FIELD SERVICE PRICING IN EUROPE

INPUT

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INPUT Planning Services for Management

FIELD SERVICE PRICING IN EUROPE

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EXHIBITS

1 INTRODUCTION

I INTRODUCTION

A. SCOPE

- The pricing of field service for the information processing industry has become an extremely important issue. Current economic factors have forced users to focus on pricing maintenance. Previously, maintenance prices were largely accepted as a "fait accompli" because of the absence of choice. Competition has therefore developed in various sectors of field service.

  - Economic pressures have motivated vendors to find new service technique options. Included are: remote diagnostics, carry-in/mail-in, central dispatching, and customer-assisted maintenance.

  - Diminishing inflation rates have decreased the field service firms' ability to raise prices.

  - The increase of independent sources of maintenance as well as the availability of cheaper, more reliable equipment (that customers can use to create higher up-time via redundancy) have also affected the services market for maintenance.

- The net affect of these changes has been the creation of a more competitive or elastic market for maintenance. Previously maintenance was monopolistic and inelastic. And in some cases it still is.

- Field Service Pricing In Europe is a timely research report which examines several important aspects of maintenance pricing in Europe from the vendors' perspective. The 1983 Field Service Annual Report - Europe will provide pricing analyses, including user as well as vendor comparisons. It will be particularly significant this year to examine user attitudes about field service pricing.

  - Chapter III summarizes, by market segment, vendor price increases vis a vis what vendors think users will tolerate as a maximum increase in 1984. The relationship of maintenance prices to hardware prices is analysed.

  - Data and analyses are presented by both country and product market segment. Countries include:

    . Europe (total).

    . The United Kingdom.

    . West Germany.

    . The Netherlands.

    . Scandinavia.

    . Italy.

  - Products include:

    . Large systems.

    . Small systems.

  - . Peripherals and terminals.
  - . Data communications.
  - . Microcomputers.
  - . Word processors.
  - . Copiers.
  - . System software.

- Current price examples for base and extra maintenance are included in Chapter IV, along with descriptions of various levels and types of services offered.

- Chapters V and VI discuss inflation and international pricing considerations in a general sense. Because of the differences among maintenance vendors, these chapters are meant to provide only a general review of the issues. Field service vendors may use these chapters to relate specific issues to their own situations.

B. METHODOLOGY

- Two separate questionnaires were used to develop data for 1) basic pricing information and 2) extra maintenance. Exhibit I-1 lists the respondents for both.

  - Twenty-nine respondents answered the basic pricing questionnaire.

EXHIBIT I-1

RESPONDENTS TO EUROPEAN FIELD SERVICE PRICING QUESTIONNAIRES - BY COMPANY

BASIC PRICING	EXTRA MAINTENANCE
American Monitor	Burroughs
BASF	Control Data Ltd.
CFM	Digital Equipment Corporation
CTS	Honeywell
Computervision	IBM*
Control Data	ICL
Digi-Data	NCR*
Ericsson	Prime
Floating Point Systems	Univac
Halcyon Data Communications	
Hamilton Service	
Honeywell	
ICL	
MAI	
MSI Data International	
Modcomp	
Multicomputer	
Nixdorf	
Philips	
Pitney Bowes	
Racal Milgo	
Raytheon Data	
Scitex Ltd.	
Terminal System Service	
Thijssen	
Thorn EMI	
Vollwood	
Wang	

* Did not answer questionnaires directly. Information obtained from TPM firms.

- Nine firms are represented in the extra maintenance research.

- Additionally, secondary research sources from INPUT Ltd.'s and other libraries and files were utilized.

- Exhibit I-2 shows the list of respondents by country.

EXHIBIT I-2

COUNTRIES REPRESENTED IN EUROPEAN FIELD SERVICE PRICING STUDY

COUNTRY	PERCENT OF TOTAL RESPONDENTS
United Kingdom	68%
West Germany	13
Italy	3
Scandinavia	5
Netherlands	11

II MANAGEMENT SUMMARY

A. CONCLUSIONS

1. THE HONEYMOON IS OVER

- Maintenance pricing has received much attention lately from customers and vendors alike. The increased awareness of maintenance prices results from a combination of factors:

  - Recent recessionary conditions have forced data processing managers to carefully scrutinize previously sacred service budgets for potential savings.

  - Increased competition for maintenance business has expanded with the advent of more reliable independent maintenance firms.

  - Cheaper and more reliable new hardware has alleviated some of the anxiety that had previously motivated users to remain loyal to traditional sources of service.

    . More reliable equipment needs less service than older products.

    . Less costly hardware makes it easier to configure backup or redundant systems and devices.

- The net effect of these market and economic conditions is to pressurize previously inelastic maintenance prices into more elastic and competitive prices. The dramatic decline in maintenance price increases is reflected in Exhibit II-1, which illustrates a 67% decline in average annual maintenance revenue increases. Maintenance revenues are closely related to maintenance prices.

- Reduced inflationary trends have similarly created problems relating to maintenance pricing. As the rate of inflation has diminished so has the amount of acceptable price adjustments for service. The relationship of inflation, cost of service and the price of service is shown in general terms in Exhibit II-2.

  - As a direct response to recession, unemployment, and constrained credit terms, inflation has currently subsided. However, INPUT believes that inflation is about to be refueled as the recession loses its kick.

  - The cost of service has risen in proportion to the rate of inflation but is expected to exceed the rate of inflation very soon. This is due to the fact that service engineers who are scarce and highly skilled soon will be given salary increases that are higher than the rate of inflation.

  - The cumulative effect of unopposed and sometimes generous maintenance price increases brought about a generally profitable field service industry in the late 1970s and early 1980s.

  - As future price increases for service are limited because of the marketing and economic reasons discussed earlier, the estimated value of field service profitability will diminish from P1 to P2 (see Exhibit II-2).

EXHIBIT II-1

AVERAGE ANNUAL MAINTENANCE REVENUE INCREASES

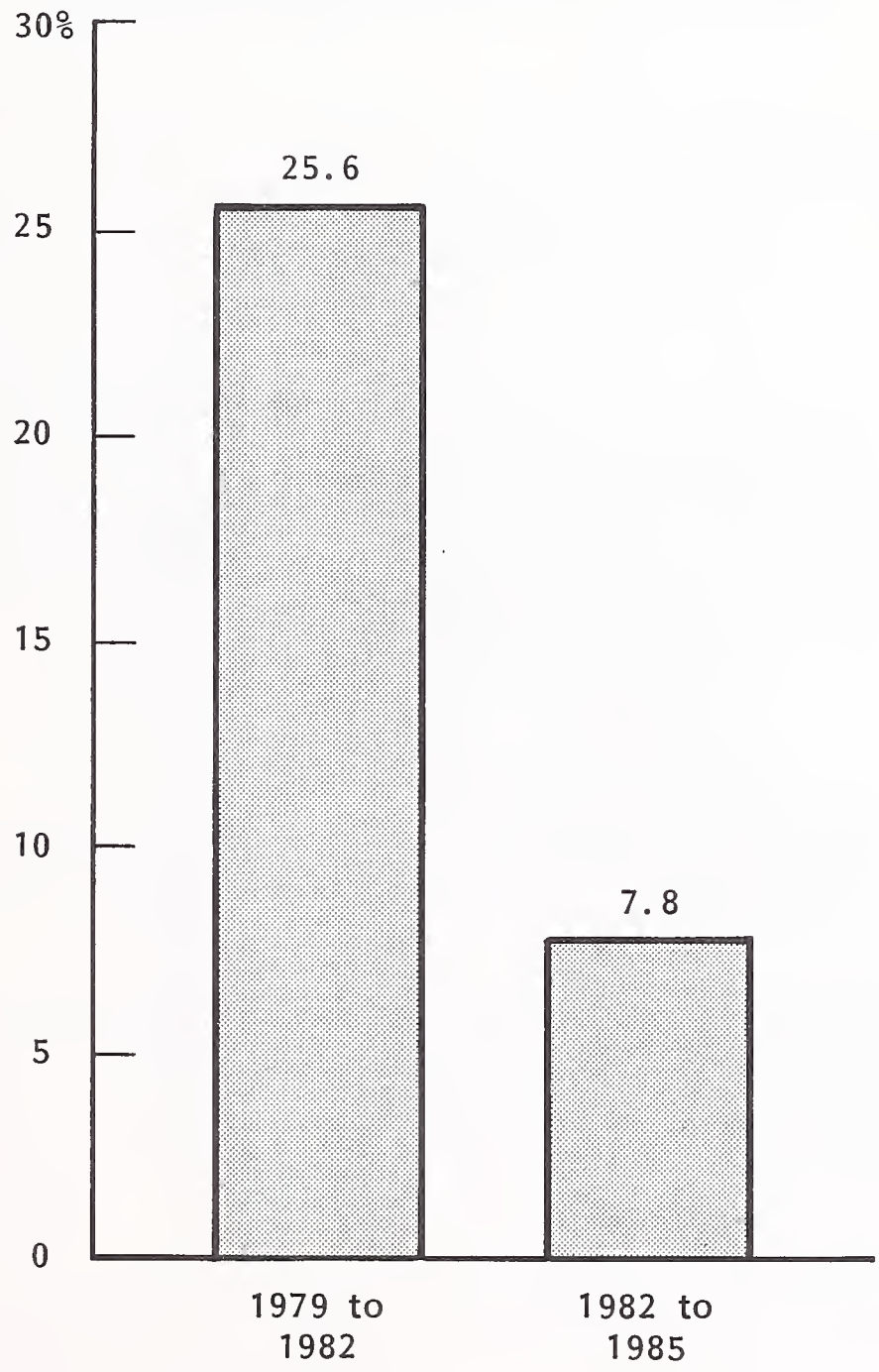
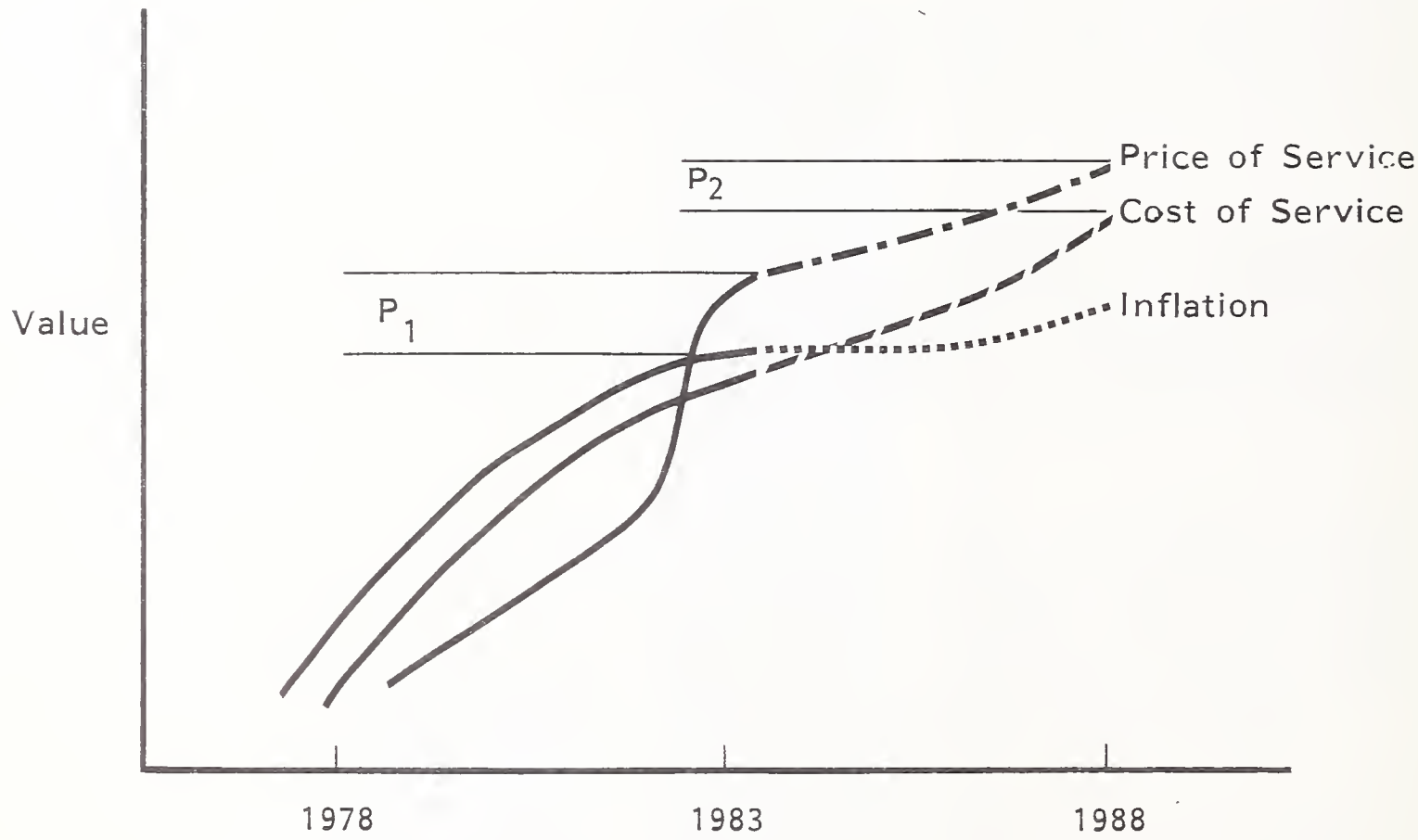


EXHIBIT II-2

PROFIT SQUEEZE IN FIELD SERVICE



SOURCE: INPUT Estimates

2. VENDOR REACTIONS TO PRICING PRESSURES

- Differentiation of service products has been and will continue to be an immediate response to the pressures of maintenance price competition by hardware manufacturing companies. This differentiation is evident, for example, in the form of guaranteed uptime agreements, carry-in or mail-in service, and customer-assisted maintenance.

- Innovative and entrepreneurial service plans are especially available in microcomputer service. One enterprising new microcomputer maintenance vendor offers three levels of service, each differentiated from the others by price and content.

  - The Microswap Plan is for large or multiple installations with in-house service engineers and diagnostic facilities. This service allows for a board or major subassembly exchange at 30% of the list price. That is, a working unit is sent to replace a bad unit for 30% of the original price of the unit.

- The Micromend Plan provides service on a nonpriority, time-and-materials basis where replaced or repaired parts will be furnished at a fixed hourly rate with fixed prices for parts.

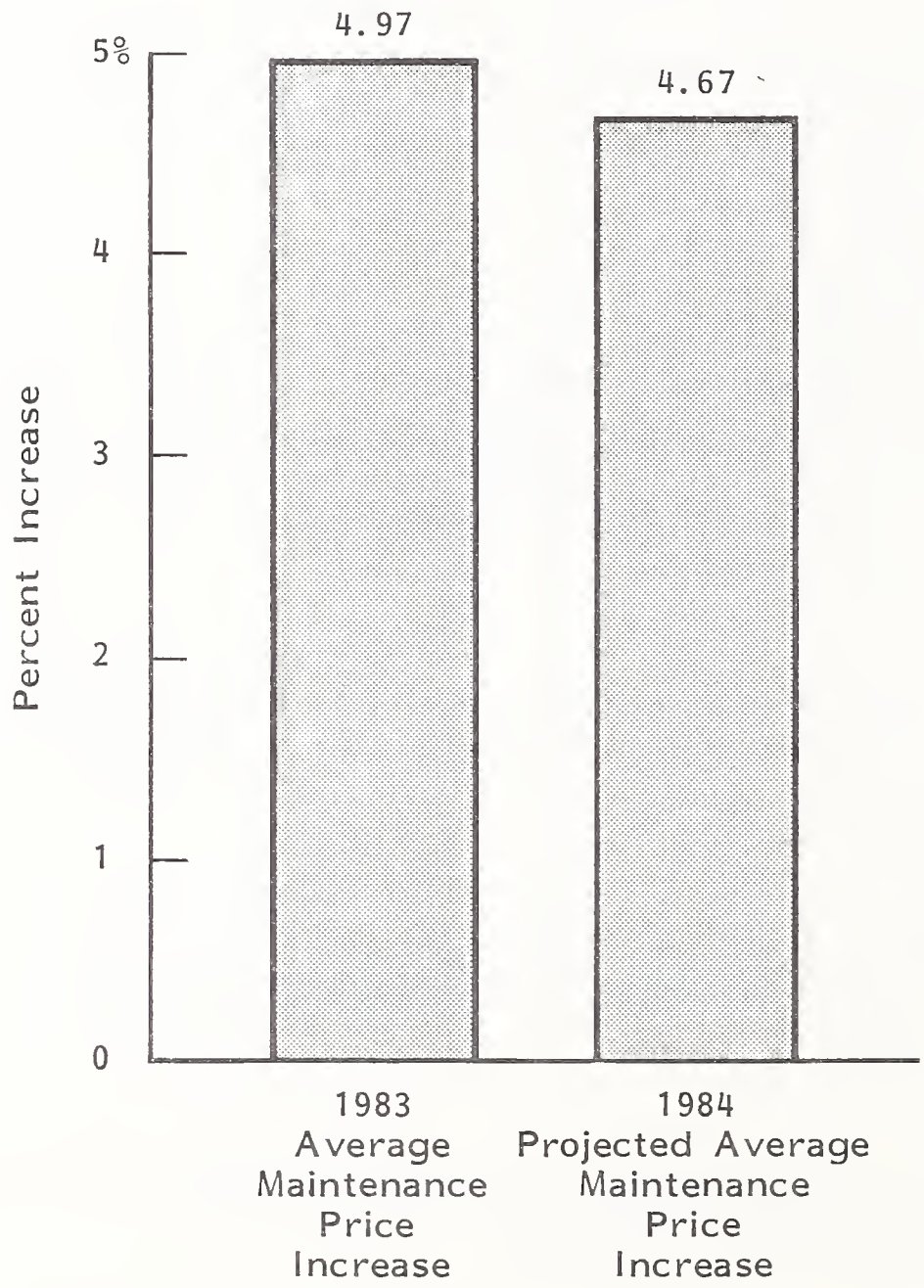
  - The Microcall Plan allows for customized field service work, such as installations, upgrades, and configuration jobs at time-and-materials rates.

  - The Microsure Plan is the on-site contract maintenance, with annual premiums paid in advance.

- Another reaction from service vendors is their plan to price maintenance more conservatively. Exhibit II-3 illustrates that maintenance price increases for 1983 averaged slightly under 5% for all products in Europe. Anticipated

EXHIBIT II-3

MAINTENANCE PRICE INCREASES FOR
1983 AND 1984 - EUROPE



1984 comparable price adjustments average 4.67%, which is 6% below the 1983 price change.

- Both 1983 and 1984 figures are below vendors' assessment of the threshold of pain (TOP) or the level at which vendors will no longer tolerate a maintenance price increase.

- Both average pricing rates are very nearly equal to the rates of inflation.

- Included in the overall price indices are:

  . Large and small systems.

  . Data communications equipment.

  . Microcomputers.

  . Word processors.

  . Copiers.

  . System software.

- Detailed price trends by individual product segment and by country are included in Chapter III.

3. EXTRA MAINTENANCE PRICING

- Extra shift maintenance, whether contracted or ad hoc, is diminishing. One vendor, for example, contracts for extra shift coverage for only 3% of their installed sytems. Furthermore, this vendor receives only 2% of the calls outside the principal period of maintenance (PPM) that they do during the PPM.

- Most respondents indicate that the quality of their extra shift maintenance is better than that during the PPM. Resources, including engineers, backup, responsiveness, and attention to the customers' problem, are better because there is not that much demand outside the PPM.

- Larger users would like to have the window for their standard maintenance expanded. Larger users want this service expansion because they are using their systems for more hours than their service contract calls for and because they would prefer to have service performed when it doesn't disrupt their own operation. For example, a problem might occur during the day. This would be only a slight hindrance, except that a service representative who preempts the system during the day is less preferred than one who preempts the system when the customers' employees are idle on their own time, i.e., extra shift.

B. RECOMMENDATIONS

- European vendors of maintenance are generally resigned to lower maintenance price increases, as illustrated earlier. The ability to continue expected revenue increases will require alternatives to price increases. INPUT addressed this requirement in its research study, Alternative Revenue Opportunities for Field Service, December 1982.

- Also, in response to increasingly competitive price pressures in maintenance, service providers need to develop and implement product services differentiation. Differentiation of service means finding and packaging service ideas, or putting a price tag on the ideas and selling them.

  - Ideally, differentiation of services is stimulated by the user. Vendors should take into account new user service requirements and respond with a priced service product.

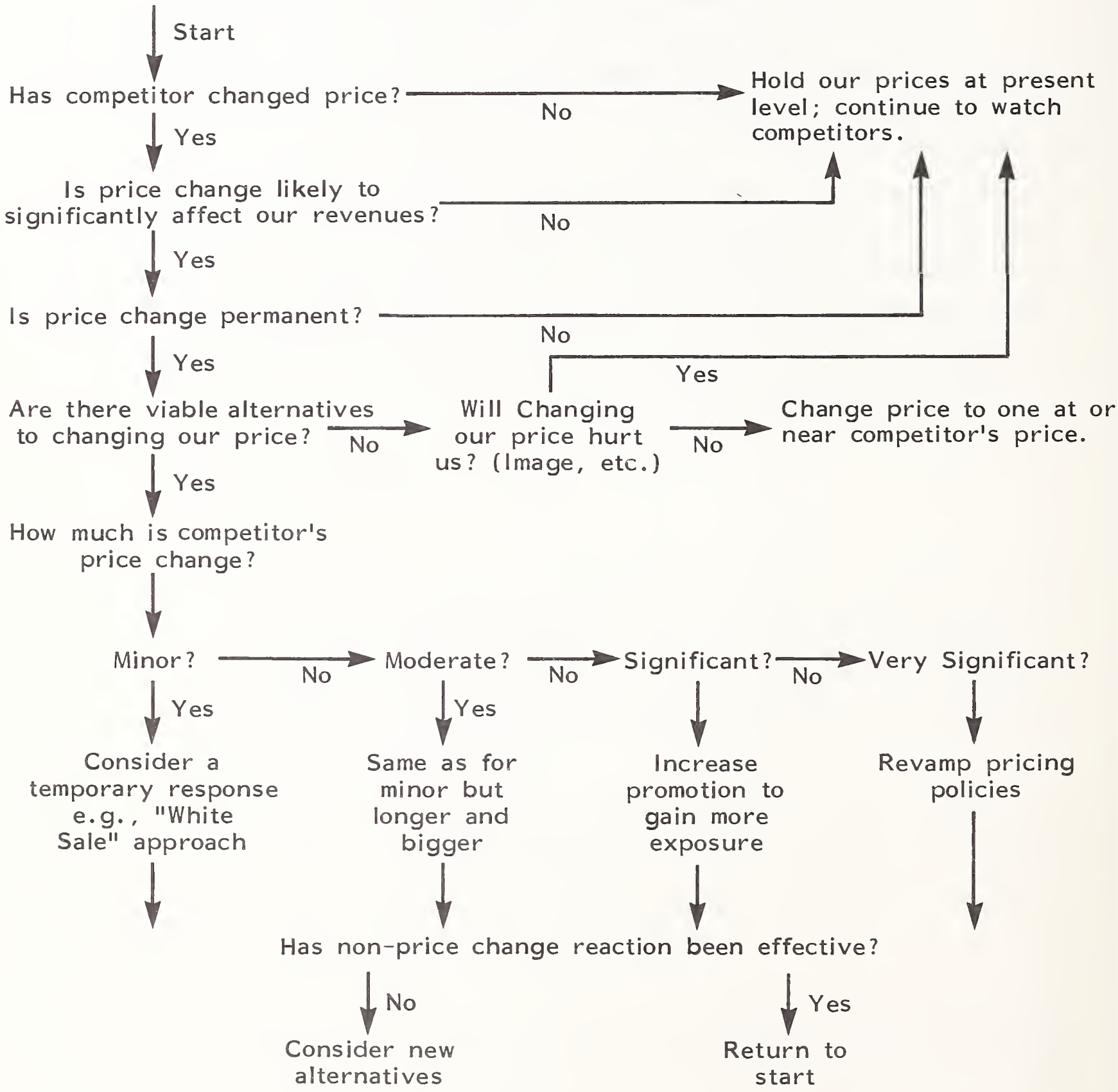
- It must be stressed that simply isolating, packaging, and pricing a new service idea is not enough. Marketing the new concept is critical.

- One suggestion is to expand the principal period of maintenance to include 12-hour service, instead of 8-hour. This change would be welcomed by many large users and could be implemented as a standard offering with an accompanying price increase.

- A further recommendation regarding maintenance pricing is to concentrate on a better understanding of pricing in general and on the development of specific pricing plans and strategies. Exhibit II-4 provides an example of a simple pricing plan that involves meeting a competitor's price change. "Competitor" in this context can mean either another information processing manufacturer or an independent service provider.

EXHIBIT II-4

PLAN FOR RESPONDING TO A
COMPETITOR'S PRICE ADJUSTMENT



III VENDOR MAINTENANCE PRICE INCREASES, THRESHOLD OF PAIN, AND MAINTENANCE PRICE TO HARDWARE PRICE RATIO

III VENDOR MAINTENANCE PRICE INCREASES, THRESHOLD OF PAIN, AND MAINTENANCE PRICE TO HARDWARE PRICE RATIO

A. EUROPE

- Maintenance price information for Europe comprises the data for each individual country. Included are the United Kingdom, West Germany, the Netherlands, Scandinavia, and Italy. Unfortunately, and despite repeated requests for data, France is not represented in the survey. However, French users are very well represented in the 1983 INPUT Annual Field Service Survey, which will be included in the 1983 Field Service Annual Report.

- Most of the data is self-explanatory. However, a few terms require further definition:

  - "Threshold of pain" refers to the customers' expected upper limit of an agreeable maintenance price increase. The threshold of pain is the upper limit of price increases that vendors believe their customers will tolerate.

  - In the 1983 Field Service Annual Report, user and vendor responses on the subject of the threshold of pain will be compared.

  - The maintenance price: hardware price ratio refers to the ratio of annual base maintenance charges to the purchase value of the hardware.

- Pricing analyses have been provided in terms of market segment. The overall European analysis gives a picture of maintenance prices by type of product, such as large systems, small systems, peripherals, and the like. Market segments by country offer another dimension in the pricing analysis.

I. LARGE SYSTEMS

- Exhibits III-1 to III-3 describe European maintenance price increases for 1983 and 1984 in terms of average increases, ranges, and standard deviation.

  - The consensus for a 1984 price increase (3.9%) is slightly lower (0.6%) than 1983's increase (4.5%) and substantially lower (3.0%) than the threshold of pain expected from users (7.9%).

  - There are two simple explanations for this more conservative pricing:

    . Lower inflation.

    . More competition.

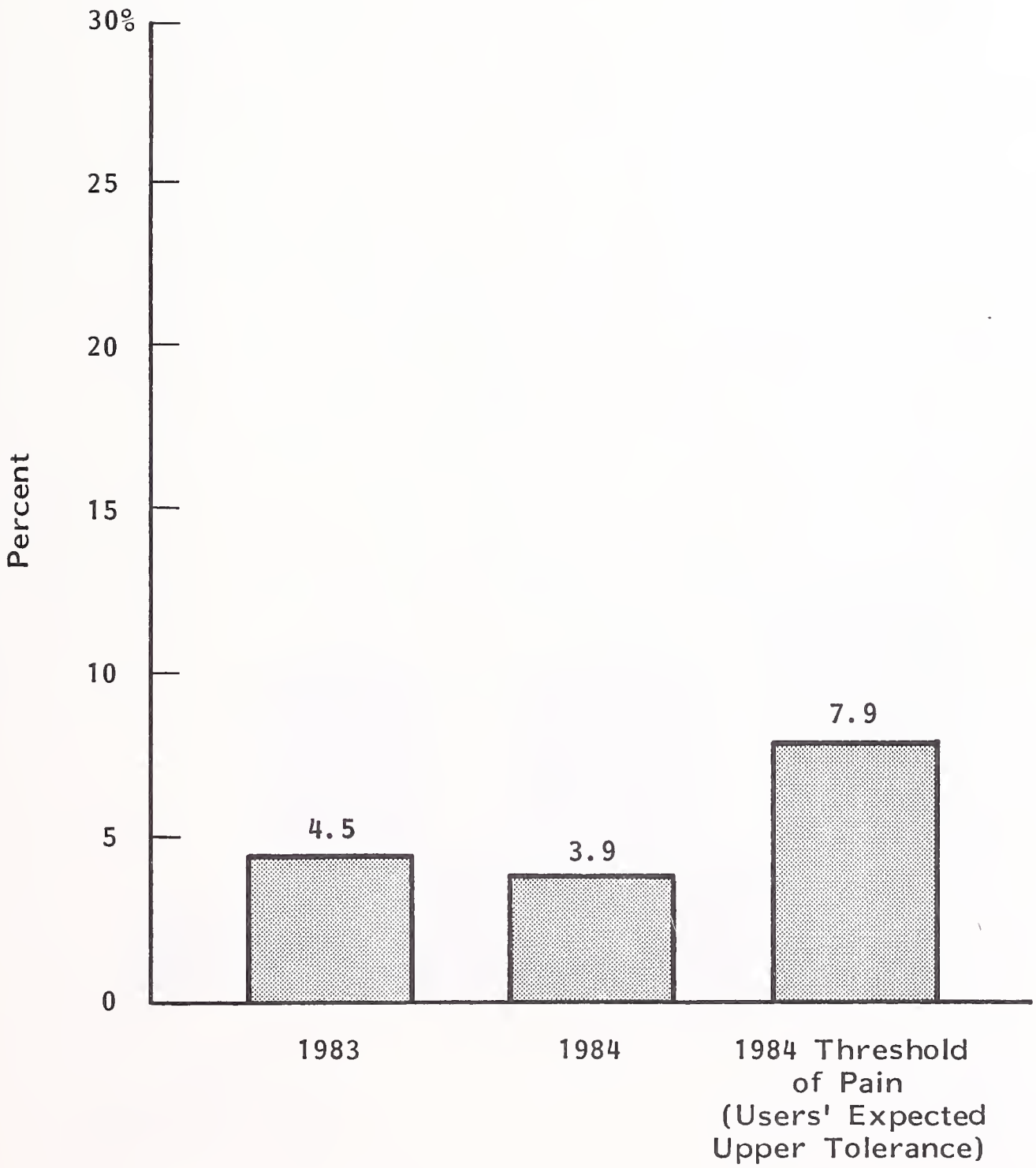
  - Lower inflation means smaller salary increases to pass along to users via prices.

  - Increased competition has resulted in alternative service options, including self- and third-party maintenance.

  - The average expected maintenance price increase of 3.9% for 1984 would be the lowest annual increase since the beginning of information processing field service.

