

TRENDS IN COMPUTER SERVICES PRICING

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I INTRODUCTION

I INTRODUCTION

- This report is produced by INPUT as part of the Market Analysis Service (MAS). INPUT intends to produce an updated edition of this report each year. The report covers pricing methods and trends for remote computing services (RCS) and software products for the period 1978-1982.
 - RCS is examined by mode of delivery, including interactive, remote batch and user site hardware services.
 - Software products are separated into systems software and applications software.
- To the extent possible, the structure of the analysis of the RCS and software product vendors is parallel in order to facilitate comparison and contrast.
- This area of research was selected because of high client interest. It is of value in comparing a company's pricing policies to the industry and in developing pricing and marketing strategies.
- This report is a follow-up to a 1978 MAS report titled Trends in Services and Software Pricing. Where appropriate, comparisons are made between current findings and that report.
- Research for this report was conducted by interviewing representative software vendors, RCS vendors and buyers of these services. A respondent

profile and copies of the separate questionnaires developed for each group are included in Appendix B.

- Interviews were conducted during April and May, 1980. All user interviews and the majority of vendor interviews were conducted by phone.
- Interviews were conducted with the most senior executive available who had responsibility for, or participated in, setting prices and pricing policy.
- Particular areas investigated were:
 - Continuation or deviation of pricing trends.
 - Change in pricing structures.
 - Actual changes in prices from 1978 to 1980 compared to both vendor and user expectations expressed in 1978.
- Buyer and vendor views are compared with respect to:
 - Impact of price changes.
 - Pricing and service selection factors.
 - Expectations for future prices.
- Vendors were asked to provide confidential information about pricing policies and plans. Therefore, there is no identification of the specific vendors who participated in the survey. Also all statistical and pricing data are treated in terms of percent changes rather than specific dollar amounts.
- The study addresses domestic U.S. pricing policies and trends only.
- Definitions are included in Appendix A.

- Related INPUT reports are listed in Appendix C.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. GENERAL PRICING TRENDS

- Pricing methods are well established within the computer services industry and are generally accepted by the users. There is little variation from vendor to vendor. The trend noted is a tendency to want to simplify the pricing arrangements and to reduce discounting.
- Users and vendors alike perceive the price of the services to be less important than the quality of the service and the vendor's ability to deliver. Analysis of sales increase versus price change, especially for software products, does not show any clear relation between price change and sales increase. Most vendors' price changes are in the same percentage range, while sales performance is dependent upon other criteria.
- The survey did not identify any strong price makers. The tendency is to establish initial prices based on an assessment of the "value" of a product or service to the prospective user and then to look closely at other prices in the marketplace. The latter will most often determine the asking price.
- Price setting is strongly influenced by concern for cost coverage. Personnel costs were identified as the most critical costs in the 1978 study, and that finding has been reaffirmed. For software product vendors, people costs have always been the major item. For RCS vendors, these costs are becoming a larger component.

- Prices increased from 1978 to 1980 and will do so at the same or higher rate in the coming two-year period. This is true for both RCS and software product vendors, as may be seen in Exhibit II-1.
 - Price increases for software products are larger than those for RCS.
 - Users expect RCS prices to increase in 1981-1982 at a rate higher than that projected by the vendors. The user forecast of a 6.6% per year change compares to a vendor projection of 5.2%.
 - Users of software products predicted a different trend, with estimated price increases averaging 8.3% per year compared to the vendor forecast of 9.9%.

B. RCS ISSUES

- There are a number of relatively complex variables for which charges are incurred in using RCS. In addition, different pricing and different pricing changes are applied for different modes of service delivery from RCS vendors. Exhibit II-2 shows the pricing changes for the four modes of RCS delivery.
 - Interactive computing represents a stable 50% of the total business, for which prices will increase 4.8% per year during 1981-1982.
 - Remote batch services are projected to decline as a percentage of total revenue and are also forecast for a lower (3.4%) price increase.
 - Larger increases are predicted for the other service components.
- Vendors indicate that nearly 9% of revenues will come from Distributed Data Processing (USHS) by 1982. There is no pricing history and few pricing models for RCS products which involve locating processing equipment at the

EXHIBIT II-1

COMPARISON OF WEIGHTED AVERAGE PRICING CHANGES PER YEAR
FOR RCS AND SOFTWARE PRODUCT VENDORS,
1978-1980 AND 1981-1982

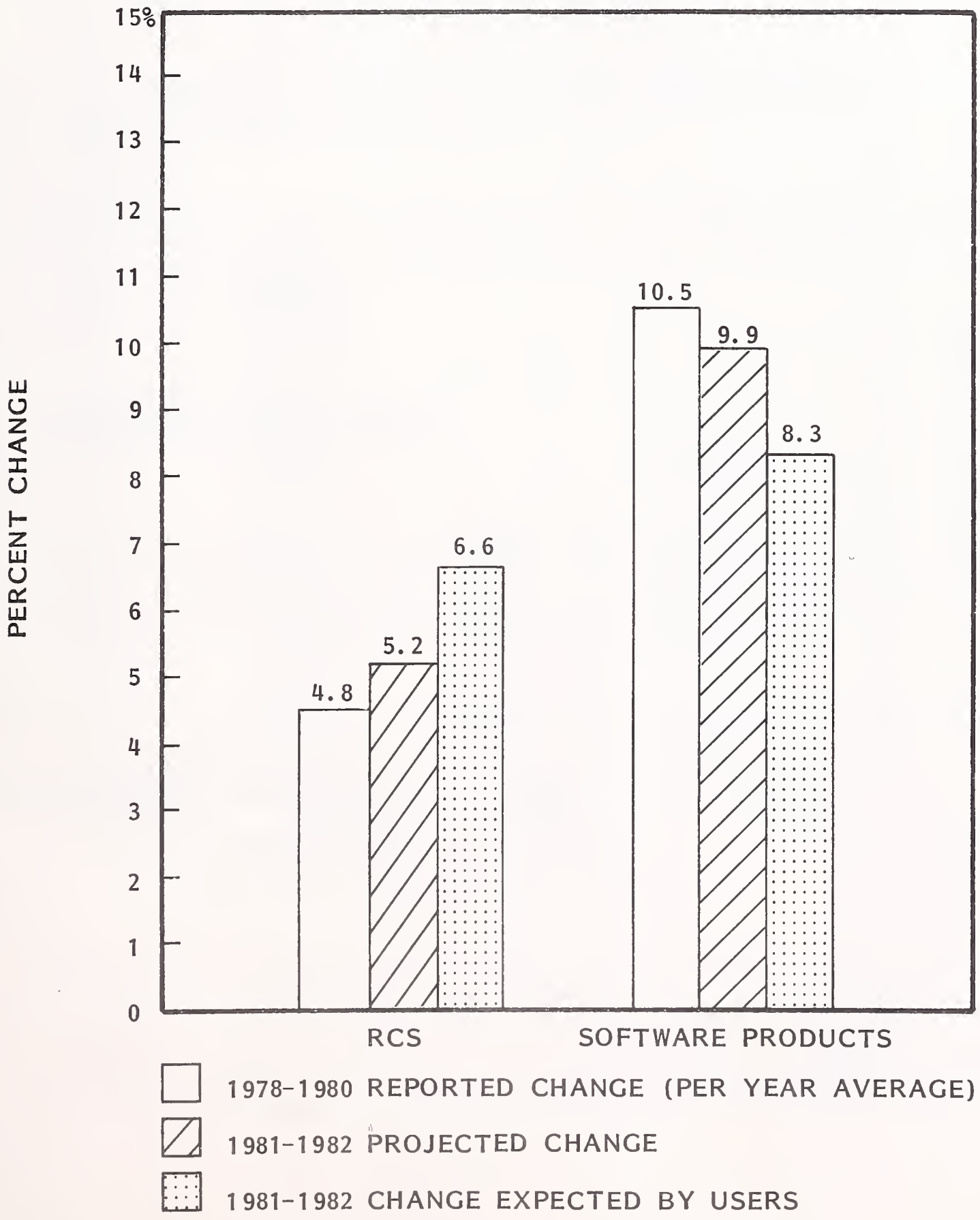
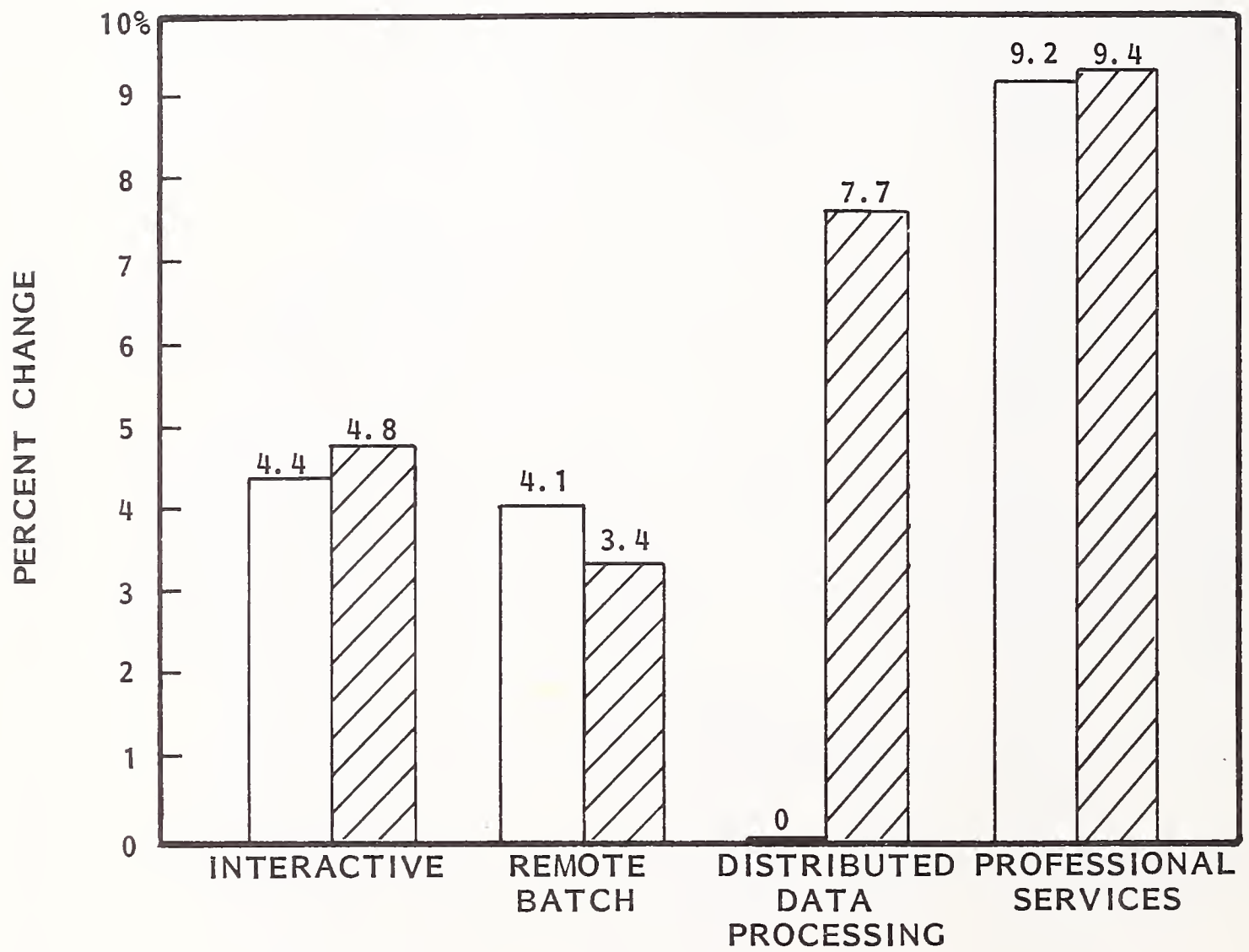


EXHIBIT II-2

AVERAGE RCS PRICING CHANGE PER YEAR BY
MODE OF DELIVERY,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

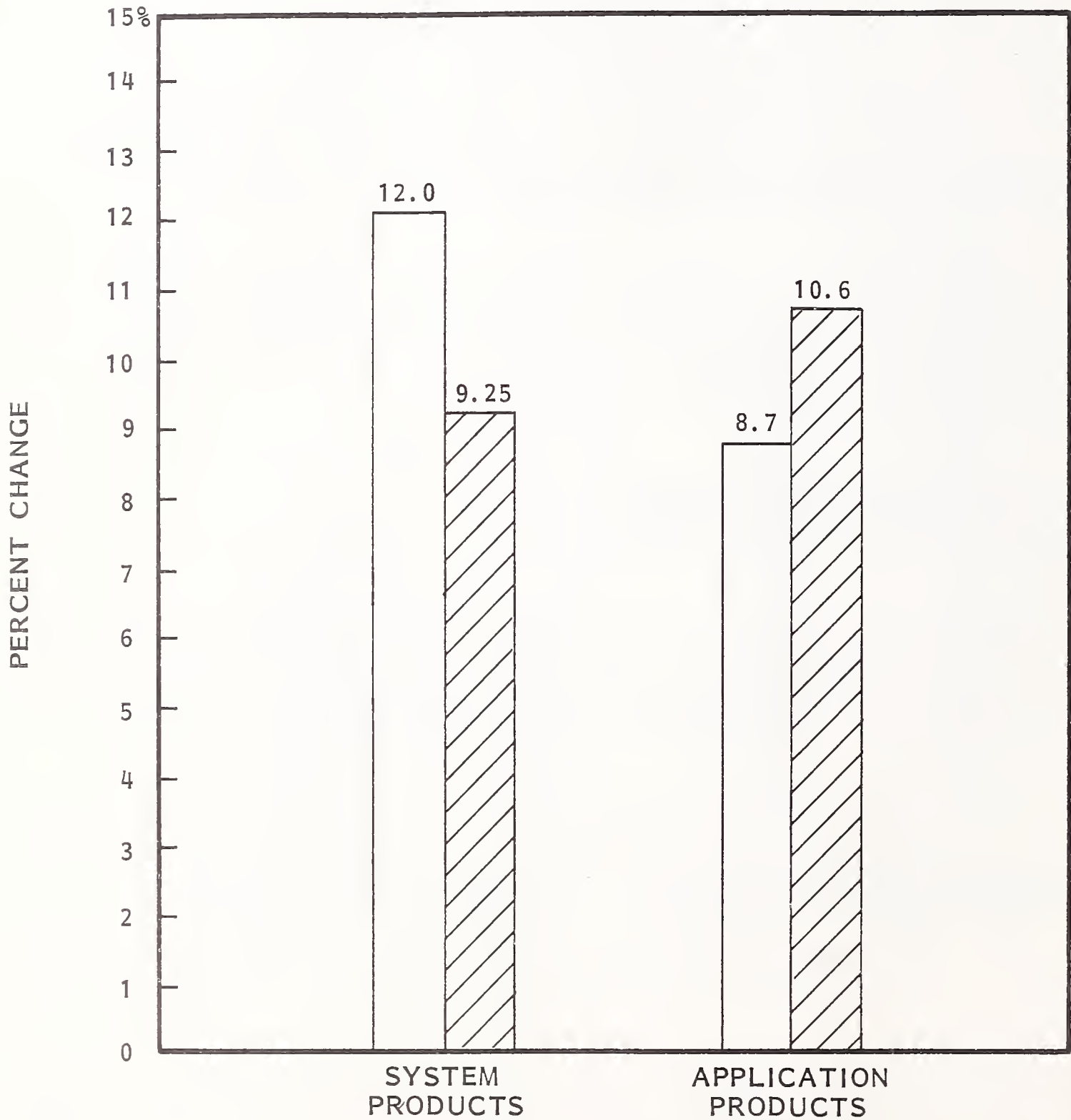
user's location. The potential exists actually to lose revenue by converting variable billing RCS usage to a fixed price USHS product. Furthermore, although USHS has been available from some vendors for nearly two years, the users surveyed for this study were generally not aware of the availability, had no plans for its use and felt that DDP needs could best be met by in-house hardware.

- RCS vendors project an increasing revenue contribution from their professional services activities. As can be seen in Exhibit II-2, they also expect to raise prices most dramatically in this area. This is essential to maintain margins in this labor-intensive activity.
- Discounting is an essential and effective tool in negotiating term contracts with major clients. However, the charging procedure must be kept simple for ease in user understanding.

C. SOFTWARE PRODUCT ISSUES

- Software product prices were predicted to increase 5-9% in the 1978 INPUT study. As can be seen in Exhibit II-3, system product prices increased by 12% for that period and applications software prices increased 3.7%.
 - Price increases of approximately 10% are projected for all software products.
 - The higher price increase listing for the system products may reflect the current demand for data base products.
- Software product firms which have historically specialized in systems software are planning to expand their product line into applications software by 1982. On the other hand, the applications software firms are not planning to enter the systems software area. Aside from the obvious implications of additional

EXHIBIT II-3
AVERAGE SOFTWARE PRODUCT PRICING CHANGE PER YEAR
BY TYPE OF SOFTWARE,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

competition from established vendors with sales forces in place, there may be structural differences in how these firms price their services. The research noted that systems software sales more frequently involve an extended payment plan while the application product firms favor a lump sum payment sale.

- Another area associated with ongoing revenue streams for software product vendors is the maintenance service. Annual product price increases in the 10% range generally translate to the same amount of increase in maintenance charges to existing users. The value received for the continually increasing cost was questioned by a number of users.

- Software product vendors are sensitive to the introduction of new technology, especially by IBM. Areas of concern include:
 - Product obsolescence as a function of new hardware or operating system environments.

 - Access to new markets by virtue of lower cost for more powerful computers which will support the large systems and applications software packages marketed by the major software vendors.

- In developing and maintaining an ongoing relationship (and revenue stream) from users, there is a trend among vendors to offer more formalized training to users at central training facilities. These services will be offered in lieu of extensive on-site training and will be provided at a fee.
 - Fees will be on a per trainee per day basis.

 - Revenues from this service will not be material as compared to those from new product sales or maintenance.

D. RECOMMENDATIONS

- The study has shown little user resistance to annual increases in line with general economic and computer industry movement.
 - RCS vendors should plan on 5-7% net annual increases.
 - Software product vendors should plan on 9-11% net annual increases.
- Price increases should be justified to the client and should be incorporated into a sales campaign which allows the user to commit for services at the pre-increase prices. This has been shown to be an effective sales gambit when properly packaged.
- Pricing for USHS should be carefully structured to avoid losing existing RCS revenue. Packaging the USHS as part of an application service will reduce the potential for revenue reduction.
- Software product vendors face a special challenge with the advent of the 43XX type hardware. Users, heretofore too small to run the more sophisticated software, will now want to acquire these products. However, they do not appreciate the value of these software products vis-a-vis their own development effort to produce comparable software.
 - To the extent possible, services and products should be sealed and bundled to provide an offering at the lower price ranges which these users can accommodate.
 - The services provided and the "value" aspects must be emphasized in the sales program.
 - Fee or installment pricing may be more acceptable to the smaller user.

- Software product companies must establish a campaign to resell the need for product maintenance to users. This significant revenue stream is essential to the livelihood of these vendors.

III REMOTE COMPUTING SERVICES PRICING

III REMOTE COMPUTING SERVICES PRICING

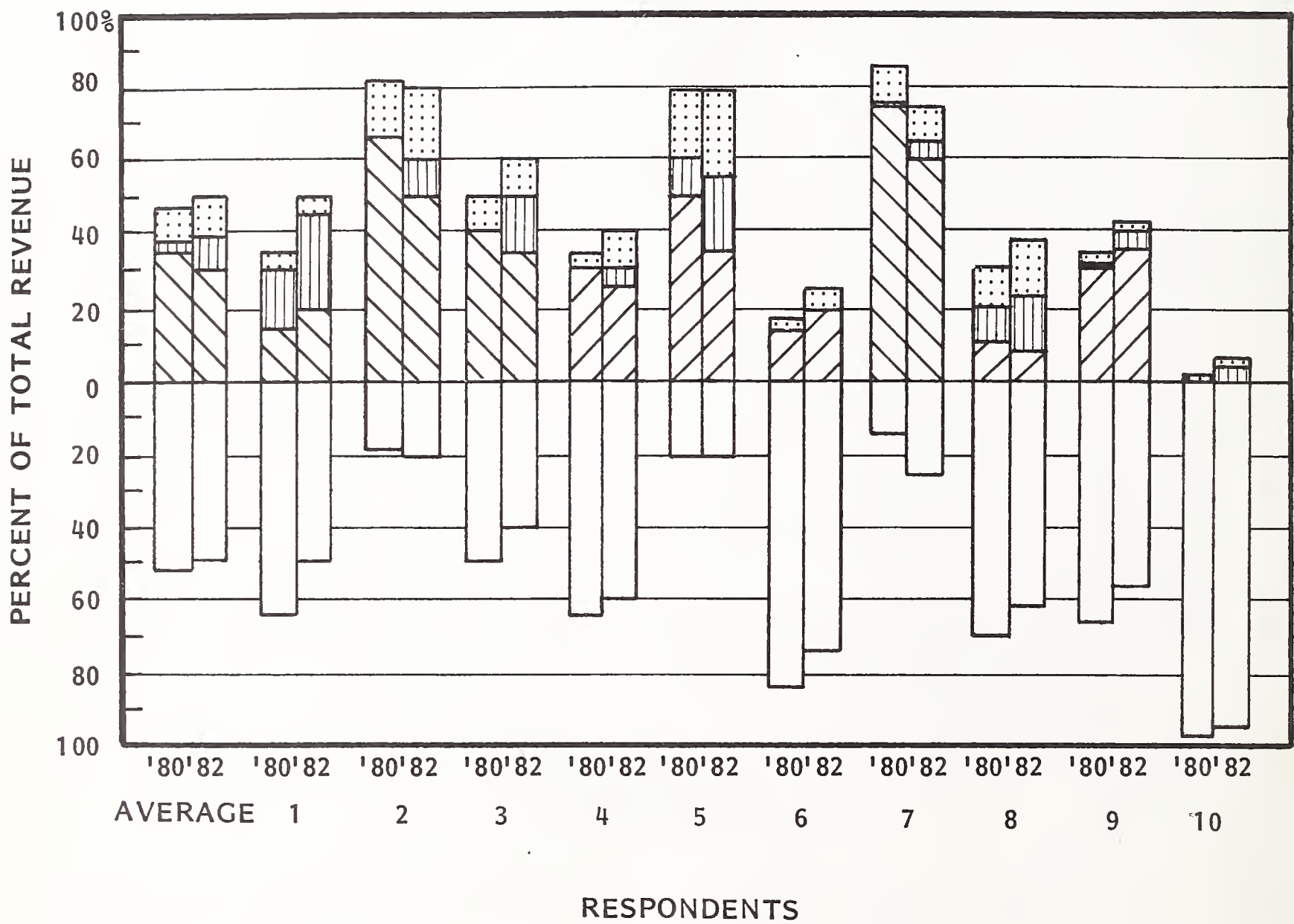
A. RCS MODES OF DELIVERY

- RCS vendors derive revenue from four basic modes of delivery of service:
 - Interactive processing.
 - Remote batch processing.
 - Distributed data processing (USHS).
 - Professional services.

