety of vested interests. Neutralisation of these barriers is key to achieving decoupled service.

Service is a critical and key, but not fully recognised, product in today's computer community. The value of service can be enhanced by independence.

B

Pricing

Research shows that pricing strategies are subject to limited flexibility. However, opportunities do still exist and when the pressure is on it is of paramount importance to maximise available opportunities.

One opportunity is to take advantage of the trends indicated by market research. Data presented in Chapter IV of this report and illustrated in Exhibits IV-41 and IV-43, show how user perception and expectations can be influenced. Generally, but not exclusively, price increases reported by users were in excess of previous expectations for the year 1987.

As a result of this trend, perceptions of future price increases were revised in a similar pattern. This is an opportunity.

- Price rises in 1987 in excess of expectations may well account for the level of dissatisfaction with service prices reflected in Exhibit V-7.
- However, the upward trend in user perceptions of the future indicates that provided this level is not significantly exceeded, satisfaction levels will not be seriously impacted. Price increase levels matching expectation usually result in relief that the level is no higher.
- Price increases below expectation levels do not necessarily improve satisfaction; more likely they would be synonymous with a missed opportunity.

In order to take advantage of existing opportunities, vendors are recommended to take careful note of the trends shown in this report. A careful and balanced pricing strategy can influence trends and, provided that a consistent approach is adopted, price and revenue erosion can be reversed slowly.

Strategy is the key; price is often used as a tactic, but less often as a strategy. Also, using price as a tactical vehicle invariably results in wide variations and swings. A strategic approach to pricing is likely to yield more positive and consistent results.

Strategy is a multivariable approach of which price is but one element. Pricing strategies are more likely to succeed if supported by visible and added value to the user, specifically in terms of quality of service.

Support for a progressive pricing strategy is identified in Exhibit VII-3.

EXHIBIT VII-3

FACTORS SUPPORTING PROGRESSIVE PRICING STRATEGIES

- Users anticipate higher future price increases.
- Over 70% of users feel service gives good price/performance.
- Over 65% of users show a preference for single-source service.
- Over 85% of these show a preference for this vendor to be the main hardware supplier.

Reference to Exhibit VI-1 shows that the area of best opportunity lies within the large-systems market segment. A segment that is also important is the need for a wider range of services.

C**Using Technology to Reduce Costs**

Much technology is available to help reduce service costs, and hence to improve efficiency and profitability.

This technology can be broadly divided into two categories:

- Implemented system features that allow remote resolution or predictive maintenance
- Field service automation aids

1. System-Based Technology

The first of these are more common on complex systems at present, but implementation downwards through the system product ranges is progressing. These are very powerful technologies in terms of adding value to service and improving system efficiency.

It is in this area of service that the major computer vendors have made a serious strategic error. For example, remote diagnostics and auto call-back are premium products; if they had been marketed correctly, they could have attracted premium prices. The fact that they offer advantages to the vendor in terms of efficiency does not reduce attractiveness to users.

Instead, in their enthusiasm to get these technologies into the market and to gain acceptance by users, computer vendors offered these products under the umbrella of pricing discounts. This was a missed opportunity.

A cleverly implemented marketing strategy employing less haste could have capitalised on the power of the technology and focused on the benefits to users.

There are other ways of achieving acceptance of revolutionary technology. This is perhaps an example of using price as a tactic as opposed to a strategy.

An example of the attractiveness of auto call-back was highlighted during an interview with a major user. The user was advised by the vendor of certain corrective actions being taken following a predictive system scan in which a hardware component was identified as likely to fail. The possible failure had been corrected by a conveniently planned activity at no inconvenience to the user. The user's reaction was very positive.

Growth of implemented system management technology is an area of creative opportunity for the vendors. The key is that premium products can attract premium prices. Marketing and implementation strategies need careful consideration.

2. Service Automation

A recent report by INPUT, *Customer Service Automation in Europe*, researched this subject in some depth. It is therefore only necessary to briefly summarise the advantages of service automation.