EXHIBIT III-1

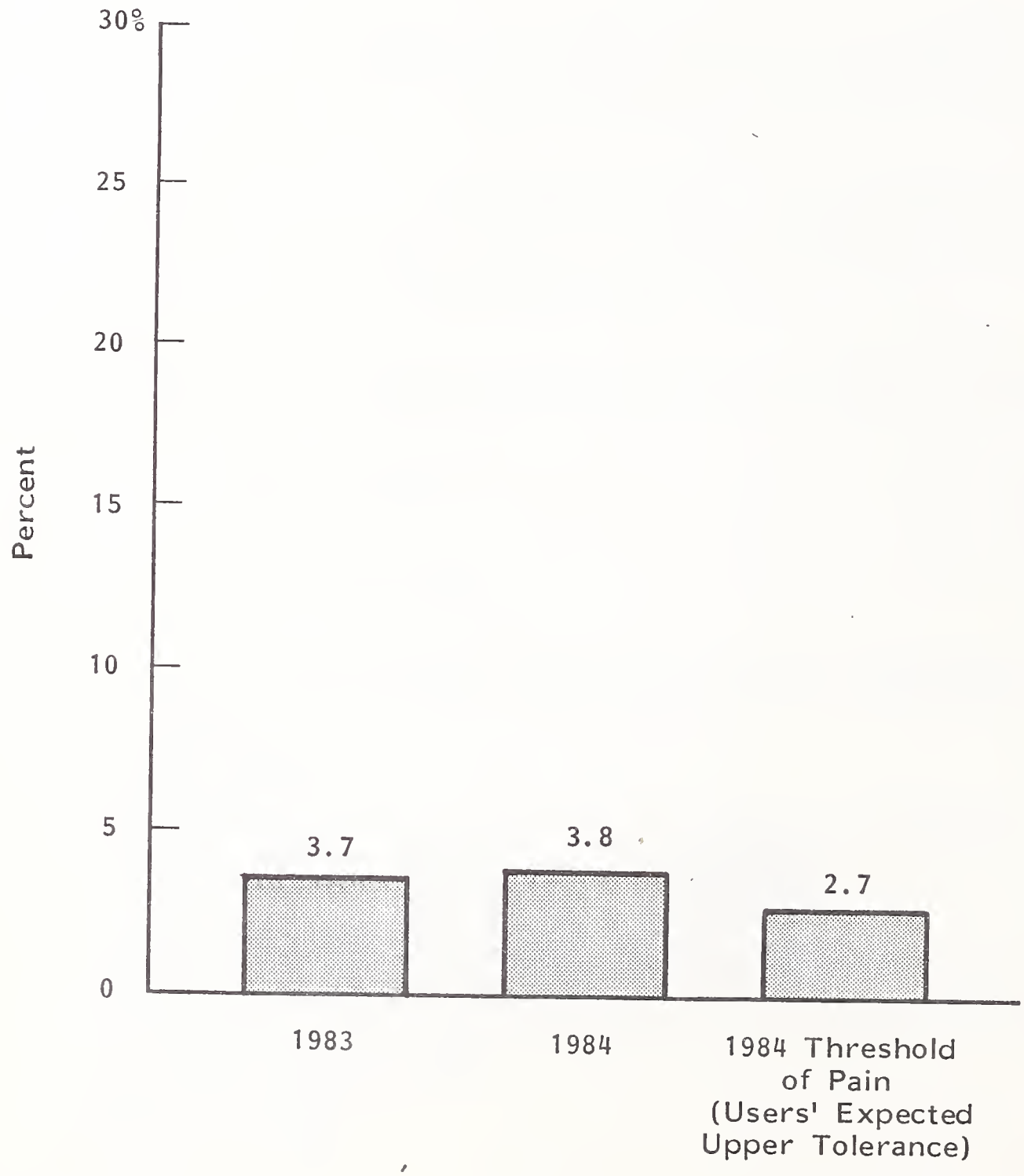
MAINTENANCE PRICE INCREASES - AVERAGES -
IN EUROPE FOR LARGE SYSTEMS



SOURCE: INPUT Survey

EXHIBIT III-2

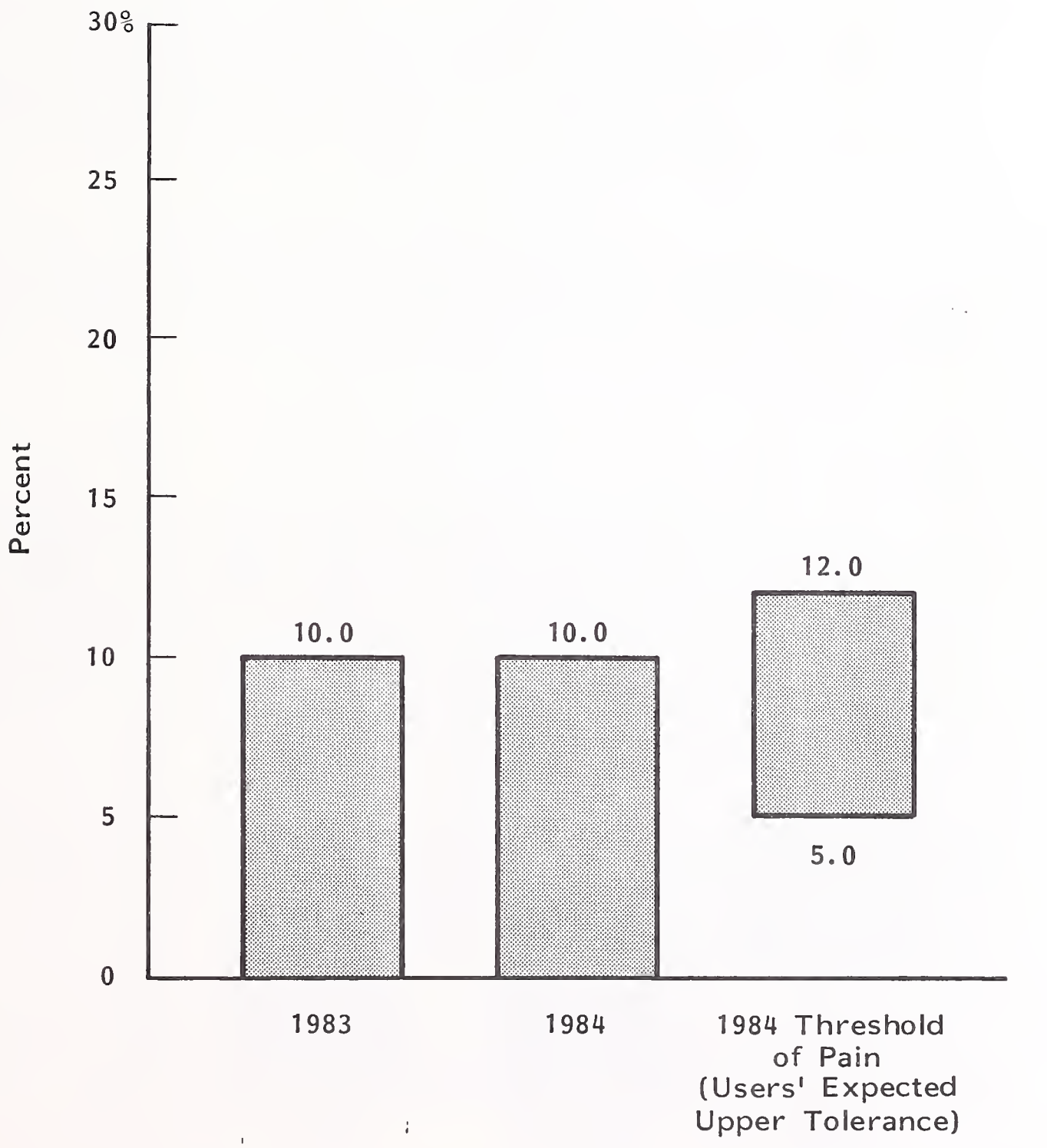
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION - IN EUROPE FOR LARGE SYSTEMS



SOURCE: INPUT Survey

EXHIBIT III-3

MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR LARGE SYSTEMS



SOURCE: INPUT Survey

- The standard deviations for maintenance pricing are closely grouped.

- Ranges of price increases for maintenance include a maximum of 10% for 1983 and 1984 and 12% for the threshold of pain while minimum are 0% and 5% respectively.

- The value of large systems maintenance compared to the cost of hardware is 7.9%, with values ranging from 4% to 12.5%, as shown in Exhibit III-4. This 7.9% figure is on the downturn and is expected to continue to decrease because of technical and competitive pressures.

- The pricing parameters for large systems reflect vendors' conservative pricing strategies. Generally, most of these parameters were several points higher a few years ago.

2. SMALL SYSTEMS

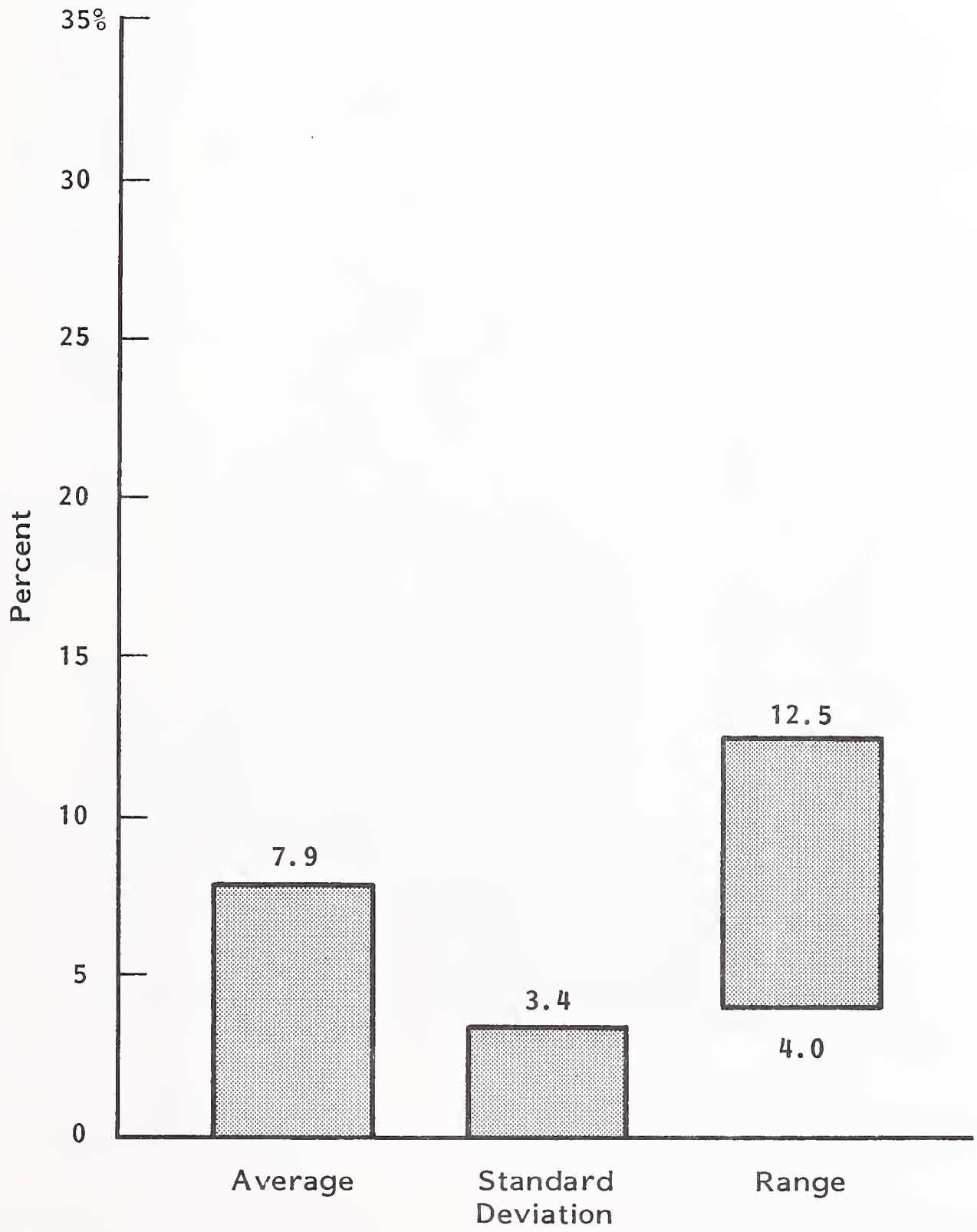
- Price increases for small systems in terms of averages, standard deviation, and ranges are shown in Exhibits III-5 to III-7. Pricing for small-systems maintenance is higher than for large systems because of two important factors: One reason is that the absolute value of small systems maintenance is much lower than that for the small systems themselves.

- Also, the market for smaller systems is booming as networks become more extensive and more local, decentralised information processing occurs. (Prices are usually higher in an expanding market.)

- These factors also explain the higher relative value of maintenance as compared to hardware. Details are shown in Exhibit III-8.

EXHIBIT III-4

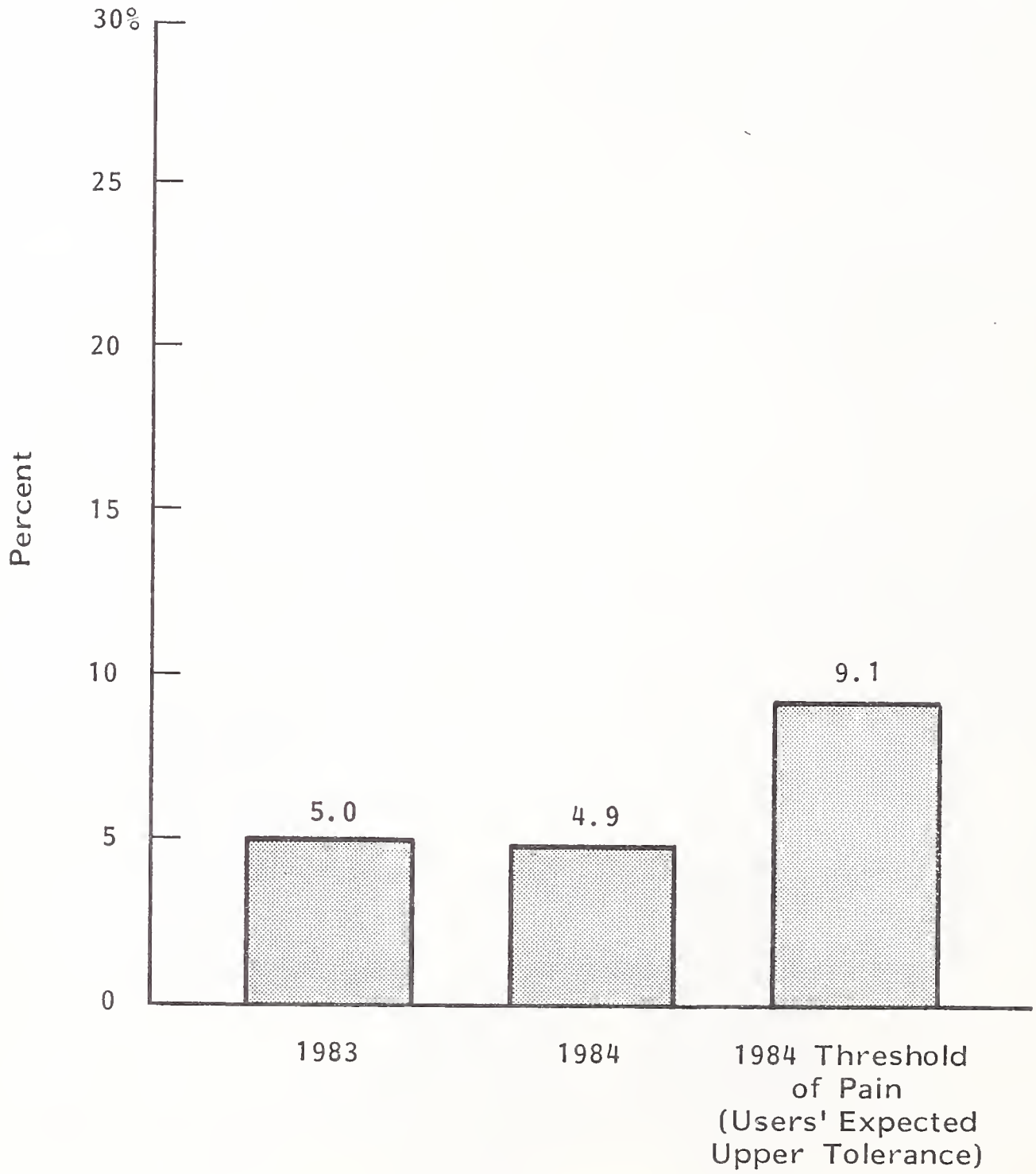
MAINTENANCE PRICE AS A PERCENT OF HARDWARE PRICE -
IN EUROPE FOR LARGE SYSTEMS



SOURCE: INPUT Survey

EXHIBIT III-5

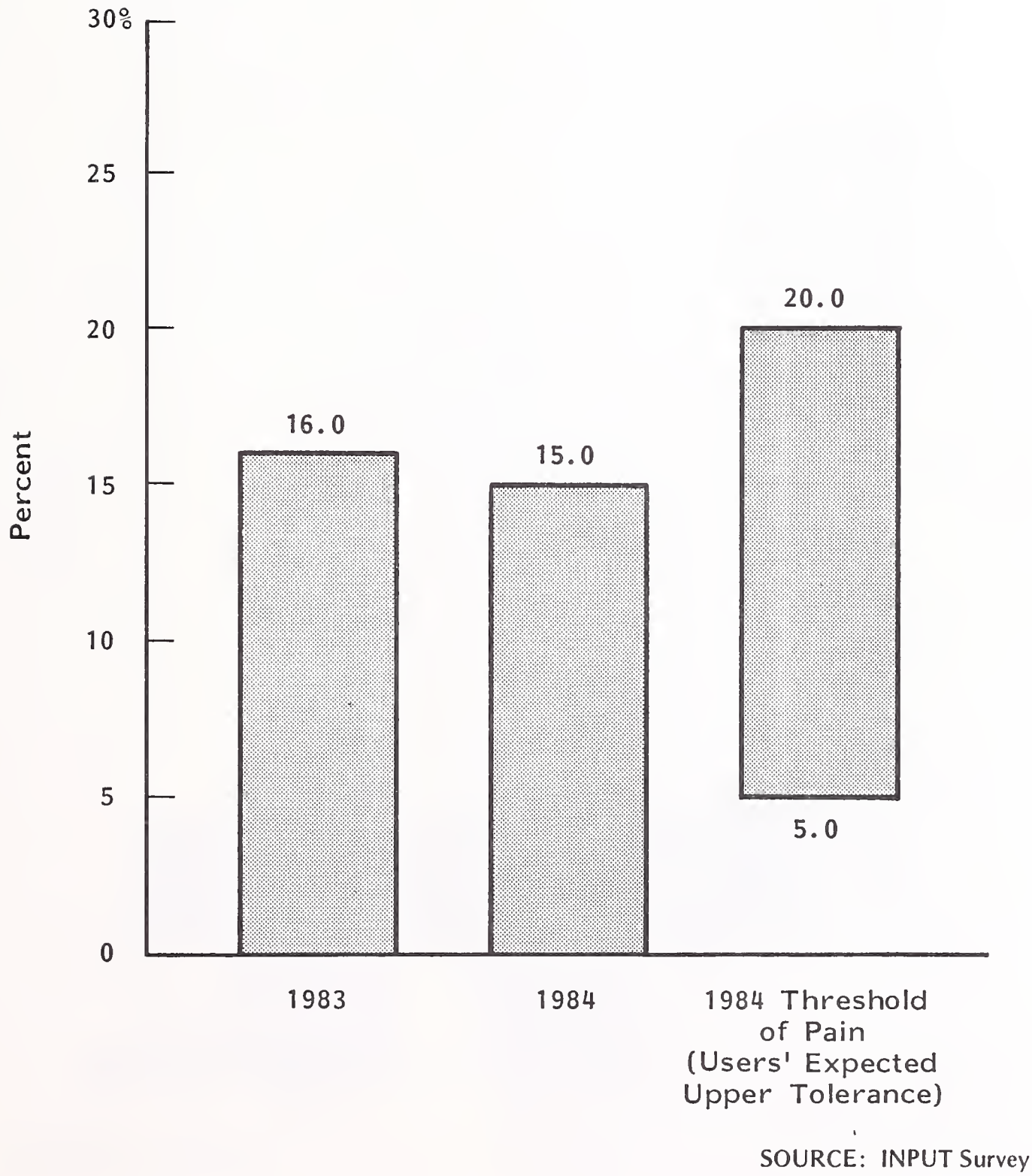
MAINTENANCE PRICE INCREASES - AVERAGES - IN EUROPE FOR SMALL SYSTEMS



SOURCE: INPUT Survey

EXHIBIT III- 6

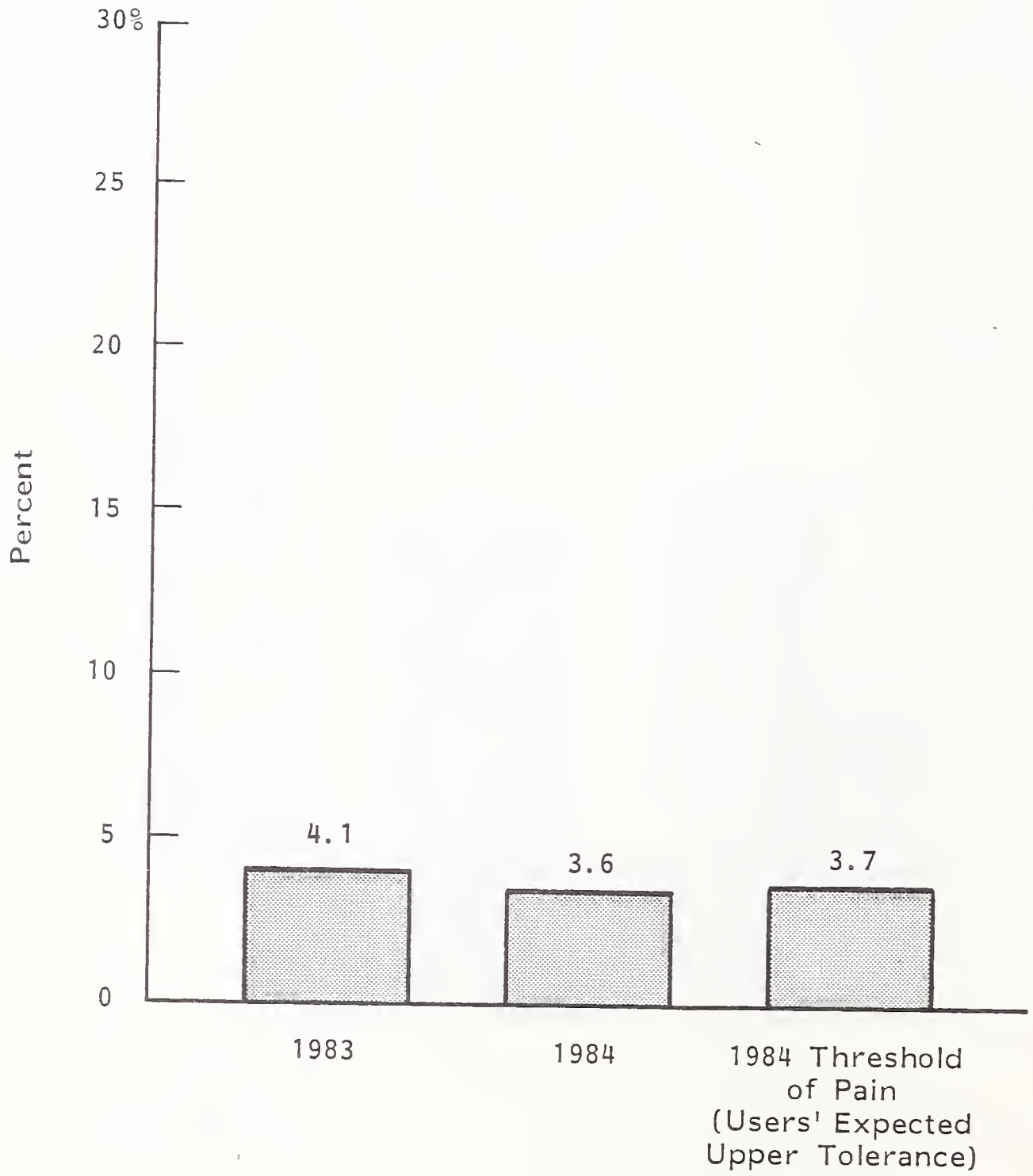
MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR SMALL SYSTEMS



SOURCE: INPUT Survey

EXHIBIT III-7

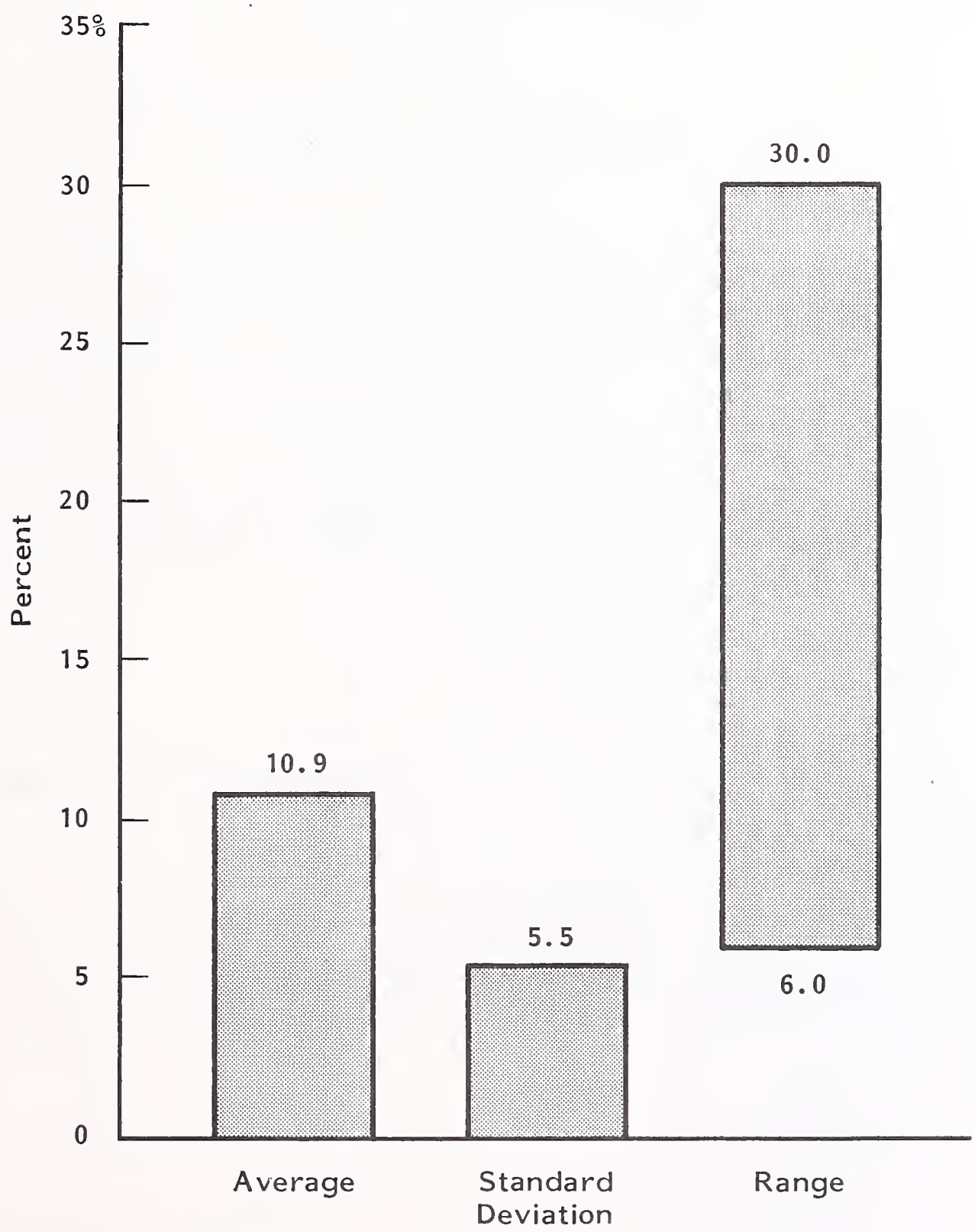
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION -
IN EUROPE FOR SMALL SYSTEMS



SOURCE: INPUT Survey

EXHIBIT III-8

MAINTENANCE PRICE AS A PERCENT OF HARDWARE PRICE - IN EUROPE FOR SMALL SYSTEMS



SOURCE: INPUT Survey

3. PERIPHERALS AND TERMINALS

- Exhibits III-9 to III-12 describe pricing for maintenance of peripherals and terminals. The rates are generally the same as those for small systems.

- Maintenance prices for peripherals, terminals, and small systems are higher than those for hardware.

  - The average ratio of maintenance to hardware costs is 11% for small systems and 13% for peripherals and terminals.

  - This means that in less than 10 years the payout for base maintenance, (excluding allowances for any extra shift coverage and maintenance price increases) will equal the original total price of the hardware.

- It will not take users a long time to realize that these costs are high. Maintenance coverage will therefore diminish as customers "gamble" on non-contract coverage and/or enhance their system's reliability by buying extra backup peripherals and terminals.

4. DATA COMMUNICATIONS

- Maintenance pricing parameters for data communications equipment in Europe are illustrated in Exhibits III-13 to III-16.