- Exhibit III-I shows the mode mix for responding vendors and their average for both current revenues and 1982 projections.
 - Interactive processing revenues are projected to remain essentially constant at approximately 50% of the business.
 - Remote batch revenues will decrease as a percent of total revenue from 35% to 30%.
 - USHS makes the most dramatic change, increasing to nearly 9% of projected 1982 revenues from 2% of revenues in 1980.

EXHIBIT III-1

RCS MODES OF DELIVERY,
CURRENT AND 1982



- INTERACTIVE
- REMOTE BATCH
- DISTRIBUTED DATA PROCESSING
- PROFESSIONAL SERVICES

- Growth is also forecast in the professional services area from 9% to over 11% of total revenues.
- The projected shifts in RCS delivery modes have significant pricing implications.
 - Implementing USHS means that difficult new pricing decisions must be made which factor in new hardware and service cost parameters by firms lacking experience or precedent in client-location hardware support.
 - Pricing and profitability of USHS are a function of new technologies to the vendor.
 - Increased professional services revenues mean increased personnel costs. Pricing will have to accommodate this factor to maintain traditional levels of profitability.
- In the 1978 survey, all RCS vendors projected revenue contribution from USHS by 1980, with some projecting as much as 20%. Of the 1980 survey members, less than half have more than 1% of their revenue from USHS and several project no 1980 USHS revenue at all.

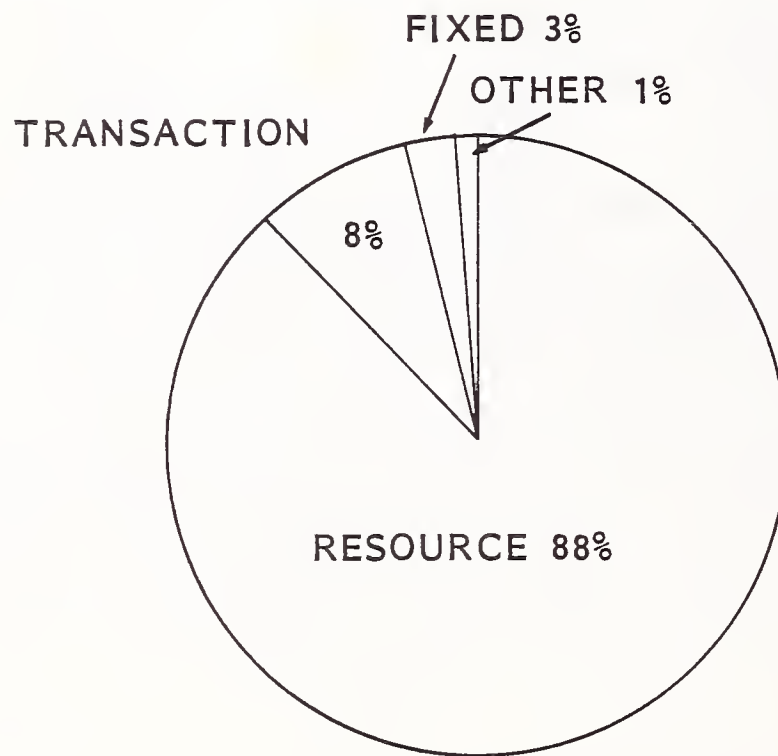
B. PRICING METHODS AND CHANGES

I. INTERACTIVE SERVICES

- Vendors employ three basic types of pricing for interactive processing services, as shown in Exhibit III-2.
 - Resource Pricing essentially puts meters at convenient places on the computer system (CPU, Disk, I/O channels, etc.) and charges the user

EXHIBIT III-2

RCS PRICING METHODS - INTERACTIVE PROCESSING

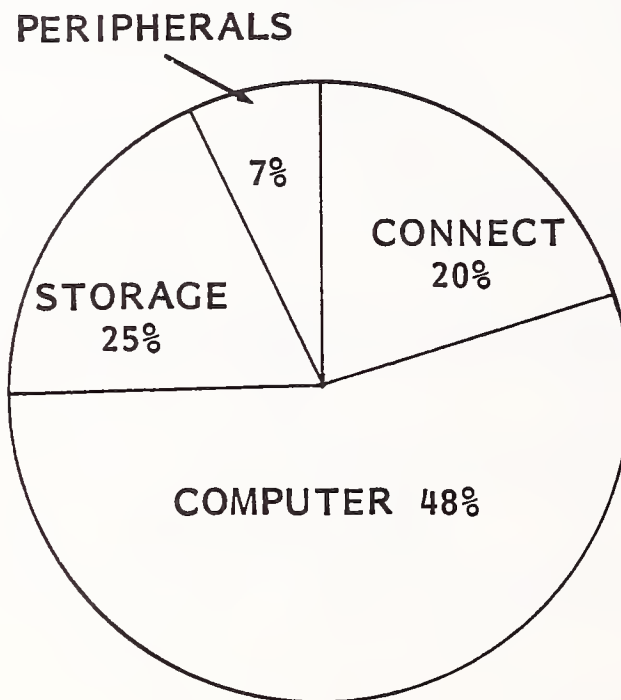


for resource consumption associated with his jobs. It is the traditional method of charging for RCS services and is by far the most prevalent at 88%.

- Transaction Pricing charges in terms of user-oriented measurements such as transactions processed or number of accounts. It represents 8% of the interactive processing billing in the survey sample.
- Fixed Pricing are services provided for a fixed dollar fee per month, accounting for 3% of revenues among respondents.
- In 1978, vendors predicted a movement toward transaction pricing. No such move is apparent.
- Vendors in the current study indicate they may use transaction pricing for special application areas.
- Within resource pricing, the main pricing parameters are:
 - Connect or communication charges.
 - Computer or central processor charges.
 - Storage charges.
 - Peripheral charges, such as those for printing, plotting, tape handling, etc.
- The average revenue distribution of survey vendors for these resource components for interactive service is shown in Exhibit III-3. Vendors typically implement price changes by adjusting the meter rates for the various components, reducing some and raising others, to achieve the desired net effect.

EXHIBIT III-3

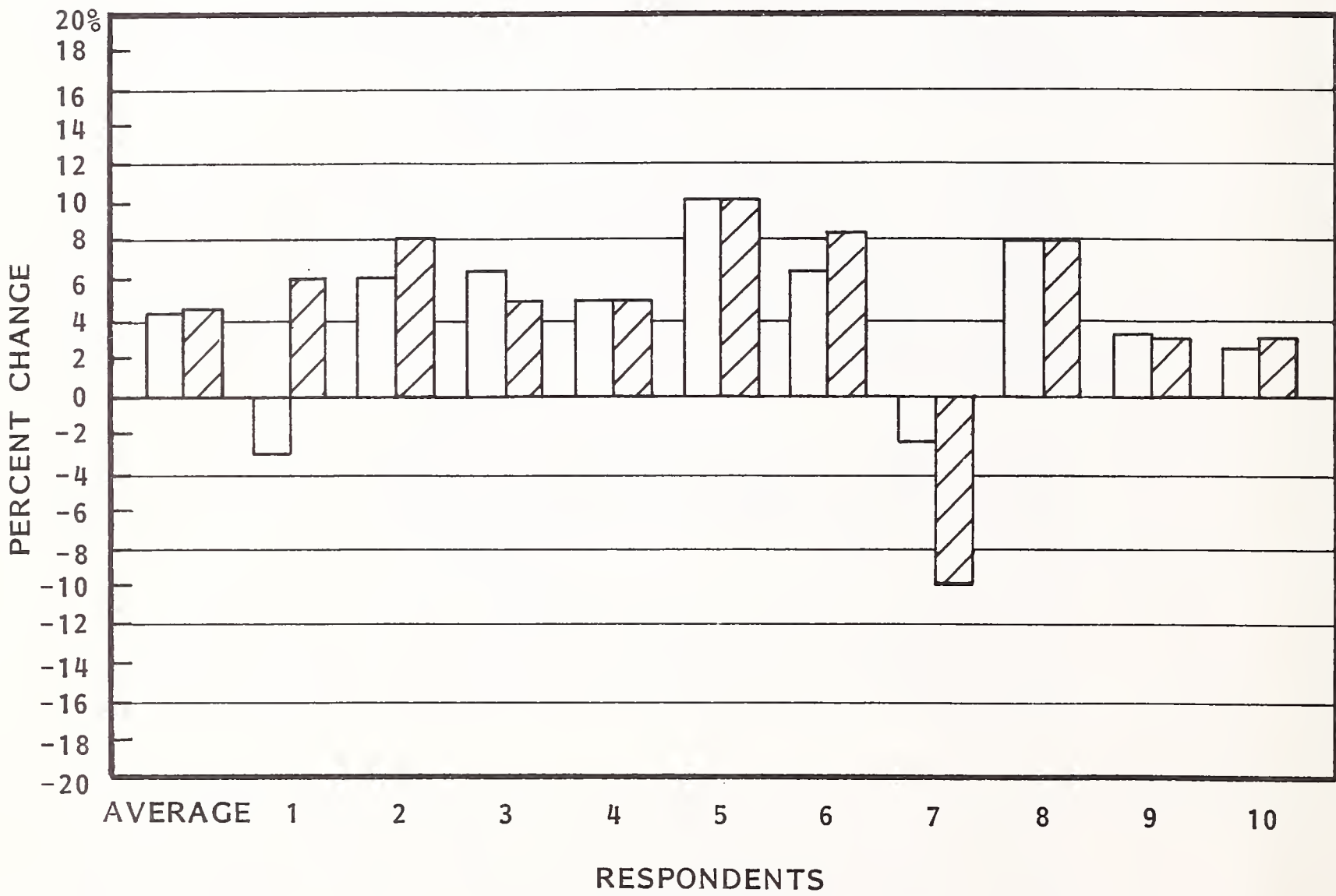
RCS RESOURCE PRICING COMPONENTS -
INTERACTIVE PROCESSING



- Several vendors reported reducing storage charges while raising compute and peripheral charges.
- A variation of this approach used by several firms involves a change in the meter algorithm. The rate may be left the same or even reduced, while the effect is to raise the price; e.g., it will take more processor units to perform the same task but the rate per unit will not be changed.
- Prices for interactive processing services have generally increased since 1978, and the prospect is for them to increase at the same or a slightly higher rate through 1982. Exhibit III-4 shows the survey results.
 - Data are presented on an average change-per-year basis. The frequency of pricing changes is not standard within the industry, and several observations actually reflect only one change within the two-year, 1978-1980 period. However, most respondents looked to annual changes in the future.
 - The average increase per year for 1978-1980 was 4.4%. Changes ranged from a 3% reduction per year to a 10% increase.
 - The average projected change for 1981-1982 was a 4.8% increase per year. Projected changes ranged from a 10% per year decrease to a 10% increase.
 - For those vendors increasing (i.e., excluding vendors who decreased prices or kept them constant) prices in 1978-1980, the average reported increase was 6.5%, while the corresponding figure was 6.7% for 1981-1982.
- Price changes implemented in 1978-1980 exceeded the projections made in 1978. The average increase projected for all RCS services was a total of 5% for the two-year period. The actual increase was close to 9%.

EXHIBIT III-4

PRICING CHANGES PER YEAR FOR INTERACTIVE PROCESSING SERVICES,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

- Half of the responding vendors stated that the 1980 increases were still to be implemented as of the end of May.

2. REMOTE BATCH SERVICES

- Vendors employ the same three pricing methods for remote batch services as are used for interactive processing. Exhibit III-5 illustrates the revenue breakdown.
- As with interactive processing, remote batch pricing components include connect (communication) charges, computing charges, and charges for storage and use of peripherals. The revenue distribution by pricing component is shown in Exhibit III-6.
- Prices for remote batch services have generally increased since 1978 and, as with interactive services, the prospect is for them to continue to increase at the same or a slightly higher rate. Exhibit III-7 shows the survey results.
 - The average change per year was an increase of 4.1%. Changes ranged from a 2.5% decrease to an 8% increase.
 - The average projected increase for 1981-1982 is lower than the 1978-1980 increase at 3.4% per year, with expected changes ranging from a 10% per year decrease to an 8% increase.
- In 1978, vendors projected little change in remote batch pricing for 1978-1980, with half expecting no change at all. Three-fourths of the responding vendors increased their prices over that period.
- Several vendors noted that the remote batch area is the most price-sensitive of the RCS delivery modes.

EXHIBIT III-5

RCS PROCESSING METHODS - REMOTE BATCH PROCESSING

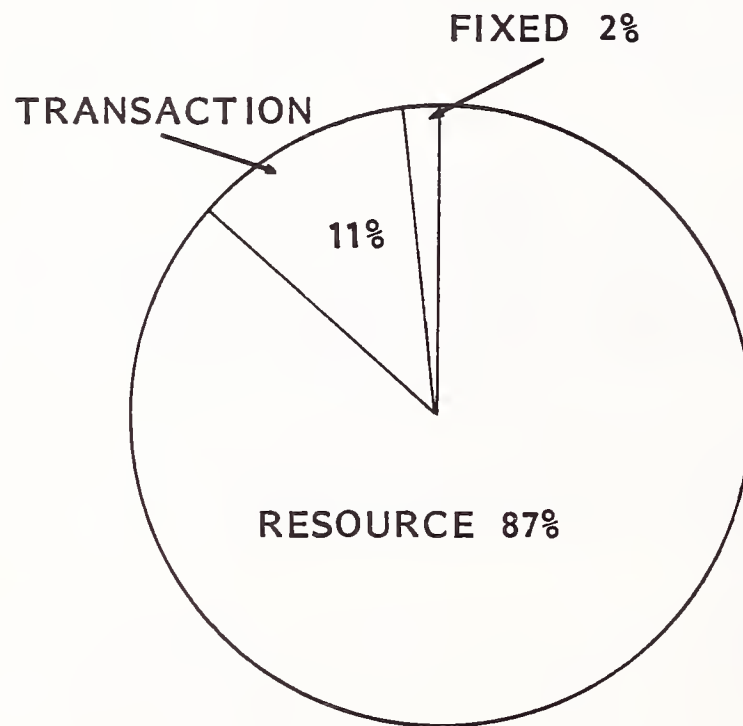


EXHIBIT III-6

RCS RESOURCE PRICING COMPONENTS
REMOTE BATCH PROCESSING

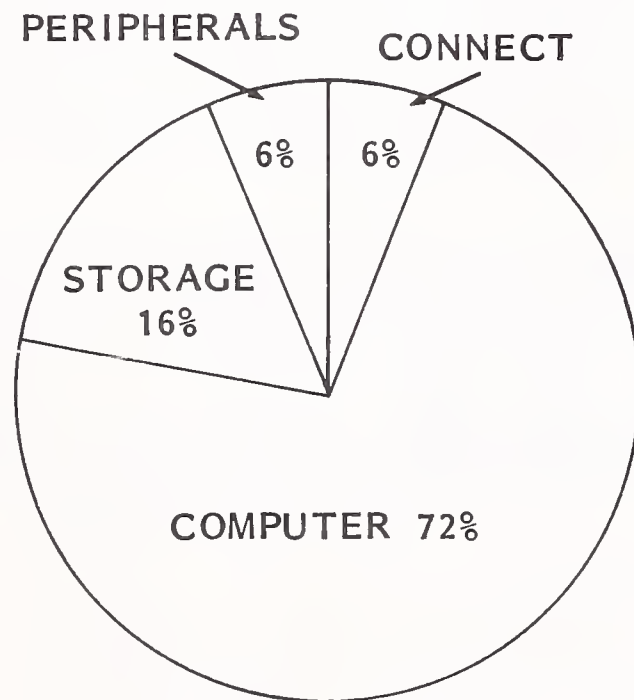
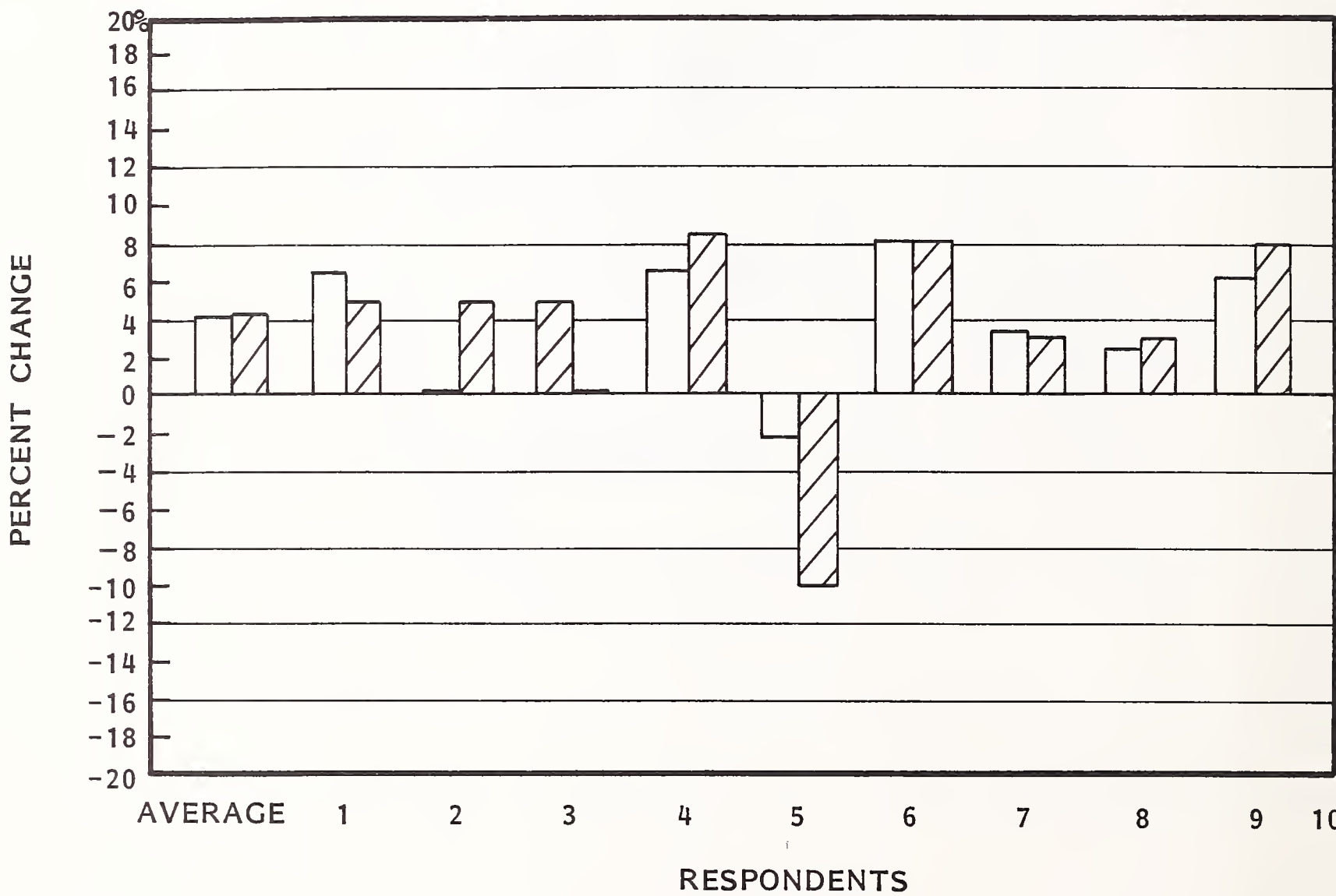