A number of areas of service can be automated with the objectives of improving efficiency and reducing costs. Elements of service automation are as follows:

- A totally integrated systems approach reducing duplication and the need for manual intervention.
- Hand-held terminals to improve the accuracy and efficiency of communication.
- System implementation of routine service activities such that management intervention is only necessary in exceptional circumstances.
- Incorporation of technology features such as remote diagnostic capability.
- Use of available technology to give system access to documentation and training, allowing convenient access.

The advantages and benefits of service automation are summarised in Exhibit VII-4.

Service automation achieves more than efficiency and cost savings. It can add value and quality as perceived by users, due to service being delivered more efficiently together with an improvement in customer satisfaction.

Implementation of an efficient service automation plan is an opportunity for creative innovation.

EXHIBIT VII-4

**ADVANTAGES AND BENEFITS OF
SERVICE AUTOMATION**

- 10%–20% Productivity Improvements
- 20% Improvement in Accuracy of Information
- Potential for Accurate Time Management of Staff
- 80%+ Software Problems Solved Remotely and Quickly
- 100% Potential of Remote Software Problem Resolution
- Predictive Maintenance and Auto-Call-Back

D**Reducing Dead Time**

The service industry is labour intensive and the product is delivered over wide geographies. This situation infers that a major cost is service personnel and that a significant proportion of time is spent in essential, but unproductive, traveling.

Therefore, reductions in traveling time are an opportunity for cost reduction by reducing inessential traveling. This can be achieved by more efficient planning and service automation.

One area that is not open to cost savings is essential nonproductive time allowances. Service activities need to contain an element of spare capacity due to the likely possibility of unplanned emergencies and the need to respond to crisis situations. This is a critical element of service capability. However, implementation of technology at the system implant level can to an increasing degree alleviate many potential crisis situations by predictive and remote means. So this area is not a strict taboo; nonetheless an element of slack must be maintained.

The major area of concentrated effort should be aimed at reducing unnecessary traveling time. Exhibit VII-5 shows a model of a typical field service call that illustrates the dead-time zones.

The key is not to apply pressure to reduce essential travel, but to implement plans and policies to cut inessential travel and waiting time. Inessential activities can include:

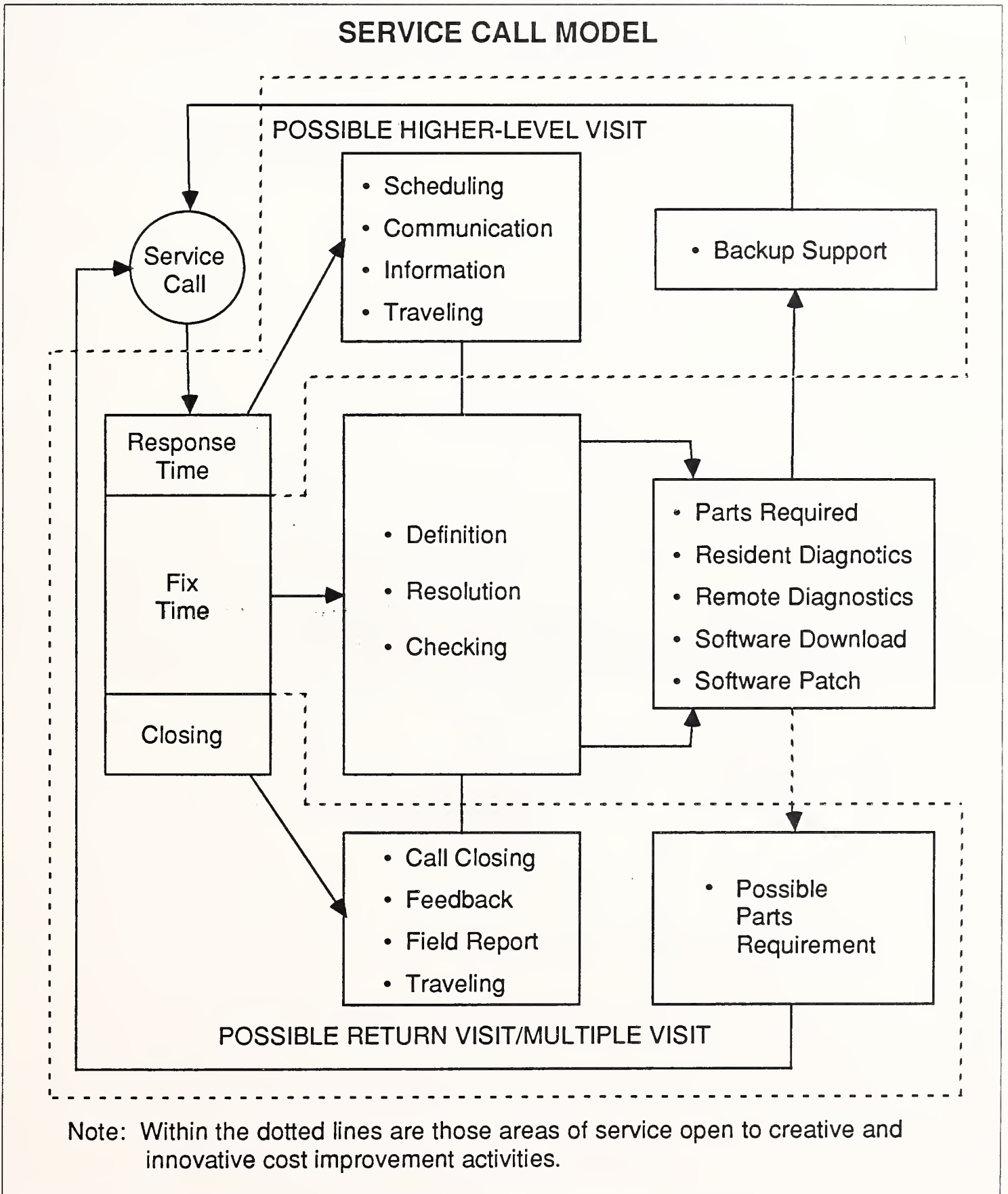
- Multiple site visits
- Delays waiting for spares
- Increased traveling time due to poorly planned itineraries
- Inefficient positioning of service locations geographically
- Poor application of service automation technology

The ratio of dead time to productive time is a measure of inefficiency that in idealised terms should be close to zero.

Exhibit VII-5 identifies, within the areas enclosed by dotted lines, potential zones in which improved efficiency can be gained by reducing costs through:

- Reductions in traveling time
- Improved service personnel skills
- Improved remote and second-line support
- Improved efficiency of service systems
- Use of remote and predictive techniques
- Automation technology