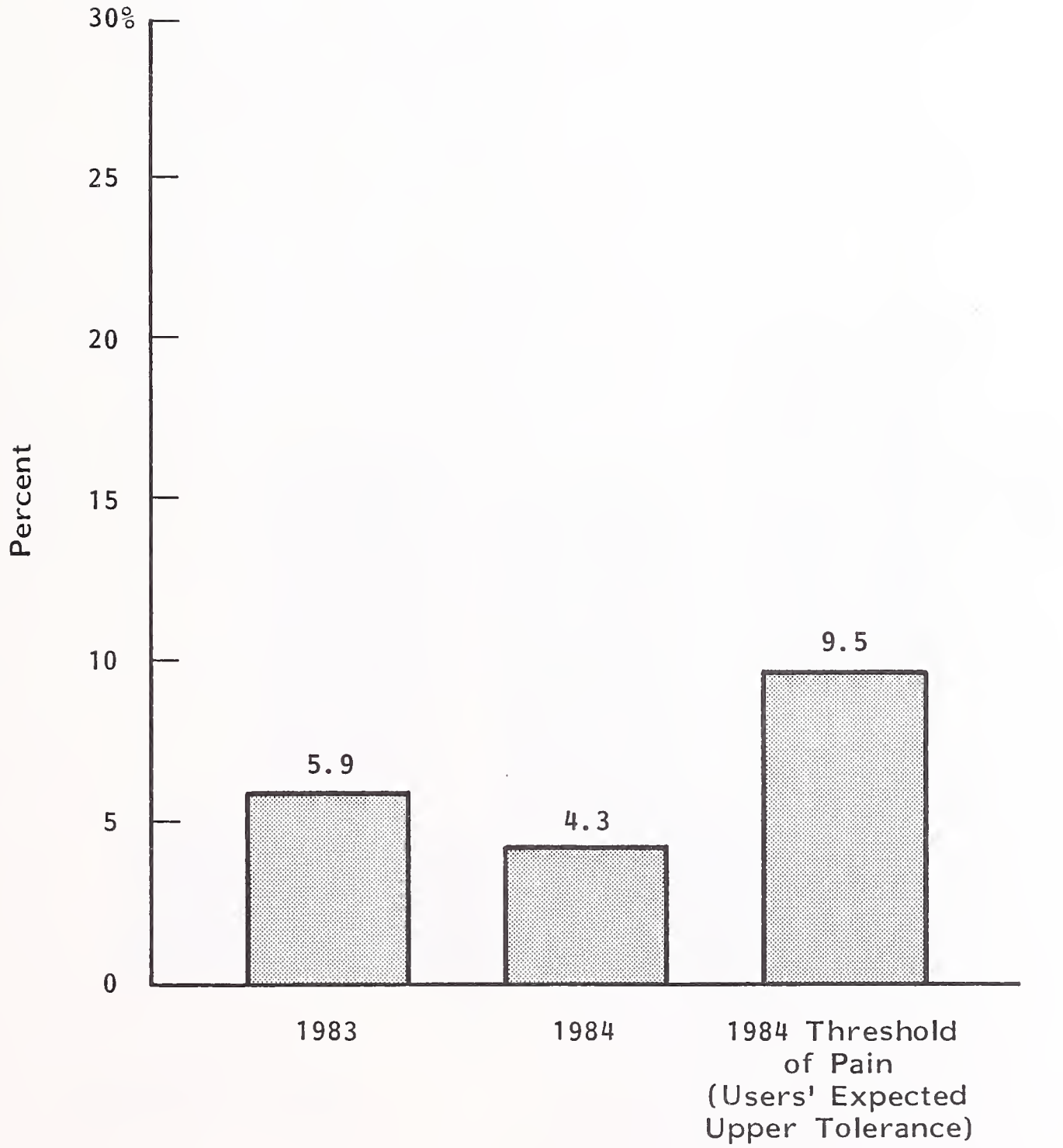
- Unlike the prices for small systems, peripherals, and terminal maintenance, the prices for data communications servicing are significantly less. This is despite the fact that the absolute value of data communications service is much less.

- Reasons for this inverse correlation include:

  - Data communications gear has no moving parts and is very reliable.

EXHIBIT III-9

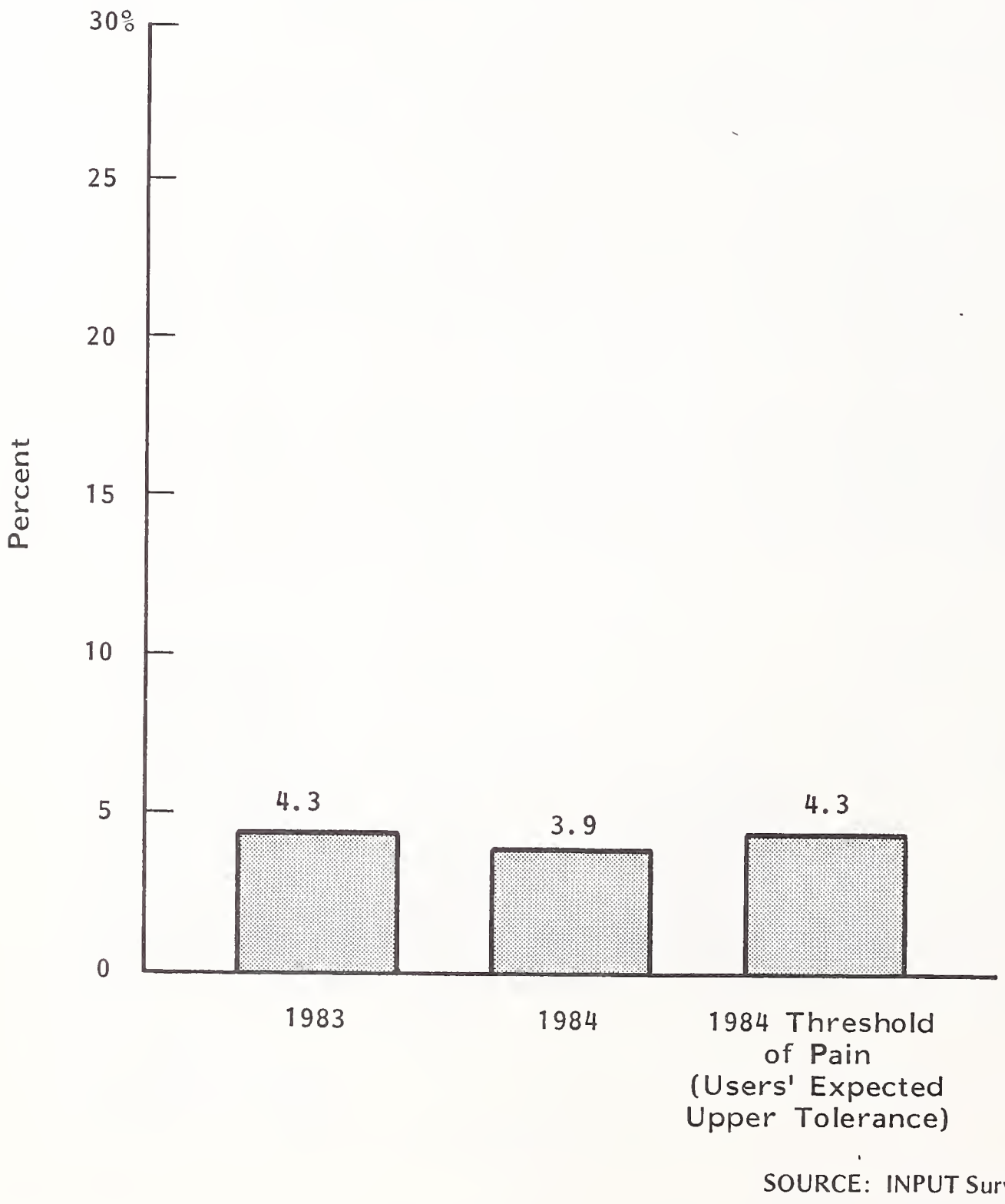
MAINTENANCE PRICE INCREASES - AVERAGES - IN EUROPE FOR PERIPHERALS AND TERMINALS



SOURCE: INPUT Survey

EXHIBIT III-10

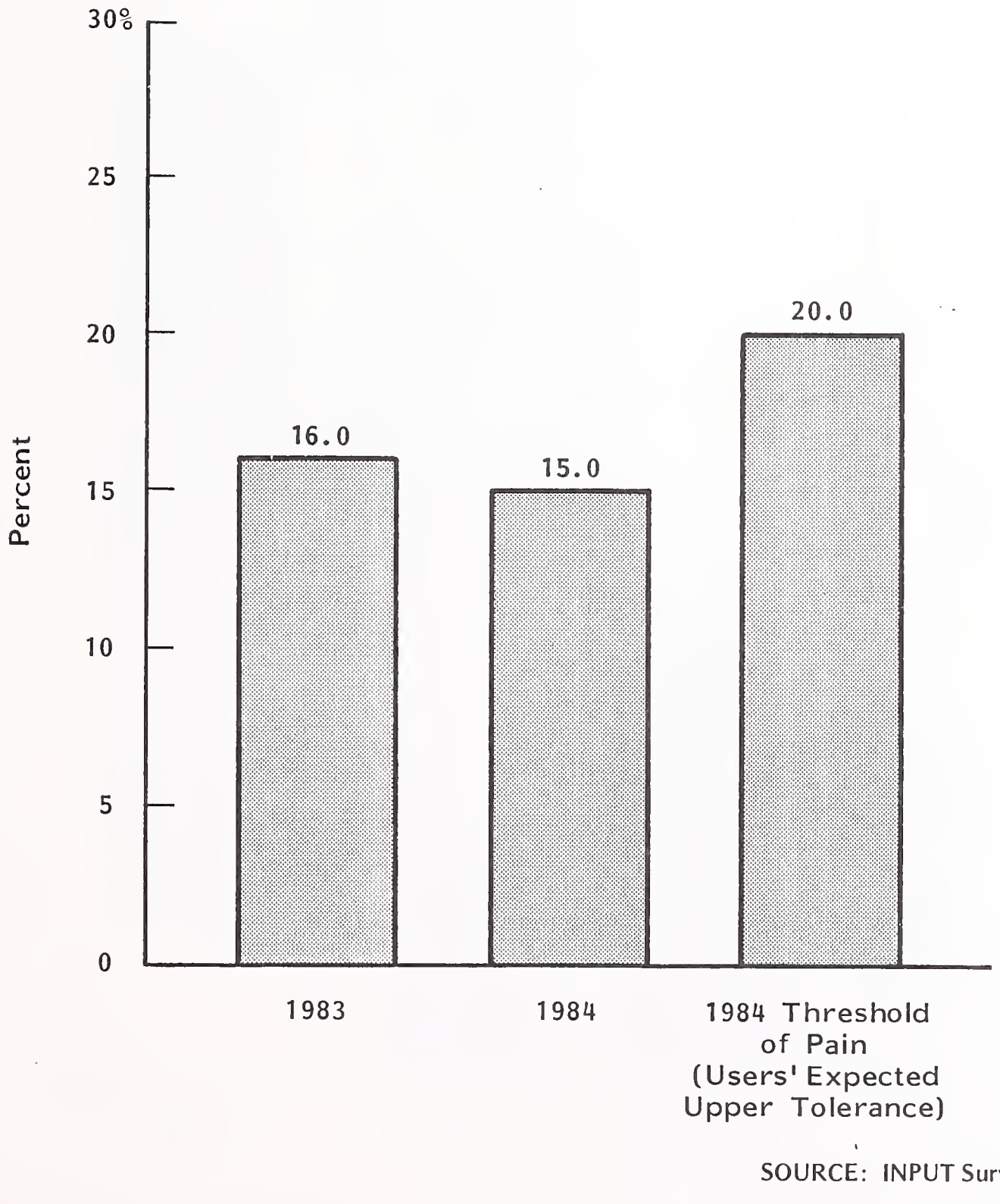
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION - IN EUROPE FOR PERIPHERALS AND TERMINALS



SOURCE: INPUT Survey

EXHIBIT III-11

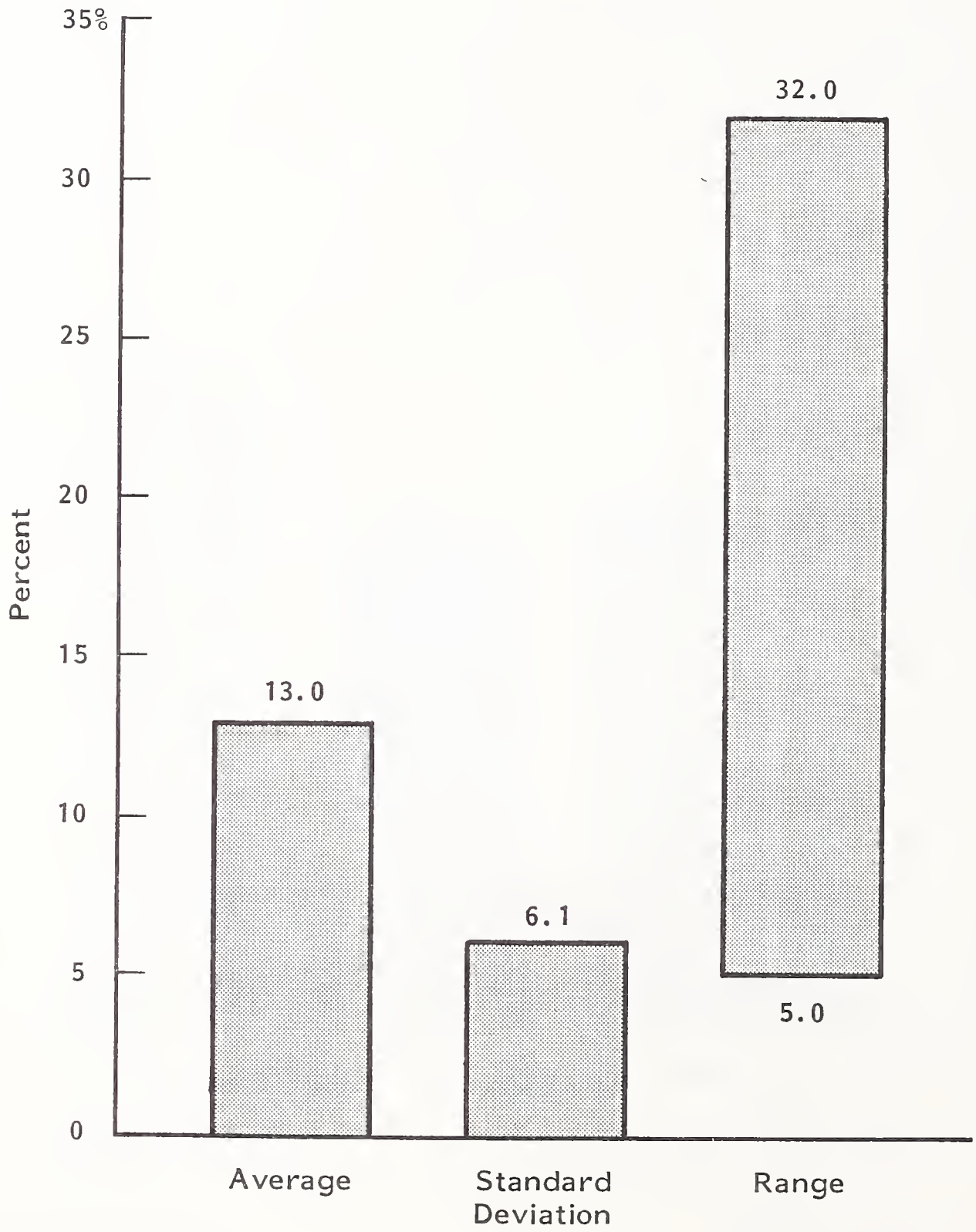
MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR PERIPHERALS AND TERMINALS



SOURCE: INPUT Survey

EXHIBIT III-12

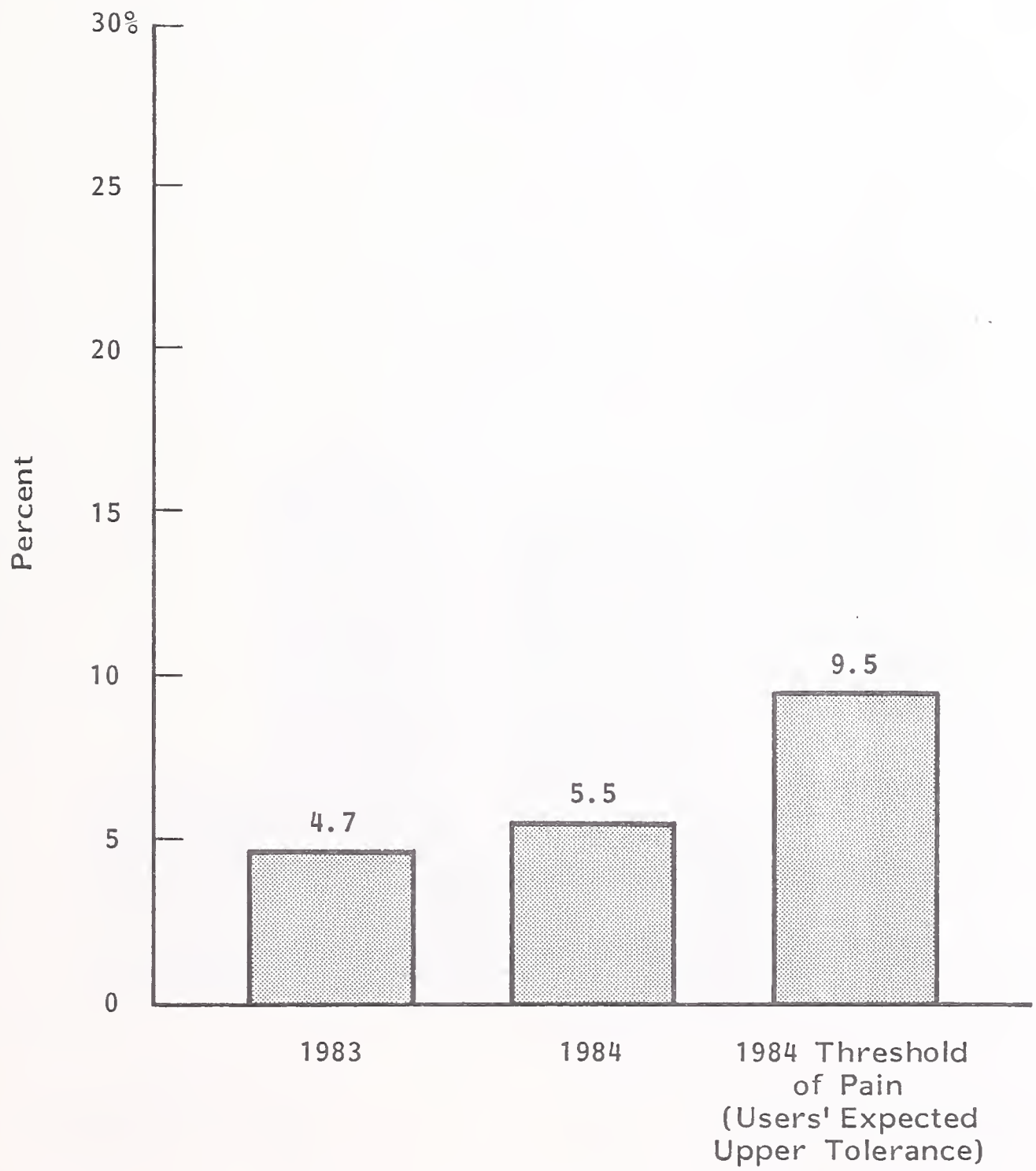
MAINTENANCE PRICE AS A PERCENT OF HARDWARE PRICE -
IN EUROPE FOR PERIPHERALS AND TERMINALS



SOURCE: INPUT Survey

EXHIBIT III-13

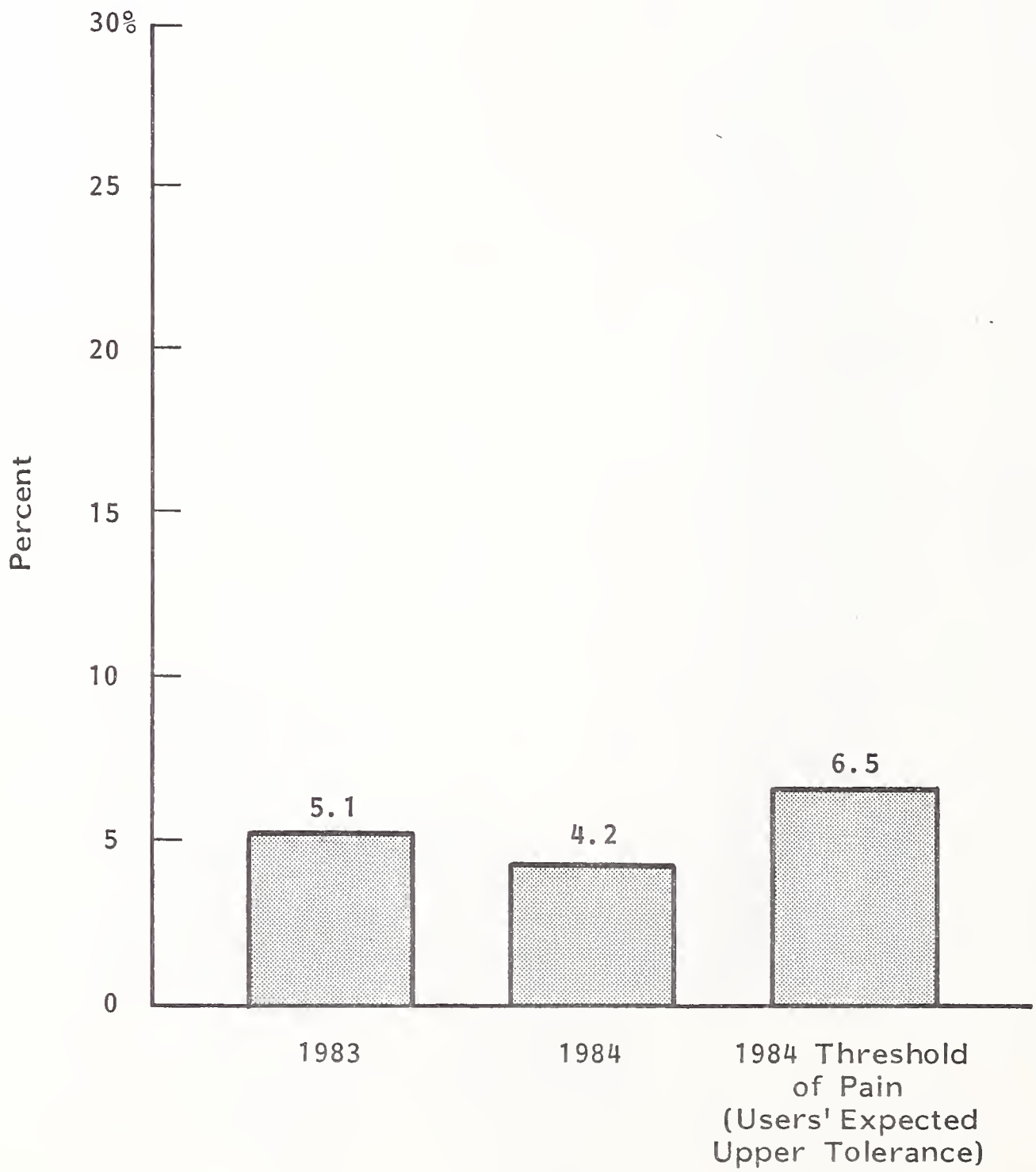
MAINTENANCE PRICE INCREASES - AVERAGES - IN EUROPE FOR DATACOMMUNICATIONS



SOURCE: INPUT Survey

EXHIBIT III-14

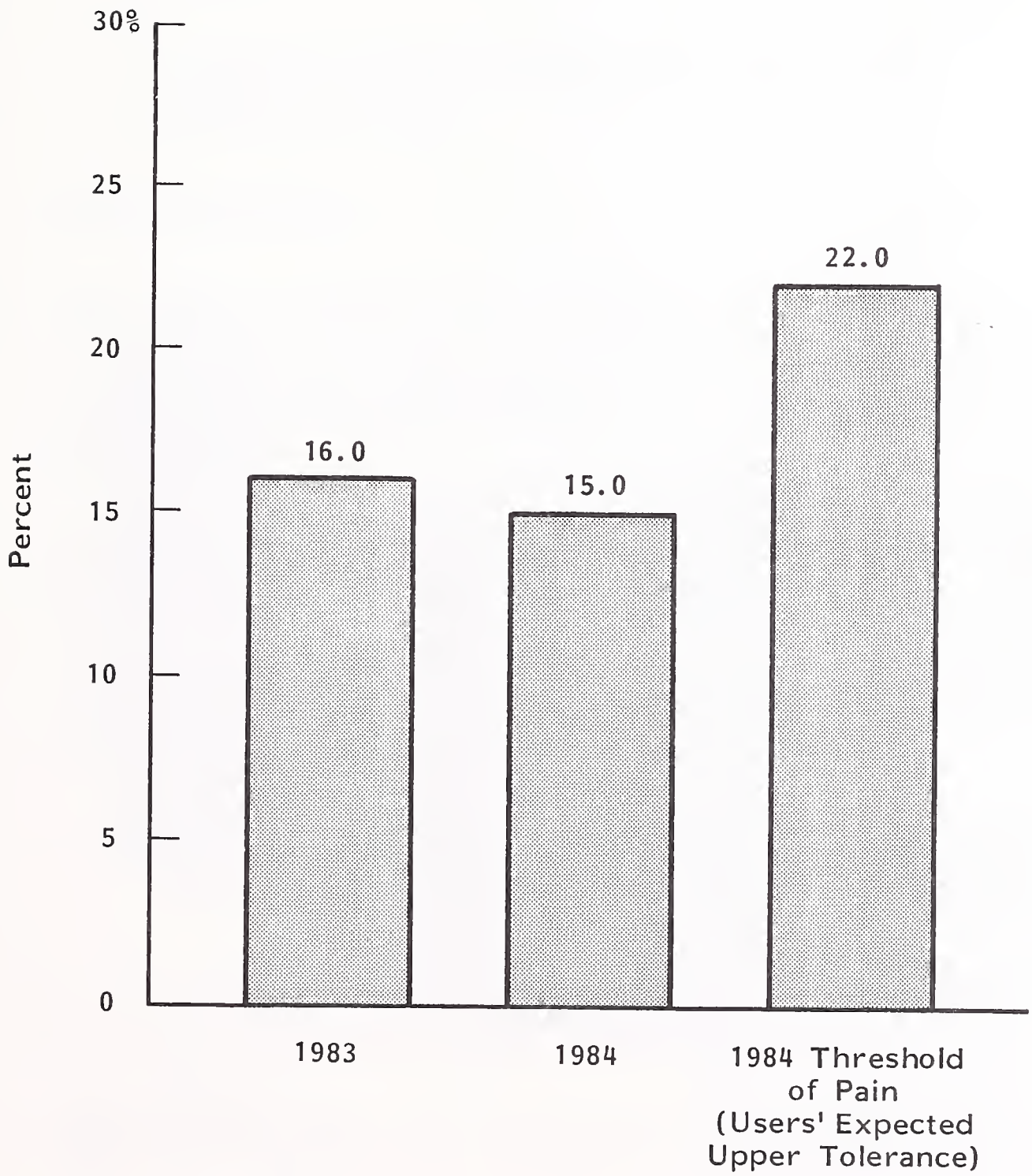
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION - IN EUROPE FOR DATACOMMUNICATIONS



SOURCE: INPUT Survey

EXHIBIT III-15

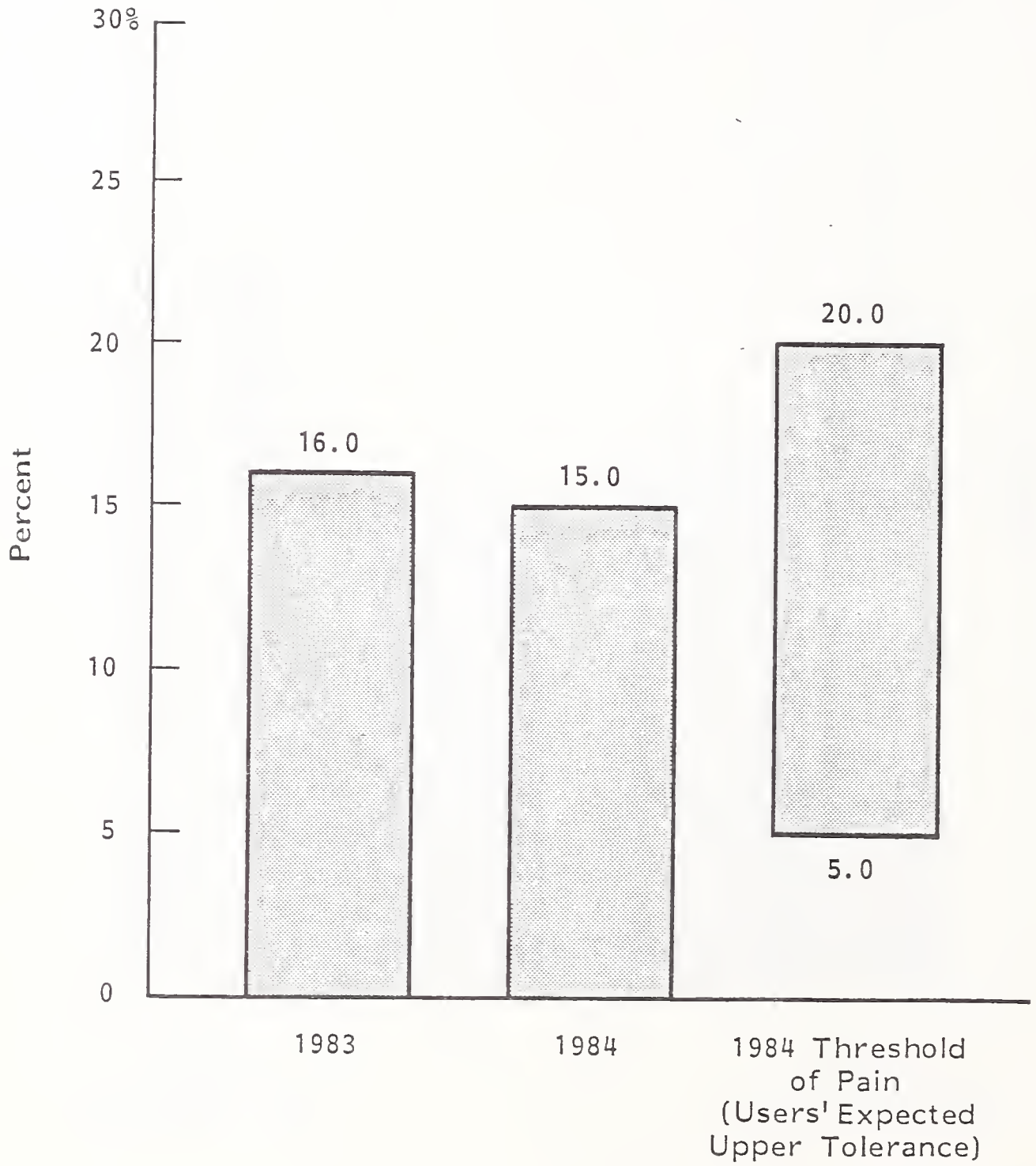
MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR DATACOMMUNICATIONS



SOURCE: INPUT Survey

EXHIBIT III-16

MAINTENANCE PRICE INCREASES - RANGES -
IN EUROPE FOR SMALL SYSTEMS



SOURCE: INPUT Survey

- Virtually all data communications faults occur and are treated during the start-up or warranty phase.

- Also, many of the faults in data communications equipment are software problems, which often are handled outside the routine service coverage.

- Competition in data communications is fierce; this also tends to depress service pricing.

5. MICROCOMPUTERS

- Microcomputers represent a new market for maintenance vendors in Europe. At the present time, despite a very large installed base, there is relatively little contract maintenance activity. This is because most units are still under warranty.

- Microcomputers are sold in two separate and distinct markets: business and personal. Service for microcomputers in a business environment is a problem in that most users are not well acquainted with computers and require "hand holding"; in some instances these users require more attention than do users of medium or large systems.