EXHIBIT III-7

PRICING CHANGES PER YEAR FOR REMOTE BATCH PROCESSING SERVICES,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

3. USER SITE HARDWARE SERVICES (USHS)

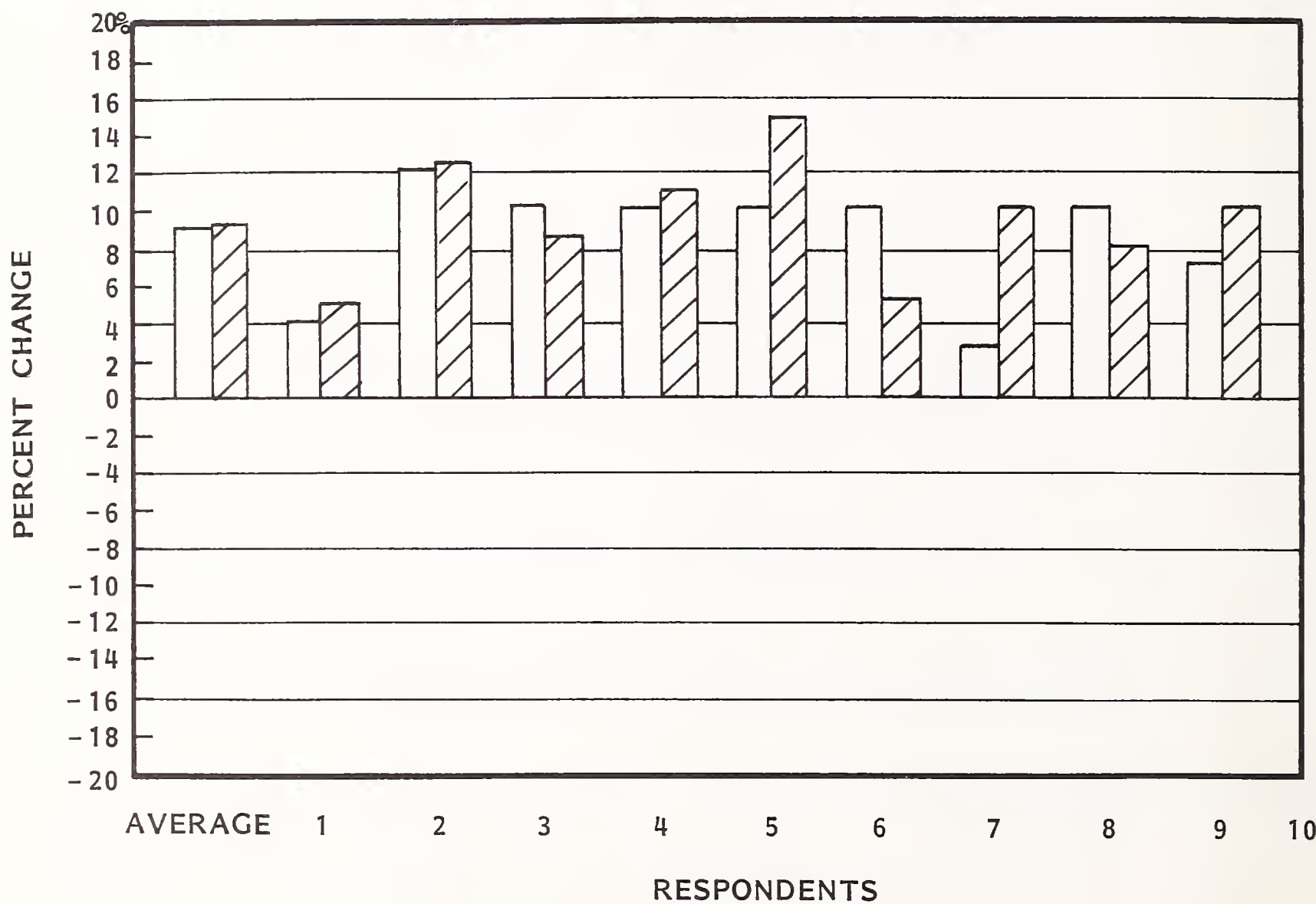
- While vendors expect that USHS will be a material contributor to revenues by 1982, few have established products for which the pricing methods and prices are stable. Once prices are established, increases ranging from 5-10% per year are expected.

4. PROFESSIONAL SERVICES

- Professional services' revenue growth will come both from an increased volume of business and from greater price increases than the other RCS modes of delivery of service. Exhibit III-8 shows the pricing changes for RCS professional services for 1978-1980 and 1981-1982.
 - Prices increased an average of 9.3% per year over the last two years, with the lowest increase per year being 4.5%.
 - The average of the vendors' projections for 1981-1982 increases was 9.4%, with projections ranging from 5-15%.
 - These increases double those experienced or projected for interactive or remote batch processing, the traditional main line modes of delivery.
- Eighty percent of the survey sample have separate groups which provide software development professional services to clients.
- Approximately three-quarters of the direct effort of those professional services groups is charged to clients on a "time-and-materials" basis, where materials include computing resources and other direct expenses. The balance of the effort is done on fixed-fee contracts. A nominal amount (less than 2%) of the professional services work was reported to have been done at no charge to the client.

EXHIBIT III-8

PRICING CHANGES PER YEAR FOR PROFESSIONAL SERVICES,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

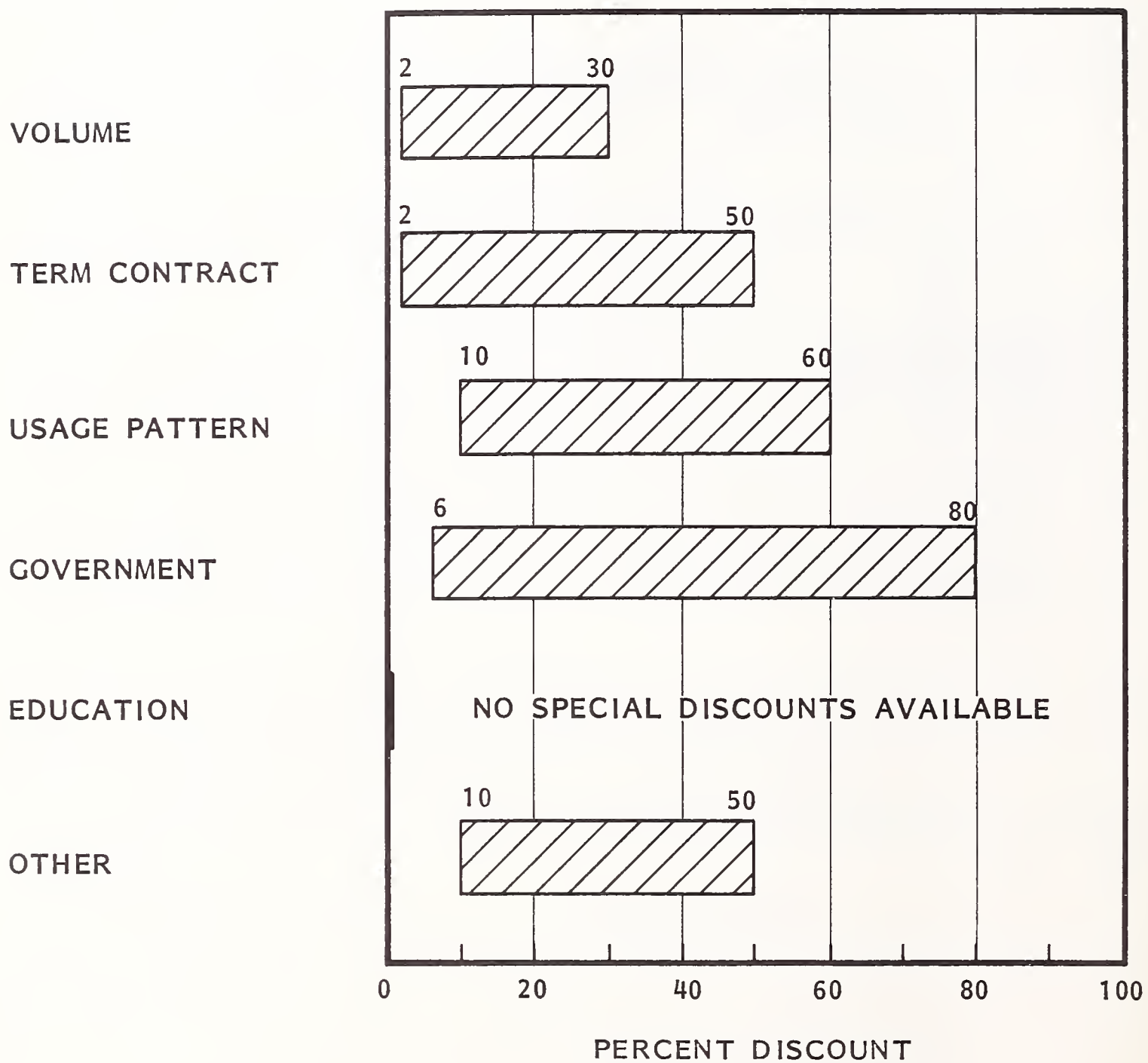
- Some professional service-type activities are performed by the staffs of local RCS sales and support offices. It is not clear whether the efforts or potential revenues involved are material, but the average of the direct effort provided at no charge is 70%.
- Rates quoted for professional services staff range from as little as \$18 per hour to \$100 per hour. Vendors were requested to classify their staff as either analyst/consultant or programmer and to provide the minimum and maximum rates charged.
 - The average min-max range for analyst/consultants was \$36.70 to \$62.70 per hour.
 - The average min-max range for programmers was \$27 to \$37 per hour.

C. DISCOUNTING

- RCS vendors provide discounts from basic retail rates for different considerations. Exhibit III-9 shows the ranges available from the survey sample vendors and the basis for the discount.
 - Volume discounts are automatically earned as a function of the amount of usage as measured by the total dollar volume of the bill. Schedules are published as part of the Price Schedule. Only half the surveyed vendors provide this type of discount.
 - Term contract discounts are provided when a client contracts for services for at least a one-year term. They typically involve a commitment to a minimum dollar amount or resource usage. Most responding vendors offer term contract discounts.

EXHIBIT III-9

RANGE OF AVERAGE PRICE DISCOUNTS PROVIDED BY
RESPONDING RCS VENDORS



- Usage pattern discounting most frequently takes the form of explicit pricing for a usage parameter. Examples include non-prime access, low priority processing, restricted access such as data entry only, etc. Almost all vendors provide some form of usage pattern incentive/discount.
- Government sector discounting is controlled by the General Services Administration Teleprocessing Services Program (TSP). Vendors negotiate their rates with GSA and they are then effective for "qualified" government business. The government insists that at a minimum it gets the best commercial discount.
- RCS vendors do not generally provide special discounts for the education sector.
- With the exception of the government sector business, the trend is toward less explicit discounting without a specific contractual commitment.
 - Several vendors stated that there was "no need" for published standard discounts such as volume discounts.
 - Over half of the vendors indicated intentions to reduce discounts currently available.
- Vendors want to "lock in" their major clients with term contracts and will negotiate the associated discounting on a case-by-case basis.
 - The average of responding vendor responses indicates that 35% of the customer population receives discounts and that that group represents 65% of total revenues.
- There is an increasing trend toward explicit pricing for special usage patterns.
 - Vendors do not want to call this approach discounting.

- This approach is often tied to specific applications.
- The selective resource pricing reflects the consensus that some resources are more price-sensitive than others.
- Raw processing RCS, which is not tied to unique proprietary software, is especially price-sensitive and will retain more of a discounting orientation than will the specialized services.
- Analysis of customers receiving discounts provides an insight into the customer profile of the RCS vendors. The plot in Exhibit III-10 shows percent of total revenue from discounted customers as a function of the percent they represent of the customer base. The solid lines connect (0, 0) and (100, 100) with a point representing 80% of the revenue generated by 20% of the customers. The resulting curve is a cumulative revenue plot for the survey sample.
 - Given the assumption that only the largest customers receive discounts, the RCS vendor revenues appear to be concentrated in a relatively small percentage of the total number of customers served.
 - The pricing implications of this situation include concern for potential revenue erosion by conversion of existing customers to more fixed-price-oriented USHS services.
 - Another pricing implication is that most substantial revenue growth must probably come from new clients rather than from existing large users.

D. EFFECT OF PRICE CHANGES

- As can be seen in Exhibit III-11, vendors perceived that price increases contributed to sales increases in the 1978-1980 period.

EXHIBIT III-10

REVENUE CONTRIBUTION FROM DISCOUNTED CUSTOMERS

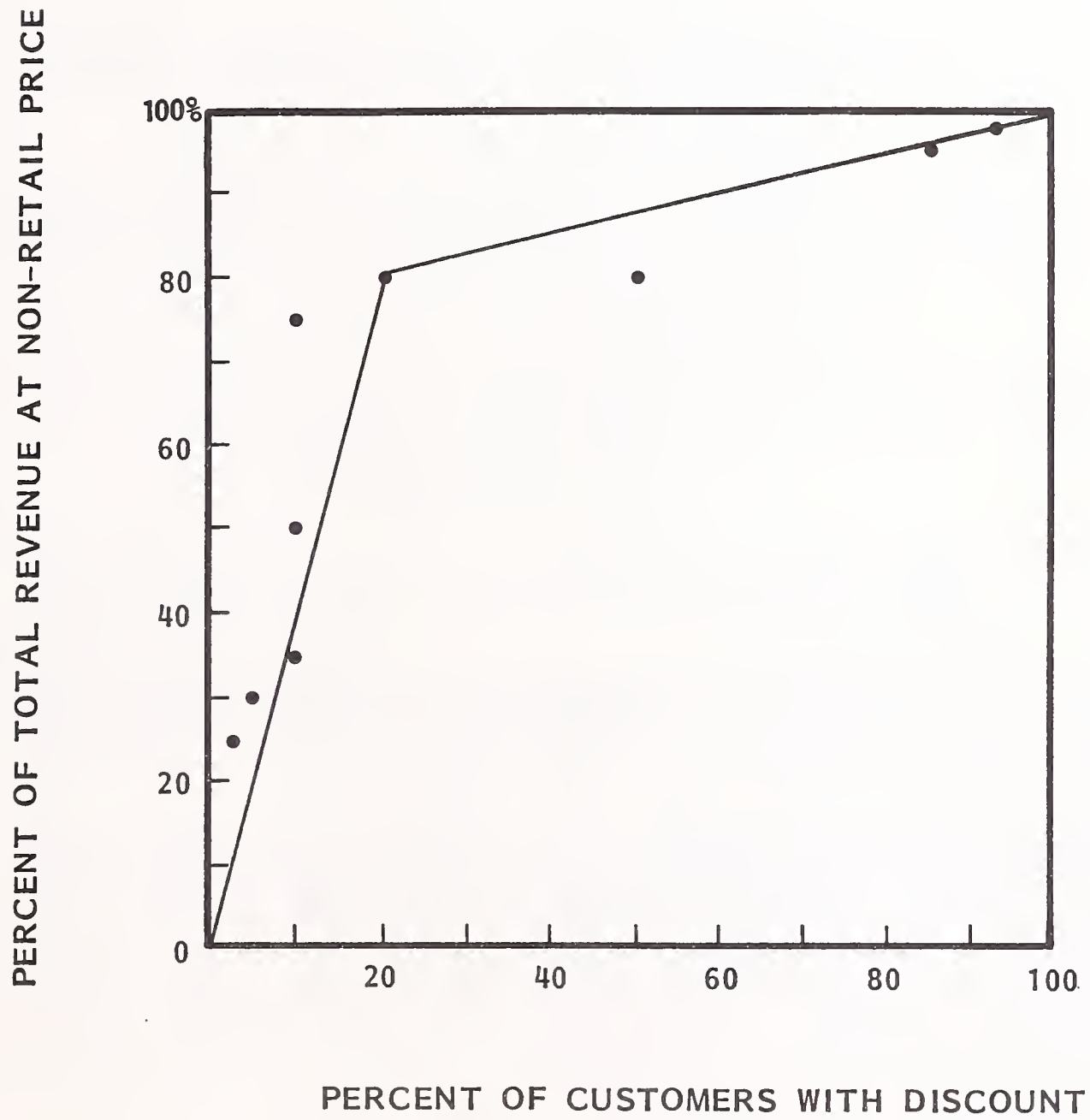
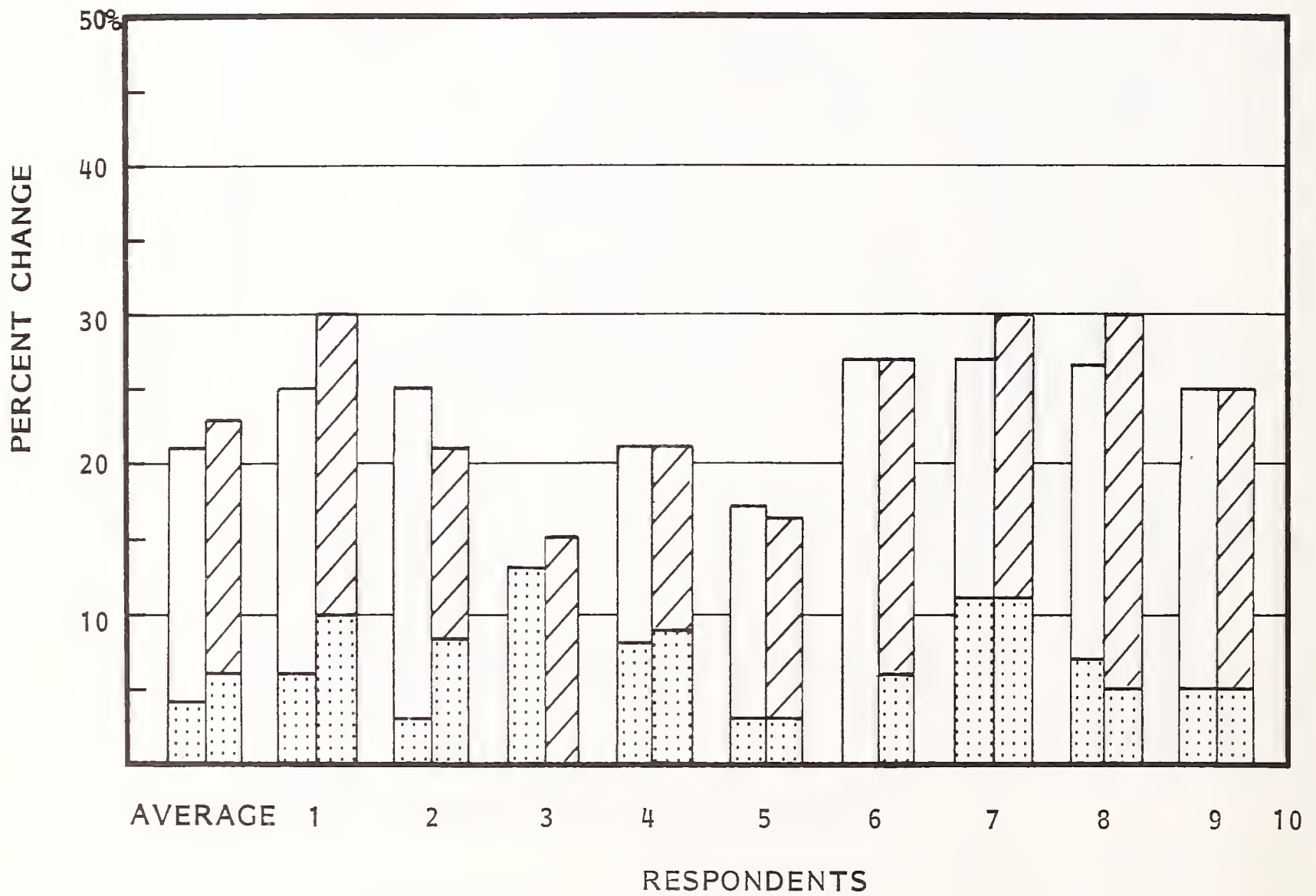


EXHIBIT III-11

CONTRIBUTION OF PRICE INCREASE TO SALES INCREASE



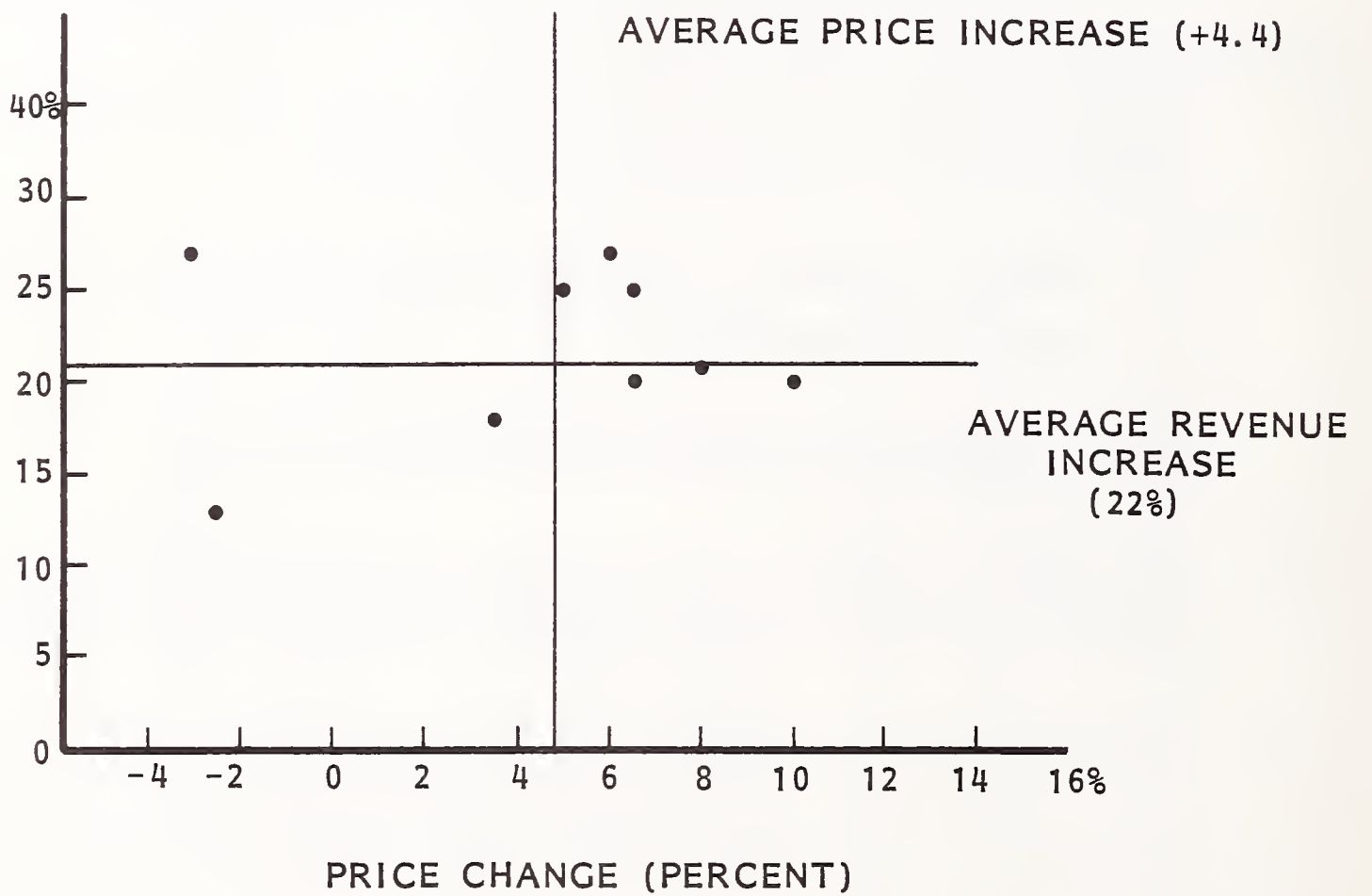
- 1978-1980 SALES INCREASE
- 1981-1982 SALES INCREASE
- PRICE INCREASE CONTRIBUTION

- Average sales increased 22% per year.
- Price increases contributed an average of 4.9% per year to total sales increases.
- Through 1982, vendors are projecting similar growth, with slightly increased contribution from price increases.
 - Average annual projected sales increase is 23%.
 - Average annual projected contribution of price increases is 6.3%.
- Revenue increase projections from the 1978 study have not been met, but the contribution percentage forecast is exactly the same.
 - Vendors projected a 1978-1980 average annual sales increase of 36% versus the 22% achieved.
 - Projected price increases contributed 4.9% per year.
- Most vendors would not associate any lost business with price increases. In the instances where a link was identified, the amount of loss was not material.
- Exhibit III-12 shows the reported average annual revenue increase plotted as a function of the reported price changes for interactive services for the 1978-1980 period. A 5-7% price increase is highly correlated with revenue growth close to 20% per year.
 - Other things being equal, it would appear that vendors contemplating smaller increases are leaving money on the table.