EXHIBIT VII-5



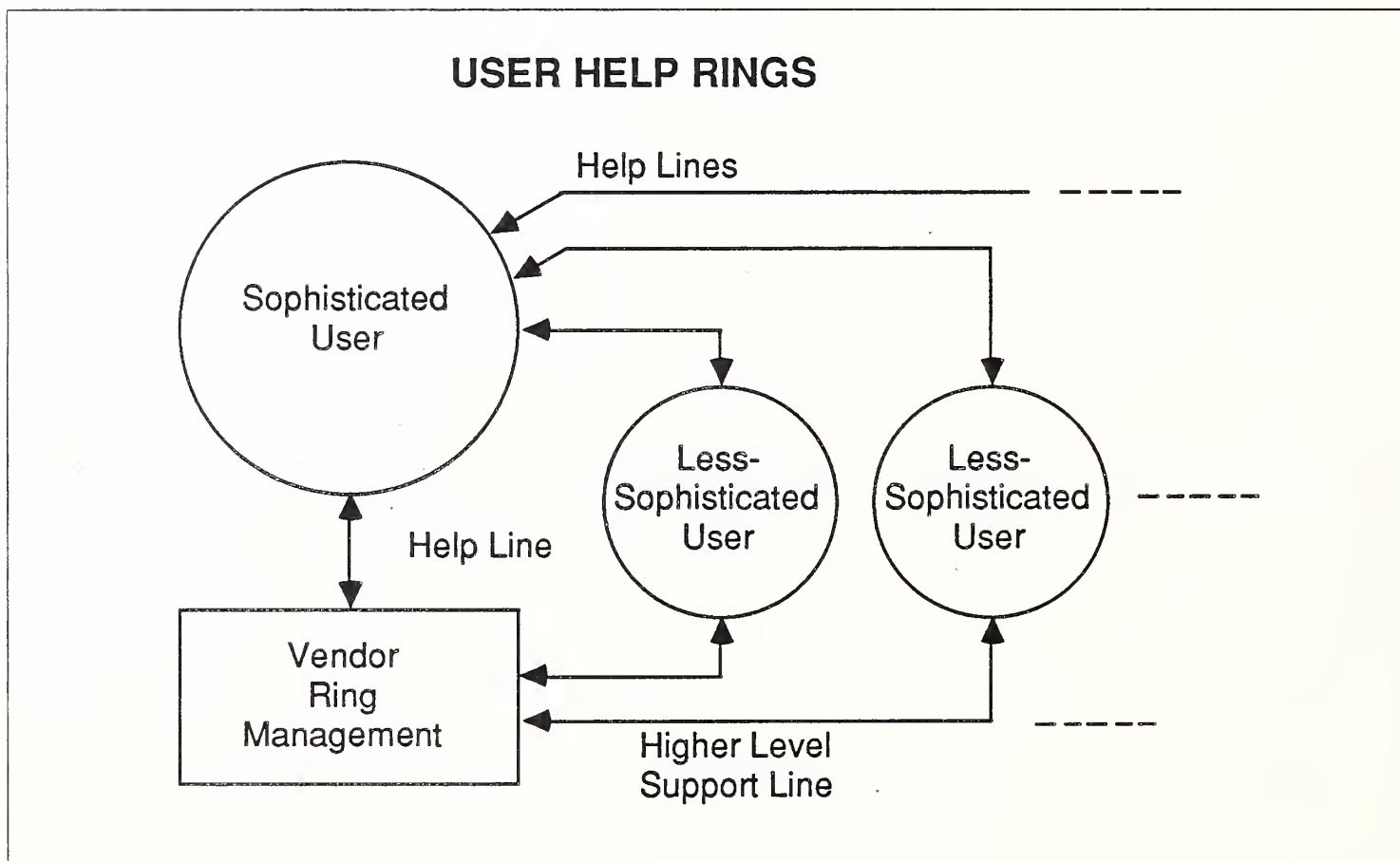
E

User Help Rings

During the course of research for this report a concept emerged in embryonic form. This concept was considered sufficiently interesting to warrant further thought and development.

User help rings, as illustrated in Exhibit VII-6, are a concept of considerable potential that offer the vendor an additional product to bring to the user.

EXHIBIT VII-6



Application of the concept is related to:

- A vendor-managed network of users
- One sophisticated user sharing the system support responsibility of less-sophisticated users with the vendor
- An objective to provide system support and assistance

An approach such as this would seem very appropriate to the emerging technological society. The characteristics of the help ring are:

- The vendor can focus on providing a high-skill-level element.
- The vendor retains control.
- The ring:
 - reduces unnecessary and costly vendor involvement in many routine matters.
 - provides a sharing of pooled resources.
 - develops the users skills.
 - provides a forum for common experiences and learning.
 - provides for optimisation of vendor and user resources.
 - makes improvements in cost effectiveness and value to the user and the vendor.

As implanted system support and diagnostic technology migrate downwards, and as system software becomes more standardised, the spread of this concept could be extended.

The help ring concept could be considered a further and logical extension of applying technology and support to service, under the guise of extended service automation.