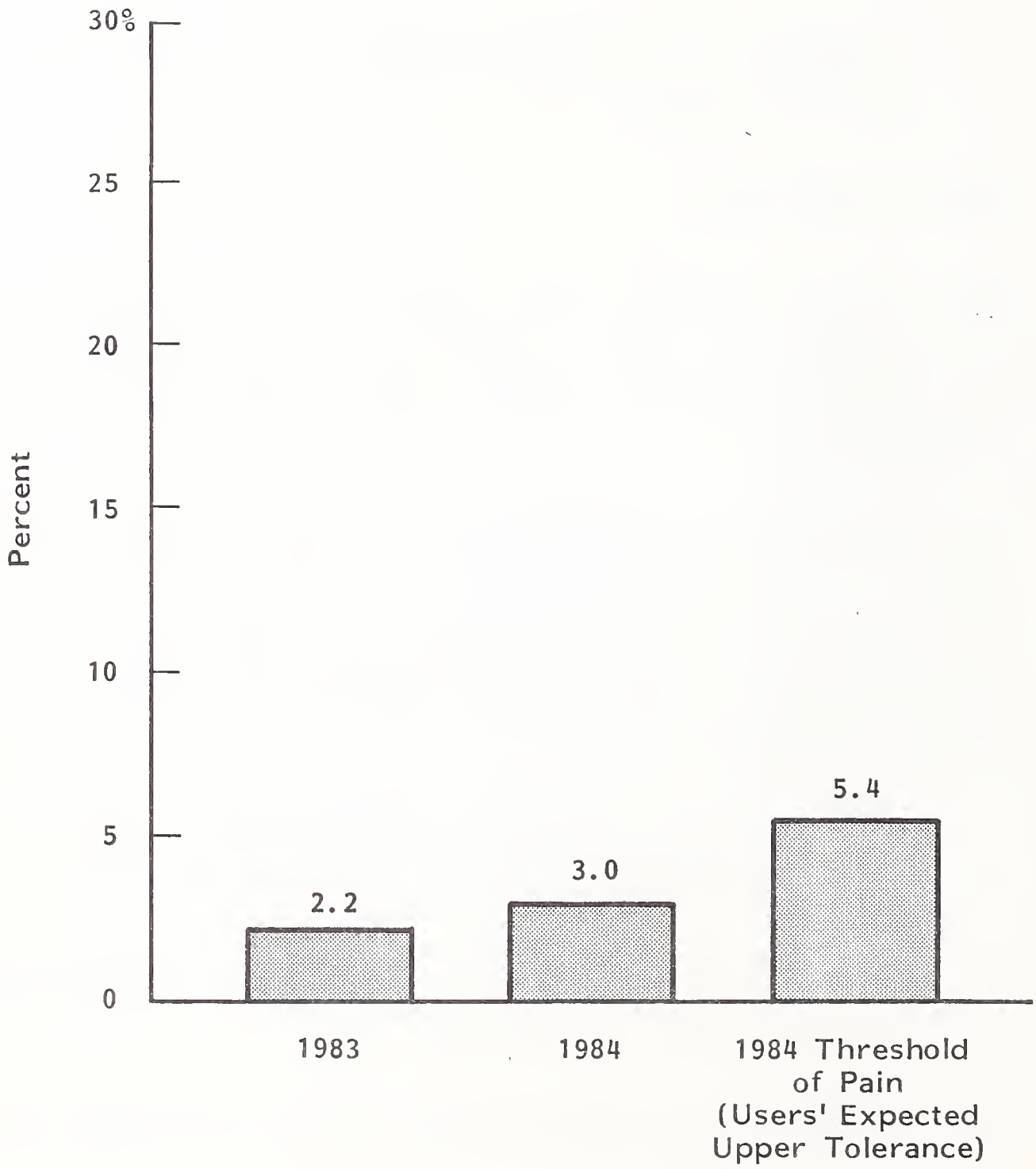
  - Business-oriented microcomputer users are quite demanding toward service because their work is dependent on the microcomputer.

  - Personal computer users are more tolerant of microcomputer faults because they are not as dependent on them.

- Microcomputer pricing parameters are illustrated in Exhibits III-17 to III-20.

EXHIBIT III-17

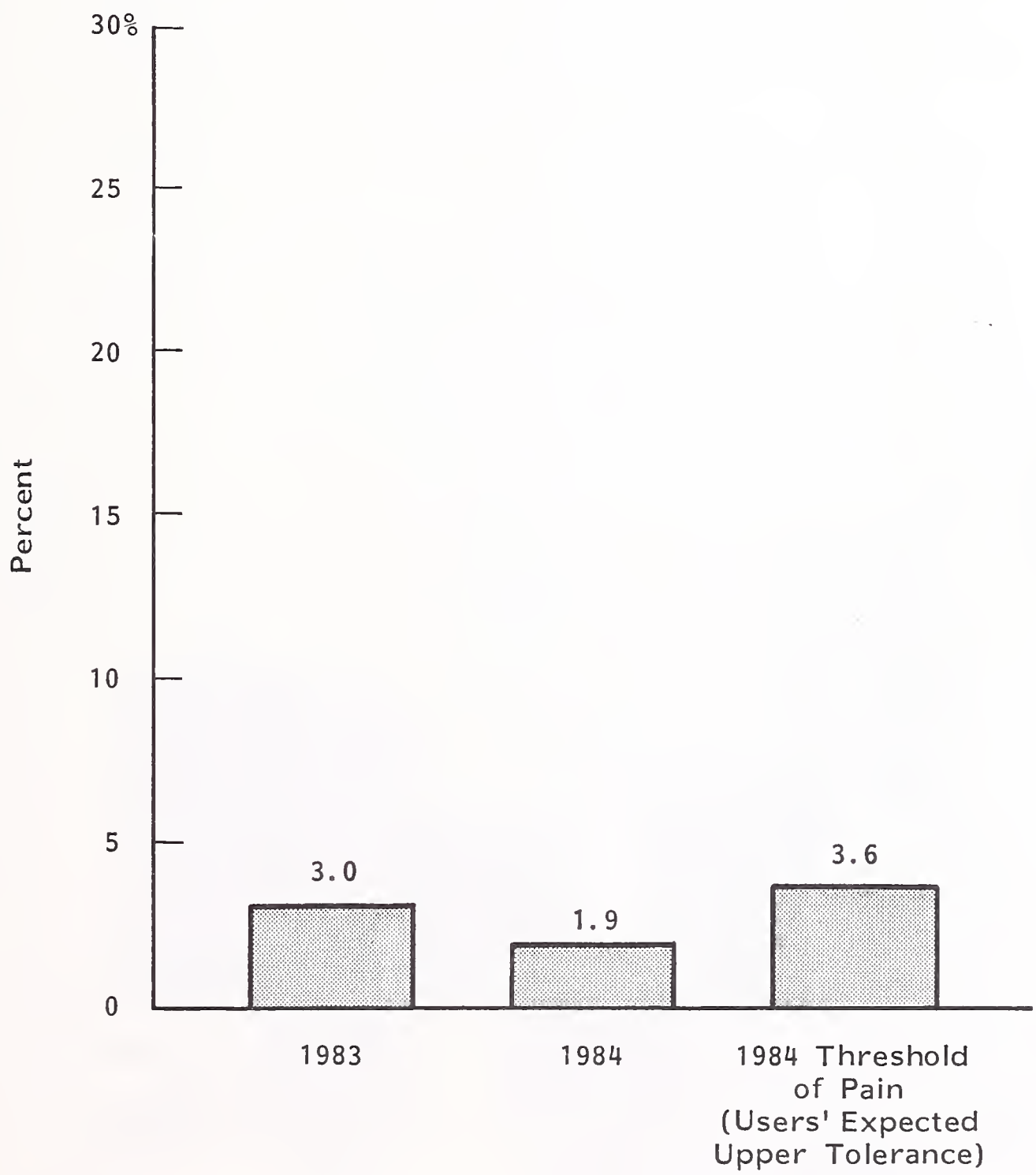
MAINTENANCE PRICE INCREASES - AVERAGES - IN EUROPE FOR MICROCOMPUTERS



SOURCE: INPUT Survey

EXHIBIT III-18

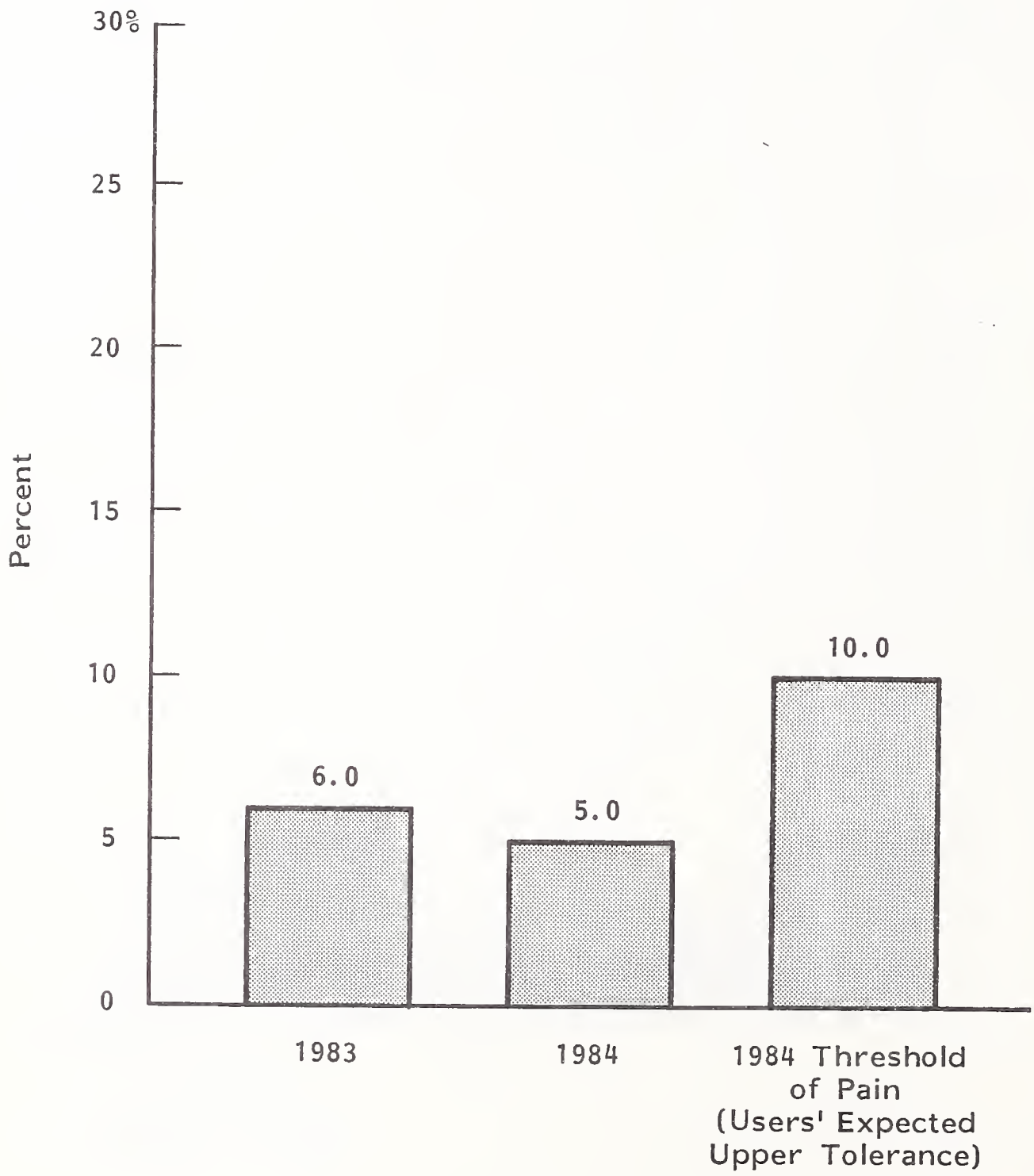
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION - IN EUROPE FOR MICROCOMPUTERS



SOURCE: INPUT Survey

EXHIBIT III-19

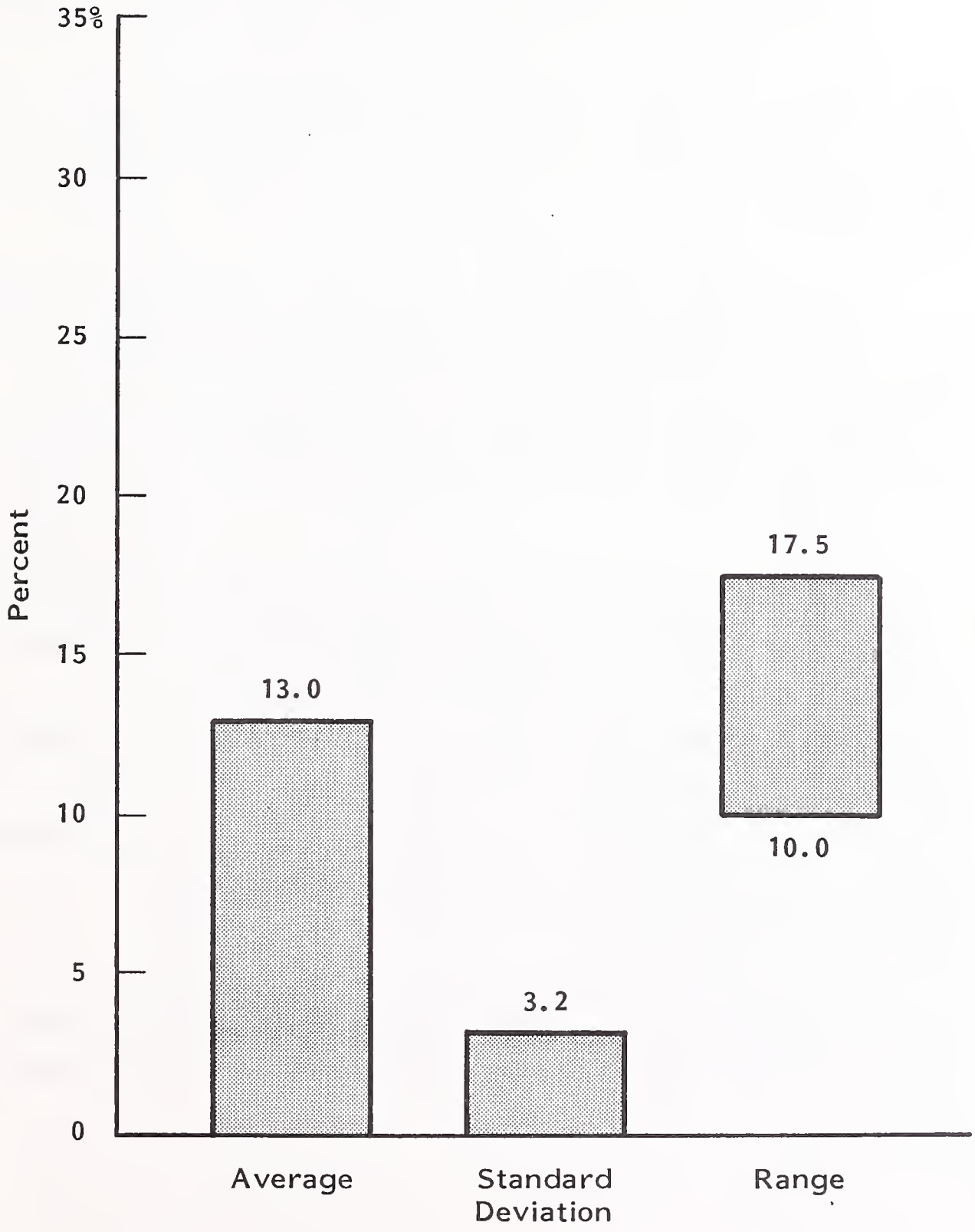
MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR MICROCOMPUTERS



SOURCE: INPUT Survey

EXHIBIT III-20

MAINTENANCE PRICE AS A PERCENT OF HARDWARE PRICE -
IN EUROPE FOR MICROCOMPUTERS



SOURCE: INPUT Survey

- While the ranges of microcomputer maintenance price increases follow normal noninflationary patterns, the actual average increases are very small - less than 3%.

- One notable anomaly is the expected increase from 2.2% in 1983 to 3% in 1984. This reflects the newness of the product to the service market. The amount of increase is bound to grow as the product matures.

- The average maintenance charge is 13% of the hardware value. Assuming a system cost of pounds sterling 2,000, the monthly maintenance is pounds sterling 21.67.

  - For dealers, distributors, and smaller maintenance providers, this pricing should be adequate and should produce profits.

  - The average failure rate for microcomputers is one every twelve months.

  - Larger manufacturers with higher overheads and larger staff will not do as well in terms of microcomputer maintenance profitability.

- Pricing for microcomputer service is complicated for two reasons. First, there are, as noted earlier, two separate user groups - a commercial one and a consumer one. Because the two groups have different users, demands, and expectations, there could very easily be different prices (and classes) of service for the same product.

- Also, because there are so many channels of distribution in microcomputers (involving dealers, distributors' agents, and manufacturers), consistent pricing is not likely.

6. WORD PROCESSORS

- Exhibits III-21 to III-24 summarize maintenance pricing for word processors. The maintenance price increase from 1983 and 1984 (5.4% to 8.9%) reflects a similar supply-demand relationship discussed previously under small systems. Demand for service exceeds availability.

  - This is brought about by the extremely rapid growth rate and wide acceptance for office automation.

  - Also, word processor maintenance requires efficient response and repair because of the number of people made idle by a fault.

- The range of expected price increases for word processing service is influenced by one respondent who believed he could increase maintenance by 60% in one year. Although details are unknown, it is expected that this extraordinary increase is accompanied by a coincidental increase in the level of service provided.

- At an average price of about 12% of hardware maintenance, prices for word processing equipment are not out of order compared to those for general computers.

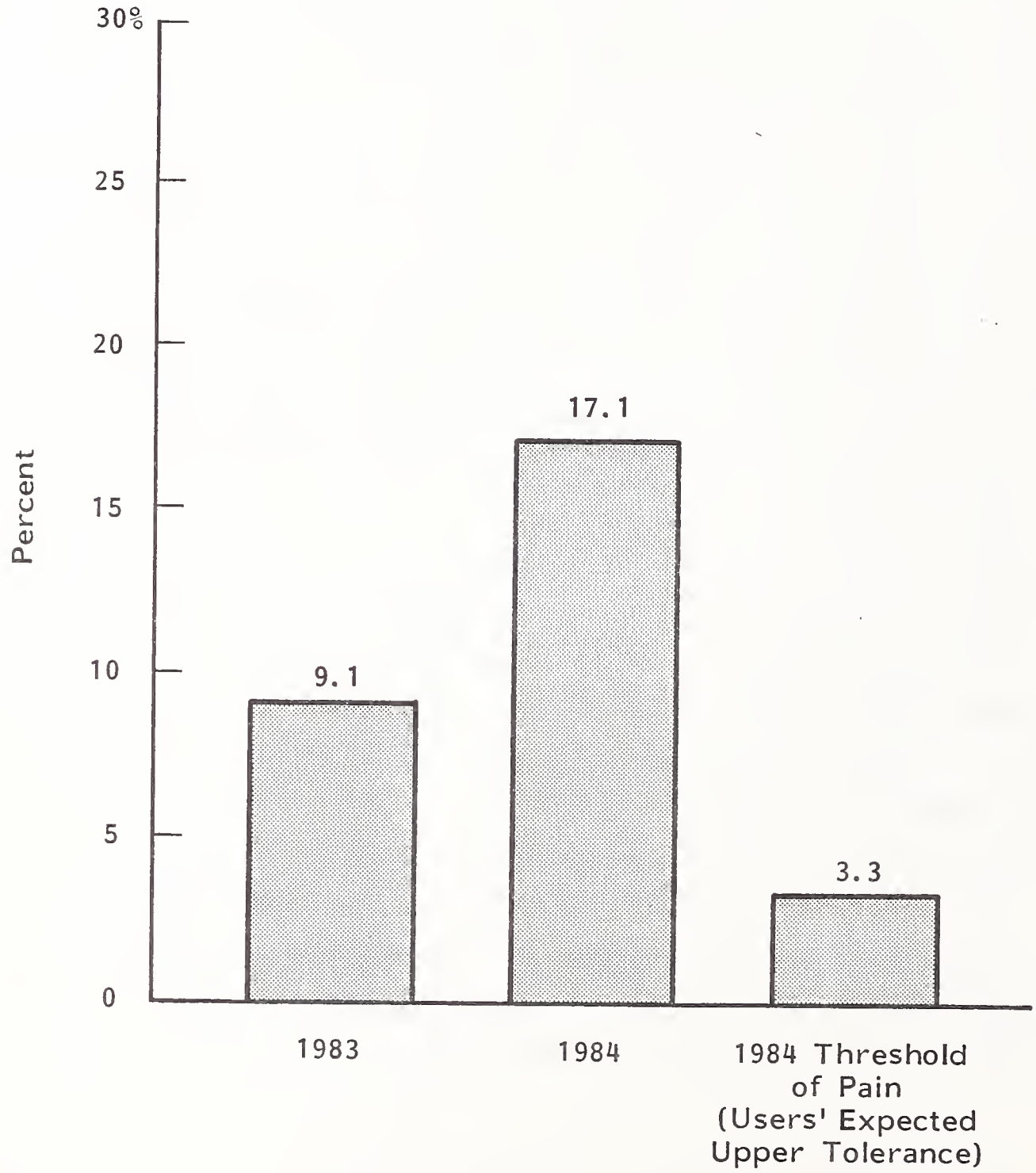
7. COPIERS

- One respondent to the survey is in the business of servicing copiers. Pricing elements are illustrated in Exhibits III-25 to III-28. It is interesting to compare copier data with that of peripherals and terminals. Peripherals and terminals are similar in that they also involve moving parts.

- The average price increase for copying equipment is almost twice the amount for peripherals and terminals. This reflects the fact that service prices are less in terms of absolute values.

EXHIBIT III-21

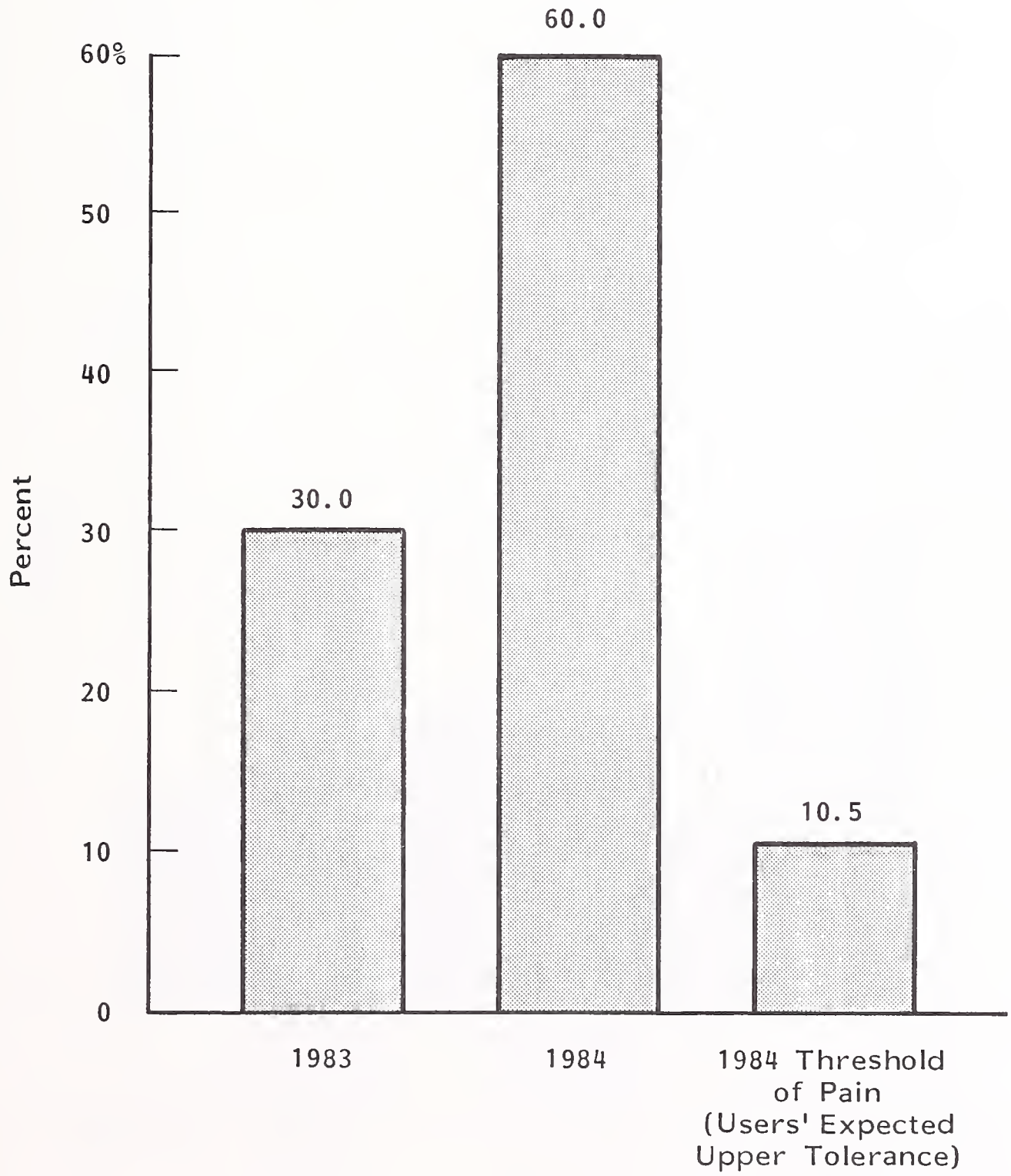
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION - IN EUROPE FOR WORD PROCESSORS



SOURCE: INPUT Survey

EXHIBIT III-22

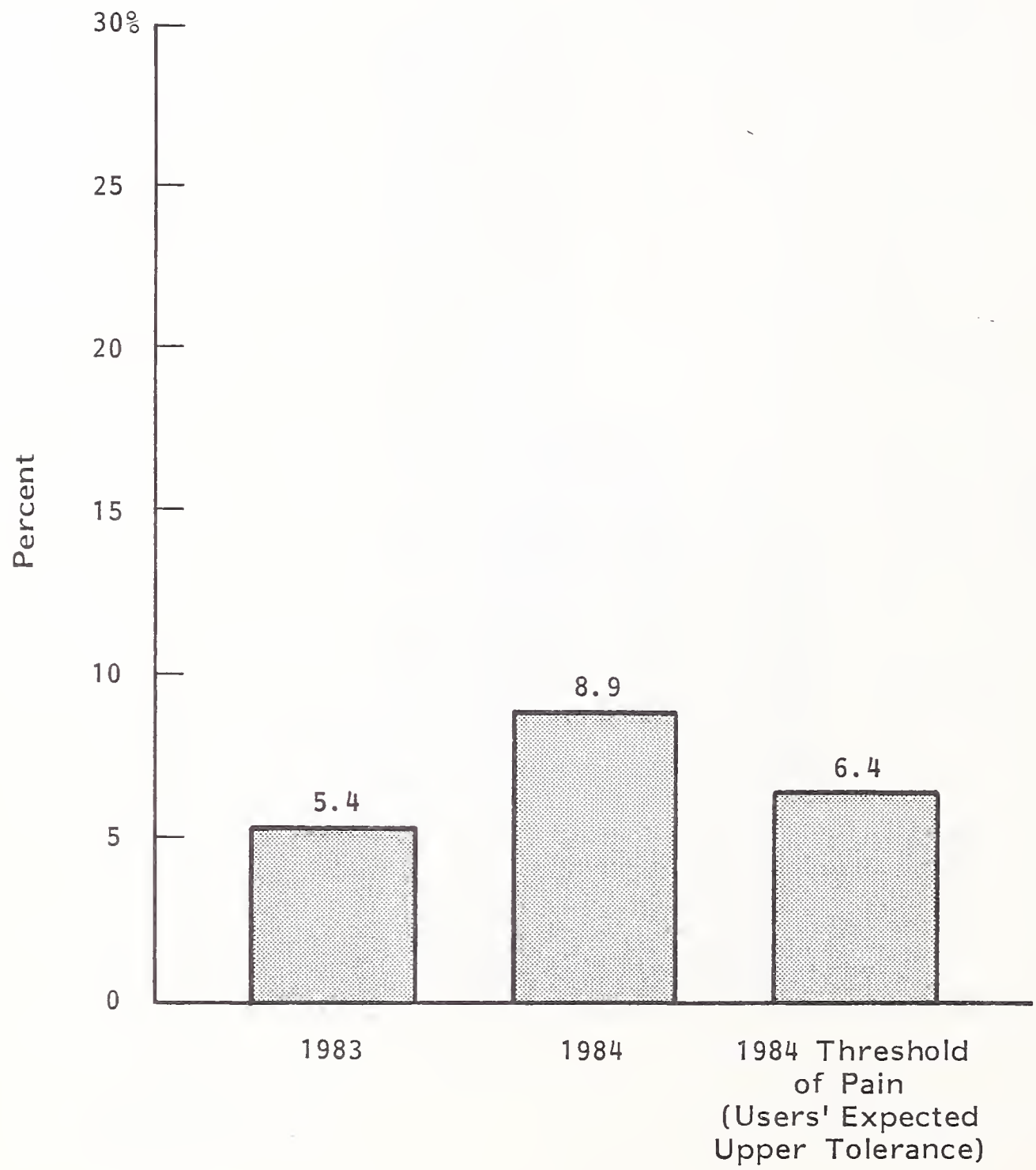
MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR WORD PROCESSORS