EXHIBIT III-12

REVENUE INCREASE PLOTTED AS A FUNCTION OF INTERACTIVE SERVICE PRICE INCREASE FOR RCS VENDORS

AVERAGE ANNUAL REVENUE INCREASE (PERCENT)



E. PRICING FACTORS

I. COST FACTORS

- Vendors rated the factors noted in Exhibit III-13 in terms of their importance in establishing prices. Factors were rated on a 1 to 5 scale where a five indicated high importance and one a low importance.
 - All vendors listed "profit margins" as the most important factor in the list.
 - Sales/marketing costs and personnel costs were next in importance.

2. EXOGENOUS FACTORS

- When asked to rate how the exogenous factors noted in Exhibit III-14 will impact pricing policies (using the 5=high, 1=low scale vendors gave the highest rating to "general economic conditions," with an average score of 3.7. However, "competition - other service vendors" was most frequently cited as most important although its average score was 3.5.
 - Seventy percent of the respondents ranked either the economy or competition from another service vendor as the most important factor.
 - The other factors received generally low ratings and were clearly not perceived as significant factors in determining pricing policy.

3. STRATEGIES

- Vendors were asked to indicate how the factors shown in Exhibit III-15 related to the strategic objections of their firms in setting prices.

EXHIBIT III-13

RATING OF IMPORTANCE OF COST FACTORS IN PRICE SETTING

COST FACTOR	AVERAGE SCORE	MODE	NUMBER OF RESPONDENTS SELECTING MOST IMPORTANT
HARDWARE COSTS	2.7	3	0
PERSONNEL COSTS	3.3	3	0
COMMUNICATION COSTS	3.3	4	0
SALES /MARKETING COSTS	3.6	3	0
PROFIT MARGINS	4.6	5	10

RATING SCALE: 5 = HIGH IMPORTANCE
1 = LOW IMPORTANCE

EXHIBIT III-14

RATING OF IMPORTANCE OF EXOGENOUS FACTORS IN PRICE SETTING

FACTOR	AVERAGE SCORE	MODE	NUMBER OF RESPONDENTS SELECTING MOST IMPORTANT
FEDERAL GOVERNMENT	2.8	2	0
GENERAL ECONOMIC CONDITIONS	3.7	4	2
COMPETITION - SERVICE VENDORS	3.5	4-5	5
COMPETITION - HARDWARE VENDORS	2.3	1-2-3	1
COMPETITION - IN-HOUSE DP	2.9	2	1
AVAILABILITY OF NEW TECHNOLOGY	2.9	2-3	1

RATING SCALE: 5 = HIGH IMPORTANCE
1 = LOW IMPORTANCE

EXHIBIT III-15

RATING OF IMPORTANCE OF PRICE-SETTING STRATEGIES

STRATEGY	AVERAGE SCORE	MODE	NUMBER OF RESPONDENTS SELECTING MOST IMPORTANT
PERCEIVED LOW PRICE	2.1	1	0%
PERCEIVED HIGH PRICE	2.3	3	0
MEET COMPETITION	3.3	4	0
COVER COSTS	4.1	5	3
WHAT THE MARKET WILL BEAR	4.1	4-5	2
VALUE ADDED	4.3	5	5

RATING SCALE: 5 = HIGH IMPORTANCE
 1 = LOW IMPORTANCE

- Little distinction was seen between "perceived value added" and "what the market will bear." Both were seen as indicating pricing based on value to the customer, and they were clearly ranked highest.
 - "Covering costs" was the next most important consideration, ranked most important by 30% of the respondents.
 - Meeting the competitors' prices was seen as an important consideration but not a driving factor in setting prices.
 - Less concern was expressed for either high or low price positioning as a strategic objective. However, several vendors did note that a low perceived price was part of their strategy.
- The strategy ratings are consistent with the responses for the cost factors and exogenous factors noted above. If anything, the importance of covering costs was made more emphatic by the other responses.
 - Cost-related factors were generally given highest importance ratings.
 - The importance of the economy was emphasized in terms of its impact on costs to the vendors, especially people costs.

IV SOFTWARE PRODUCT PRICING

IV SOFTWARE PRODUCT PRICING

A. TYPES OF SOFTWARE PRODUCTS

- Exhibit IV-1 shows the current mix of revenue from systems software products and applications software products for the survey software product vendors and their projection of the mix in 1982.
- System software houses, which have little or no applications software revenue today, predict material applications software revenues by 1982. Today's applications software firms show no such inclination toward selling systems software.

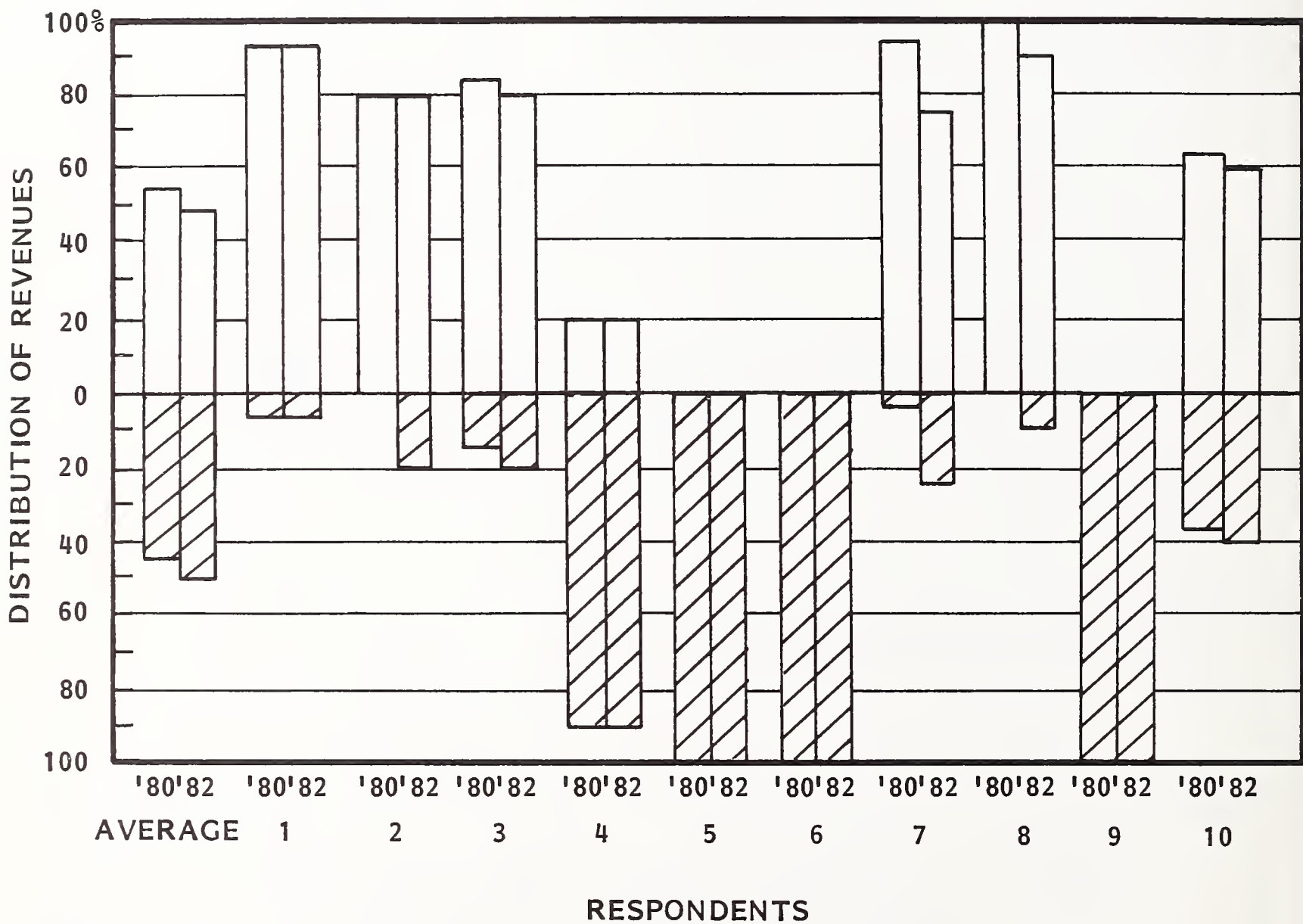
B. PRICING METHODS AND CHANGES

I. NEW SALES

- Three methods of pricing or types of contractual relationships are typically utilized in the software product market. Products are generally not sold per se. The customer acquires a usage license for a period along with the code and documentation.

EXHIBIT IV-1

TYPES OF SOFTWARE PRODUCTS PROVIDED BY SURVEYED VENDORS

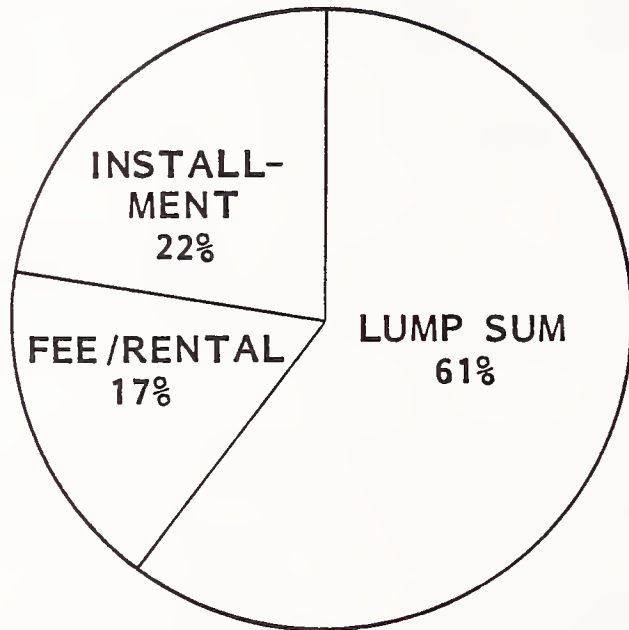


SYSTEM SOFTWARE
 APPLICATION SOFTWARE

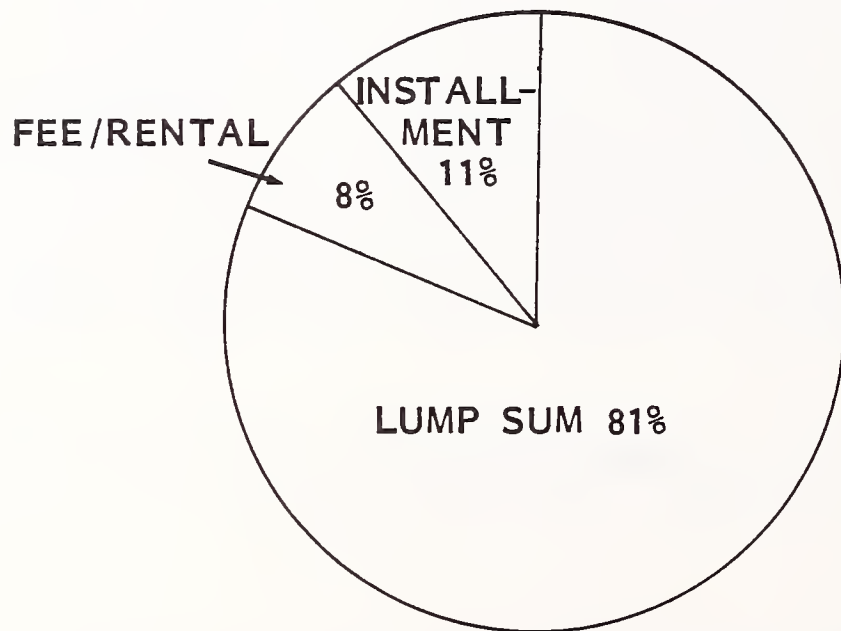
- Lump Sum: the customer contracts to pay all monies to acquire the software when the product is delivered. Typically partial payment is made when the order is placed with the balance due at installation.
 - Fee/Rental: the customer acquires access to the software for some term, but without capital investment or long-term commitment.
 - Installment: this method fits between lump sum and rental in that there is a periodic payment to the vendor with eventual usage license ownership transfer.
- The mix of these arrangements is different between system products and application products, as can be seen in Exhibit IV-2.
 - Applications software vendors get their money on the front end. Over 80% of their revenue comes from lump sum pricing.
 - Systems software vendors have large financial relationships with their customers. Nearly 40% of their revenues come from rental or installment pricing.
 - Systems software prices have increased more rapidly than have those for applications software. Vendors project that trend will change, with both types of software increasing at approximately 10% per year through 1982. Exhibit IV-3 shows the average annual price changes for 1978-1980 and projected for 1981-1982 for systems software. Exhibit IV-4 shows comparable data for application products.
 - The average of the reported systems software price increases was 12% compared to 8.7% for applications software.
 - The average of the 1981-1982 projected increases is 9.3% for the system products compared to 10.6% for application products.

EXHIBIT IV-2

SOFTWARE PRODUCT PRICING METHODS



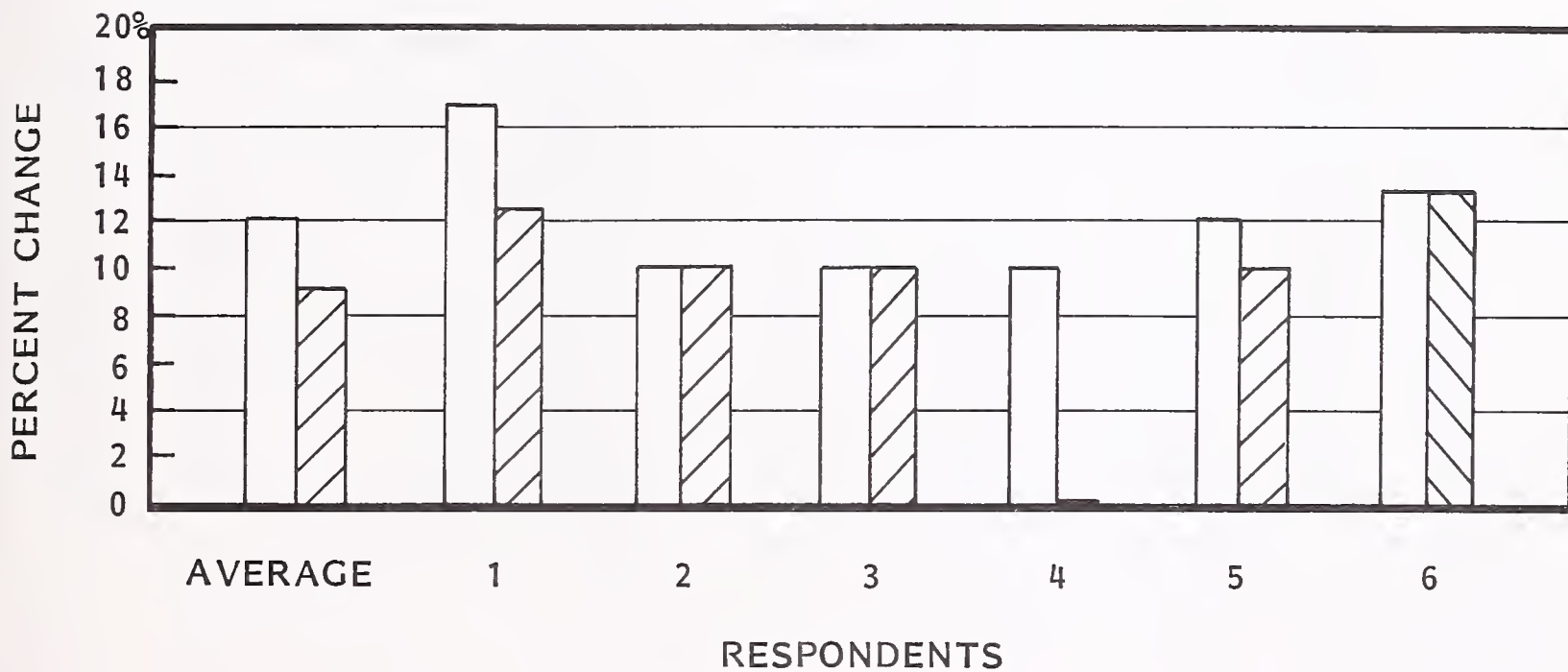
SYSTEMS SOFTWARE



APPLICATIONS SOFTWARE

EXHIBIT IV-3

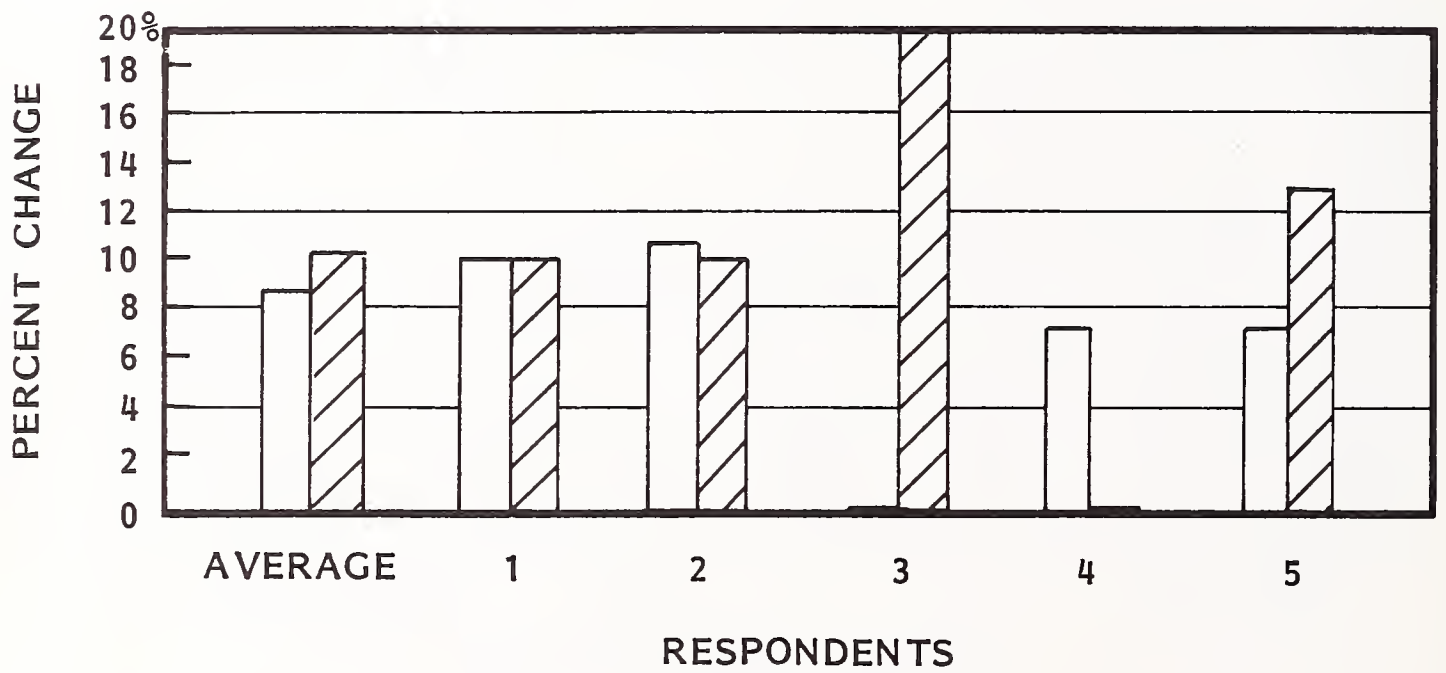
PRICING CHANGES PER YEAR FOR SYSTEM SOFTWARE PRODUCTS,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