SOURCE: INPUT Survey

EXHIBIT III-23

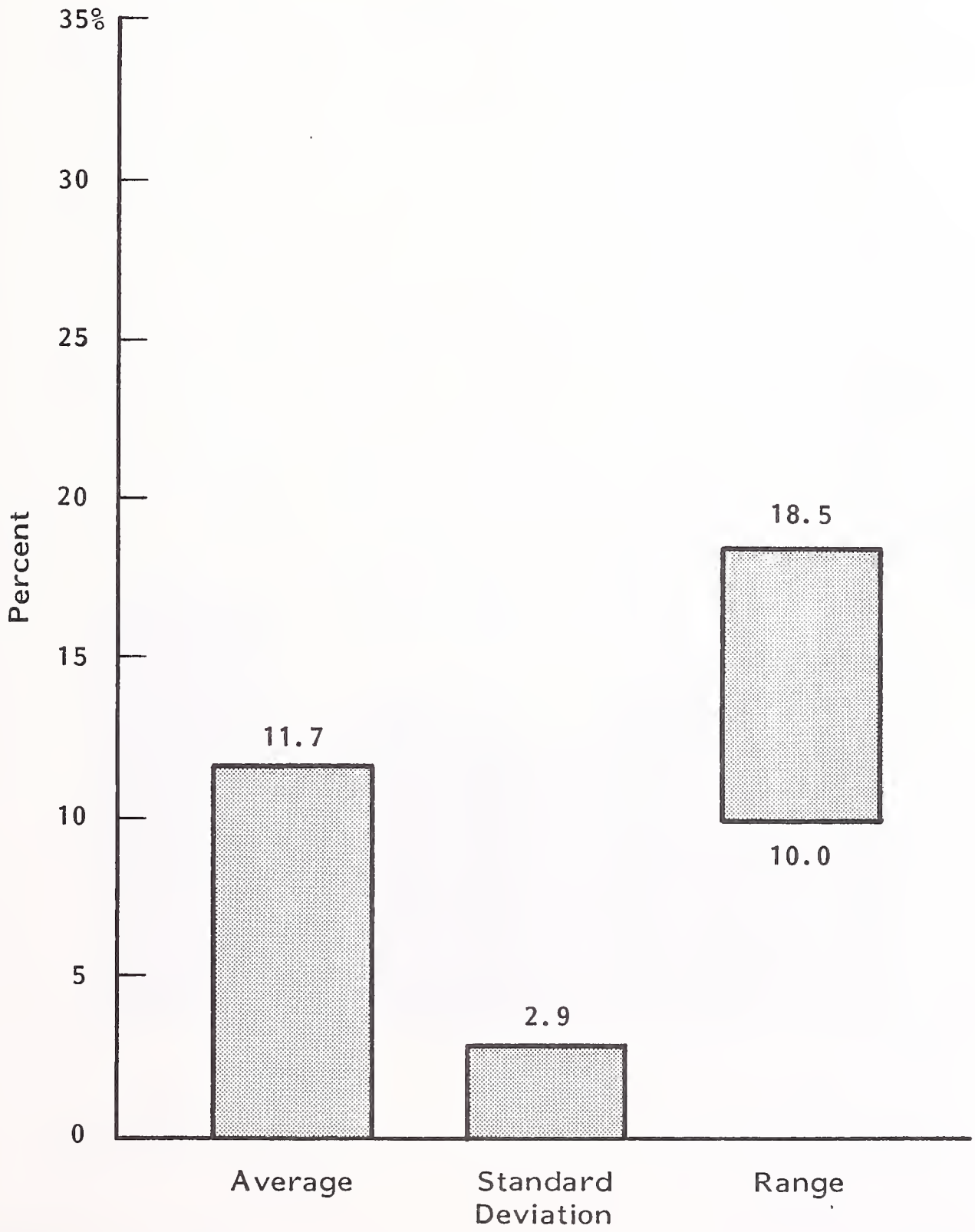
MAINTENANCE PRICE INCREASES - AVERAGES - IN EUROPE FOR WORD PROCESSORS



SOURCE: INPUT Survey

EXHIBIT III-24

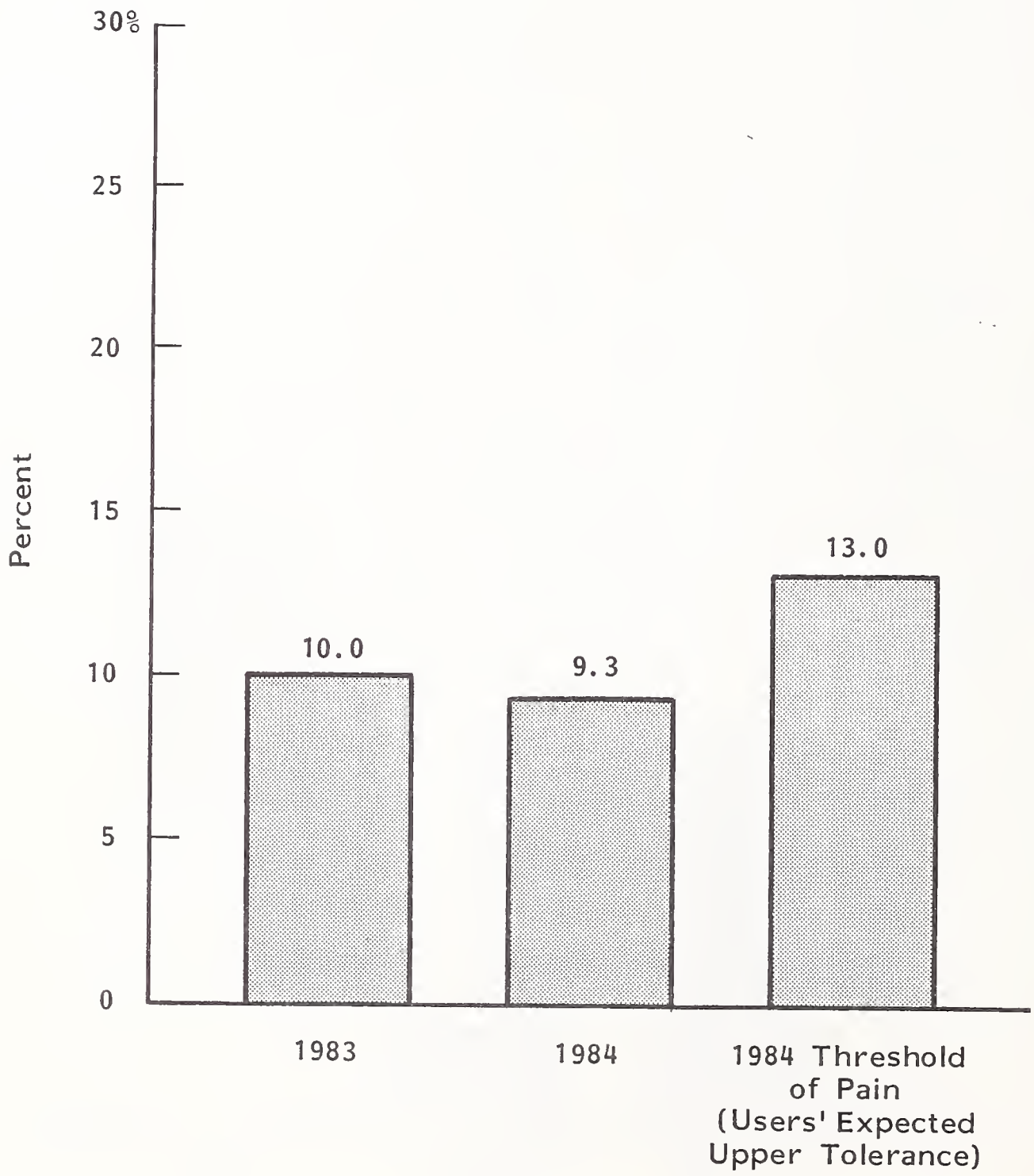
MAINTENANCE PRICE AS A PERCENT OF HARDWARE PRICE - IN EUROPE FOR WORD PROCESSORS



SOURCE: INPUT Survey

EXHIBIT III-25

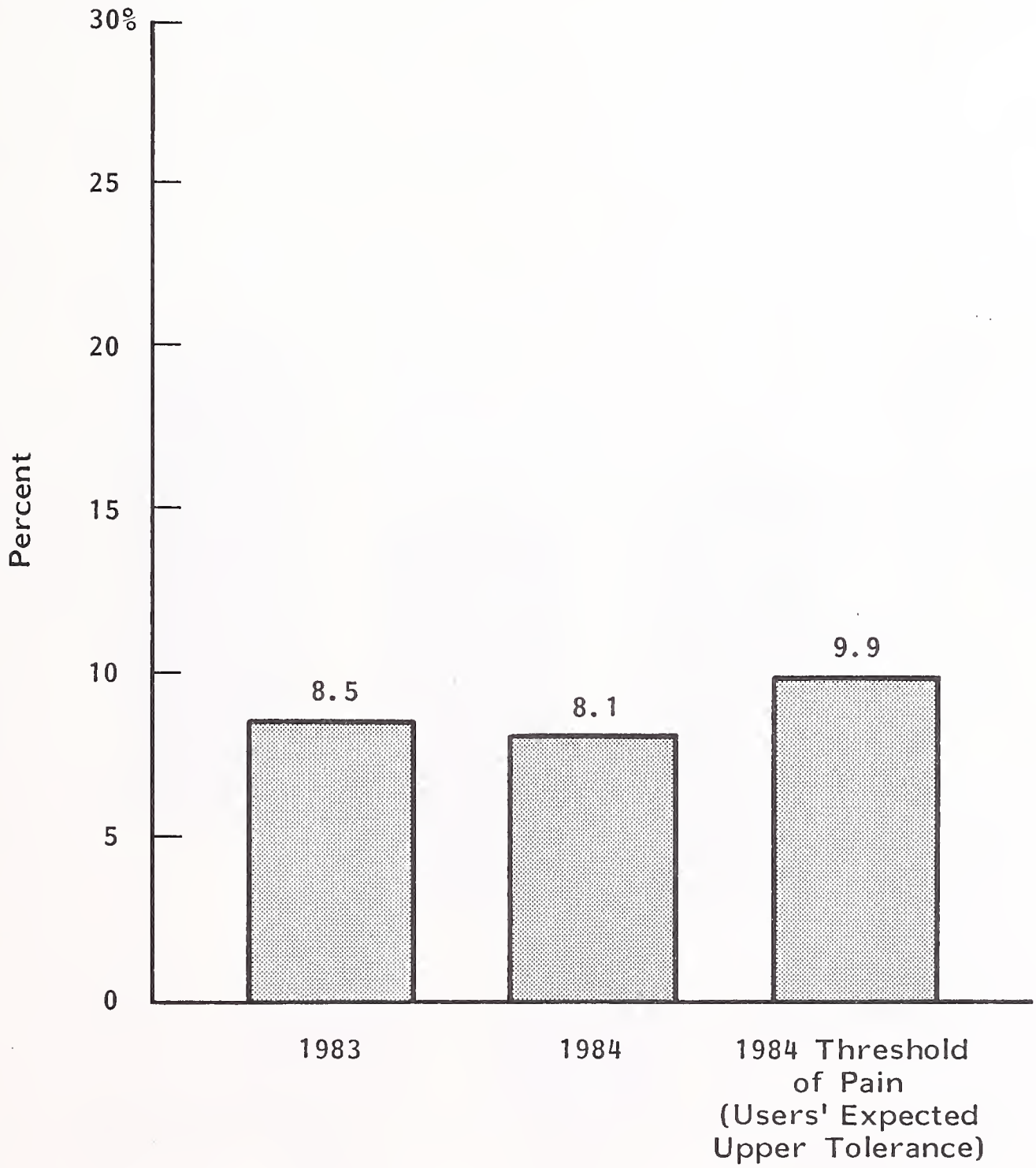
MAINTENANCE PRICE INCREASES - AVERAGES - IN EUROPE FOR COPIERS



SOURCE: INPUT Survey

EXHIBIT III-26

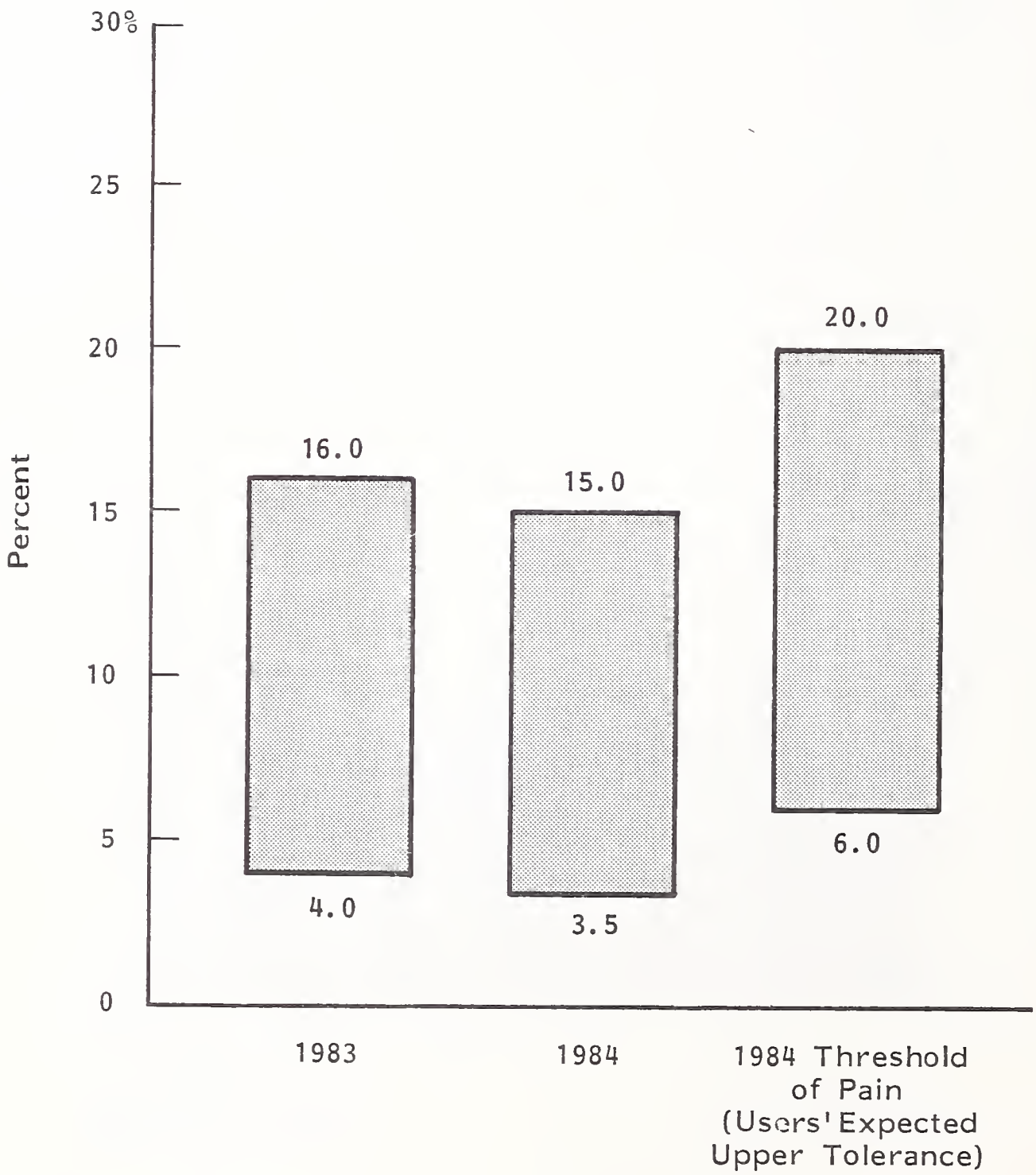
MAINTENANCE PRICE INCREASES - STANDARD DEVIATION IN EUROPE FOR COPIERS



SOURCE: INPUT Survey

EXHIBIT III-27

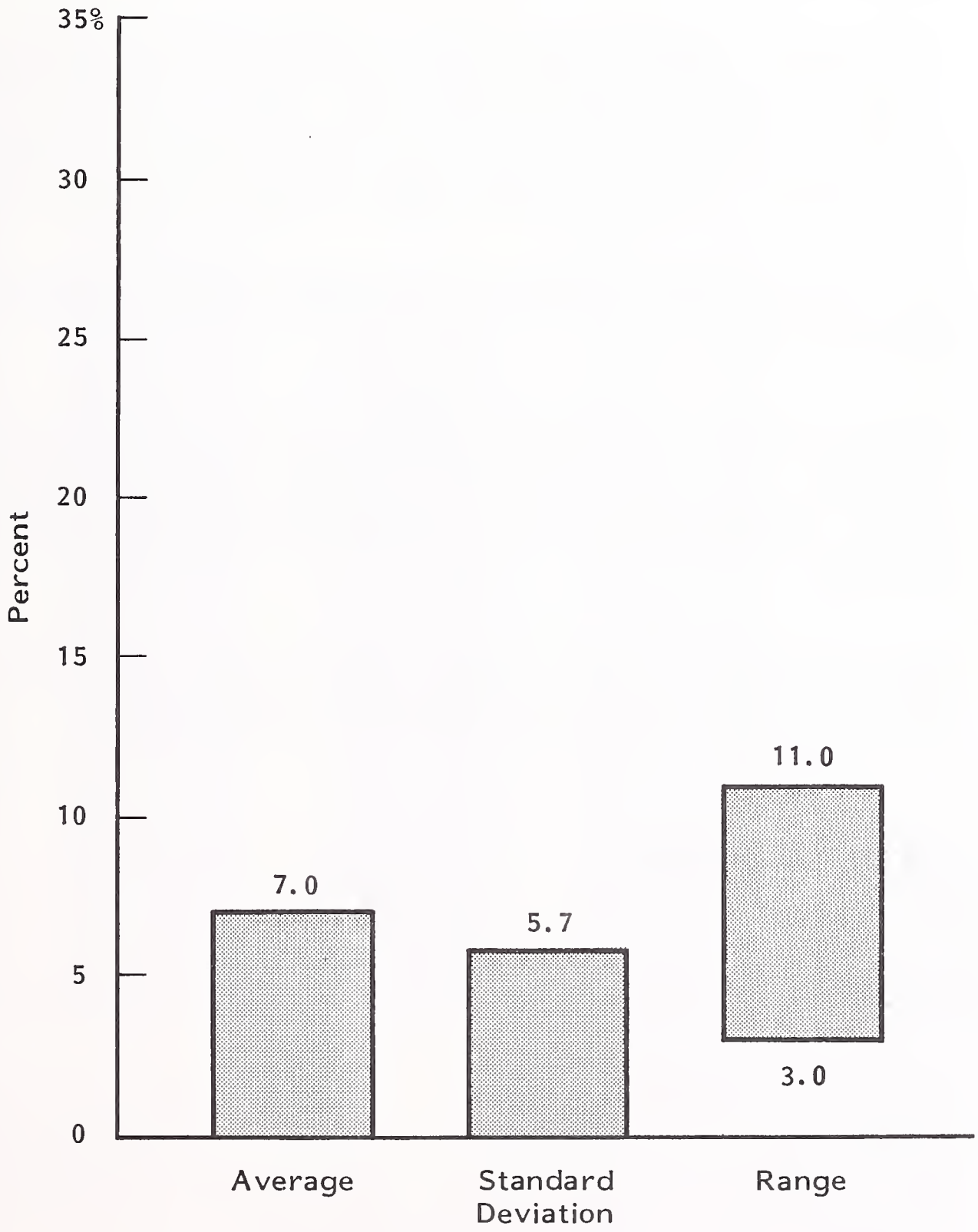
MAINTENANCE PRICE INCREASES - RANGES - IN EUROPE FOR COPIERS



SOURCE: INPUT Survey

EXHIBIT III-28

MAINTENANCE PRICE AS A PERCENT OF HARDWARE PRICE -
IN EUROPE FOR COPIERS



SOURCE: INPUT Survey

- While the percent of price increase for copiers is nearly double that of peripherals and terminals, the relationship of service cost to product cost is about half of that of peripherals and terminals.

8. SYSTEM SOFTWARE

- Price increases for software support are two to three times the value of hardware service, as shown in Exhibit III-29. While the anticipated software support price increases for 1984 are less than those for 1983, they are only nominally less and are considerably higher than those for hardware service.

- The threshold of pain is perceived by European vendors to be 20% for 1984 price increases.

- System software price increases of three times hardware service price increases are rational since the value of software support, expressed as a percentage of hardware cost, is nearly one-third that of hardware maintenance to hardware.

- As expressed earlier in various INPUT studies, software support can be priced at generally higher levels because of the phenomenal demand.

B. THE UNITED KINGDOM

1. LARGE SYSTEMS

- Large-systems maintenance pricing in the United Kingdom is summarized in Exhibit III-30. Percent increases are in line with inflationary trends. The 1984 anticipated increase is 1.2 points below the 1983 average. Both remain comfortably below the 1984 threshold of pain (TOP).

EXHIBIT III-29

MAINTENANCE PRICE PARAMETERS -
IN EUROPE FOR SYSTEM SOFTWARE

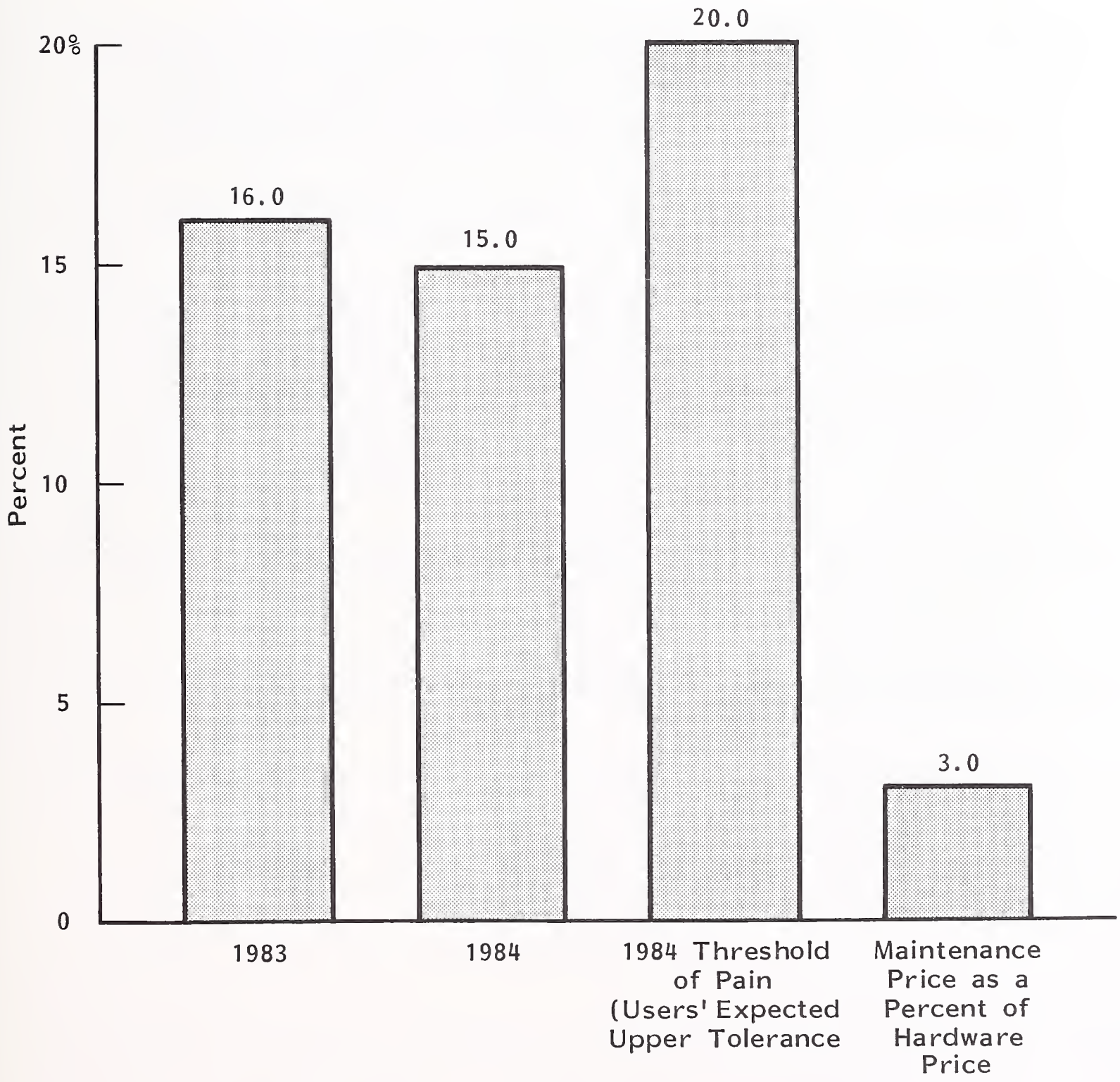


EXHIBIT III-30

U.K. PRICING PARAMETERS - LARGE SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	7.2%	6.0%	8.8%	7.1%
Standard Deviation	2.0	3.4	2.7	2.8
Minimum	4.8	2.0	5.0	5.0
Maximum	10.0	10.0	12.0	11.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

- The relationship between maintenance and hardware as expressed in terms of annual base maintenance charges over purchase cost of hardware is 7.1%. This is reasonable.

2. SMALL SYSTEMS

- Small systems percent increases are well below both inflationary levels and the TOP findings are illustrated in Exhibit III-31. An interesting point is that the increase for 1984 is slightly higher than that assessed in 1983.

3. PERIPHERALS AND TERMINALS

- Maintenance pricing for United Kingdom peripherals and terminals is shown in Exhibit III-32. Vendors believe that users' TOP is more than twice the amount of the expected 1984 price increase. The large gap of 5.9% reflects a reluctance by U.K. vendors to overdo price increases in a market that is very competitive with TPM contenders.

- Other pricing factors are similar to small systems; there do not seem to be any anomalies.

4. DATA COMMUNICATIONS, MICROCOMPUTERS, AND WORD PROCESSORS

- Detailed results of maintenance pricing for the United Kingdom data communications, microcomputers, and word processors are illustrated in Exhibit III-33 to III-35. Expected price increases for each product segment are expected to exceed 1983 price increases, reflecting an excessive demand-to-supply ratio in these newer service markets.

- In the microcomputer market it is interesting to study pricing trends that are just getting started. The fact that most of the products are new and still under warranty accounts for the very low price increase index. The relation-

EXHIBIT III-31

U.K. PRICING PARAMETERS - SMALL SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	4.1%	4.3%	7.9%	10.2%
Standard Deviation	3.8	3.0	2.5	2.5
Minimum	0.0	0.0	5.0	6.5
Maximum	10.0	9.0	10.0	15.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-32

U.K. PRICING PARAMETERS - PERIPHERALS AND TERMINALS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	5.7%	3.8%	9.7%	11.4%
Standard Deviation	4.4	3.2	4.1	3.7
Minimum	0.0	0.0	5.0	5.0
Maximum	15.0	9.0	20.0	18.5

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-33

U.K. PRICING PARAMETERS - DATACOMMUNICATIONS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	3.5%	5.0%	9.8%	10.0%
Standard Deviation	4.2	1.6	6.4	1.4
Minimum	0.0	3.0	5.0	8.0
Maximum	10.0	7.6	22.0	12.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-34

U.K. PRICING PARAMETERS - MICROCOMPUTERS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	3.6%	4.0%	7.0%	14.2%
Standard Deviation	3.2	1.0	2.6	3.8
Minimum	0.0	3.0	5.0	10.0
Maximum	6.0	5.0	10.0	17.5

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-35

U.K. PRICING PARAMETERS - WORD PROCESSORS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	2.7%	3.4%	6.6%	13.0%
Standard Deviation	3.2	2.3	2.3	3.8
Minimum	0.0	0.0	5.0	10.0
Maximum	6.0	5.0	10.0	18.5

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

ship of maintenance to hardware is significant because, at 14.2%, the cost of service will equal the cost of the hardware in seven years (assuming no inflation).

- As the novelty of these markets gives way to maturity and to fewer but better managed competitors, pricing parameters will change to reflect more of those parameters related to peripherals and terminals.

C. WEST GERMANY

1. SYSTEMS - LARGE AND SMALL SYSTEMS, PERIPHERALS AND TERMINALS, AND DATA COMMUNICATIONS

- Pricing parameters for West Germany are summarized in Exhibits III-36 to III-42. There was only one respondent for large systems who reported no price increases for either 1983 or 1984 - consequently the "zero" average percent increases.

- There are two notable features of maintenance pricing in West Germany. These involve percent increases and percent maintenance of hardware.

  - The average percent of service to hardware cost for peripherals and terminals is nearly 22%, which means that over a four-and-a-half year period the cost of maintenance equals the cost of the original hardware.

    . This is too high.

    . TPM firms should have a feast on this segment of maintenance.

EXHIBIT III-36

WEST GERMAN PRICING PARAMETERS - LARGE SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	0.0%	0.0%	5.0%	10.0%
Standard Deviation	-	-	-	-
Minimum	0.0	0.0	5.0	10.0
Maximum	0.0	0.0	5.0	10.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-37

WEST GERMAN PRICING PARAMETERS - SMALL SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	2.8%	2.1%	7.0%	17.3%
Standard Deviation	2.1	1.2	3.4	11.0
Minimum	0.0	0.0	5.0	10.0
Maximum	5.0	3.0	12.0	30.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-38

WEST GERMAN PRICING PARAMETERS - PERIPHERALS AND TERMINALS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	4.0%	1.5%	6.3%	21.5%
Standard Deviation	1.2	1.4	2.6	9.8
Minimum	3.0	0.0	4.0	12.5
Maximum	5.0	2.8	10.0	32.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-39

WEST GERMAN PRICING PARAMETERS - DATACOMMUNICATIONS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	0.0	0.0	5.0	10.0
Standard Deviation	-	-	-	-
Minimum	0.0	0.0	5.0	10.0
Maximum	0.0	0.0	5.0	10.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-40

WEST GERMAN PRICING PARAMETERS - MICROCOMPUTERS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	0.0%	1.5%	3.0%	11.3%
Standard Deviation	0.0	2.1	4.2	1.1
Minimum	0.0	0.0	0.0	10.5
Maximum	0.0	3.0	6.0	12.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-41

WEST GERMAN PRICING PARAMETERS - WORD PROCESSORS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	8.3%	13.7%	3.7%	10.8%
Standard Deviation	14.6	25.9	3.2	0.4
Minimum	0.0	0.0	0.0	10.5
Maximum	30.0	60.0	6.0	11.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-42

WEST GERMAN PRICING PARAMETERS - COPIERS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	4.0%	3.5%	6.0%	11.0%
Standard Deviation	-	-	-	-
Minimum	4.0	3.5	6.0	11.0
Maximum	4.0	3.5	6.0	11.0

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

- Or, manufacturers must reduce their price for peripheral and terminal service.

- West German service vendors have apparently already caught onto this as they are collectively intending to raise maintenance prices by 1.5% in 1984 as compared to 4% in 1983 with a TOP of 6.3%.

- The other noteworthy anomaly is data communications price increases, where a "nothing" is predicted yet vendors reckon the TOP is 5%. A 4% increase within this market could be easily absorbed.

2. OFFICE PRODUCTS - MICROCOMPUTERS, WORD PROCESSORS, AND COPIERS

- According to West German respondents, the average 1983 increase of maintenance prices was nothing for microcomputers as shown in Exhibit III-40. This is because most microcomputers are under warranty. However, the average projected increase in 1984 is 1.5%.

  - Unless there are substantial volumes of equipment involved, a price increase of this magnitude should be deferred.

  - To raise prices by 1.5% would probably cost more to implement in the long run.

  - An increase in the microcomputer maintenance service price should be postponed unless it reaches 3% or more.

- In word processor markets, it is interesting to note that West German maintenance vendors plan on bringing an average increase in maintenance pricing of almost 14% to this class of equipment, as shown in Exhibit III-41. This is definitely too high an increase and cannot under any circumstances be justified.

- This hefty 14% increase in maintenance seems illogical especially considering that these same vendors, collectively, say that only a 4% increase can be tolerated by customers.

- It appears that a few vendors may be slightly greedy. Most likely they will receive payment for the much higher rate only so long as the market is unaware of the fact.

  - TPM should consider this carefully.

  - Manufacturers should reconsider such high price increases.

- The pricing parameters for copiers, a relatively new entrant into INPUT's European field service data base, is virtually the same as most other computer hardware.

  - Exhibit III-42 summarizes data for copiers.

D. THE NETHERLANDS

1. SYSTEMS - LARGE SYSTEMS, SMALL SYSTEMS

- Large and small systems pricing data for maintenance in the Netherlands is shown in Exhibits III-43 and III-44. There are no unusual findings in this data.

- Only large and small systems are represented and only on a small scale with limited information.

  - While large systems are expected to receive only a nominal average increase in 1984 of 2.5%, small systems' average maintenance is expected to decline.

EXHIBIT III-43

NETHERLANDS PRICING PARAMETERS - LARGE SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	2.5%	2.5%	7.5%	-
Standard Deviation	3.5	3.5	3.5	-
Minimum	0.0	0.0	5.0	-
Maximum	5.0	5.0	10.0	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-44

NETHERLANDS PRICING PARAMETERS - SMALL SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	6.5%	5.5%	10.0%	-
Standard Deviation	2.1	0.7	0.0	-
Minimum	5.0	5.0	10.0	-
Maximum	8.0	6.0	10.0	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

- Large systems' maintenance price increases averaged 2.5% in 1983 and are expected to be the same in 1984.

- Small systems' maintenance pricing will drop 1% to 6.5% in 1984.

2. SYSTEM SOFTWARE MAINTENANCE

- The only respondent answering for software maintenance was a Netherlander. This lack of response reflects a lack of knowledge of the software support services in the maintenance mix and/or the lack of appreciation for the importance of software pricing now and in the future. Exhibit III-45 provides the data on software.

- The TOP is twice as high for software as it is for hardware service, generally reflecting the vendor's appraisal of the unfilled need in supporting systems software.

  - The percent increase for 1984 is expected to be 1% below that of 1983.

  - The fact is that the TOP is conservatively 5% above the planned increase.

  - Because of the scarcity of qualified software support, higher maintenance prices could be imposed without great difficulty.

EXHIBIT III-45

NETHERLANDS PRICING PARAMETERS - SYSTEMS SOFTWARE
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	16.0%	15.0%	20.0	3.0
Standard Deviation	-	-	-	-
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

E. SCANDINAVIA

1. SYSTEMS - SMALL SYSTEMS, PERIPHERALS AND TERMINALS, AND DATA COMMUNICATIONS

- Pricing for Scandinavian systems is very much in line with overall pricing trends. Representing a relatively small sample, these pricing trends are illustrated in Exhibits III-46 to III-48.

- 1984 anticipated increases are well below the expected TOP.

2. OFFICE PRODUCTS - WORD PROCESSORS

- Word processors are represented in almost exactly the same way as small systems, peripherals, and terminals, as shown in Exhibit III-49. The only difference, which is a minor one, in the relationship of maintenance to hardware in terms of values.

F. ITALY

- Small systems, peripherals and terminals, and data communications are represented sparsely in this vendor sample. However, as might be expected, inflationary conditions in Italy create an environment for higher maintenance price increases than those for the remainder of European field service firms. Exhibits III-50 to III-52 summarize Italian maintenance pricing parameters.

- At least the nominal drop of 1% (from 16% to 15%) reflects a change in the right direction.

EXHIBIT III-46

SCANDINAVIAN PRICING PARAMETERS - SMALL SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	5.2%	7.8%	10.3%	9.5%
Standard Deviation	3.3	0.4	0.4	0.7
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-47

SCANDINAVIAN PRICING PARAMETERS - PERIPHERALS AND TERMINALS

(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	5.2%	7.8%	10.3%	10.5%
Standard Deviation	3.3	0.4	0.4	2.1
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-48

SCANDINAVIAN PRICING PARAMETERS - DATACOMMUNICATIONS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	5.2%	7.8%	10.3%	-
Standard Deviation	3.3	0.4	0.4	-
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-49

SCANDINAVIAN PRICING PARAMETERS - WORD PROCESSORS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	5.2%	7.8%	10.3%	10.0%
Standard Deviation	3.3	0.4	0.4	0.0
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-50

ITALIAN PRICING PARAMETERS - SMALL SYSTEMS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	16.0%	15.0%	20.0%	9.0%
Standard Deviation	-	-	-	-
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-51

ITALIAN PRICING PARAMETERS - PERIPHERALS AND TERMINALS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	16.0%	15.0%	20.0%	9.0%
Standard Deviation	-	-	-	-
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

EXHIBIT III-52

ITALIAN PRICING PARAMETERS - DATACOMMUNICATIONS
(percent)

	INCREASE 1983	INCREASE 1984	TOP* 1984	SERVICE: HW**
Average	16.0%	15.0%	20.0%	9.0%
Standard Deviation	-	-	-	-
Minimum	-	-	-	-
Maximum	-	-	-	-

* Threshold of pain (users' expected upper tolerance of maintenance price increase).

** Ratio of annual maintenance to purchase value of hardware.

SOURCE: INPUT Survey

IV BASIC AND EXTRA-SHIFT MAINTENANCE SERVICES AND PRICES - EXAMPLES

IV BASIC AND EXTRA-SHIFT MAINTENANCE SERVICES AND PRICES - EXAMPLES

A. BASIC MAINTENANCE

1. LEVELS OF SERVICE

- Earlier in the history of information processing service, there were very different levels of service offered. Basic maintenance referred to on-site preventive and corrective service and was performed by skilled, all-round engineers knowlegeable in central system, peripherals and terminals, and some software as well.

- Basic maintenance was provided for the principal period of maintenance (PPM), which was any period of eight or nine consecutive hours between 7 a.m. and 6 p.m., Monday through Friday, excluding holidays. Customers were allowed to choose their window of allotted time.

- A grace period of one hour was usually part of base maintenance. In other words, if the engineer was still in the process of fixing the fault at the end of the PPM, the policy was to stay on for one hour beyond the PPM. If more time than that was needed, he would either stop work and come back the next day or continue until finished, charging an hourly rate.

- Maintenance prices were for the PPM. There were very few other levels of service offered.

- The situation today has vastly changed as many different levels of service are provided. These multiple service offerings evolved for several reasons:

  - New technology has improved product reliability and vendor capability in terms of remote diagnostics and decentralized repair functions.

  - Costs of basic services have risen such that vendors of maintenance have developed service options where certain functions are now performed in whole or in part by the customer.

  - Customers have become much more aware of maintenance since the early days and have demanded more alternatives to service.

- There are numerous and different levels of service available in today's service market. These may depend on location or type of equipment, resources, and user requirements.

  - Different levels of service that are becoming popular include:

    . Guaranteed uptime service.

    . Guaranteed response time service.

    . Carry-in or mail-in service.

    . Automatic standby.

    . Hot spares.

    . Customer-assisted maintenance.

- Detailed description of these and other varieties of service have been described in other INPUT studies, including Alternative Revenue Opportunities in Field Service, December 1982.

- An enterprising and marketing-oriented vendor of computer maintenance differentiates levels of basic maintenance in terms of response and repair times, as shown in Exhibit IV-1.

2. PRICES

- Prices for base maintenance vary in terms of the standard level of service offered and the competitive factors. This makes the "apples-to-apples" comparison of prices more difficult for customers and prospective customers.

- Examples of maintenance price lists for basic maintenance are included in Appendix B.

B. EXTRA MAINTENANCE

- Extra maintenance is any maintenance that is not basic. In other words, extra maintenance applies to service outside the PPM, which is normally between 7 a.m. and 6 p.m., Monday through Friday, excluding holidays.

- To examine extra maintenance, INPUT researched current offerings and trends from: Burroughs, Control Data, Digital Equipment Corporation, Honeywell, IBM, ICL, NCR, Prime, and Sperry.

EXHIBIT IV-1

SERVICE LEVELS - SAMPLE

CUSTOMER SERVICE

SERVICE REFERENCES

LEVEL 1 Engineer will attend customer's premises within 72 hours of fault being reported to UK Control Centre. No guaranteed repair time or replacement unit, but repair is normally effected within 48 hours, worst case repair will be 14 days or contract may be terminated and monies refunded.

LEVEL 2 Engineer will attend customer's premises within 24 hours of fault being reported to UK Control Centre. No guaranteed repair time or replacement unit, but repair is normally effected within 48 hours, worst case repair will be 14 days or contract may be terminated and monies refunded.

LEVEL 3 Engineer will attend customer's premises within 24 hours of fault being reported to UK Control Centre. Repair will be guaranteed within 5 days or replacement supplied.

LEVEL 4 Engineer will attend customer's premises within 24 hours of fault being reported to UK Control Centre. Repair will be guaranteed within 3 days or replacement supplied.

LEVEL 5 Engineer will attend customer's premises within 4 hours of fault being reported to UK Control Centre. Repair will be guaranteed within 24 hours or replacement supplied.

With levels 3, 4 and 5, if for any reason repair or replacement cannot be effected within the guaranteed period, the insurance policy is automatically triggered, which entitles the customer to rent a replacement machine from either , or outside sources, and the following payments will be made under the terms of the insurance:-

2% of the value of the equipment per day, with a maximum of 5% per week.

NON-CONTRACT TIME & PARTS SERVICE.

For customers not wishing to enter into a maintenance agreement, we do offer on-site repairs, our charges being as follows:-

Standard Call-Out fee ..... £70 – this fee covers all travelling time and expenses.

Engineers time will be charged at ..... £30 per hour on-site. Parts charged at current price lists.

JANUARY 1983

I. TYPES OF COVERAGE

- Contracted extra-shift service is offered by all vendors for systems service. Usually software support and standalone terminals are covered during the PPM.

  - Most vendors offer contracted extra shift coverage at variable premiums based on type of equipment.

  - Vendor H offers extra shift coverage based on response time requirements rather than on type of equipment. These plans depend upon available resources and proximity to service office.

  - Vendor D offers contracted extra shift service at the same premiums for all types of equipment.

- Ad hoc service is offered for both contract and noncontract customers. Users with a maintenance contract for the PPM only may require service outside the PPM. In this case an hourly rate is charged. If parts are required for this type of call, they are usually at no additional cost.

  - Ad hoc coverage for noncontract customers is normally on a time-and-materials basis. Charges for travel time portal to portal, mileage, and parts are additional.

  - If an engineer is at another customer site or at home when dispatched to this type of call, the local service manager usually has discretion regarding the actual charge.

  - In some cases ad hoc service is not available to noncontract customers when it is needed outside the PPM. Vendor H is quite adamant regarding this. Vendor D will normally respond to the very first such call on a best endeavour basis, but will discourage future calls for ad hoc service outside the PPM.

2. BACKUP SUPPORT AND ESCALATION

- All vendors have escalation procedures for handling technical support and spare parts as backup to assist the field engineer. The escalation levels during the PPM are as follows when problems exceed acceptable times without fixes:

  - Engineer to first-level manager (district).

  - District to branch.

  - Branch to headquarters.

- This applies to software support during the PPM except for Vendor B. A separate department, outside customer services, handles software. Very little software support is provided outside the PPM. Vendor F is the only vendor to provide software support extra-PPM.

- Backup support outside the PPM is generally the same as during the PPM except that headquarters management (technical and logistical) is not available. This means that during the PPM an unsolved problem may ultimately receive director level attention for resolution, while outside the PPM managers are usually left to solve the problem.

  - While access to higher levels is available off-shift, the staff to handle the backup support is thinned considerably, compared to the PPM.

  - Engineering and logistical support outside the PPM are usually accomplished by calling home or emergency numbers.

- Two vendors, D and E, have known self-help procedures for software where users can dial in directly off-shift and seek solutions to software problems via a reference library of symptoms and solutions.

- Two-thirds of D's large systems users make use of this service.

- F is planning a similar capability for 1984.

3. RESPONSE

- Response times by each vendor are shown in Exhibit IV-2. Response times during the PPM vary by type of equipment and type of contract. Terminal problems are generally responded to between four to eight hours or next half day, while systems generally receive responses of two to four hours.

  - Only A, E, and J guarantee response times. Guarantees are provided at premium charges. These guarantees are for contractual customers. Noncontract customers do not receive guarantees for response.

  - Ad hoc response time is generally on a "best endeavors" agreement or not defined, be it within the PPM or outside.

- Outside the PPM, response times are generally no different from those within the PPM as long as the service is under contract and not ad hoc.

- The concept of response time is changing with the technology. A customer may initiate a call for service to the dispatcher who, in turn, passes the call to a diagnostician or other specialist.

  - If the problem is still undefined, an engineer may be sent to the site, his actual response time being longer than if he had just gone to the site on the basis of the call alone.

  - The customer perceives the response time to be better because the vendor is in touch and trying to fix the problem, even if it is by phone.

EXHIBIT IV-2

EXTRA-SHIFT RESPONSE TIMES

PPM: VENDOR

A (1)		B		C (2)		D		E	F	G	H (3)	I	
Sched	Ad hoc	Sched	Ad hoc	Sched	Ad hoc	Sched	Ad hoc	Sched / Ad hoc	Sched / Ad hoc	Sched / Ad hoc	Sched / Ad hoc	Sched	Ad hoc
Systems		Systems		Systems		Systems		Systems	Systems	Systems	Systems	Systems	
<2 hrs	No definition	1 hr	Best Endeavors	4 hrs max, any system	No definition Actual	2-4 hrs	No definition	½ to 2 hrs within 30 mls from office	Goal is 4 hrs	Approx 2 hrs	Basic: next day; no guarantee	2 hrs	No policy
Terminals		Terminals		Terminals		Terminals		Terminals	Terminals	Terminals	Terminals	Terminals	
2-4 hrs	No definition	2 hrs	Best Endeavors (3 hrs actual)	as well as terminals Actual =1.3hr Software= 4 hrs Tel	ranges from 1 hour to 1 wk contract customers always come first	Next ½ day	No definition	Same as systems	Same as systems	Approx 4 hrs	Same as systems	Next ½ day	No policy

EX-PPM:

Same as PPM	Scheduled: same as PPM Ad Hoc: Best Endeavors Actual is normally 2 hrs for systems & next day for terminals	No definition but actual response tends to be better than PPM because of overstaffing	Same as PPM for Scheduled Within 3 days for Ad Hoc	No apparent change from PPM	Next day	No apparent change from PPM	Basic Contract : Response Next working day 4 hr guarantee at up to 60% premium 2 hr guarantee at up to 80% premium	Same as PPM if customer has extra shift cover

Notes: 1) Response times of 24 hours or less may be guaranteed by contract.
2) 20% reduction in price if customer accepts 1 day response.
50% reduction in price if customer accepts no commitment for response.
3) H has a 2 hr and a 4 hr guarantee response for premiums up to 80% subject to being 25 miles from service center.

- Vendor H has interesting options of service differentiated by response time.

  - Provided that customers can meet certain prerequisites such as being within 25 miles of a service center, two-hour and four-hour response times are contracted at premium.

  - Vendor C is reported to provide a 50% discount if the customer will agree to no response time commitment.

4. CHARGES FOR EXTRA-SHIFT MAINTENANCE

   a. Contractual Extra-shift Premium

- Premiums charged for contractual extra-shift maintenance coverage are variable depending on type of equipment, or in the case of Vendor H, by which response time commitment is applicable. These premiums are shown in Exhibit IV-3.

- Pricing of extra-shift premiums has tended to decrease because of the decrease in demand. Univac said that after every regular price increase they receive significant cancellations for extra-shift coverage.

  - With equipment becoming more reliable, it is easier for users to gamble by carrying over service calls until the start of the PPM the next day.

  - In a separate study conducted by INPUT Ltd., it was determined that European users plan on shrinking their extra-shift coverage while, in fact, increasing extra-shift use of the equipment.

- Companies, including Vendors B and I, price extra-shift premiums so as to discourage coverage for certain products, usually older equipment. In some cases mature products are not eligible for extra-shift coverage.

EXHIBIT IV-3

EXTRA-SHIFT MAINTENANCE PREMIUMS
(Cumulative as a Percent of PPM Price)

VENDOR

Shift	A		B (1)			C	D (2)	E (3)				F	G	H (4)		I (5)	
M-F	Bx9	Bx7 Term	A	B	C	Basic Service	All Products	A	B	C	D			4 hr Svc	2 hr Svc	Lge Sys	Small Sys
2	30	50	8	12	21	20	25	18	22	28	14	See		20	30	25	50
3	12	30	6	8	12	33	10	26	34	46	18	Attachment 2	No data	20	20	20	40
Sat																	
1	9	25.0	4	5	7		5	4	5	8	4	Attachment 2	No data	)	)	)	
2	3	12.5	6	7	14	15%	5	7	8	11	7			) 15	) 15	) 15	
3	4	7.5	8	10	21		5	9	11	15	8			)	)	)	
Sun & Hols																	
1	11	30	5	6	8		5	5	6	9	5	Attachment 2	No data	)	)	)	
2	3	15	7	8	15	20%	5	9	10	14	9			) 5	) 15	) 20	
3	4		9	12	22		5	12	14	18	12			)	)	)	
Max Charge	76	179	51	68	120	88	65	90	110	149	77			60	80	86	210

Notes: 1) A = CPU's, B = Controllers etc, C = Electromechanical.
2) A 12-hour period costs 15%. Weekend cover which follows a break is 10%.
3) Category A = Larger Machines, B = Smaller Machines, C = Certain Peripherals, D = Newer Machines. E offers 12 and 20 hour cover.
4) See Attachment 1.
5) I has 8 groups of equipment. Groups including punches and communication don't have extra shift cover.

EXHIBIT IV-3 (Cont.)

ATTACHMENT 2

TABLE OF SERVICE COVER RATES - VENDOR F

S.C. code	Standard monthly maintenance charge per price manual £	Basic engineering cover rates based on scheduled service: Normal weekday: Per shift £	Normal weekday: Monthly charge for a single 8 hour shift per week £	Saturday: Per shift £	Saturday: Monthly charge for a single 8 hour shift per week £	Sunday and public holiday: Per shift £	Sunday and public holiday: Monthly charge for a single 8 hour shift per week £	Sunday and public holiday: P factor per month £	Sunday and public holiday: S.C. code
10	1034- 1238	27.20	108.80	30.30	121.20	33.40	133.60	354	10
11	1239- 1443	28.20	112.80	31.40	125.60	35.50	142.00	393	11
12	1444- 1650	30.30	121.20	32.40	129.60	35.50	142.00	433	12
13	1651- 1754	31.40	125.60	33.40	133.60	36.60	146.40	472	13
14	1755- 1856	32.40	129.60	33.40	133.60	36.60	146.40	511	14
15	1857- 1960	33.40	133.60	34.50	138.00	38.70	154.80	551	15
16	1961- 2063	35.50	142.00			39.70	158.80	589	16
17	2064- 2167	36.60	146.40	Use Weekday Rates		39.70	158.80	629	17
18	2168- 2270	38.70	154.80			40.80	163.20	669	18
19	2271- 2373	39.70	158.80			40.80	163.20	707	19
20	2374- 2477	40.80	163.20					747	20
21	2478- 2579	41.80	167.20					787	21
22	2580- 2683	42.80	171.20			Use Weekday Rates		812	22
23	2684- 2785	43.90	175.60					838	23
24	2786- 2889	44.90	179.60					865	24
25	2890- 2993	46.00	184.00					890	25
26	2994- 3094	47.00	188.00					916	26
27	3095- 3198	48.10	192.40					944	27
28	3199- 3508	50.20	200.80					970	28
29	3509- 3921	54.30	217.20					1074	29
30	3922- 4332	59.60	238.40					1179	30
31	4333- 4745	63.70	254.80					1284	31
32	4746- 5159	69.00	276.00					1389	32
33	5160- 5571	75.20	300.80					1493	33
34	5572- 5983	79.40	317.60					1599	34
35	5984- 6398	85.70	342.80					1703	35
36	6399- 7016	90.90	363.60					1808	36
37	7017- 7633	99.30	397.20					1965	37
38	7634- 8254	105.50	422.00					2122	38
39	8255- 8873	115.00	460.00					2279	39
40	8874- 9490	121.20	484.80					2437	40
41	9491-10110	130.60	522.40					2594	41
42	10111-10733	137.90	551.60					2751	42
43	10734-11349	145.30	581.20					2908	43
44	11350-12174	155.70	622.80					3065	44
45	12175-12793	164.10	656.40					3275	45
46	12794-13413	171.40	685.60					3432	46
47	13414-14032	179.70	718.80					3590	47
48	14033-14649	186.00	744.00					3746	48
49	14650-15270	195.40	781.60					3904	49
50	15271-15887	203.80	815.20					4061	50
51	15888-16508	211.10	844.40					4219	51
52	16509-17127	219.50	878.00					4374	52
53	17128-17746	225.70	902.80					4532	53
54	17747-18364	235.10	940.40					4689	54
55	18365-18985	242.40	969.60					4847	55
56	18986-19603	250.80	1003.20					5003	56
57	19604-20242	258.10	1032.40					5161	57
58	20243-20831	265.40	1061.60					5318	58
59	20832-21423	272.70	1090.80					5461	59
60	21424-22015	280.10	1120.40					5603	60
61	22016-22604	286.30	1145.20					5748	61
62	22605-23194	294.70	1178.80					5890	62
63	23195-23784	301.00	1204.00					6033	63
64	23785-24376	309.30	1237.20					6175	64
65	24377-24967	315.60	1262.40					6318	65
66	24968-25557	322.90	1291.60					6461	66
67	25558-26149	330.20	1320.80					6604	67
68	26150-26741	337.50	1350.00					6747	68
69	26742-27330	343.80	1375.20					6890	69

EXHIBIT IV-3 (Cont.)

ATTACHMENT 1 (Note 4)

CUSTOMER SERVICES

EXTENDED SHIFT COVERAGE PREMIUMS FOR HARDWARE SERVICE

Extended Shift Coverage is available only to Preferred Service customers and is an extension of the principle period of maintenance, including all services provided during normal hours, except guaranteed on-site response. Shift Coverage is not available to Basic Service customers.

Note:

1. All figures are percentages of the total-system preferred maintenance price.
2. Extended response times are no longer available other than by special quotation.
3. Out of hours rates appear under Supplementary Services.
4. Four hour response within 50 miles of a designated Service Centre only.

- Four hour response:

Cover Hours	Monday-Friday	Saturday	Sunday and Public Holidays
8 hours (0900-1700)	100	115	130
12 hours (0800-2000)	110	125	140
16 hours (0800-2400)	120	135	150
24 hours	140	155	160

Requests for two hour response must only be handled by the Customer Service District Manager. Only customers within 25 miles of a designated Service Centre will qualify. The following table details guide prices which will need confirmation in each case by the Customer Service District Manager:

Hounslow	Southampton	Syndenham	Birmingham
Milton Keynes	Cambridge	Bristol	Leeds
Loughborough	Glasgow	Manchester	

- Two hour response:

Cover Hours	Monday-Friday	Saturday	Sunday and Public Holidays
8 hours (0900-1700)	110	125	140
12 hours (0800-2000)	120	135	150
16 hours (0800-2400)	130	145	160
24 hours	150	165	180

Issue Date: 26th January 1983

- Most vendors have more than one plan for extra-shift coverage, depending on equipment type or response time in the cases of C and H. F has an extra-shift coverage plan that is so complex it looks like a railway timetable. D, at the other extreme, has only one extra-shift plan.

  - The less complicated the plan, the better it will be administered.

  - This can mean less administrative costs and more revenue through improved accuracy.

- Some vendors, including D, E, F, and H, offer extra-shift increments. An extra four-hour coverage period added to the PPM, making a total of 12 consecutive hours, is a popular option. Typical costs for this (weekdays) is:

  - D - 15%.

  - E - 14%.

  - H - 10%.

b. Ad Hoc Rates

- Ad hoc hourly rates are differentiated in several ways. Type of product, i.e., system or terminals, is a popular distinction. Also, depending on whether the customer has a maintenance contract or not, rates differ. Exhibit IV-2 provides a breakdown.

- Other unique hourly rate-charging schemes are provided by C, F, and I:

  - C's rate is cheaper for the user, pounds sterling 47.50 per hour for systems, if the local engineering office is all that is required for service. If a regional support office is required, the cost climbs to pounds sterling 70 per hour.

- G breaks their charges down into increments of the first one and one-quarter hours for one price, pounds sterling 54, and the remainder for a lesser price, pounds sterling 40.

- If the customer schedules occasional coverage such as month-end closings and does so at least five days in advance of the required coverage period, I charges a standby cost of pounds sterling 30 per hour. If a call by the engineer to the site is required, the rate is pounds sterling 50 per hour.

- It is interesting to note that the vendor with the most complicated plan for contractual extra-shift coverage, ICL, has the simplest and cheapest hourly rate structure.

5. TRENDS

- Extra-shift maintenance, under contract, is shrinking quickly in terms of user demand. For years customers have been motivated by fear (mostly of the unknown) to subscribe to extra periods of maintenance coverage. These loyal customers have not realized very much from their investment in extra-shift coverage. Now, with more reliable equipment and redundancy and confidence, customers are cancelling extra-shift service more frequently.

- The number of incidents requiring vendor participation has diminished significantly. Exhibits IV-4 and IV-5 demonstrate the trend toward less requirements for extra-shift coverage.

- British users, according to INPUT's 1983 Annual Field Service Survey, planned to reduce their extra-shift coverage by 10%. They simply aren't receiving equivalent value for pounds spent.

EXHIBIT IV-4

CALL ACTIVITY FOR VENDOR D
SOUTHERN DISTRICT (U.K.)

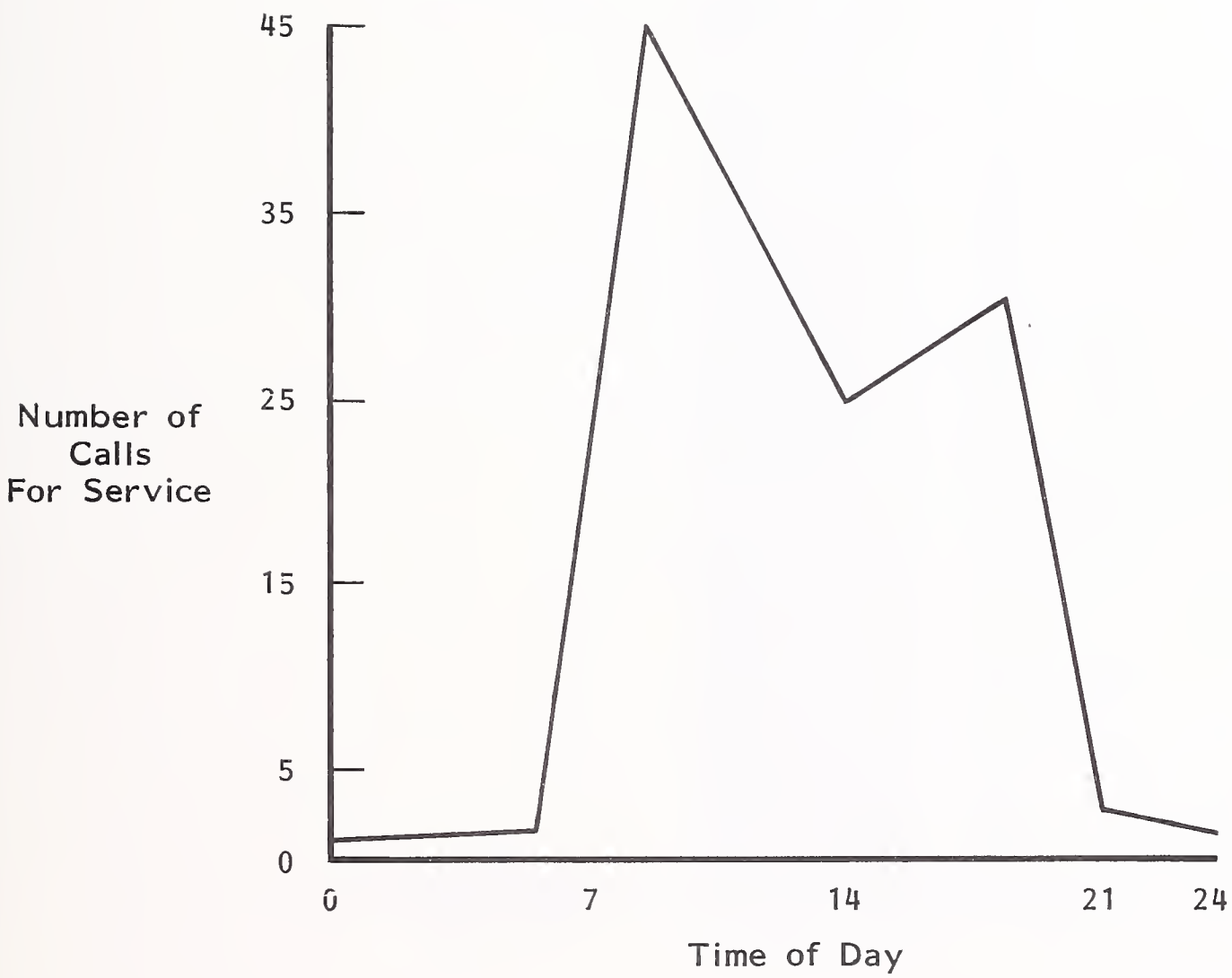
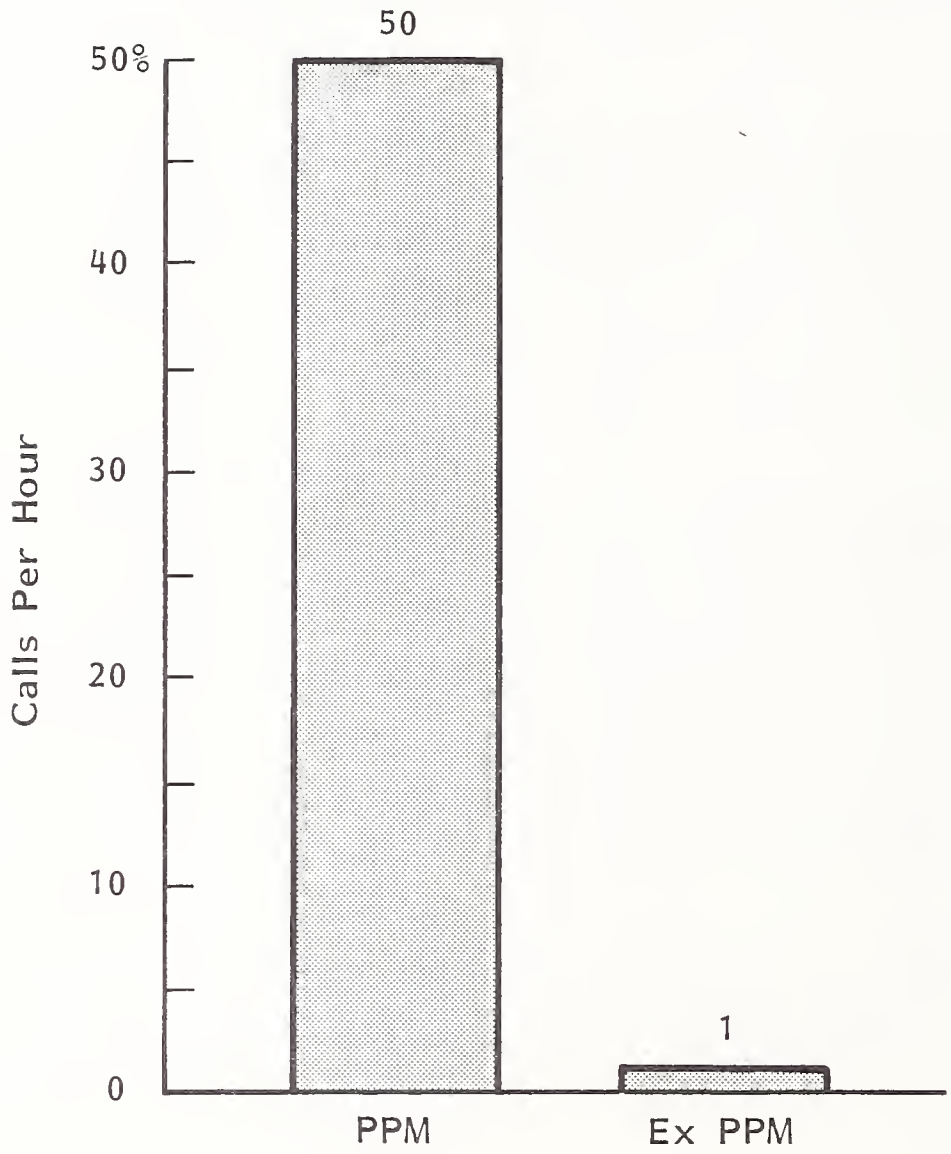


EXHIBIT IV-5

CALL ACTIVITY FOR VENDOR D



- Vendors responding to this survey generally agree to a trend of less extra-shift coverage. A representative summary of vendors' perceptions of trends concerning extra-shift service is shown in Exhibit IV-5.