EXHIBIT IV-4

PRICING CHANGES PER YEAR FOR APPLICATIONS SOFTWARE PRODUCTS,
1978-1980 AND 1981-1982



□ 1978-1980
▨ 1981-1982

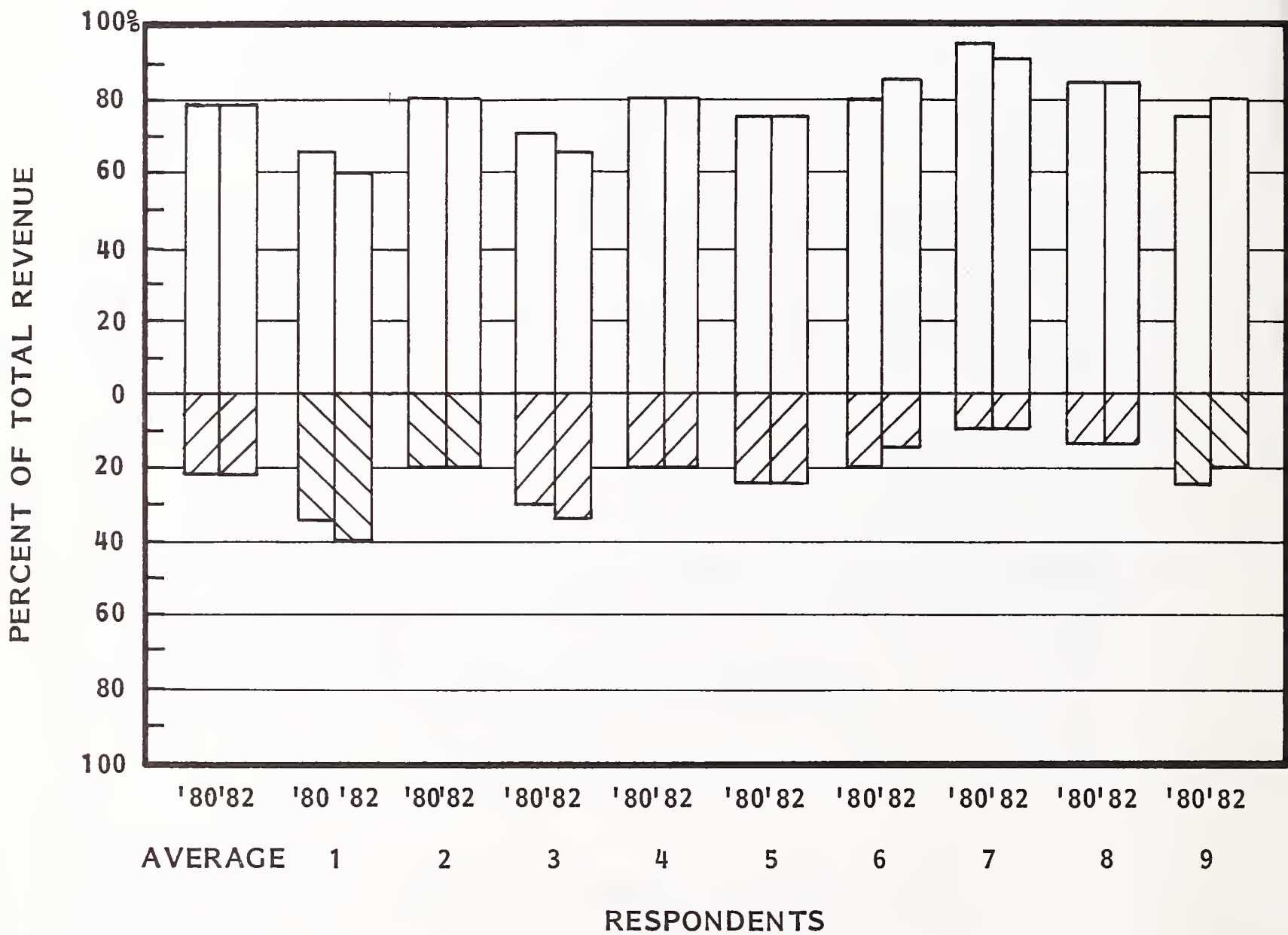
- Higher price increases for systems software products are consistent with the findings and projections of the 1978 INPUT study.
 - The average annual price increase reported in the 1978 study was 8.8% for systems software as compared to 7.2% for applications software.
 - The average annual price increase projected for systems software for 1978-1980 was also 8.8%. The 1980 reported increase was higher at 9.3%.
- Vendors may charge different prices for the same products sold to differentiate market segments (e.g., charging more for a DOS version than for an OS version).
- Vendors do not generally charge for installation of their software. A trend noted, however, is to charge for more of the training services provided and to provide those services at a central vendor site rather than at the client location.

2. MAINTENANCE

- The annual maintenance charge is an ongoing revenue stream to both systems and applications software vendors. This annual fee provides for updates and enhancements to the software as well as inquiry consultation after the first year of service. Exhibit IV-5 shows the revenue mix between maintenance and services provided, such as installation and training.
 - The survey vendors report that 22% of current revenues come from maintenance charges. The systems software average is slightly greater than 22% and the applications software group slightly less.
 - Vendors project that the maintenance revenue percentage will be approximately the same through 1982.

EXHIBIT IV-5

REVENUE CONTRIBUTION FROM PHASES OF SERVICE RELATIONSHIP



- SALES, INSTALLATION AND RELATED REVENUES PERCENTAGE
- MAINTENANCE REVENUE PERCENTAGE

- The maintenance charge is based on a percentage of the current sale price for the software. The average percentage reported was 11%, with a range from 7%-15%.
- While the maintenance percentages seldom change, each increase in the new sale price raise the basis on which the maintenance fee is computed. In addition to the 7-8% increase that the vendors projected for sales, several vendors also indicated intentions to increase the maintenance percentage in the 1981-1982 period.

3. PROFESSIONAL SERVICES

- Most software vendors do not generate material revenues from professional service activities.
- System software product vendors do not generally provide any consulting or professional services to their clients. Those who do provide high-level data base design support.
- Application software product vendors do provide some customization services. When these services are provided, over 50% of the efforts are priced at a fixed fee. The balance is done for time and expenses.
- Rates charged for professional service staffs range from \$23 to \$125 per hour. Vendors were asked to classify their staffs as either analyst/consultant or programmer and to provide the minimum and maximum they charge for each.
 - The average min-max range for analyst/consultants was \$59-70 per hour.
 - The range for programmers was \$49-\$51.

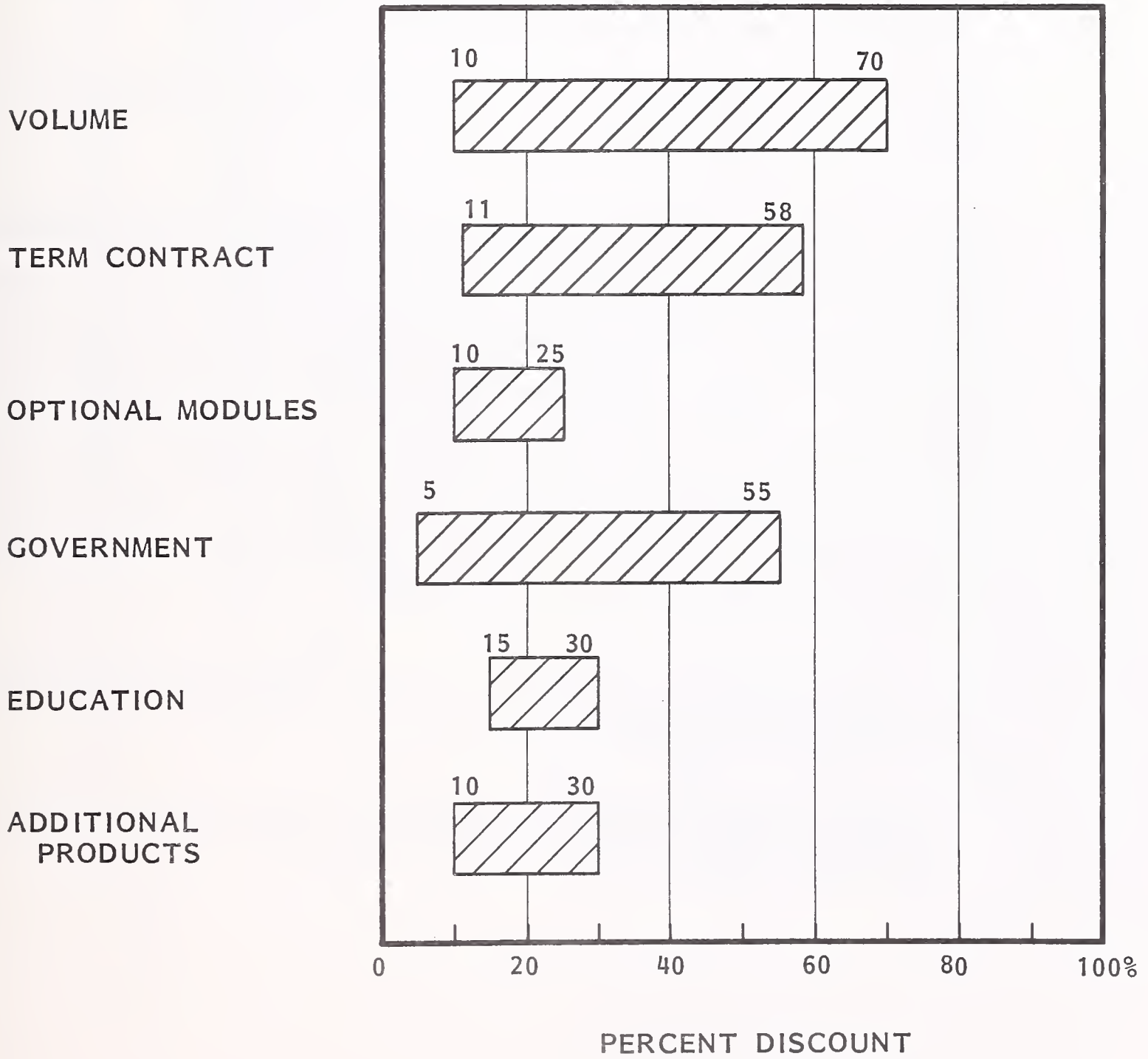
- Most vendors actually quote these services by the day only.

C. DISCOUNTING

- Software product vendors provide discounts from basic retail rates for a variety of considerations. Exhibit IV-6 shows the range of discounts available from the survey sample and the basis for the discount. The figures displayed are aggregate numbers and do not represent the policies of any one vendor.
 - Volume discounts are provided for simultaneous installation of the same software on more than one main processor. Lesser-volume discounts are provided by some vendors for additional installations of an already installed software product subsequent to the initial key. This area represents the deepest discounting available. The third to fifth copy will frequently earn a 50% discount.
 - Term contract discounts do not represent a significant factor since, as has been noted, only approximately 10% of software product sales are on a fee/rental basis. Only three of the vendors reported even offering such a discount.
 - Optional module discounts are only applicable to some software products. When provided, they are based on the simultaneous acquisition of modules with the base software. Only four vendors noted providing these terms.
 - Government sector discounting is not universal in the software products market. Half the vendors had additional discounts to the government over the standard commercial discounts.

EXHIBIT IV-6

PRICE DISCOUNTS PROVIDED BY
RESPONDING SOFTWARE PRODUCT VENDORS



- Education sector discounts are provided by some software vendors.
- Additional product discounts are another form of volume discount. Like volume and multiple-option discounts, they apply to simultaneous purchase. In this case, the customer is encouraged to buy more than one unique product from the vendor.
- No single clear pattern of change in discounting policies was observed. The most frequently stated objective was to simplify the process.
- The discounting policies reported by respondents are consistent with the findings in the 1978 pricing study.
- As with the RCS vendors, the analysis of customers receiving discounts provides an insight into the customer profiles of the software vendor. The plot in Exhibit IV-7 shows the percent of total revenues from discounted customers plotted as a function of the percent of the customer base represented by these customers. Two lines are shown. The upper one is the 80/20 line which represented the RCS revenue profile. (Eighty percent of the revenue comes from 20% of the customers, as shown in Exhibit III-8.) The lower line plots a 60/40 relationship. That is, the lines pass through a point indicating 60% of the revenue is contributed by 40% of the clients.
- This difference is a function of the fact that software firms deliver a more specific product.
- It also highlights the lack of a predominant, large-user customer set for software vendors.

EXHIBIT IV-7

REVENUE CONTRIBUTIONS FROM DISCOUNTED CUSTOMERS

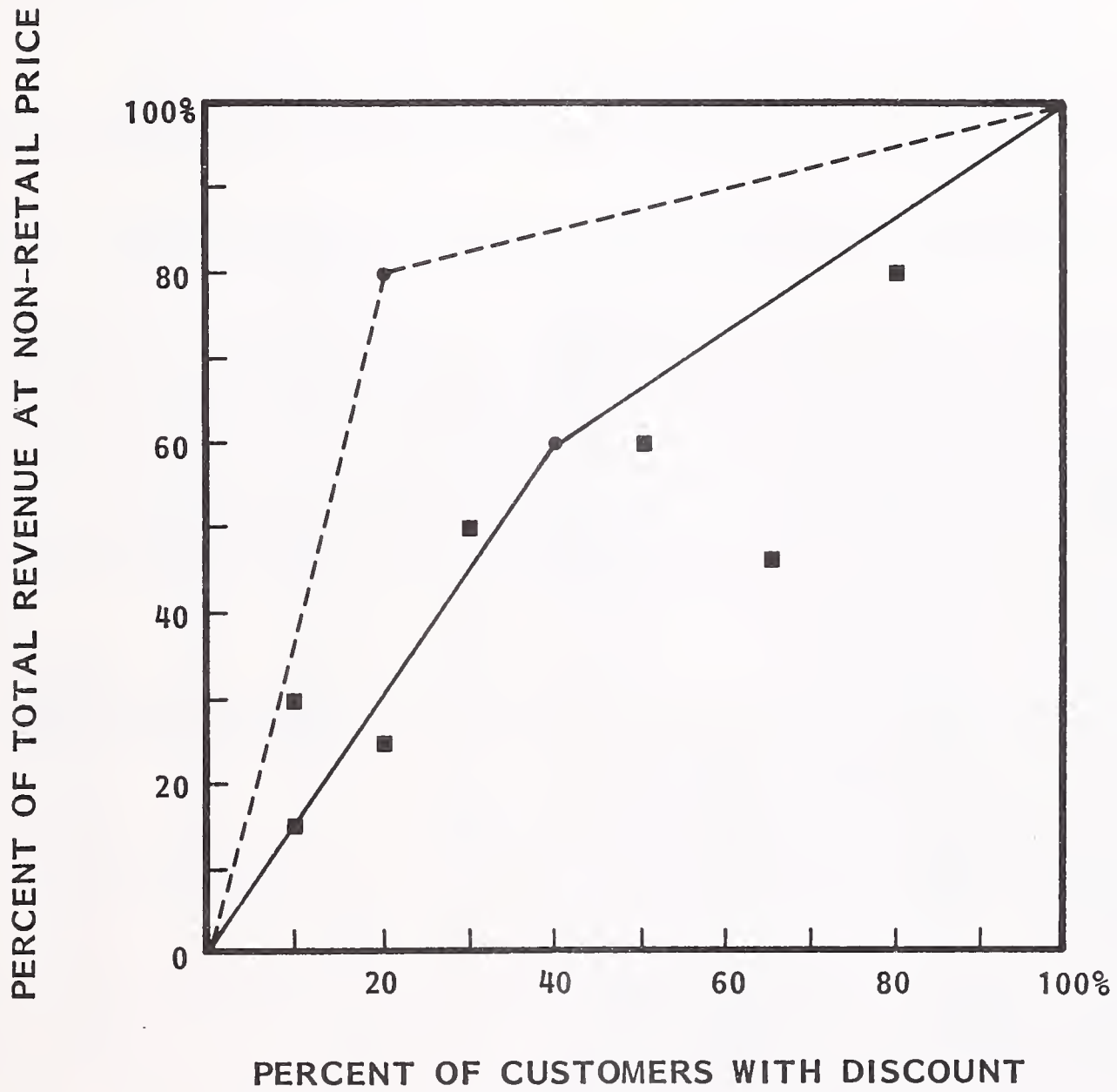
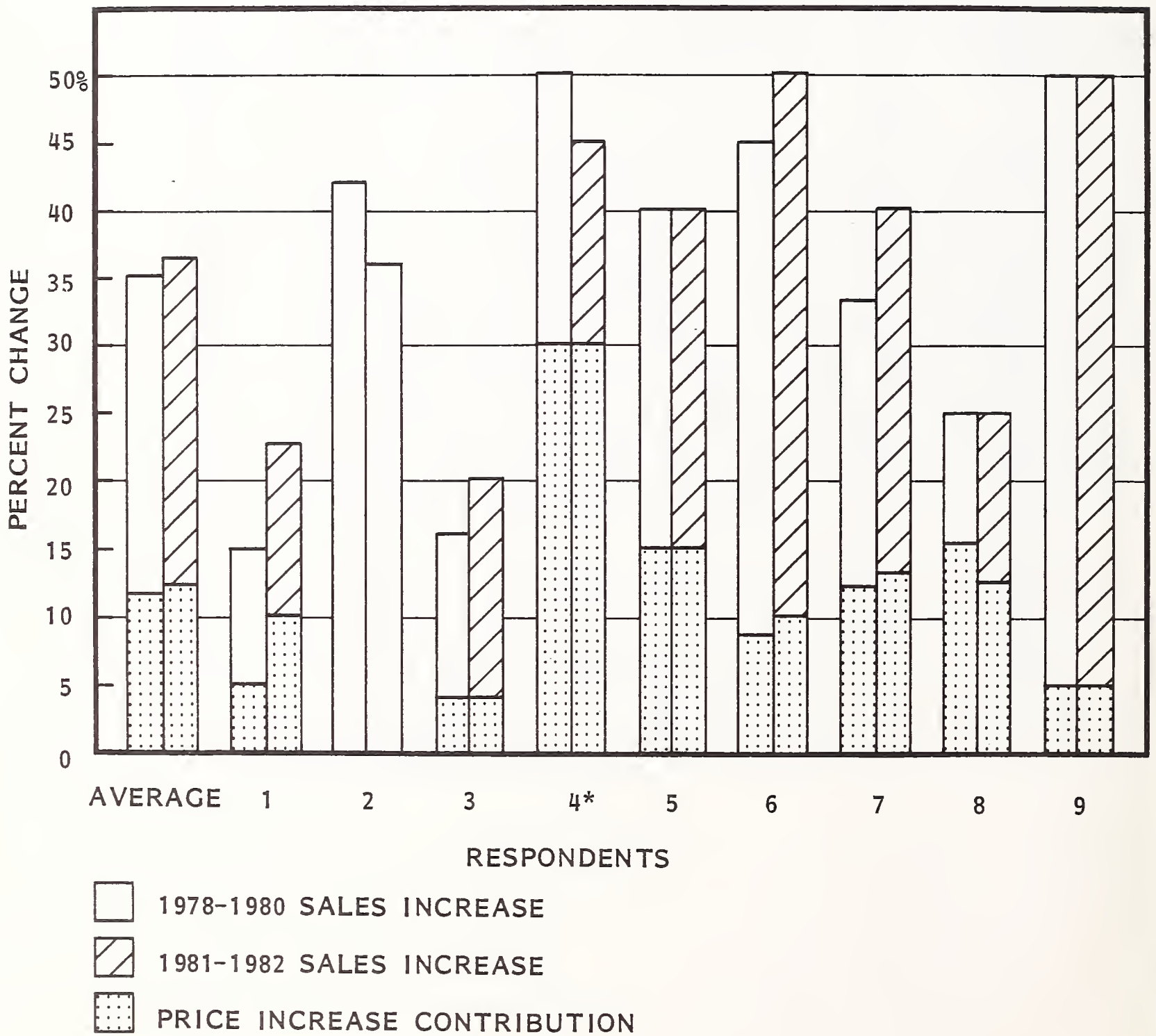


EXHIBIT IV-8

CONTRIBUTION OF PRICE INCREASE TO SALES INCREASE



*NO PRICE INCREASE CONTRIBUTION AVAILABLE

D. EFFECT OF PRICE CHANGES

- Exhibit IV-8 shows the extent to which software vendors believed price increases contributed to sales increases in the 1978-1980 period, and the extent to which they will contribute in 1981-1982. Projections are consistent with recent experience.
 - The average of the annual revenue increases was 35%; the forecast is for 37%.
 - Price increase contribution was 12% and is projected to remain 12%.
- Exhibit IV-9 displays average annual sales increases for software vendors as a function of their reported price changes for the 1978-1980 period. The wide variation in revenue growth performance compared to the narrow variation of price change indicates that price movement is not a significant factor in the revenue performance of the vendors.

E. PRICING FACTORS

I. COST FACTORS

- Vendors rated the factors in the table in Exhibit IV-10 in terms of their importance to pricing policies. Five indicates high importance; one indicates low. The results imply that people-related costs are crucial to software vendors.