EXHIBIT IV-6

TRENDS FOR EXTRA-SHIFT COVERAGE AS VIEWED BY VENDORS

- "The trend for extra shift coverage is downward. Every time we have a new price increase, one of the responses from our customers is to reduce extra-shift coverage. They are more sensitive to costs."
- "Customers shouldn't think of tangible results for extra shift coverage. It's an insurance policy and results occur only when needed."
- "We leave most extra-shift maintenance coverage as discretionary with the local manager depending on his resources. You can't treat everyone the same because their needs are different."
- "If we let our local managers use their own business discretion, we get into a big mess because others find out we are treating them differently."
- "More and more remote fixes and built-in diagnostics."
- "We have 720 systems installed. Only 20 (3%) have extra-shift coverage."
- Last year we made 4.5% of our total service revenues from ad hoc service. This is unusually high, reflecting the Falklands crisis."
- "Very few customers want 24-hour coverage. More want coverage up to 8 o'clock."

V INFLATION AND PRICES

V INFLATION AND PRICES

A. THE PRICING PROCESS

- There are four main elements in the pricing process that require attention: costing methods and stock valuation, price fixing and frequency of price reviews, terms of sale and price variation clauses, and government legislation.

- The following discussion provides a checklist to keep pace with inflationary pressures.

1. COSTING

- In inflationary conditions, costs fixed on historical data can rapidly become out of date, and these include costs conventionally described as "fixed" overhead.

  - Even direct costs are not always easy to estimate where there is any significant delay between the order and the invoice.

  - Labour rates have been affected by demands for increased wages, with a frequency that was not anticipated.

  - Material costs and interest rates have risen steeply.

- One of the most important aspects of costing concerns materials used in manufacturing or spare parts. These have usually been priced at the historic price of acquisition, and this has in the past produced a reasonable result in terms of value. If, however, the business is viewed as a continuing process and not a series of discrete sales, it becomes clear that assets will diminish and cash-flow problems will occur if this practice is continued for long in an inflationary situation.

  - Every item removed from stock to be used or sold has to be replaced with a similar item. The money for this must come from the sale itself, and if goods are priced on a historic cost basis, there may not be enough cash to maintain stock purchases unless the time gap between buying-in and selling is very short.

  - This may indeed be the case with fast-moving items, but the gap will be much greater where manufacturing cycles are a matter of months, where long-term contracts are involved with delivery some considerable time ahead, or where purchases are made on a batch basis with perhaps six months or a year between batches.

  - In such circumstances it has not been unusual to be faced with purchase costs increasing at 1.5% or 2.0% a month, sufficient to absorb any calculated profit simply in replacing the material sold.

- The answer would seem to be to ensure that costs are calculated on the basis of material prices applied at the time of sale rather than at the time of purchase. This might be accomplished by demanding and obtaining from suppliers firm price quotations valid for an established period in the future - not an easy feat in inflationary times - or by estimating what the cost of materials will be at the time of invoicing.

  - If a large number of items are involved, this may have to be done by fixing an average rate of anticipated increase and building it in to all quotations.

- The same action might be considered where labour costs are concerned. Most companies expect an annual increase and might hope to hold rates steady for a year at a time, but in fact increased expense allowances and similar extras have tended to produce a continuous rise in costs that needs to be considered when fixing prices.

- It does not matter that historical costs rather than these inflated figures may be used in compiling the company's account. Cost is considered here simply as a factor in establishing the right price, regardless of how it may be handled subsequently.

2. PRICE DETERMINATION

- The chief requirement in fixing prices in an inflationary situation is speed. Every avoidable delay in making a necessary increase means a permanent loss of profit which can no longer be taken lightly. The factors involved in determining when a price change should be made are anticipated cost increases and competitive pricing policy.

  - Cost increases are the main determinant, but it seems that more attention might profitably be given to competitive price levels.

  - Any upward move on the part of a significant competitor provides an opportunity for an increase, and although in pre-inflationary times there might have been some temptation to maintain prices in the hope of securing a greater market share, in inflation the risks attendant upon inadequate prices outweigh the possible advantages of sales taken at the expense of competitors.

  - Internal discipline is necessary to establish a policy of matching competitors' price increases as well as to pave the way for the next step, which involves positive price leadership.

- Price leadership is normally only possible for companies enjoying a substantial share of the market, but such companies need not wait for a general upward movement to be initiated by others. Once it is seen that costs are going to increase and that margins are threatened, there is every reason for making a change and informing competitors that this is happening and what the thinking is behind it.

- It may be worthwhile to establish a "pricing calendar" to ensure that reviews are made regularly. Even if no change is appropriate, at least the matter will have been aired. Dates and intervals may vary from one product to another and can be made to suit seasonal trends or the input of fresh cost information.

3. TERMS OF SALE

- For many companies, pricing activity does not end with entering the price into the quotation document. If delivery is prolonged for any reason, whether the responsibility lies with the selling company or with the customer, the price quoted may be out of date at the time of invoicing. Either the cost of materials or labour rates or both may have risen to levels beyond those anticipated in the original quotation. This creates both a contractual and a marketing problem.

- Contractually, the answer lies either in limiting the validity period of the quotation, which may be sufficient protection in the case of goods normally held in stock, or in the introduction of a price adjustment clause. It is likely that most standard conditions of sale include some clause limiting validity. A substantial proportion may have an additional statement to the effect that "prices quoted may be varied in accordance with changes in the cost of raw materials and labour prevailing at the time of delivery."

- As far as validity clauses are concerned, the question which must be asked first is whether they can reasonably be shortened from, for example, 60 days to 30 days. Whether a shorter period is possible depends largely on the type of market involved, and the time required to compile and evaluate each quotation. Nevertheless, the fact that some customers take many weeks to come to a conclusion is not a good test of the viability of a shorter period. The essential consideration is the time that might reasonably be taken in the majority of cases.

- Price-adjustment clauses require more thought, since to make them workable on a regular basis implies the application of a set formula. Clauses incorporating an adjustment formula have been in use for many years, and if a suitable wording is found which enjoys recognition and a fairly wide acceptance throughout the industry, this is normally to be preferred to a "home-made" version open to argument. As an example, the British Electrical and Allied Manufacturers Association (BEAMA) has established a standard CPA clause and offers an advisory service in its application.

4. GOVERNMENT LEGISLATION

- Inflation brings governments under political pressure to hold prices down, either by subsidies or by controls, or by a combination of both methods. It is important to appreciate the strength of these political factors, whatever opinion might be held of their economic logic. Economically it would not be difficult to argue that a nation's interests might be better served by letting prices find their own level, or by stimulating the competitive market forces that limit increases.

- Nevertheless, governments will from time to time be swayed by demands for positive action and, in bowing to pressure from the electorate or from the representatives or organized labour, will set up the bureaucratic machinery necessary to produce evidence of action, if not of results. Businesses then have to adapt to the new situation with which they are faced.

- In the United Kingdom price controls have been established and operated under the Counter-Inflation Act of 1973, with a number of orders made subsequently. This legislation places on companies the burden or prenotifying, reporting, and recording price increases, and of justifying them in accordance with a formula of considerable complexity set out in the data sheets of the Price Commission.

  - The Price Commission is likely to apply its rules more to whole sections of an enterprise or groups of products than to individual products in the catalogue. The rules involve consideration of the direct costs, overhead, and profit of the business as a whole.

  - Every company that is by its size obliged to have dealings with the Price Commission will have to appoint someone to handle the work, preparing its case in the prescribed form.

B. THE OPPORTUNITIES CREATED BY INFLATION

- Opportunities created by inflation occur both in pricing individual products and in setting pricing policies for the markets in which a company participates. They stem from the disorientation towards pricing that has taken place among customers and salesmen alike. Because they may be short lived, they require rapid action if they are to be fully exploited. This is quite consistent with the main message of inflation, which is that decisions and actions must be more rapid than was thought possible or even perhaps desirable in more stable times.

- Disorientation appears in the form of vagueness about the "right price" for an article. In pre-inflationary times this concept was fairly well established and competitors' prices fell within close limits. Buyers could obtain information

about the "right price" from data on previous orders, from discussions with other buyers and from competitive salesmen. As soon as changes become too frequent for these sources of information to be reliable, disorientation sets in, accompanied by a diminution of price sensitivity.

- This phenomenon gives to those companies that are bold enough the opportunity of correcting anomalies in their pricing structure. There are in most catalogues products that are not as profitable as others, which may be carried to support the sale of the main profit-bearing lines. These can now be examined to see whether they can be put on the same level of gross profit as other products. The fact that one product is subjected to a heavier increase than others is less likely to cause problems when every price is moving upwards more steeply than before.

- The knowledge that competitors are having to meet the same inflationary pressures and that their thinking is probably on similar lines may enable the process of anomaly correction to be extended to markets, which as a whole have proved less profitable than required. Either prices can be adjusted or, in an inflationary situation, the company has to consider withdrawal more seriously than ever before. As has been said, there are now opportunities to seize price leadership that did not exist when circumstances were more stable.

- The exact shape the next requirements of economic-cycle/economic-phase will assume, is going to depend on the efforts of buyers to solve their present predicament, the extent of any business recession likely to take place and the degree to which inflation continues independently of these other factors. It seems to be generally agreed that inflation will continue at a fairly steep rate, impelled by the increasing cost of labour and the long-term world scarcity of raw materials.

  - Some recession also seems inevitable, even if it is no more than the transient swing between quasi-boom and quasi-slump to which we have become accustomed over the past two decades.

- Economists may argue over the relative importance of these trends, but marketing men would be advised to go further. They must consider carefully the effect of the inevitable buyers' reaction to a situation that has been tolerated partly because the onset of inflation coincided with a shortage of supplies and a lack of alternative sources. The disorientation arising from the present situation might well appear intolerable should conditions change, even if the change is no more than a slight tilting of the balance between supply and demand.

- It is hard to believe that buyers will continue to accept price increases uncritically. In the consumer field, there are signs that customers are prepared to "shop around" more keenly in search of bargains and that they are prepared to change buying habits to suit changing price levels.

- This natural reaction from customers wishing to reorient themselves is likely to be amplified in conditions of shrinking demand. The result may be that pricing will become rapidly more competitive. It is therefore likely that businesses will be faced with an almost unprecedented combination of inflated costs and tougher market conditions, and it seems possible that this change could come about very quickly.

C. REQUIREMENTS OF ECONOMIC CYCLES

1. BETTER UNDERSTANDING OF THE CUSTOMERS

- It is clear that price competition is strongest when a customer is buying an article he knows and has bought previously. This condition is the nearest approximation to the economists' model of pure competition. If it is desirable to avoid a situation which allows the buyer to dictate his terms, it is better to attempt to change the straight repurchase to either a modified repurchase or to a new purchase altogether.

- This lays stress on product differentiation as a means of justifying higher price. In industrial marketing the tendency is already to compete on grounds other than price if at all possible, but in future this will require a greater degree of competence and imagination, if it is to be successful. In other words, companies will have not only to talk about professional selling but also to practice it at all levels.

- The cost of enhanced promotional activity will have to be balanced against loss of profit from attempting to compete on price alone. It is therefore likely that marketing will resume the place in policy-making which it has tended to forfeit in the early stages of inflation. It should go without saying that product quality, delivery and after-sales service will have to match the promotional effort made, and here too marketing has an important advisory role to play.

2. MORE INTELLIGENCE REGARDING MARKET PRICES

- There may be considerable scope for error in a company's appreciation of its pricing structure relative to competition. In the past, the sources of information on competitive prices and price acceptability have been primarily the sales force and internal sales staff. Very little formal investigation has been made into price acceptability, and this may be because research in this field is not easy.

- Research in inflationary times, when quick results are required (if the information is to be of any use at all) poses quite considerable problems. New techniques have to be developed, and the most promising approach seems to lie in test-marketing which enable questions to be asked and answered more rapidly than has been the custom.

- Pricing research may prove to be an opportune area for the currently depressed market research industry, but few clients will be able to afford wait-

ing three months for an answer, so conventional studies will be of little use, and assistance with in-company test marketing might be a better proposition.

3. FLEXIBILITY

- With the reservations already made on the sales force as a source of general pricing information, it will pay nevertheless to listen to the salesperson attempting to fine tune the offer and provide guidance in the best tactics for given situations. Too rigid a discipline can lose orders; too loose a control will lead to profit erosion.

- Rigidity may still pay dividends on certain points, and those are in terms of sale, escalation clauses and similar anti-inflation devices. These will need to be maintained so long as the exact rate of inflation remains unpredictable.

4. ALTERNATIVE WAYS OF CHANGING PRICES

- It may be worthwhile to explore other means of altering prices, for example by changing the product specification or by the inclusion or omission of "extras." These tactics have already been widely employed in the automobile industry, but they do not seem to have found much favor elsewhere. They naturally serve to make direct price comparisons more difficult.

- Undoubtedly, the scope exists for further application of such methods and there may well be areas where they are unlikely to cause an unfavorable customer reaction. They could, however, prove counter-productive in situations where a straight rebuy is made at fairly regular intervals. Furthermore, they are difficult and costly to administer, compared with a simple price increase. The cost of making a physical change, including design, tooling and documentation, is the most obvious deterrent; even changing sales literature can take time and absorb considerable expense.

- Apart from studying more oblique ways of increasing price, it may be worth considering means of reducing price, other than by a straight reduction to list price. That is, of course, if a larger market share is sought at minimum additional cost and with minimum risk of retaliation. Time-honoured methods include "loss leaders," special offers for a limited period, and "package deals." These have the advantage of flexibility and do not commit the company to a permanent reduction.

- As has been noted, there appears to be ample scope for the exercise of imagination in the application of discounts and in the promotional tactics pertaining to price. Nevertheless, whatever the reaction of customers to such offers, the likely reaction of competitors will require close attention.

5. KEENER COMPETITIVE KNOWLEDGE

- It is clear that when tougher market conditions are combined with continuing inflation, not all competitors are going to survive. There is, however, a danger that, unless great care is taken in pricing decisions, the more efficient companies will be dragged down with those that deserve to fail.

  - Conditions of rising costs and shrinking demand argue for an increase in price along with a cutback in production.

  - This, however, can rarely be phased with any great accuracy, and where over-production occurs, some competitors are likely to seek a larger market share to absorb the surplus.

  - A price war may follow, to the detriment of all participants.

- Occasionally inflation may offer the opportunity of winning such a war by eliminating competitors known to be in serious financial difficulty, but that is a game for companies with deep pockets and strong nerves. Most others show a far too deeply rooted conservatism on matters of price to initiate a war. For them a price war is more of a threat than an opportunity.

- They have, therefore, to make sure that competitors at least understand the company's position, so that war is not provoked, as is so often the case, through ignorance.

- No collusion is involved in making plain the company's policy on price increases, discounts, special offers and similar matters.

- Communication between competitors needs in many cases to be improved, and a fair measure of trust engendered between rival directors for this to be possible. Where it is possible - normally in fairly compact, oligopolistic type industries - the effort may be worthwhile, just as in international diplomacy the "summit" meeting is of some use in making clear the intentions of the participants.

6. A MORE DISCERNING MEASUREMENT OF RESULTS

- The normal method of measuring the results of pricing decisions is a simple comparison of sales volume with that for similar periods in the past. It is clear that to navigate the tricky straits between inflation and recession a better guidance system will be required. Some of the techniques that might be employed are:

  - Formal market investigation.

  - Studying market shares from available statistics.

  - Comparing sales results with those for comparable periods.

  - Test marketing in a limited area.

- To use these techniques will demand better, and quicker, marketing decisions than were necessary either in pre-inflationary times or in the earlier stages of

inflation. The only way in which quick decisions can be made on sound information, rather than hunch, is for such information to be continuously available.

- Even then companies will have to appreciate the risks involved with each decision. They should use marketing expertise correctly, not as a panacea for all ills, but as a guide to the most profitable course in a highly competitive situation.

- There is every danger that, if the need for all this is not foreseen and action taken in good time, the next stage will be characterized by tension between inflation-conscious accountants and salespeople demanding price cuts in the face of a hardening attitude on the part of increasingly cost-conscious customers.

- If timely action is taken and prices are fixed on the basis of improved market information, companies will be able to reap the rewards of a more professional sales approach. This and other measures not directly related to pricing (for example, the coordination of marketing planning and production cutbacks, the selection of longer term developments that can most profitably be abandoned, or the identification of fresh opportunity areas) are the major contributions that marketing can make towards survival in the next phase of inflation.

VI INTERNATIONAL PRICING CONSIDERATIONS

VI INTERNATIONAL PRICING CONSIDERATIONS

- Pricing the product is a tricky problem in a domestic market. In international marketing it can be a nightmare. The trouble is that the price is a quantitative and unequivocal figure. It is there to be compared and analyzed by competitors, distributors, and consumers alike. The mismanagement of a firm's pricing policy can easily lead to:

  - Substantial variations in the price of the same product in different countries.

  - Pressures for price reduction and/or bigger discounts resulting from such variations.

  - The development of a "grey market" by unscrupulous traders. A grey market is created where the product is purchased in a cheap market with the view of being sold in markets enjoying higher prices.

- A sound international marketing strategy demands, therefore, that a framework be established for decision making in the pricing arena. In the absence of such a framework or a series of guidelines, the firm runs the risk of allowing its international pricing to run out of control. The problem becomes even more acute in an era of exchange anarchy and floating currencies.

- The structure of the rim and the level of decentralization developed therein have a major influence on the pricing policies of such a company. A firm that

has opted for an "umbrella" structure is unlikely to attain a centrally controlled price uniformity. In fact, the underlying philosophy of the organization may be quite unsympathetic to such a strategy.

- On the other hand, a company centrally structured is much better attuned to a policy of relatively homogeneous international pricing. In the extreme case, one encounters the firm that seeks to impose a single price for its product throughout world markets. Attractive as such a policy may be, one must not overlook the complications that may arise from the incidence of local taxes, such as sales tax, value-added tax, or custom duties.

- A number of major considerations should be studied with care before laying down pricing policy guidelines for a firm's international markets.

A. CORPORATE OBJECTIVES

- This is, of course, always the starting point: until one knows what the firm wishes to achieve, one cannot determine a sound price for the firm's products. A firm may achieve a volume of profit by catering to a small number of consumers with a high quality product at a high price.

- A competitor may opt for a different approach: he may wish to attain a substantial penetration of the market with a lower quality product at a lower price and yet achieve virtually the same amount of profit. The net result of these two extremes may be the same in terms of profit but totally different in terms of turnover, production load, productivity, and so on.

- The underlying considerations in each situation will be different, and it is essential for a person responsible for determining the price of a product to understand these considerations and the goals of the firm that result therefrom. It is the role of the firm's strategic level to communicate such a fundamental "input" to the marketing personnel.

B. COMPETITION

- Assuming that the firm's corporate objectives are clear and that they have been communicated to all managers, one must gauge the impact that competition may have on one's freedom to manipulate one's prices. Competition, whether it is of the brand type or of the functional type, can be so powerful that the marketer is virtually forced to follow the leadership of the major manufacturer in the industry.

- This in turn can have a significant influence on the firm's pricing policy in other markets, in that the marketing objective may call for a reasonably standard price throughout the firm's markets. In other words, competitive pressures may have an overriding impact on a company's pricing decisions.

- It is often suggested that where the level of innovation is high, a firm can escape from the rigors of competitive pricing. This is probably right where the competition is of the "brand" type. However, where the competition is of the "functional" type it is more difficult to ignore the cost-benefit value of other products that perform the same function.

C. RETURN ON INVESTMENT EXPECTATIONS

- Crucial questions that help the marketing planner determine a sensible pricing policy are:

  - What is the expected life of the product?

- How much profit do we need to generate to recover the total investment in this product during its lifetime?

- A firm that has experienced short life cycle problems coupled with a heavy investment programme will inevitably try to charge the highest price that the market can bear.

D. STRUCTURE

- A firm that has structured its international operations on a centralized pattern is more likely to develop strong pricing guidelines emanating from some central authority. It is much more difficult to exercise control procedures or guidelines in a decentralized enterprise. It is much more common to find price variations among markets organized on the "umbrella" principle than on the centralized structure.

- Any attempt at introducing rigidity on pricing policies in an "umbrella" type firm may well defeat the whole purpose of such an organization. Giving managerial freedom with the one hand and withdrawing it with the other is inconsistent. Therefore, it must be accepted that the organization selected for a firm's international business will have a major influence on its attitude of pricing decisions.

E. LEGAL CONSTRAINTS

- Over the years pricing policies have attracted the attention of lawyers and legislators of many countries. It has always been recognized that the economic welfare of a country could be manipulated through pricing practices to the advantage of powerful manufacturers and to the disadvantage of the consumer and the public at large.

- Each country has adopted its own curtailment style of the freedom to compete. The main objective of such interference with the freedom to manipulate pricing decisions was to safeguard the interest of the consumer and the economy in general.

F. THE COST OF TRANSPORTATION

- Assuming that a standardized pricing policy is adopted, the obvious question arises as to who pays the extra cost of transportation to distant destinations? This is an important consideration even in domestic markets. A U.S. manufacturer on the east coast of the country who sends goods to the west coast would feel entitled to charge for the freight across the continent. However, he may easily cost himself out of the market if a competitor is located on the west coast.

- This kind of consideration applies with equal force to international markets. International marketers must resolve the question of whether they propose to equalize world prices, regardless of distance and transportation costs.

G. CURRENCY PROBLEMS

- Currency uncertainties are rapidly developing into a major problem. Ideally one wants to apply a common currency in all markets, but this, of course, is not always possible. Until a short while ago it was possible to invoice in one currency throughout the world. Thus a British company might have chosen to invoice in sterling irrespective of the country of destination.

- A standard currency for international trade can be a great help in monitoring perfo mance and controlling cash flow and bank balances. However, with floating currencies and the uncertainties surrounding currency values, many companies have opted for the practice of invoicing in the currency of the receiving country.

- The influence of currency instability on pricing policies is enormous. The choice of one basic currency is useful, but it is important that it is universally recognized as a desirable one. International airlines adhering to the IATA rules and price structure have adopted the U.S. dollar as the basis for calculating prices in various countries. However, as most people in the air travel industry know, this is not always a comfortable basis for determining the price of a journey, and many anomalies do occur.

H. PRICING OBJECTIVES

- If corporate and marketing objectives have been clearly defined, the formulation of pricing objectives should logically follow. Thus each one of the following marketing objectives would have a direct impact on the pricing objectives of a firm in relation to a product or a group of products.

1. ROI

- Such an objective can be simply reiterated as the basis for pricing decisions. The marketer determines a price that will satisfy the needs of the consumer on the one hand and at the same time enable the firm to attain a pre-set return on the capital or investment involved.

- A price that satisfies the consumer but fails to meet the return on the investment goal has obviously failed to meet the underlying objective.

2. MARKET STABILIZATION

- Here the marketer wishes to operate in the market without disturbing competitors. Adhering to a pricing policy whereby one follows the recognized leader of the market is a sound way to maintain stability. The international implication is that one has to identify the leader in each country and aim to develop the least upsetting possible pricing policy.

- This approach may be inconsistent with the desire to have a fairly standardized price throughout one's international markets, but it is a case for deciding which objective is the most important in a given set of circumstances.

- Giant competitors seldom react to a marketer who behaves in a responsible way and does not undercut their prices with the intention of nibbling into the leader's market share.

3. MARKET POSITION

- Price is a potent instrument for improving one's market share and where the firm is in a defensive position it helps to maintain its existing share.

- The pricing implications are obvious. However, the international marketer, especially where control of the global marketing scene exists, must translate this overall objective into clear pricing strategies for each market. Through price he may be able to improve his market position in less sensitive markets thus creating minimum upheaval in others. The essence of a successful strategy implementation is the availability of information about each market and the behavioral pattern of competitive reaction to price changes.

4. COMPETITION

- To meet or follow competition are objectives in situations where one enters markets for the first time or where one is operating in markets in which one

or more competitors enjoy a dominant position. The assumption is that such competitors have been in the markets for some time and therefore they have had an opportunity of testing the validity and acceptability of their existing prices.

- Moreover, it is seldom a good policy to enter a new market with a flagrant price cutting strategy. The reaction to such a provocation may quickly defeat the marketing aims of the pricing strategy.

5. PRODUCT DIFFERENTIATION

- A company that has a wide range of products serving the same market can choose to highlight the differentiation among these products through variations in price. Such prices do not aim to reflect the actual difference in cost of production of the products in the range. They seek to attach a subjective "price tag" to each product thus appealing to a range of population segments. A watch manufacturer can offer two different models - one at a very high price and one at a low price.

- The former will appeal to one segment of the population; the latter will appeal to a totally different segment. However, the price variation need not fully reflect the cost of production. As long as the products are seen as different and the more expensive product offers a sufficient number of unique selling points to reflect the differentiation, everybody is happy.

- Such a strategy can have important international implications:

  - If the firm is aiming at a pricing policy to reflect product differentiation, it must ensure that this game is played consistently throughout the world.

  - The strategy is sure to fail if in one country the price differentiation is adhered to and in another market the underlying philosophy is ignored and the two products are sold at more or less the same price.

- With the speed at which international rumors are communicated nowadays it will not be long before the strategy is in shreds. The problem is, of course, less likely to occur where the price is determined at one centre. However, this problem can be quite acute in a decentralized firm where the price is fixed by the local management of each market.

6. MARKET SKIMMING

- The aim here is to set a price that is at the top end of the range of possible prices. The seller will continue with this price until desiring to penetrate the market more deeply. At that point the price will be lowered especially where evidence of demand elasticity exists.

- Skimming objective is particularly useful when the product is new and the firm has production limitations and is not fully aware of the market situation. Normally in the case of new products, price is less important, because the innovators who are the initial purchasers of the product are less price sensitive than the subsequent buyers.

- In any event market skimming can act as a hedge against a possible mistake in setting the price. It is always easier to correct a price downwards; it is very difficult to raise a price which proves to be too low to cover costs or which is lower than the market reaction warrants.

- Market skimming is quite popular in international marketing. The size of the potential market is such that a small penetration of the global market can be sufficient to meet the immediate marketing objectives. The high initial prices can generate the level of revenues and profits which could justify a major market development.

- The difficulties arise when the international distributors, especially those who are independent of the firm, cannot derive sufficient sales because of the high

price and become quite unhappy. It must be appreciated that a pricing policy which is good for the marketing company is not always good for its international distributors.

7. MARKET PENETRATION

- This is almost the opposite of the previous approach. To attain this objective one sets a low initial price in order to reach the mass market immediately. It is a more aggressive marketing objective and it calls for a more decisive pricing policy.

- This strategy can be more satisfactory when the following conditions exist:

  - First, evidence exists to show that demand is sensitive to price;

  - Second, the production process is such that substantial reductions in cost take place when a large-scale operation is established;

  - Third, there is an inadequate innovators market to sustain a market skimming policy;

  - Fourth, competition can be forestalled through an aggressively low price.

- A full understanding of the relationship between the price and the product life cycle is an essential element in a successful penetration policy. Used in the right circumstances it can give the marketing firm a significant grip on the market by making it unattractive for competitors to enter in view of the high investment needed in the substantial production and marketing facilities and the anticipated low margins.

- On the other hand, a penetration policy can be disastrous if it is based on a product with a very short life cycle. However, a firm that has a good interna-

tional distribution network is probably well placed to exploit the life cycle on a penetrative basis. The fact that the life cycle may be short can be offset by the rapidity at which international markets can be covered.

8. CASH RECOVERY

- A firm that has identified the liquidity problem as one of its weaknesses must inevitably aim at a pricing policy which is capable of generating a better cash flow through an early cash recovery process.

- Improving liquidity calls for careful organization at all levels. Among others, one has to control credit terms rigorously, monitor costs, and obtain maximum credit terms from suppliers. At the same time one can improve the liquid resources through an imaginative pricing policy. By offering special discounts for prompt payment one can motivate the buyer or the distributor to pay on time.

- An "early cash recovery" objective is closely linked with the choice of distribution channels. A firm often selects longer channels for the simple reason that marketing through middlemen often improves the cash flow of the firm. In other words this kind of objective does not only affect the pricing policy but also other interdependent ingredients of the mix.

9. DEFENSIVENESS

- A firm may wish, as part of its marketing objectives, to take all the tactical steps within its power to stop a competitor from entering the market. Such a pricing policy must be handled with care, because it may be based on the fallacy that competitors are fully aware of the cost of production and distribution, and will be deterred from entering a market that is unlikely to offer fair rewards.

- This is a dangerous assumption, in that not every competitor is efficient and painstaking in the way data about markets and costs is assembled. Many competitors simply follow others blindly, and in such an event the marketer who seeks to prevent new entry through low prices may discover a price war in which nobody is likely to earn a living.

- This risk is particularly high in international marketing where one is likely to encounter competitors who are particularly ill-informed about the cost realities of marketing in foreign countries.

10. "LOSS LEADER" POLICY

- The underlying marketing objective here is that by pricing one product at a very low level the consumer will be attracted to the supplier's marketplace and at that point may purchase other commodities that are priced in the normal way. In other words the low price of the "loss leader" product acts as a promotional bait to the consumer.

- This strategy is particularly attractive in the retail trade. Supermarkets often indulge in this kind of practice. They advertise a product quite inexpensively. The consumer will probably buy other items in that store once going to the trouble of visiting the supermarket in question. The margin lost through such a low price can be rightly attributed to the promotional effort of the firm.

- Other examples where loss leadership is a useful strategy can be found in situations where derived demand exists. Derived demand occurs where the demand for one product stems from the existence or availability of another product. The demand for razor blades occurs only when the consumer possesses a razor. The marketer may decide to sell cheap razors on the basis of loss leadership; once the razors have been purchased the demand for the blades will follow. The marketer will endeavor to achieve profit objectives through the sales of the blades.

- This policy is often applied in international marketing but the pitfalls are numerous: first, loss leadership may contravene the law of certain countries where selling a product on this basis is considered an offence; second, in some markets it would become impossible to raise the price once a decision has been taken to sell the product very cheaply; third, psychologically it is a dangerous strategy vis-a-vis foreign distributors who may get the impression that the supplier can be pressured to concede low prices in relationship to other products.

H. OTHER INTERNATIONAL PRICING PARAMETERS

1. WHAT THE TRAFFIC WILL BEAR

- The basis here is that the marketer seeks to price product at as high a level as possible without jeopardizing sales. This method is consistent with a market-skimming objective, and its advantage is that it allows ample latitude for future reductions. Yet it needs a fair bit of research inasmuch as one cannot establish "what the traffic will bear" until one has conducted some investigations.

- This approach to pricing can be quite suitable in situations where the product is expected to have a relatively short life cycle and the firm wishes to maximize the returns as quickly as possible in order to obtain a rapid investment recovery.

- High prices might appeal to the innovators. Once they are out of the marketplace one would aim to peg the price in such a way as to satisfy the early adopters. The important point to remember is that this kind of pricing policy must be synchronized on an international scale.

- A firm that feels it can lower its price in the U.K. because it is hoping to attract the laggards will be asking for trouble if, in the German market, the target group is still the innovators. In other words "what the traffic will bear" has to be dynamic to continue satisfying the bulk of international consumers.

2. BARTER TECHNIQUES

- These are a series of highly creative methods used for identifying products that are perceived by the consumers as comparable in value. One displays a large number of products, the majority of which are clearly priced. A panel of consumers is asked to pair those products that they feel are similar in value and that they would be prepared to swap or "barter" for each other. The outcome of such an exercise gives the marketer a fairly good idea as to the price and value the consumer ascribes to such new products under investigation.

- This kind of technique can be developed into a very sophisticated instrument of pricing research. If carried out systematically in a number of large markets, one can obtain considerable input about what the consumers feel is an accurate level of pricing for a product. On the basis of such information one can explore the possibility of developing a price that is reasonably homogeneous for all countries or for a cluster of countries. This is probably one of the most marketing-oriented methods of determining the correct price of the product.

3. NEGOTIATING WITH GOVERNMENTS

- This is rapidly becoming an important way in which the price of commodities and large installations is negotiated. More and more governments are taking an active part in important international transactions, and the likelihood is that such governmental participation in marketing decisions will increase in most countries.

- International marketing personnel are well advised to acquaint themselves with the intricacies of international barter and switch deals, because in many situations the price of the product will be controlled by the incidence and details of such deals.

4. RESTRICTIVE TRADE PRACTICES

- This is a very important topic for an international marketer. A knowledge of the comparitive legislation on restrictive trade practices among the various industrial nations is essential for anybody responsible for making pricing decisions. In fact the whole question as to how far one is free to compete in a given country stems from the legislation that has been introduced on the subject.

- A restrictive trade practice which may be taboo in one country may be acceptable in another. An American industrialist, who is accustomed to the uncompromising attitude of his country to price fixing and other types of restrictive trade practices, will be unwise if he carried the American antipathy to a country where such practices are tolerated.

APPENDIX: SAMPLE PRICE LISTS

CUSTOMER SERVICE

SERVICE REFERENCES

LEVEL 1 Engineer will attend customer's premises within 72 hours of fault being reported to UK Control Centre. No guaranteed repair time or replacement unit, but repair is normally effected within 48 hours, worst case repair will be 14 days or contract may be terminated and monies refunded.

LEVEL 2 Engineer will attend customer's premises within 24 hours of fault being reported to UK Control Centre. No guaranteed repair time or replacement unit, but repair is normally effected within 48 hours, worst case repair will be 14 days or contract may be terminated and monies refunded.

LEVEL 3 Engineer will attend customer's premises within 24 hours of fault being reported to UK Control Centre. Repair will be guaranteed within 5 days or replacement supplied.

LEVEL 4 Engineer will attend customer's premises within 24 hours of fault being reported to UK Control Centre. Repair will be guaranteed within 3 days or replacement supplied.

LEVEL 5 Engineer will attend customer's premises within 4 hours of fault being reported to UK Control Centre. Repair will be guaranteed within 24 hours or replacement supplied.

With levels 3, 4 and 5, if for any reason repair or replacement cannot be effected within the guaranteed period, the insurance policy is automatically triggered, which entitles the customer to rent a replacement machine from either , or outside sources, and the following payments will be made under the terms of the insurance:-

2% of the value of the equipment per day, with a maximum of 5% per week.

NON-CONTRACT TIME & PARTS SERVICE.

For customers not wishing to enter into a maintenance agreement, we do offer on-site repairs, our charges being as follows:-

Standard Call-Out fee ..... £70 – this fee covers all travelling time and expenses.

Engineers time will be charged at ..... £30 per hour on-site. Parts charged at current price lists.

JANUARY 1983

SAMPLE PRICE LIST #1

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
ANADEX					
DP 8000			£150	£100	£90
DP 9000, 9001, 9500, 9501	£450	£300	£200	£150	£130
DP 9620	£450	£300	£200	£160	£140
WP 6000	£500	£350	£275	£200	£160
CENTRONICS					
150, 739, 737	-	£175	£150	£100	£90
152, 730	-	£200	£160	£120	£110
779, 154	-	£250	£200	£140	£120
701, 702, 703	-	-	£250	£200	£175
353	£500	£425	£350	£250	£200
DATAPRODUCTS					
M100, M200	£600	£400	£300	£250	£200
B300	-	-	£500	£350	£300
B600	-	-	£600	£450	£400
DP 35, 50, 55	£500	£400	£300	£200	£175
DEC					
LA36, LA34DA	£250	£150	£100	£90	£80
LA34AA	£300	£200	£150	£100	£90
LA120, LA180, LS120	-	£400	£300	£225	£200
DIABLO					
620	£300	£200	£175	£150	£125
630	£600	£500	£400	£300	£215
1640, 1650	-	-	£400	£300	£275
DOLPHIN					
BD80P	-	-	-	£150	£130
BD136	-	-	£200	£150	£130
D.R.E.					
8810/8820	£325	£260	£200	£130	£110
8830	£400	£320	£250	£160	£140
8840	£400	£360	£250	£200	£180
8910	£500	£400	£300	£250	£200

SAMPLE PRICE LIST #1

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
SUPERBRAIN II					
JR 64k, 2 x S.S. Floppies	£480	£310	£250	£195	£155
QD 64k, 2 x Q.D. Floppies	£580	£370	£300	£230	£185
SD 64k, 2 x D.T. Floppies	£670	£435	£350	£270	£215
SUPERBRAIN 5" WINCHESTER SYSTEMS					
64k, 1 x S.S. Floppy	£430	£255	£215	£160	£130
64k, 1 x Q.D. Floppy	£590	£300	£235	£190	£160
64k, 1 x D.T. Floppy	£550	£350	£300	£215	£170
Add on 5" Winchester (Rodime) to above					
1 x 3Mb + Controller	£400	£300	£250	£200	£175
1 x 5Mb + Controller	£475	£400	£300	£225	£200
1 x 10Mb + Controller	£600	£500	£325	£250	£225
1 x 12Mb + Controller	£600	£500	£350	£275	£250
1 x 20Mb + Controller	£700	£550	£400	£300	£275
ICARUS SEAGATE WINCHESTER SYSTEMS					
W6 QD5	£700	£550	£450	£375	£325
W6 DT5	£750	£600	£500	£400	£350
W6 QD10	£750	£600	£500	£400	£350
W6 DT10	£800	£650	£550	£450	£400

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, reserves the right to amend these prices thereafter, without prior notice.

Prices are for a 12 month period and exclude V.A.T.

JANUARY, 1983

SAMPLE PRICE LIST #1

PRINTER PRICE LIST CONTINUED...

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
DATASOUTH					
DS180	£350	£250	£175	£150	£130
EPSON					
MX80T, MX80F, MX82	£200	£150	£125	£90	£80
MX100	£300	£200	£150	£120	£100
FACIT					
4520	-	-	£150	£125	£100
4525	-	-	£250	£175	£150
4542	-	-	£350	£300	£250
4560	£500	£400	£300	£225	£175
4565	-		£350	£250	£200
FUJITSU					
830, DPS200B	£600	£500	£400	£300	£215
120	£450	£300	£200	£160	£140
INFOSCRIBE					
500	£350	£250	£175	£150	£130
LEARSEIGLER					
BALLISTIC 200			£450	£350	£300
BALLISTIC 300, 310	£500	£400	£300	£200	£180
MANNESMAN TALLY					
T1602, MT1802, MT480, MT440	-	£400	£300	£250	£225
T1612, T2000	£600	£500	£400	£350	£300
MT120	-	£200	£150	£120	£100
MT140	-	£300	£200	£150	£130
MITSUI					
ASP 3500	£350	£250	£175	£150	£130
N.E.C.					
8023	£250	£175	£150	£90	£80
SPINWRITER 3510	£500	£400	£300	£200	£175

SAMPLE PRICE LIST #1

PRINTER CONTINUED...

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
OKI					
Microline 80,82	£200	£150	£125	£90	£80
Microline 83,92	£250	£175	£150	£100	£90
Microline 84,93	£300	£200	£150	£120	£100
DP125, 2350	-	£500	£400	£325	£300
DP250	-	£600	£500	£400	£350
PAPER TIGER					
440/445,460, Prism 80	£300	£250	£175	£130	£110
560, Prism 132	£450	£300	£200	£150	£130
Colour Prism	-	£350	£250	£200	£150
QUME					
Sprint 3	£ -	-	£450	£350	£300
Sprint 5	-	£500	£400	£300	£250
Sprint 9 (45 or 55)	£600	£500	£400	£250	£200
Sprint 9 135 KSR	-	-	£400	£250	£200
Sprint 10	£500	£400	£250	£200	£175
RICOH					
1600/1600G/Flowriter	£600	£500	£400	£250	£225
SANDERS					
S700	-	£500	£400	£300	£250
TEC					
1550, FP1500-25	-	£300	£200	£180	£160
F10-40 Starwriter	£500	£400	£300	£200	£175
F10-55 Starwriter	£600	£500	£400	£250	£200
TEXAS					
810	£500	£300	£250	£180	£160
820,825	£550	£350	£275	£225	£200

SAMPLE PRICE LIST #1

NORTHSTAR & COMART

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
COMART					
CP100; 64K, 2 x DDDS FLOPPIES	£550	£450	£375	£250	£200
CP200; 64K, 2 x DTDS FLOPPIES	£650	£550	£450	£350	£300
CP500; 64K, 1 x DTDS FLOPPY) 1 x 5mb WINCHESTER)	£750	£600	£500	£400	£350
CP510; 64K, 1 x DTDS FLOPPY) 1 x 10mb WINCHESTER)	£800	£650	£550	£450	£400
CB200 TAPE BACK-UP	£550	£450	£375	£250	£200
HD200 18mb WINCHESTER + CONTROLLER	£800	£600	£500	£400	£350
NORTHSTAR					
HORIZON, 64K, 2 x DDSS FLOPPIES	-	£400	£325	£200	£175
HORIZON, 64K, 2 x DDDS FLOPPIES	-	£450	£375	£250	£200
32K BOARD	-	£60	£50	£30	£20
64K BOARD	-	£100	£90	£60	£50
ADVANTAGE					
64K, 2 x DDDS FLOPPIES	£500	£400	£325	£200	£175

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SAMPLE PRICE LIST #1

ALTOS

MODEL	STORE	FLOPPY SIZE	HARD DISK	MTU	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
ACS8000-2	64K	2;1mb	-	-	£800	£600	£450	£340	£300
ACS8000-15	64K	2;1mb	-	-	£850	£700	£575	£410	£350
ACS8000-15	208K	2;1mb	-	-	£1200	£1000	£800	£575	£500
ACS8000-6	208K	2;1mb	14.5mb	-	£1700	£1400	£1150	£820	£750
ACS8000-7	208K	2;1mb	29mb	-	£1800	£1500	£1250	£900	£825
ACS8000-6	208K	1;½mb	14.5mb	17.5mb	£2000	£1700	£1500	£1040	£950
ACS8000-7	208K	1½mb	29mb	29mb	£2100	£1850	£1600	£1120	£1000
ACS8000-10	208K	1mb	10mb	-	£1500	£1200	£1100	£800	£725
ACS8000-10 MTU	208K	-	10mb	17.5mb	£1750	£1500	£1250	£900	£825
ACS8000-12	208K	1;½mb	20mb	-	£1550	£1300	£1200	£850	£775
ACS8000-12 MTU	208K	-	20mb	17.5mb	£1850	£1600	£1450	£950	£875
ACS8000-14	208K	1;½mb	40mb	-	£1750	£1500	£1325	£1000	£900
ACS8000-14 MTU	208K	-	40mb	17.5mb	£2100	£1850	£1600	£1100	£1075
ACS Series 5-15D	2;2mb	-	-	-	£700	£525	£450	£300	£250
ACS Series 5-5D		1;1mb	5mb	-	£1100	£900	£750	£525	£450
ACS8600-10	-	-	-	-	£1750	£1500	£1250	£900	£800
ACS8600-12	-	-	-	-	£2100	£1850	£1600	£1100	£975
ACS8600-14	-	-	-	-	£2400	£2100	£1850	£1250	£1100
ACS8600-10MTU		-	-	-	£2500	£2000	£1750	£1200	£1000
ACS8600-12MTU		-	-	-	£2600	£2100	£1850	£1250	£1100
ACS8600-14MTU		-	-	-	£2800	£2500	£2100	£1500	£1300
ADD ON 10mb DISK					£800	£650	£500	£400	£350
ADD ON 20mb DISK					£900	£800	£625	£500	£425
ADD ON 40mb DISK					£1150	£1000	£850	£700	£600
ADD ON MTU					£650	£500	£400	£325	£300

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NOVEMBER 1982

SAMPLE PRICE LIST #1

APPLE/ITT 2020

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
16K with Video Output	£150	£120	£100	£80	£60
32K with Video Output	£160	£130	£110	£90	£70
48K with Video Output	£175	£150	£120	£100	£80
1 x Floppy Disk with Controller	£90	£75	£60	£50	£45
Additional Floppy Disk	£75	£60	£50	£45	£40
Parallel Printer Card	£25	£20	£15	£10	£8
Communications Card	£25	£20	£15	£10	£8
High Speed Serial Card	£25	£20	£15	£10	£8
Pascal Card & 1EEE - 488 Card)					
Centronics Card	£25	£20	£15	£10	£8
Applesoft Firmware Card	£30	£25	£20	£15	£12
Integer Card	£30	£25	£20	£15	£12
Eurocolor Card	£20	£15	£15	£10	£10
80 Column Card	£40	£35	£30	£25	£20
Graphics Tablet	£100	£80	£70	£60	£50
Black & White TV Monitor	£40	£35	£30	£25	£20
Colour TV Monitor	£90	£70	£60	£50	£40
10mb Hard Disk + Controller	£-	£-	£-	£550	£450
8" Templeman/Vlasak Megastor) Floppy Disk Unit)	£500	£400	£350	£300	£260
Apple 111, 128 Monitor 111	-	-	-	£375	£300
Profile 5mb	-	-	-	£325	£275
Lynx Single Drive + Controller	£650	£550	£450	£350	£300
Lynx Dual + Controller	£900	£800	£675	£600	£550

The prices quoted above are correct at the time of issue, however, [illegible], reserves the right to amend these prices thereafter, without prior notice.

Prices are for a 12 month period and exclude V.A.T.

NOVEMBER 1982

SAMPLE PRICE LIST #1

C.E.C./APPLE

	LEVEL 5	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
Apple 2, 48K	£200	£175	150	£110	£90
2.2mb 8" Megastore	£500	£400	£350	£300	£260
Videx 80 Column Card	£40	£35	£30	£25	£20
Serial Printer I/F Card	£30	£25	£20	£15	£12
Pascal Card	£50	£45	£40	£35	£30
B/W Monitor	£40	£35	£30	£25	£20
Colour Monitor	£90	£75	£60	£50	£40
3mb ICE	£340	£215	£175	£135	£110
6mb ICE	£400	£255	£210	£160	£130
12mb ICE	£550	£350	£285	£220	£175
Network System subject to drawings being made available, free of charge	£650	£550	£440	£310	£265
10mb Ampex, plus Cameo Controller	£1500	£1000	£900	£700	£600
Prism 80	£300	£250	£175	£130	£110
Paper Tiger 560	£335	£275	£200	£150	£130
1 x 5¼" Floppy with Controller	£150	£125	£100	£75	£70
1 x 5¼" Floppy	£125	£100	£80	£60	£50
Prism 132 Printer	£450	£300	£200	£150	£130
Tape Streamer	£600	£450	£375	£250	£200

The prices quoted are for a 12 month period and exclude V.A.T.

SAMPLE PRICE LIST #2

INTRODUCTION

With the vast number of components that make up a microcomputer system it is inevitable that at some time failures will occur or adjustments be necessary **microsure** is our nationwide on-site maintenance contract for the service and repair of microcomputer hardware It is your insurance premium for trouble free operation It is renewable on an annual basis and as with any comprehensive insurance policy covers you for attendance, service, labour, parts, replacements, exchanges and travelling time This is how it works

CONTRACT

Once you have accepted our written quotation and the contract has been signed and your payment received, maintenance and service can commence immediately

You may wish to take out the **microsure** plan from day 1, following the installation and set up of your system. We do strongly recommend this for obvious practical reasons, as it assures you continued uninterrupted service coverage This is particularly important where no back up facilities exist and where part of your operation is computer dependent.

PRE-CONTRACT INSPECTION

When for some reason you wish to take out coverage at a later date (and this may be several months or even several years after installation), you will of course be entitled to the same services as if you had taken out coverage from day 1 However, an on site pre-contract inspection will be necessary to check both the location and condition of equipment It is in both our interests that your system hardware should be thoroughly checked at this point, to ensure that your system hardware is fully upgraded, if necessary, and any faulty or suspect components replaced We do make a charge for this preliminary on-site visit and obviously any work necessitated by the report recommencations will be invoiced

CONTRACT COVERAGE

If you experience a problem please call your nearest Centre Immediately upon receipt of your call a job number will be allocated and a service engineer will be with you within 24 hours All engineers are fully trained on manufacturers' equipment and are fully equipped with spares and exchange modules While most repairs can and are completed on attendance, some problems may take a little time to solve We will always do our very best to complete all repairs and ensure that your system is up and running again within 48 hours of fault notification

The items for coverage under the **microsure** service contract will be agreed and specified on the equipment schedule of the contract agreement Please see the schedule of charges and agreement data sheets for further details

Please note that service is provided for hardware only This contract does not provide for support or service of operating systems or application software

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A commitment to service.

SAMPLE PRICE LIST #2

INTRODUCTION
This schedule of charges refers to the microsure contract maintenance plan and is based on an annual premium from contract commencement date—per unit or item of hardware

If you have equipment that is not listed on this schedule please complete the "request for quotation" form (enclosed) and return it to your nearest Centre or head office

System	Description			Annual contract charge £
NorthStar				
	Model	RAM	Disk drives	
ADV1H	Advantage	64K	1×360Kb+1×5Mb/HD	450 00
ADV2Q/64	Advantage	64K	2×360Kb	300 00
HRZ2Q/64	Horizon	64K	2×360Kb	300 00
HRZHD5	Horizon	64K	1×360Kb+1×5Mb/HD	450 00
SIO	Serial interface			50 00
PIO	Parallel interface			50 00
Peripherals				
WY100	Comart VDU			100 00
4404	Volker Craig VDU			100 00
3102	Cromemco VDU			200 00
C1	Cromemco VDU			150.00
DP9500A	Anadex printer 150cps			150 00
DP9501A	Anadex printer 150cps			200 00
DP9620A	Anadex printer 200cps			200 00
WP6000	Anadex printer/letter quality			300 00
MX80FT3	Epson printer 80cps			100 00
MX100FT3	Epson printer 100cps			100 00

System	Description			Annual contract charge £
comart communicator				
System	RAM	Disk drives		
Z80—8 bit				
CP100	64K	2×390Kb		240 00
CP200	64K	2×790Kb		280 00
CP500	64K	1×790Kb+1×5Mb/HD		380 00
CP520	64K	1×790Kb+1×20Mb/HD		510 00
8086—16 bit				
CP1100	128K	2×390Kb		290.00
CP1100B	64K	2×390Kb		270 00
CP1102	256K	2×390Kb		310 00
CP1200	128K	2×790Kb		330.00
CP1202	256K	2×790Kb		350 00
CP1500	128K	1×790Kb+1×5Mb/HD		440 00
CP1502	256K	1×790Kb+1×5Mb/HD		460 00
CP1520	128K	1×790Kb+1×20Mb/HD		570.00
CP1522	256K	1×790K+1×20Mb/HD		590.00
Subsystems				
CB200	Cartridge tape backup			320 00
HD200	20Mb hard disk-8"			500 00
HD520	20Mb hard disk-5"			300 00
HD522	2×20Mb hard disk			500 00
FD800	8" SS/SD floppy drive			120.00
FD802	2×8" SS/SD floppy drive			190.00
MPMSUB	Multi-user upgrade			140 00
Boards				
CRAM256	256K dynamic memory+parity			70 00
CRAM128	128K dynamic memory+parity			50.00
CRAM64	64K dynamic memory			50 00
CRAM48	48K dynamic memory			50 00
HDCONT	2×20Mb disk controller			70 00
4SIO	Serial interface (quad)			50 00
CWDC	Hard disk controller			50.00

System	Description			Annual contract charge £
Cromemco				
Z80—8 bit				
System	RAM	Disk drives		
CS1	64K	2×390Kb		350 00
CS1H	64K	1×390Kb+1×5Mb/HD		600.00
CS2	64K	2×390Kb		450 00
CS3	64K	2×1.2Mb		600 00
Z2H	64K	2×390Kb+1×10Mb/HD		900 00
68000—16 bit				
CS1D2E	256K	2×390Kb		500 00
CS1D5E	512K	2×390Kb		600 00
CS1HD2E	256K	1×390Kb+1×5 5Mb/HD		800 00
CS1HD5E	512K	1×390Kb+1×5 5Mb/HD		800 00
CS3D5E	512K	2×1.2Mb		900 00
CS3HD5E	512K	1×1.2Mb+1×5.5Mb/HD		1100 00
Subsystems				
HDD-11	10Mb HD drive			700 00
HDD-5	5 5Mb HD drive			350 00
BRZ	Fan unit			50 00
Boards				
64KZ	64K dynamic RAM			100 00
TU-ART	Dual serial/parallel interface			50 00
IOP	I/O processor			50 00
QUADART	Quad serial interface			100 00
256 MSU	256K memory			200 00
512 MSU	512K memory			300 00
DPU	Dual processor Z80/68000			100 00
MCU	Memory controller			50 00

Charges are subject to change without notice and are valid within a radius of 60 miles from regional service centres
Other areas may incur an excess mileage charge
Details are available from your nearest Centre

A commitment to service.

SAMPLE PRICE LIST #3

24th September, 1982

CONTRACTS DEPARTMENTS USE ONLY

EFFECTIVE FROM 1ST JANUARY, 1983 TO EXISTING CUSTOMERS

THE FOLLOWING PRICES MUST BE QUOTED FOR ALL QUOTATIONS MADE AFTER 1ST OCTOBER, 1982

MANUFACTURER/EQUIPMENT		£ PER ANNUM
ADDS		
REGENT 20/25/40/60	VDU	137
100/200	VDU	150
520/580/980	VDU	171
VIEWPOINT VDU		137
CENTRONICS		
150/152 (Exchange Service only)		236
306 TICKET PRINTER		393
352 (Only as part of a system)		296
700 FRONT FEED DEVICE		111
701		295
702		353
703		424
704		424

SAMPLE PRICE LIST #3

761RO/KSR	338
6150	663
6300	792
6600, 6080	933

BLOCKED MODE SERIAL I/F)
COMMS ADAPTOR I/FS)
BUFFERED SERIAL I/FS) 50% OF SALE LIST PRICE PER ANNUM
MICROPROCESSOR I/F)
OTHER SERIAL I/F)

COHERENT EQUIPMENT — Q U O T A T I O N O N L Y

Existing Customers - Equipment faults only	7%
" " - Incl. Diagnosing Line Faults	15%

COMPUTER AUTOMATION

LSI/2 - LSI/4 — Q U O T A T I O N O N L Y

Existing Customers - 7%

DATA GENERAL

NOVA - ECLIPSE — Q U O T A T I O N O N L Y

Existing Customers - 7%

DATA DYNAMICS

303 (as DEC LA36)	269

DATAMEDIA

DT80	185

SAMPLE PRICE LIST #3

DATA PRODUCTS	
2230	1,044
2237	1,999
2260	1,476
2290	2,088
2550 (excluding Charaband)	3,051
B300 (excluding Interface)	740
B300 (including Interface)	880
B600 (incl. D.G. I/F) AS PART OF A SYSTEM ONLY	984
DIABLO	
1620 HYTYPE 2	274
1640 HYTERM RO/KSR	406
HYTERM 2 RO	406
1650 HYTERM	406
630 PRINTER	342
SHEETFEEDER FOR 630 PRINTER	128
DIGITAL EQUIPMENT CO.	
PDP8-PDP11 SYSTEMS	Q U O T A T I O N O N L Y
EXISTING CUSTOMERS - 7%	
DECWRITER LA34/LA36	167
" LA38	141
" LA120	370
" LA180	488
" LS120	370
DEC VT100 VDU	165
" " " WITH AV OPTION	201

SAMPLE PRICE LIST #3

DIGICO		
16V-16E SYSTEMS	Q U O T A T I O N O N L Y	
EXISTING CUSTOMERS		10%
EMULOG		
LOG 200		154
HAZELTINE		
1400 VDU		145
1500 VDU		149
2000 VDU		325
INFOTRON	Q U O T A T I O N O N L Y	
LEAR SIEGLER		
ADM1		175
ADM3		150
ADM3A		137
ADM32		137
MEGADATA RANGE	Q U O T A T I O N O N L Y	
EXISTING CUSTOMERS		10%
MILLHOUSE		
MS 380 INTERFACE		103
NEWBURY LABS		
7000 - 1 - 2		145
7006 - 7 - 8 - 9		150
QUME	Q U O T A T I O N O N L Y	
EXISTING CUSTOMERS		10%
SAGEM		
T10 RO		251

SAMPLE PRICE LIST #3

TX20 ASR	278
TX35 KSR	520
SIEMENS	
T1000 RO/ASR/KSR + PERF.	344
STOCK EXCHANGE	
Bishopsgate Viewdata Terminals	147
Multiplexor Channel	116
Modem Link	147
SYSTEMS INDUSTRIES	78
TALLY	
1612 RO	475
1612 KSR	505
T2000/T2200	475
T3000	739
TELETYPE	
42 OR 43 ASR OR BUFFERED VERSION	189
43 RO/KSR	147
4504 SUBSYSTEM (INCL. CONTROLLER)	539
4505 CONTROLLER (8/16 LINE)	189
4505 CONTROLLER LOCAL CONNECT (8 LINE)	466
4505 CONTROLLER LOCAL CONNECT (16 LINE)	492
4505 CONTROLLER (32 LINE)	242
4505 CONTROLLER LOCAL CONNECT (32 LINE)	528
4503 DISPLAY VDU (INC. 4501 KB)	132
4504 PRINTER	325

SAMPLE PRICE LIST #3

TEXAS INSTRUMENTS	
720, 725,	312
733 ASR	349
733 KSR - 743 RO-KSR	262
745 - 810 RO	259
820	325
TEKTRONIX	
4006	325
4010/4010-1	406
4012	487
4014/4014-1	1,022
4014/4014-1 EXCLUDING TUBE	676
4061/4601/4610/4631/4631 HCU's	556

SAMPLE PRICE LIST #3

TRANSTEL

AH11R FRICTION FEED RO	184
AH11RS SPROCKET FEED RO	265
PAPERWINDER	34
B405/406-408 STAND ALONE REPERF	233
B208L KSR NON-EXPANDABLE	295
B318 SWL ASR 4K MEMORY	369
B318 SWL ASR 8K MEMORY	409
B215 KSR	369
B315P ASR PAPER TP.PUNCH & RDR.	586
B315S ASR 4K MEMORY	400
B315S ASR 8K MEMORY	432
B315SC ASR 4K MEMORY & CRT.	541
B315SC ASR 8K MEMORY & CRT.	556
B315PS ASR 4K MEMORY & PR MOD	603
B315PS ASR 8K MEMORY & PR MOD	629

SAMPLE PRICE LIST #3

B315PSC ASR 4K MEMORY PR MOD & CRT.	730
B315PSC ASR 8K MEMORY PR MOD & CRT.	757
B315 TRX	295
AF11 - AHRO	189

XYLOGICS

XL850/9762	1,648
XL850/9766	2,409
XL850/996	1,284
XL850/964	1,155
XL850/932	1,072
XL850/9730-80	1,015
XL850/9730-160	1,171
CDC 9762	588
CDC 9766	688
DFR 996	899
DFR 964	856
DFR 932	749
CDC 9730-80	717
CDC 9730-160	931

SAMPLE PRICE LIST #3

TIME AND MATERIALS RATES

	Prime Shift	Out of Prime Shift
Computer Systems (excluding their printers up to but not including 300 lpm, and V.D.U's).	£35 per hr.	£40 per hr.
Peripherals & Telecom Systems	£30 per hr.	£34 per hr.
Telecoms Installations	£25 per hr.	£30 per hr.

ZONE CHARGE £35 per call