EXHIBIT IV-9

REVENUE INCREASE PLOTTED AS A FUNCTION OF PRICE INCREASE FOR SOFTWARE PRODUCT VENDORS

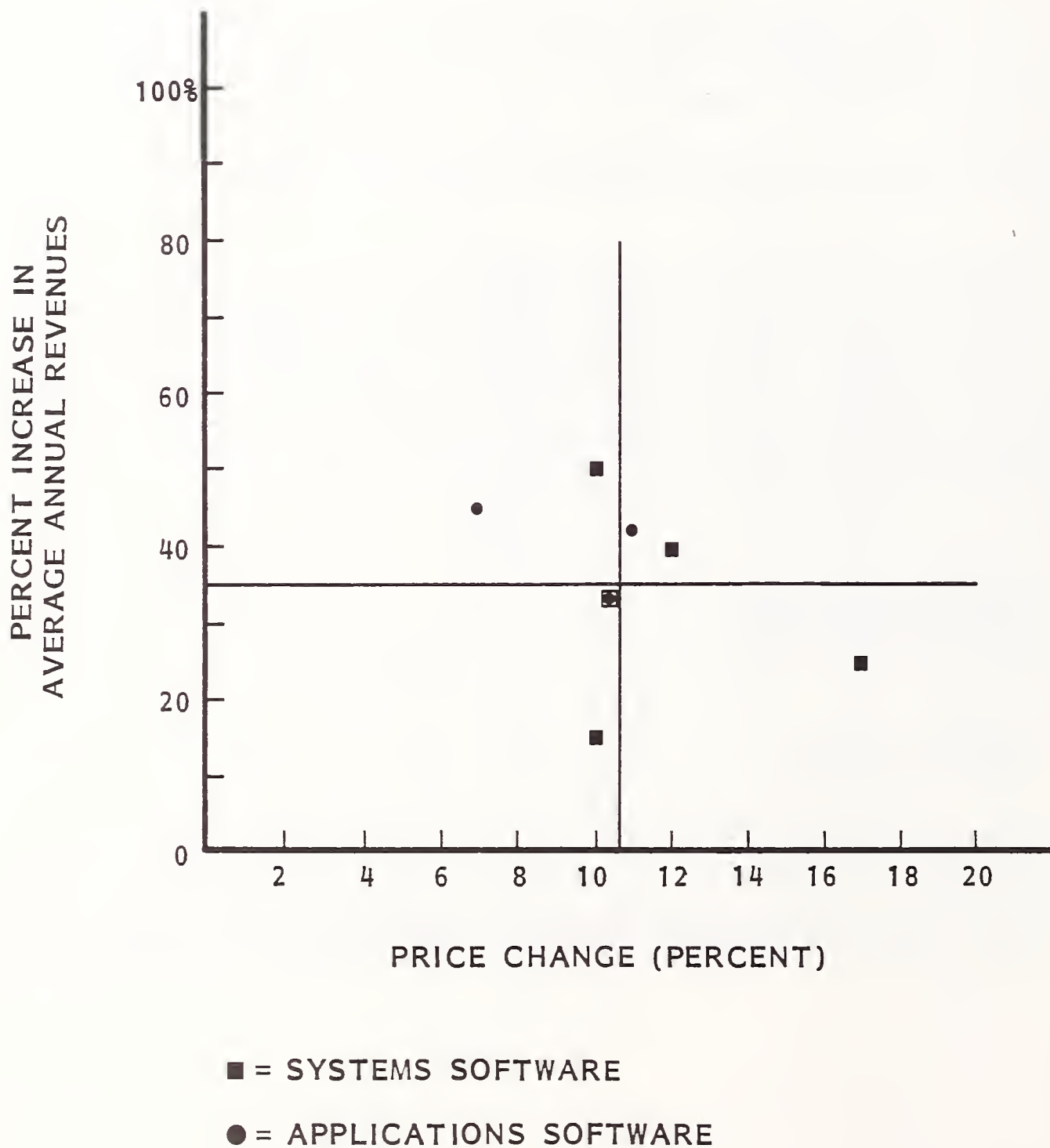


EXHIBIT IV-10

RATING OF IMPORTANCE OF COST FACTORS IN PRICE SETTING

COST FACTOR	AVERAGE SCORE	MODE	NUMBER OF RESPONDENTS SELECTING MOST IMPORTANT
HARDWARE COSTS	1.8	1-2	0
PERSONNEL COSTS	3.9	5	6
COMMUNICATION COSTS	2.1	3	0
SALES/MARKETING COSTS	3.9	4	2
PROFIT MARGINS	3.9	5	2

RATING SCALE: 5 = HIGH IMPORTANCE
1 = LOW IMPORTANCE

2. EXOGENOUS FACTORS

- When considering the factors listed in Exhibit IV-11, it is easy to identify what the software vendors think is not important to their pricing. Federal government actions and competition from in-house data processing received very low ratings. The ratings for the five remaining factors were almost even.
 - Respondents rated general economic conditions slightly above competition from service vendors or hardware vendors.
 - Relatively large concern was expressed over the impact of new technologies. The context was generally one of new hardware rendering an existing software product obsolete.

3. STRATEGIES

- According to the results reported in Exhibit IV-12, software product vendors are value pricers. By far the highest ratings were given to "perceived value added" as a price-setting strategy.
 - "What the market will bear," which may be another approach to value pricing, was next highest in ranking.
 - Some concern was expressed for "meeting competition" and for "covering costs," but high or low price positioning is apparently not a significant factor.

EXHIBIT IV-11

RATING OF IMPORTANCE OF EXOGENOUS FACTORS IN PRICE SETTING

FACTOR	AVERAGE SCORE	MODE	NUMBER OF RESPONDENTS SELECTING MOST IMPORTANT
FEDERAL GOVERNMENT	1.2	1	0
GENERAL ECONOMIC CONDITIONS	3.2	2-3-4	3
COMPETITION - SERVICE VENDORS	3.0	3	1
COMPETITION - HARDWARE VENDORS	2.8	2-3-4	3
COMPETITION - IN-HOUSE DP	2.0	1	0
AVAILABILITY OF NEW TECHNOLOGY	3.1	3	3

RATING SCALE: 5 = HIGH IMPORTANCE
1 = LOW IMPORTANCE

EXHIBIT IV-12

RATING OF IMPORTANCE OF PRICE-SETTING STRATEGIES

STRATEGY	AVERAGE SCORE	MODE	NUMBER OF RESPONDENTS SELECTING MOST IMPORTANT
PERCEIVED LOW PRICE	1.4	1	0
PERCEIVED HIGH PRICE	2.6	3	0
MEET COMPETITION	2.9	3	0
COVER COSTS	2.6	1-3-4	2
WHAT THE MARKET WILL BEAR	3.4	4	2
VALUE ADDED	4.3	4	6

RATING SCALE: 5 = HIGH IMPORTANCE
1 = LOW IMPORTANCE

V USERS' VIEWS OF SERVICES PRICING

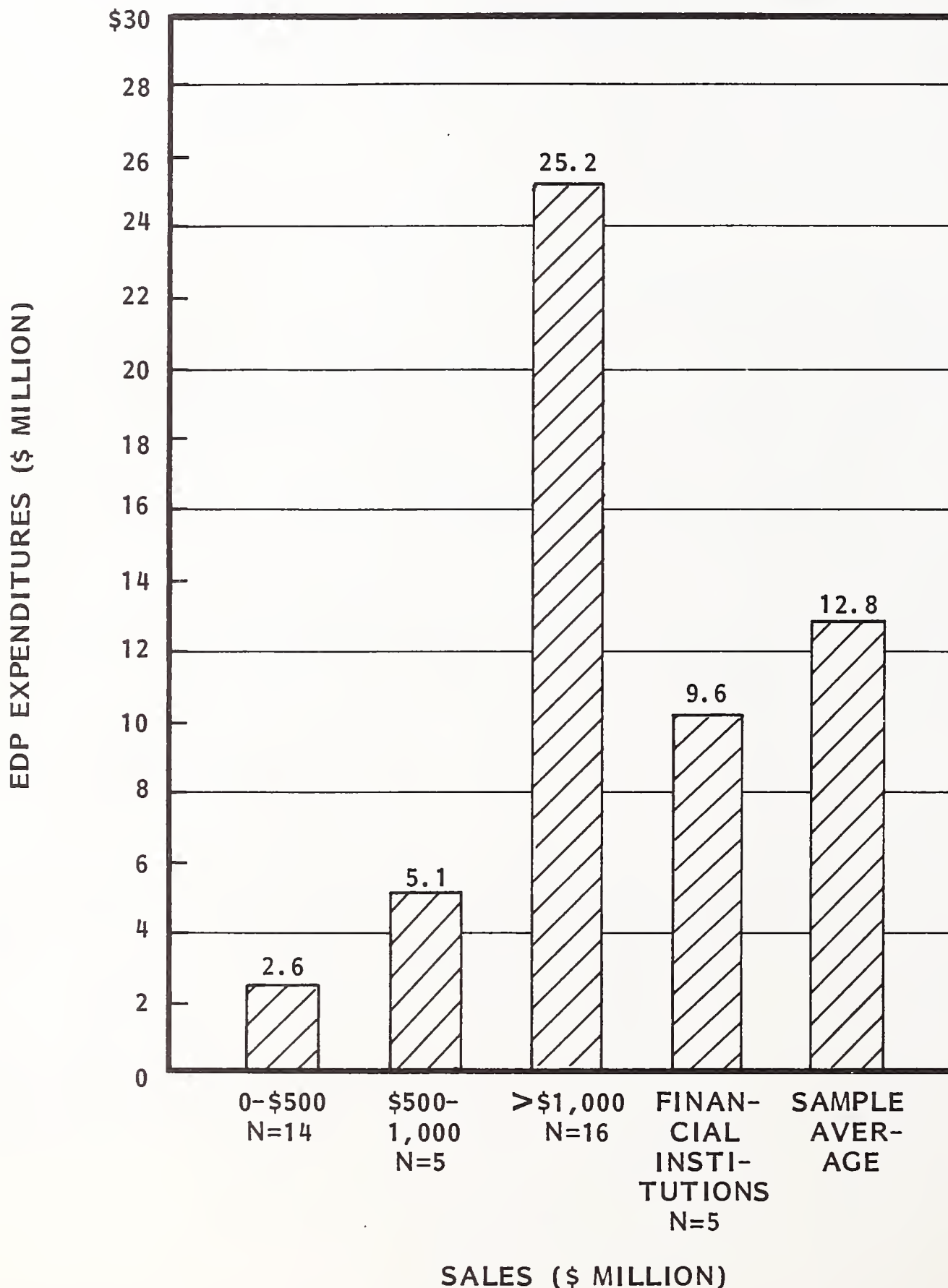
V USERS' VIEWS OF SERVICES PRICING

A. USER SAMPLE PROFILE

- The user sample consists of 40 firms. They range in size from a sales volume of \$100 million to in excess of \$11 billion. Total EDP expenditures for both the data processing organization and non-DP departments are shown in Exhibit V-1.
 - DP expenditures range from less than 0.5% to 3% of sales for the \$0-500 million group.
 - In the \$500 million to \$1 billion sales group, the percentages range from less than 0.2% to 1.8% of sales.
 - For firms over \$1 billion in sales, the figures range down from approximately 1.1%.
- Users report that expenditures for outside services represent just under 10% of their expenditures for data processing. Variations as a function of company size may be noted in Exhibit V-2.
- Regardless of size, users reported spending 50% of their outside service dollars for software product services. The balance was spent for RCS and other services.

EXHIBIT V-1

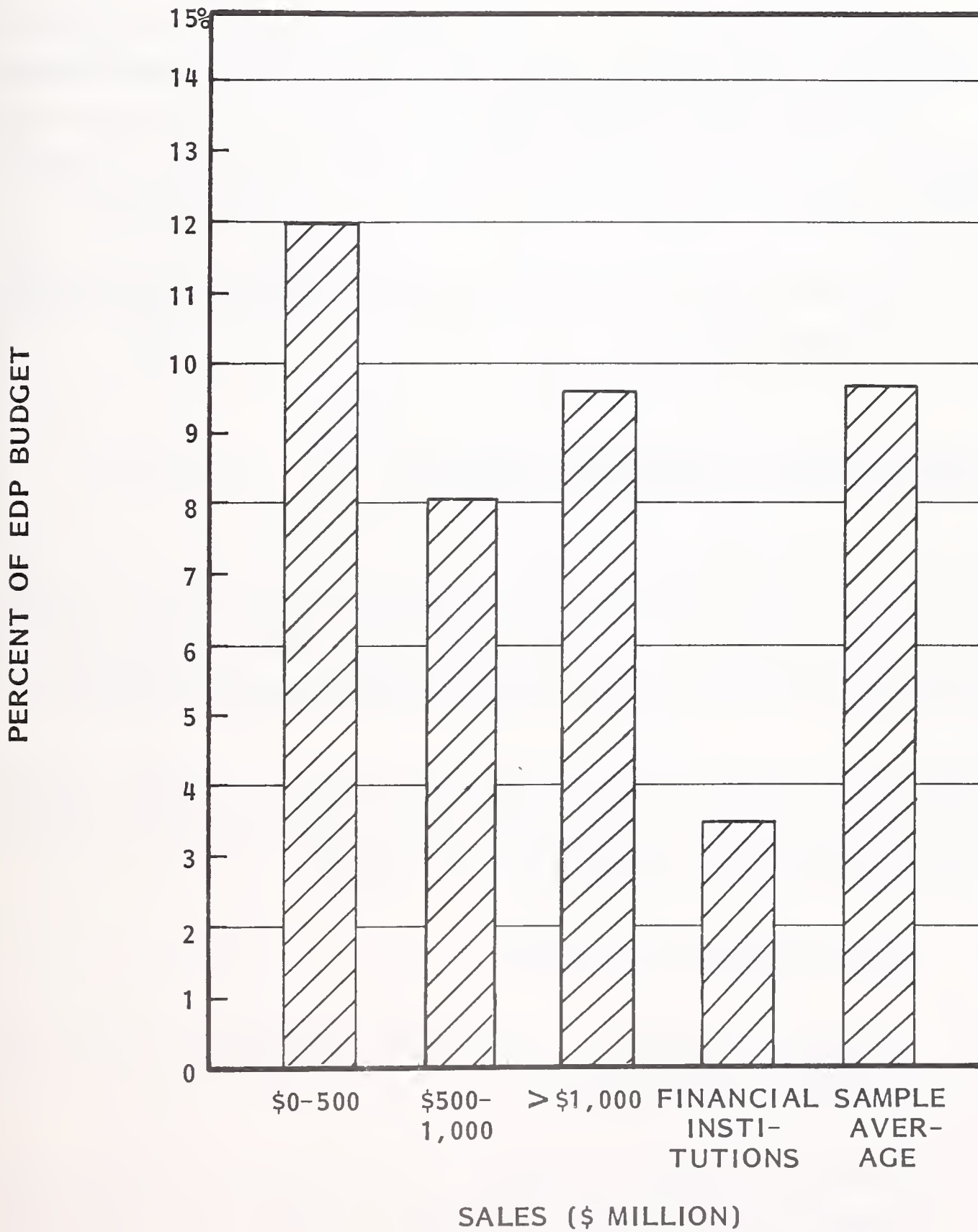
AVERAGE EDP EXPENDITURES FOR SURVEY USERS
(GROUPED BY SALES VOLUME)



FINANCIAL INSTITUTIONS' ASSETS AVERAGE \$4.5 BILLION

EXHIBIT V-2

EXPENDITURES FOR OUTSIDE SERVICES AS A PERCENT OF TOTAL
EDP EXPENDITURES



- Users deal with a relatively large number of vendors for computer services. Between RCS and software product vendors, the users reported buying from a total of at least six vendors, with the number of software product vendors generally higher than the number of RCS vendors. The average of the vendor responses is tabulated by sales in Exhibit V-3.
- The most significant bias in the data reflects the fact that managers of information processing departments or their designates were interviewed. As has been noted, those managers may not be aware of the specific uses of computer services outside their department, or of the amounts expended for those services.
 - The main effect of this interview bias is to understate the amount of RCS purchased.

B. VIEWS ON REMOTE COMPUTING SERVICES

- The survey sample represents a cross-section of RCS users. Forty-five percent use interactive processing services only, while 13% reported using only remote batch. The balance reported using both modes of service.
- Modes of delivery of RCS are discussed in Section III. Exhibit III-1 shows the vendors' revenues distributed among the various modes of delivery. Exhibit V-4 shows a slightly different profile for the user sample.
 - No users indicated use of USHS.
 - Professional services represented only approximately 2.2% of total outside services expenditures.
 - Comments indicated a general lack of awareness of RCS vendors' capabilities in USHS and professional services. Less than 1% of

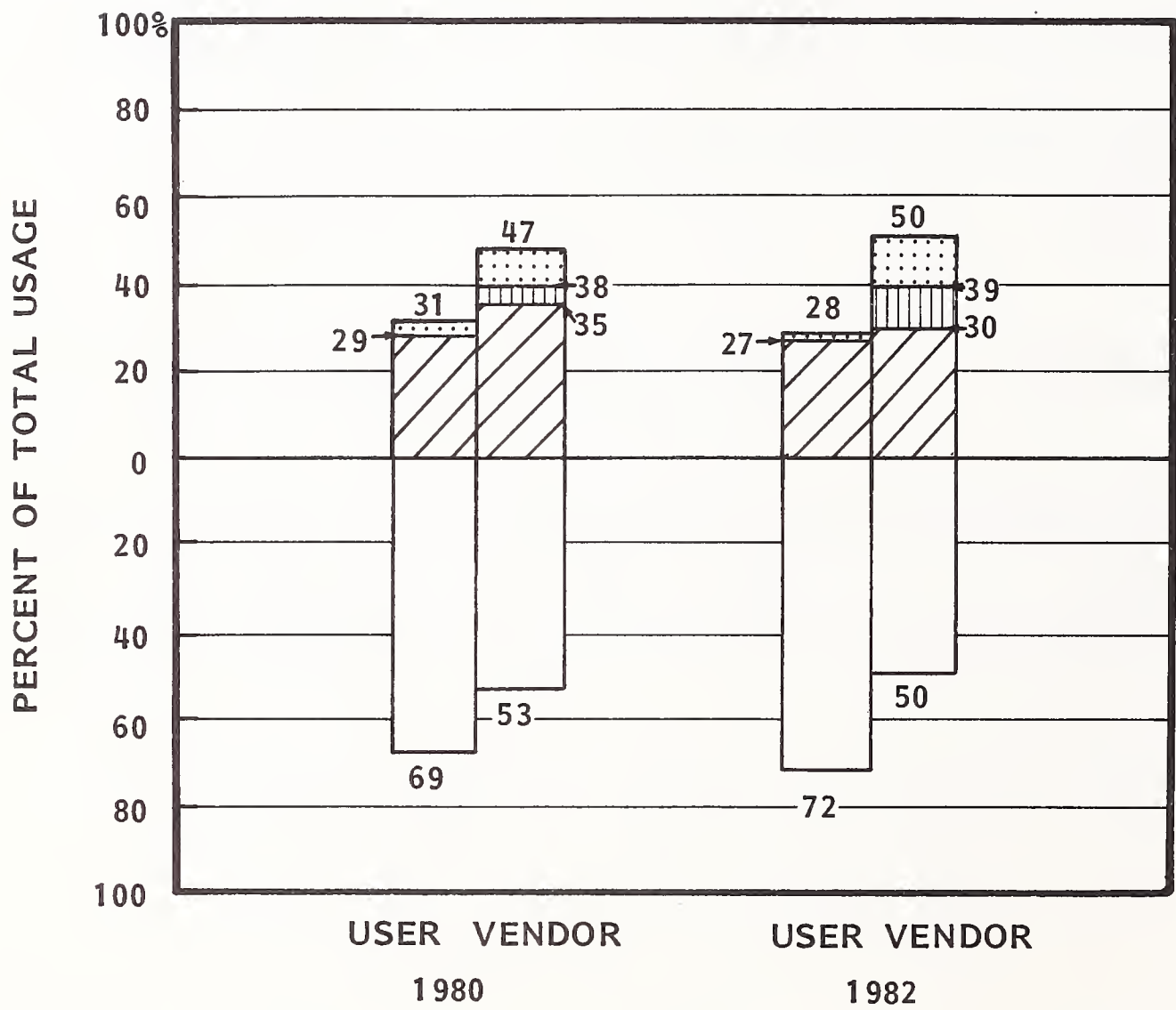
EXHIBIT V-3

AVERAGE NUMBER OF VENDORS USED
FOR RCS AND SOFTWARE PRODUCT SERVICES

TYPE OF SERVICE	NUMBER OF VENDORS USED PER SALES VOLUME CATEGORY			SAMPLE AVERAGE
	\$0-500M	\$500-1,000M	>\$1,000M	
RCS	2.3	3.0	5.4	4.1
SOFTWARE	5.5	3.2	11.0	8.2
TOTAL	7.8	6.2	16.4	12.3

EXHIBIT V-4

REPORTED USAGE OF RCS MODES OF SERVICE



- INTERACTIVE
- REMOTE BATCH
- DISTRIBUTED DATA PROCESSING
- PROFESSIONAL SERVICES

expected expenditures in 1982 is projected for either USHS or professional services from the RCS vendors.

- Users reported a higher ratio of interactive usage when compared to remote batch than is represented in the vendor sample.
- Usage trends over the last two years ranged from -50% to +100%. Decreasing usage trends were all attributed to conversion of RCS applications to in-house. Conversion to minicomputers was noted in several instances.
 - Less than half of the respondents indicated a material trend in usage. The average change of those who did respond was +12.4%.
- The user sample reported a higher percentage of processing service purchases as transaction-priced or fixed-priced than was reported by the vendors. Exhibit V-5 shows the comparison.
 - The sample reflects several situations where users have very large fixed-price contracts and where users of very specialized applications have transaction pricing. With these removed, the results generally reflect the vendor data.
 - DP managers tend to be involved in contracts for fixed prices and are aware of the amount involved. This may cause the contract data to be overstated compared to the resources-used pricing.

C. RCS PRICE CHANGE AND SENSITIVITY

- Six percent of the RCS users reported receiving price decreases during the 1978-1980 period. Most users reported either no price change or an increase, as is shown in Exhibit V-6.

EXHIBIT V-5

COMPARISON OF USER-REPORTED RCS PRICING METHODS TO VENDOR SURVEY

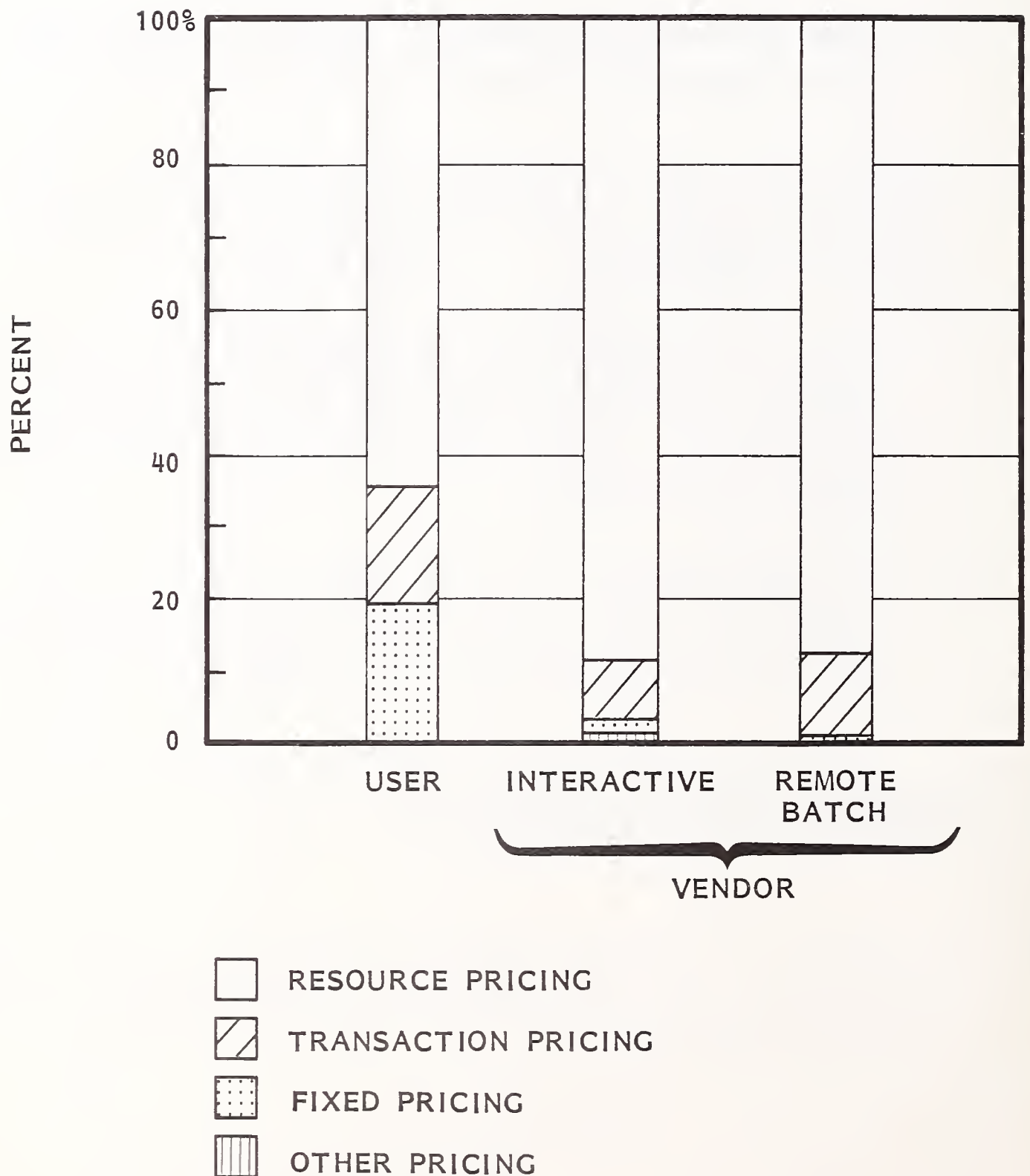
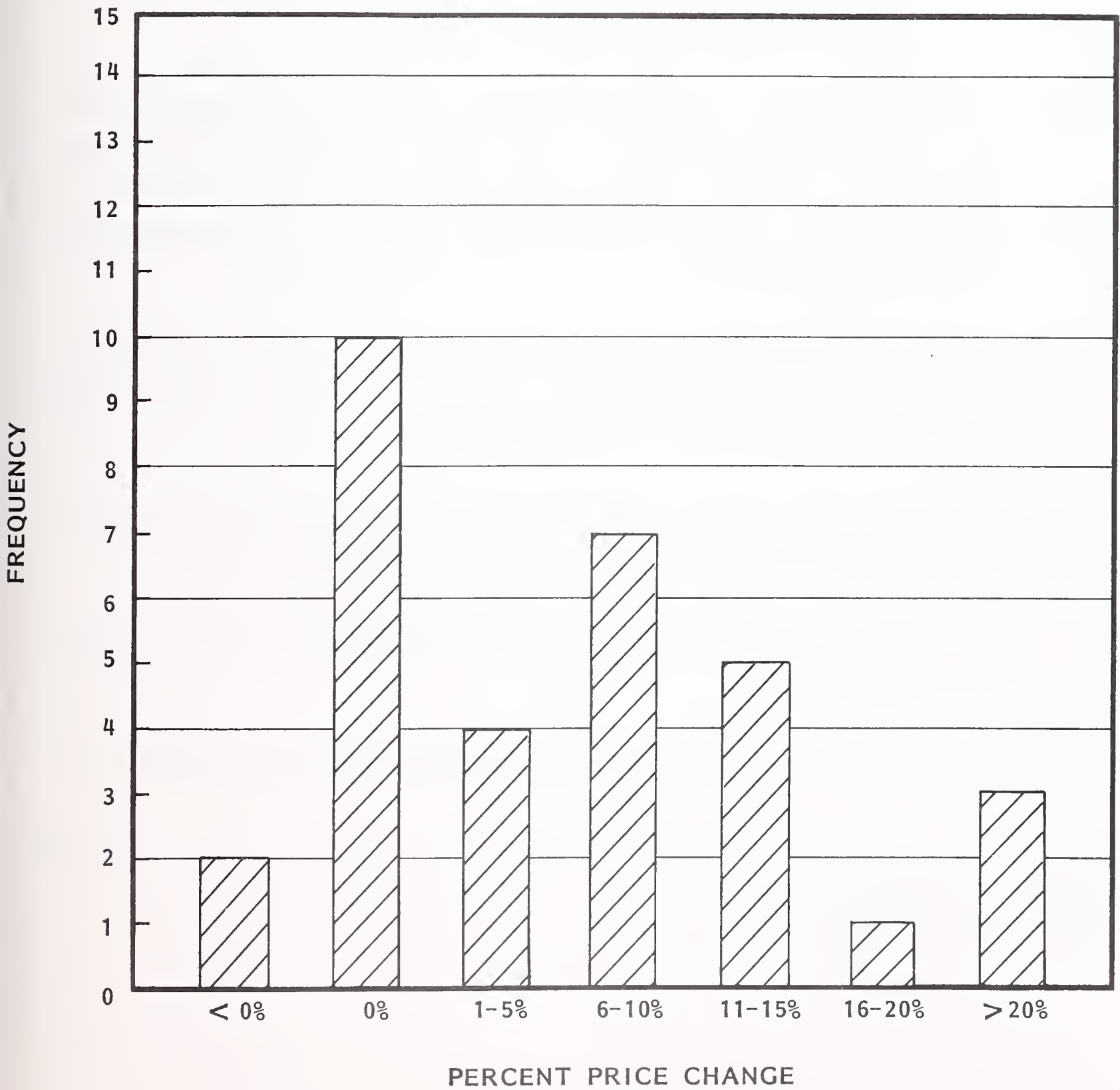


EXHIBIT V-6

FREQUENCY DISTRIBUTION OF RCS
PRICE CHANGES EXPERIENCED BY USERS,
1978-1980



- The 1978-1980 average total increase in prices reported for the two-year period (excluding the few reported decreases) is 8.5% for all modes of delivery. At 4.2% per year, this compares closely to the change reported by the vendors.
 - Vendors said that their prices increased 4.4% per year for interactive services and 4.1% per year for remote batch.
- Of those reporting price increases, the most frequent response when asked how the vendor explained the increase was that no explanation was provided. Those who did provide a justification cited increased cost and inflation. No one mentioned "enhanced service," which would be a reasonable way of justifying price increases.
- The overwhelming user response to the question of price increases was "no change." The 13% who did report action in response to a price increase reportedly switched to services provided in-house.
- When users were asked what percentage price increase would cause them to take action, the most frequently cited value was a 20-25% increase.
 - Most users stated that their continued use of RCS was "not a function of price."
 - The option of changing vendors was seen as unacceptably costly.
 - Conversion to in-house is proceeding as a matter of control rather than price.

D. RCS DISCOUNTING AND BILLING

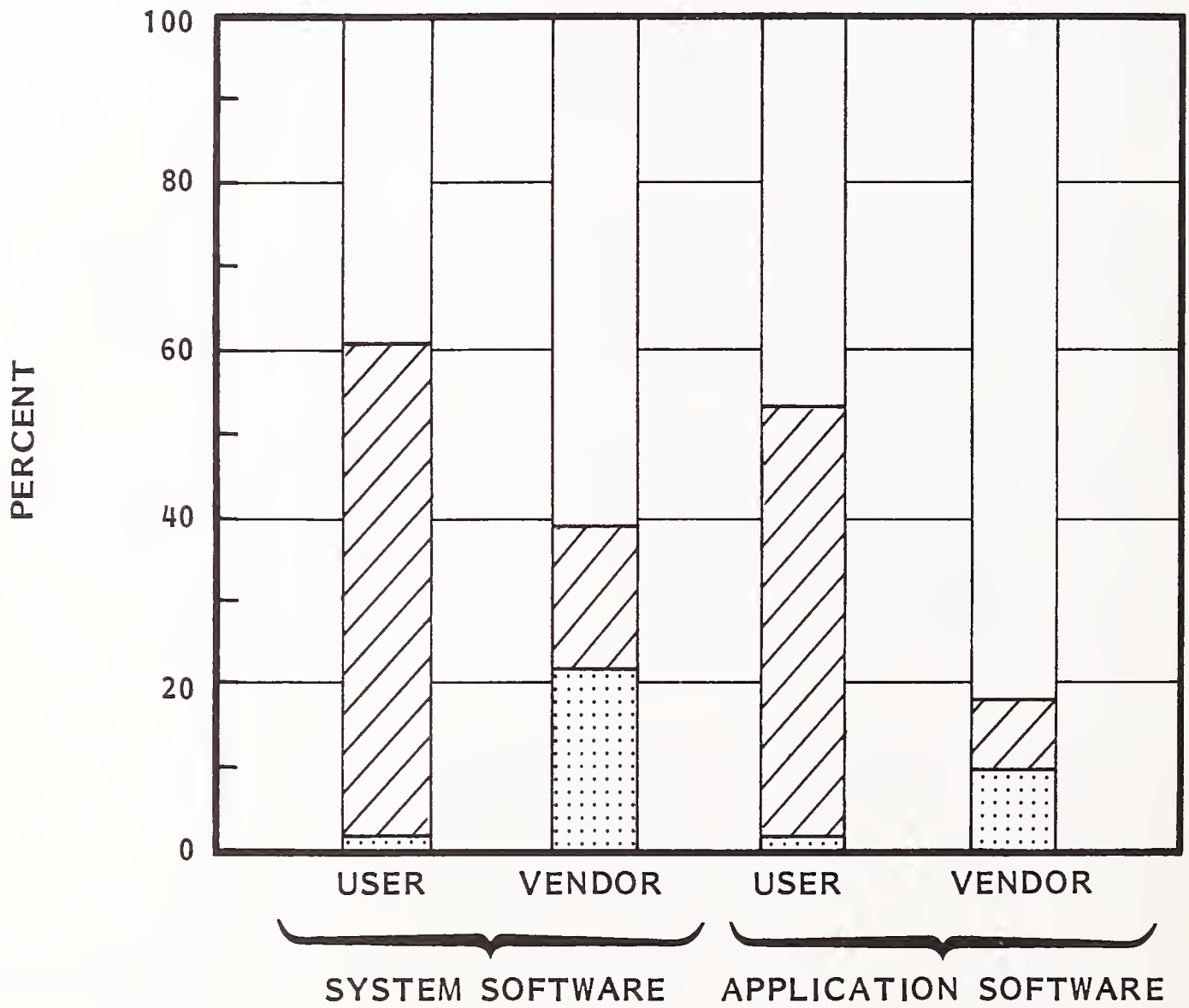
- While over 55% of the users of RCS reported total expenditures of \$10,000/month or more, only 21% reported receiving discounts. Discounts ranged from 7-50%.
- Respondents did not agree whether users of RCS understood the pricing and discount arrangements their firms had with their vendors. Furthermore, they did not feel that an understanding was very important.
 - Half the respondents indicated that prices and discounts were understood and half did not.
 - Users' ratings of the importance of understanding indicated neither high nor low importance. On a scale where five is high and one is low, users' responses averaged 3.2.
 - Special efforts at transaction pricing may provide a marketing advantage in a specific application area, but conventional pricing based on resource "meters" is, if not accepted, at least not a deterrent to usage.

E. VIEWS ON SOFTWARE PRODUCT SERVICES

- The 40 user respondents accounted for the acquisition of 621 software packages in the last two years. These were distributed between 63% system packages and 37% application packages.
- The distribution of acquisitions among the pricing methods was different from that reported by the vendors for both system and application packages, as can be seen in Exhibit V-7.

EXHIBIT V-7

COMPARISON OF USER-REPORTED SOFTWARE PRICING METHODS TO VENDOR SURVEY



- LUMP SUM
- RENTAL/FEE
- INSTALLMENT

- For example, users indicated that 39% of the system packages were acquired by lump-sum payment, as compared to 61% reported by the vendors.
- The data are heavily weighted by eight reports of 20 or more package applications during the period. Of these, 250 acquisitions were reported with the annual fee/rental pricing. If these are excluded, the results correspond closely to the vendor pricing profile.
- Many of the large acquisitions on a fee basis were users changing IBM operating systems hardware.

F. SOFTWARE PRODUCT PRICE CHANGES AND SENSITIVITY

- Software product vendors reported price increases of 12% per year for systems software and 7% per year for applications software from 1978 to the present. Users reported a much lower price increase experience. Exhibits V-8 and V-9 show the experience for systems software and applications software respectively.
 - One-third of the respondents noted no increase for systems software and half noted no change for applications software.
 - For those reporting change, the average change for the two-year (1978-1980) period was a 3.4% increase for systems software and a 5.6% increase for applications software. These changes represent increases of only 1.7-2.5% per year.
 - If the no-change responses are taken out, those reporting increases reported a 6.5% change for all software, which is still below the vendor-reported increases.

EXHIBIT V-8

FREQUENCY DISTRIBUTION OF SYSTEM SOFTWARE PRICE CHANGES
EXPERIENCED BY USERS, 1978-1980

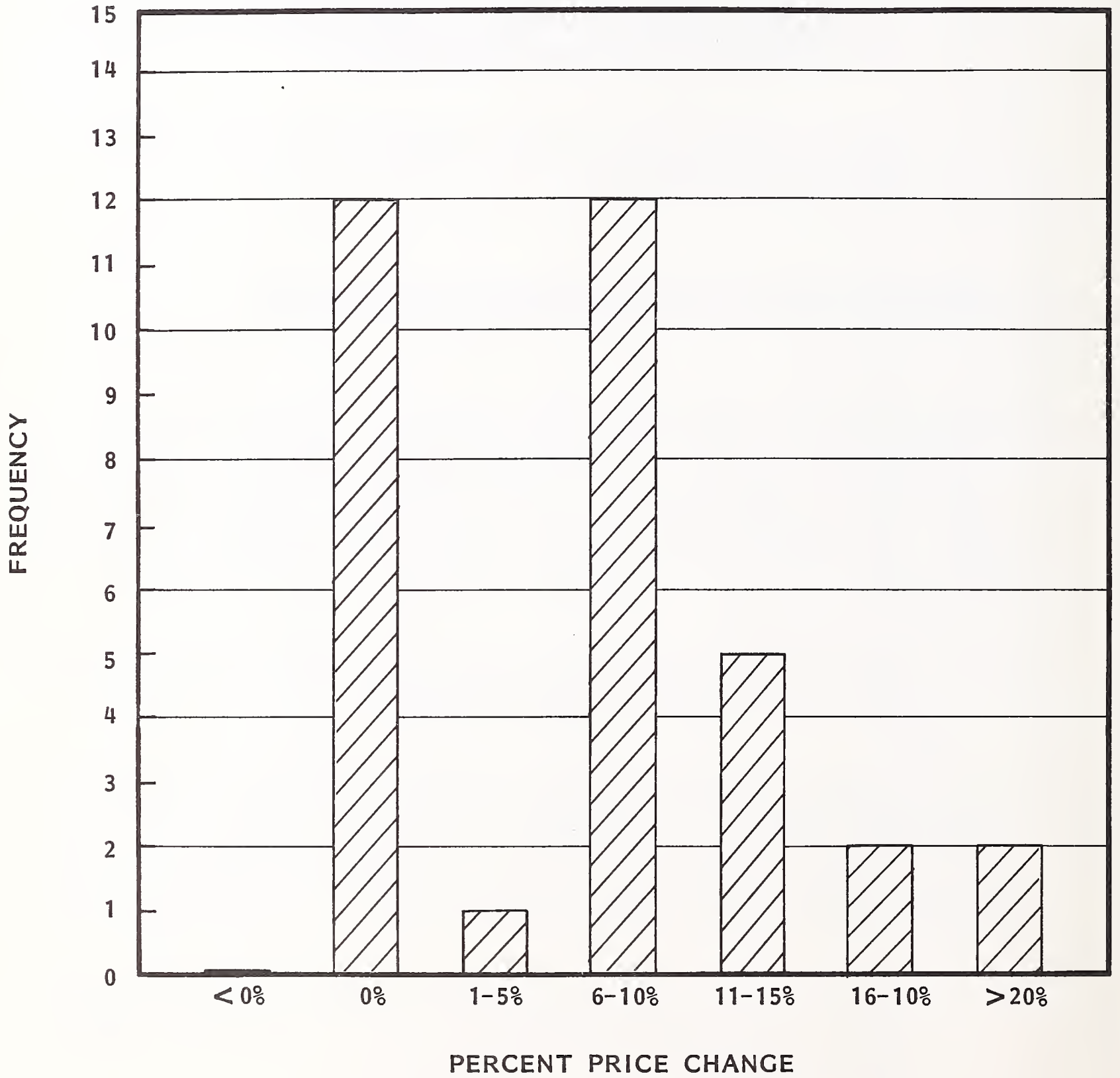
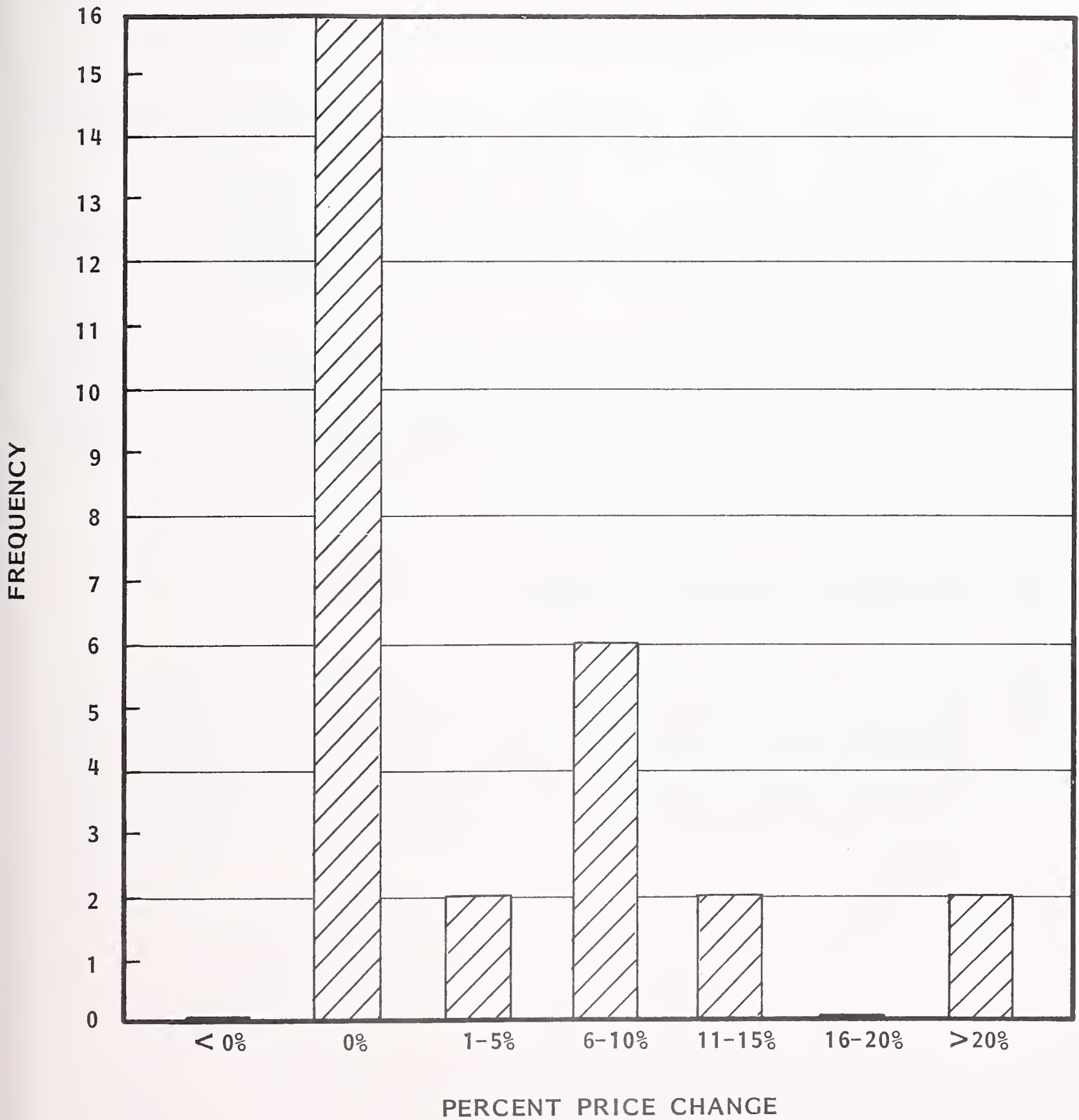


EXHIBIT V-9

FREQUENCY DISTRIBUTION FOR APPLICATION SOFTWARE PRICE CHANGES
EXPERIENCED BY USERS, 1978-1980



- Since more software is acquired on a lump-sum basis than any other way, buyers are not aware of the movement of prices except as they affect maintenance costs.
- As with the RCS increases, users either received no rationale for the price increases or were told they were necessitated by higher costs and inflation. Enhanced capabilities were mentioned only once.
- When asked their action in response to the price changes, over 80% of the users said that no changes were made nor action taken.
 - Significantly, several respondents stated that they made a decision to buy software more rapidly in order to avoid an increase.
 - To the extent that there is a response to the software price increases, users are becoming sensitive to the cost of maintenance. Comments indicated that users may not feel they are receiving value to justify maintenance increases.

G. SOFTWARE PRODUCT DISCOUNTING

- Even with the relatively large number of software product acquisitions, users reported relatively few made at a discount. Some users were not sure whether a discount had been involved. Discounting is considered part of the price rather than a separate issue and is not a differentiating factor in the buying process.

H. USER BUYING DECISION FACTORS

- Both RCS and software vendors were asked to rate (five=high, one=low) how important the factors in Exhibit V-10 were to users in their service buying decisions. Users were asked to perform the same rating. The comparison of their answers is tabulated from which several observations may be made.
 - All three groups rated "service quality" the highest.
 - Users and RCS vendors elected "service quality" as most important, but more software vendors felt the availability of software was most important.
 - The software vendors believed that the users had a much lower estimation of the "in-house capability" than the users actually reported. The average of the software vendor ratings was low (below 2), while the users' responses were clearly high (close to 4). If the vendors' response indicates a feeling that the users perceive limitations to the users' capabilities, then the actual user responses indicate an additional sales requirement for the vendors to demonstrate the need for their services.
- In order to understand the relative importance of price among various factors considered by users during vendor selection, the users were asked to rate the factors listed in Exhibits V-11 and V-12 for RCS and software products. The same question was asked in the 1978 study, and those results are included for comparison.
 - Customer support is most important from both RCS and software vendors in 1980. Application knowledge was rated more highly in the 1978 study, but still ranks well above price.
 - Vendor reputation is also very significant and is verified in the 1980 study by the high rating given to the new factor, "reference checking."

EXHIBIT V-10

COMPARISON OF DECISION FACTOR RATINGS BY USERS,
RCS VENDORS AND SOFTWARE VENDORS

DECISION FACTOR	AVERAGE USER RATING	AVERAGE RCS VENDOR RATING	AVERAGE SOFTWARE PRODUCT VENDOR RATING
SERVICE PRICE	3.5	3.8	2.6
SERVICE QUALITY	4.6	4.6	4.1
IN-HOUSE CAPABILITY	3.7	3.1	1.9
HARDWARE AVAILABILITY	3.1	3.2	2.0
SOFTWARE AVAILABILITY	3.6	3.6	3.8

CIRCLED RATINGS INDICATE FACTOR WAS SELECTED MOST IMPORTANT BY THE LARGEST PERCENTAGE OF RESPONDENTS.

EXHIBIT V-11

USER SELECTION FACTORS - RCS

FACTOR	1978 SURVEY RATING	1980 SURVEY RATING
VENDOR'S KNOWLEDGE OF APPLICATION	4.2	3.4
VENDOR'S KNOWLEDGE OF INDUSTRY	2.2	2.7
VENDOR'S REPUTATION	3.3	3.9
REFERENCE CHECKING	-	3.7
LIST PRICE	1.9	3.0
METHOD OF PAYMENT AND TERMS	0.6	2.4
DISCOUNTS AVAILABLE	-	2.9
CUSTOMER SUPPORT	3.2	4.5

CIRCLED RATING INDICATES FACTOR WAS SELECTED MOST IMPORTANT BY THE LARGEST PERCENTAGE OF RESPONDENTS.

EXHIBIT V-12

USER SELECTION FACTORS - SOFTWARE PRODUCTS

FACTOR	1978 SURVEY RATING	1980 SURVEY RATING
VENDOR'S KNOWLEDGE OF APPLICATION	4.5	4.5
VENDOR'S KNOWLEDGE OF INDUSTRY	2.4	3.1
VENDOR'S REPUTATION	3.8	4.1
REFERENCE CHECKING	-	4.0
LIST PRICE	2.1	3.2
METHOD OF PAYMENT AND TERMS	0.8	2.5
DISCOUNTS AVAILABLE	-	2.8
CUSTOMER SUPPORT	3.4	4.6

CIRCLED RATING INDICATES FACTOR WAS SELECTED MOST IMPORTANT BY THE LARGEST PERCENTAGE OF RESPONDENTS.

- Method of payment and discounting are relatively less important.
- The quality of the service and the vendors' ability to follow-through are clearly more important than price in selecting outside services from either RCS vendors or software product vendors. This 1978 finding has been reaffirmed in the 1980 study.

I. EXPECTED PRICE CHANGES

- When asked what price changes they expected in the 1981-1982 timeframe, the average user response for RCS services was a 6.6% per year increase. Vendors stated that they thought that customers expected a 3.7% increase. Vendors, at the same time, projected that they would raise prices from 3.4% per year to 9.4%, depending on the mode of service, with the average increase at nearly 5%.
 - Users are expecting increases in line with recent inflationary experiences and, vendors' comments notwithstanding, they will probably get them.
 - The average user expectation for price increases in 1978 was 6% per year. Research shows that, except for some special types of service, increases of that approximate size occurred.
- Expectations for software product increases in 1981-1982 are between 8% and 8.5% per year. Little difference is noted in expectations for systems software or applications software. The software vendors project a 10.9% increase per year.
 - Software vendors raised prices an average of 8.4% per year from 1978-1980. Users projected increases of 7.6% per year in 1978.

APPENDIX A: DEFINITIONS

APPENDIX A: DEFINITIONS

COMPUTER SERVICES

- These are services provided by vendors which perform data processing functions using vendor computers (processing services) or which assist users in performing such functions on their own computers (software products and/or professional services).
- The following are definitions of the modes of service used in this report:
 - Remote Computing Services. Provision of data processing to a user by means of terminals at the user's site(s) connected by a data communications network to the vendor's central computer. There are three submodes of RCS.
 - Interactive (timesharing) is characterized by interaction of the user with the system, primarily for problem-solving timesharing, but also for data entry and transaction processing: the user is on-line to the program/files.
 - Remote Batch is where the user hands over control of a job to the vendor's computer, which schedules job execution according to priorities and resource requirements.

- . Data Base inquiry is characterized by the retrieval of information from a vendor-maintained data base. This may be owned by the vendor or a third party.
- . User Site Hardware Services (USHS). These are offerings, typically provided by RCS vendors, which place programmable hardware on the user's site (as compared to the EDP center). USHS offers:
 - Access to a communications network.
 - Access through the network to the RCS vendor's larger computers.
 - Significant software as part of the service.
- Batch Services. This includes data processing performed at vendors' sites of user programs and/or data that are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and COM processing, are also included. Batch services include those expenditures by users who take their data to a vendor's site where a terminal connected to a remote computer is used for the actual processing.
- Facilities Management (FM). (Also referred to as "Resource Management" or "Systems Management.") The management of all or part of a user's data processing functions under a long-term contract (not less than one year). To qualify as FM, the contractor must directly plan and control as well as operate the facility provided to the user on-site through communications lines or mixed mode. Professional or contract services provided on a long-term contract where users purchase services from the vendor's staff in order to run their (the user's) computer facilities does not qualify as FM.

- Turnkey System. A combination of hardware and software integrated into a system designed to fulfill the processing requirements of an application (or applications) for a user.

PROCESSING SERVICES

- Processing services encompass facilities management, remote computing services and batch services. They are categorized by type of services bought by users as follows:
 - General Business services are processing services for applications that are common to users across industry categories. Software is provided by the vendor; this can be a complete package, a payroll package or an applications "tool," such as a budgeting model, where a user provides much of the customizing of the finished product it uses. General business processing is often repetitive and transaction-oriented.
 - Scientific and Engineering services are the processing of scientific and engineering problems for users across industries. The problems usually involve the solution of mathematical equations. Processing is generally problem solving and is non-repetitive, except in the sense that the same packages or "tools" are used to address different, but similar, problems.
 - Industry Specialty services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an applications "tool" which the user employs to produce a unique solution. Specialty applications can be either business or scientific in orientation; data base services, where the vendor supplies the data base and controls access to it (although it may be owned by a third party), are also included under this category. Examples of industry specialty applications are: seismic data processing, numerically-controlled machine tool software development, and demand deposit accounting.

- Utility services are those where the vendor provides access to a computer and/or communications network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal handling software, sorts, language compilers, data base management systems, information retrieval software, scientific library routines and other systems software.

PROFESSIONAL SERVICES

- This category is made up of services related to EDP, including system design, custom/contract programming, consulting, education and training. Services are provided on the basis of:
 - Time and Materials - The billing rate is measured in units of time, rather than actual costs.
 - Fixed Price - A firm price is agreed upon for a defined piece of work.
 - Cost Plus Fee - The billing rate depends on actual costs plus a fixed fee.

SOFTWARE PRODUCTS

- This category includes a user's purchase of applications and systems packages for use on in-house computer systems. Included are lease and purchase expenditures as well as fees for work performed by the vendor to implement and maintain the package at the user's site(s). Fees for work performed by organizations other than the package vendor are counted in professional services. There are several subcategories of software products.

- Application Products are software that perform processing to serve user functions. They consist of:
 - Cross-industry products, which are used in multiple-user industry sectors. Examples are payroll, inventory control and financial planning.
 - Industry-specialized products, which are used in a specific industry sector such as banking and finance, transportation or discrete manufacturing. Examples are demand deposit accounting and airline scheduling.

- System Products are software that enable the computer/communications system to perform basic functions. They consist of:
 - System operation products, which function during applications program execution to manage the computer system resource. Examples include operating systems, DBMS, communication monitors, emulators and spoolers.
 - System utilization products, which are used by operations personnel to utilize the computer system more effectively. Examples include performance measurement, job accounting, computer operations scheduling and utilities.
 - System implementation products, which are used to prepare applications for execution by assisting in designing, programming, testing and related functions. Examples include languages, sorts, productivity aids, data dictionaries, report writers, project control systems, program library management systems and retrieval systems.

- All expenditures and revenues addressed are "available" in that they are open for competition. "Captive" figures, which refer to expenditures by a user for

services from a subsidiary company, such as Boeing Aircraft with Boeing Computer Services (BCS), are not included. They may be referred to when examining an individual "spin-off" vendor, such as BCS.

- When any questions arise as to the proper place to count certain user expenditures, INPUT addresses them from the user viewpoint, and categorizing the expenditures according to what the user perceives it is buying.

APPENDIX B: RESPONDENT PROFILE

APPENDIX B: RESPONDENT PROFILE

A. RCS VENDOR INTERVIEWS

- The RCS vendor sample included ten of the leading U.S. RCS firms.
- The ten firms represent a cross section of the industry in terms of size and modes of delivery of their services.
- Firms with functional specialization as well as those providing general utility services are represented.

B. SOFTWARE PRODUCT VENDOR INTERVIEWS

- The software product vendor sample includes ten of the leading U.S. firms.
- Five of the selected firms were primarily system software vendors, while the other five were primarily application software vendors. Several provided products in both areas.
- The firms represent a cross section of the industry in terms of size and modes of delivery of their services.

C. BUYER INTERVIEWS

- The buyer sample consisted of forty companies. The sample includes a range from modest to heavy users of both RCS and software products.
- Buyers interviewed were the senior executives in information systems or data processing organizations who could address acquisition of RCS and software products by their firms. This is a biased population in that, while these executives are typically the buyers of software products, they may not be directly involved with the selection of RCS vendors or services.

APPENDIX C: RELATED INPUT REPORTS

APPENDIX C: RELATED INPUT REPORTS

<u>Title</u>	<u>Publication Date</u>	<u>Price</u>
Trends in Services and Software Pricing	July 1978	\$1,000
Computer Services Industry 1979 Annual Report	December 1979	\$4,000
Opportunities in Marketing Systems Software Products, 1979-1984	September 1979	\$2,000
Marketing Applications Software Products	September 1980	\$3,000
Trends in Modes of Delivery: Interactive, Remote Batch, Facilities Mangement	August 1980	\$3,500

APPENDIX D: QUESTIONNAIRES

TRENDS IN COMPUTER SERVICES PRICING

USER QUESTIONNAIRE

The purpose of this interview is to determine your recent experiences with remote computing services and software product pricing. We are interested in finding out how much vendors have raised or lowered prices to you in the last two years. We are also interested in your expectations of price changes through 1982. Your responses will be summarized with other respondents' to present an overall picture of remote computing services and software product pricing. For your participation in the study, we will provide you with a summary of the results.

1. What are your company/division sales for the most recent fiscal year?

Sales \$ _____ million

FY End _____

2. a. What are the company's expenditures for EDP during the same period?

By the DP Organization \$ _____ million

By Non-DP Departments \$ _____ million

- b. What percent of total EDP expenditures is for the purchase of outside services (including software)?

_____ %

- c. For the outside services, what percent of expenditures apply to the following categories?

Systems and Application Software _____ %

Remote Computing Services _____ %

Other _____ %

If "Other", go to next question. If not, go to question 3.

d. What "other" outside services do you acquire?

3. How many vendors does your firm deal with for outside services?

	<u>Number</u>
Remote Computing Services	_____
Systems & Application Software Products	_____

The next several questions relate to Remote Computing Services only.

4. a. In examining the Remote Computing Services your firm acquires, what percent of your RCS expenses would apply to the following delivery-mode categories?

	<u>NOW</u>	<u>1982</u>
Interactive Processing	_____ %	_____ %
Remote Batch Processing	_____ %	_____ %
DDP from Services Vendors	_____ %	_____ %
Professional Services	_____ %	_____ %
TOTAL	100%	100%

b. Looking again at the RCS modes of delivery, what has the usage trend been for the last two years?

Interactive Processing	_____ +%
Remote Batch Processing	_____ +%
DDP from Services Vendors	_____ +%
Professional Services	_____ +%

5. a. For the RCS modes of delivery noted, what price changes did you experience during the last two years (1978-present)?

Interactive Processing	_____	+%
Remote Batch Processing	_____	+%
DDP from Service Vendors	_____	+%
Professional Services	_____	+%

b. How were these changes explained to you?

	Remote Computing Services	
Price Increase		
Not Explained	_____	
Service Enhanced	_____	
Increased Vendor Cost	_____	
Inflation	_____	
Other (please list)	_____	
_____	_____	
_____	_____	
_____	_____	
Price Decrease (please list)		
_____	_____	
_____	_____	
_____	_____	

c. As a result of these price changes, what actions were taken?

	Remote Computing Services
No Change	_____
Acquired Minicomputer/ Microcomputer Solution	_____
Used In-House Solution	_____
Changed Vendor	_____
Dropped Product/Service	_____
Other (please list)	_____
_____	_____
_____	_____
_____	_____

d. What percentage price increase would cause you to take the following actions?

	Remote Computing Services
Use In-House Solution	_____
Change Vendor	_____
Drop Application	_____

6. Remote computing services are typically charged either at a fixed price per month, by transaction, or on a resource-used basis. What percent of your RCS services are charged each way?

Fixed Price Per Month	_____ %
Transaction	_____ %
Resource Used	_____ %
TOTAL	100%

7. Remote computing services vendors provide discounts from the basic list prices for certain circumstances.

a. What percentage of your remote computing services expenditures are at less than basic retail rates?

_____ %

b. What is the maximum percentage discount you enjoy?

_____ %

8. Do the end users of remote computing services understand the pricing and discount arrangements your firm has with its vendors?

Yes

No

9. Please rate how important such an understanding is to the users (5 = high, 1 = low).

_____ %

The following questions relate to software package purchasing.

10. a. Please indicate the number of software packages which were acquired during the last two years by each of the following payment arrangements:

	<u>Number of Systems Software Packages</u>	<u>Number of Application Software Packages</u>
Lump-Sum Purchase	_____	_____
Annual Fee/Rental	_____	_____
Installment Purchase	_____	_____
Other (please list)	_____	_____
_____	_____	_____
_____	_____	_____

b. If you experienced price changes for software products in the last two years, what were these price changes expressed as a percent of the pre-increase price?

	Systems Software Products	Application Software Products
Price Increase %	_____	_____
Price Decrease %	_____	_____

c. How were these changes explained to you?

Not explained	_____
Service enhanced	_____
Increased vendor cost	_____
Inflation	_____
Other (please list)	_____
_____	_____
_____	_____

d. As a result of these price changes, what actions were taken?

No change	_____
Developed needed software in-house	_____
Selected other software vendor	_____
Acquired software from hardware vendor	_____
Acquired mini/micro for application	_____
Dropped application	_____
Other (please list)	_____
_____	_____
_____	_____

11. Software package vendors provide discounts from basic retail rates for certain circumstances.
- a. How many of the software package purchases during the last two years were at less than basic retail prices?
- _____ Number
- b. What percentage of your software package expenditures does this represent?
- _____ %
- c. What was the maximum percentage discount you enjoyed?
- _____ %

12. Technology and other factors will affect your outside software and service buying decisions during the next two years.
- a. Please rate the following factors in terms of their impact on you (5 = high, 1 = low):
- | | |
|-----------------------|-------|
| Service Price | _____ |
| Service Quality | _____ |
| In-House Capability | _____ |
| Hardware Availability | _____ |
| Software Availability | _____ |

- b. Which is the most important factor?
- _____
- _____
- _____
- _____
- _____

13. Assuming you do decide to purchase outside services during the next two years:

a. Please rate the following factors in terms of importance in selecting a vendor (5 = high, 1 = low):

	<u>Remote Computing Services</u>	<u>Most Important</u>	<u>Software Products</u>	<u>Most Important</u>
Vendor's Knowledge of Application	_____	_____	_____	_____
Vendor's Knowledge of Your Industry	_____	_____	_____	_____
Vendor's Reputation	_____	_____	_____	_____
Reference Checking	_____	_____	_____	_____
List Price	_____	_____	_____	_____
Discounts Available	_____	_____	_____	_____
Method of Payment Available (e.g., fixed price/month, usage, etc.)	_____	_____	_____	_____
Customer Support	_____	_____	_____	_____

b. Which factor is most important?

c. In the preceding list of eight selection factors, how would you rank price and discount for remote computing services and software products purchases (1 = top, 8 = bottom)?

	<u>Remote Computing Services</u>	<u>Software Products</u>
Retail Price	_____	_____
Discounts Available	_____	_____

d. What other significant factors would you add to the list?

e. How would these compare to price?

More important _____

About the Same _____

Less Important _____

14. What percentage changes in price (+) do you expect from your service vendors for their products?

	<u>Balance of 1980</u>	<u>1981-82</u>
Remote Computing Services	_____ %	_____ %
Systems Software Products	_____ %	_____ %
Application Software Products	_____ %	_____ %

TRENDS IN COMPUTER SERVICES PRICING

RCS VENDOR QUESTIONNAIRE

The purpose of this interview is to determine trends in pricing of remote computing services through 1982. Your responses to this questionnaire will be kept confidential. We will aggregate all responses together for analysis, but will not divulge individual answers. For your participation, we will send you a summary of the results of the study.

1. What percentage of your company's remote computing services revenue is derived from the following delivery modes?

	<u>1980</u>	<u>1982</u>
Interactive	_____ %	_____ %
Remote Batch	_____ %	_____ %
DDP from Services Vendors	_____ %	_____ %
Professional Services	_____ %	_____ %
Other	_____ %	_____ %
TOTAL	100 %	100 %

2. a. For interactive and remote batch services, what percentage are priced using the following methods?

	<u>Fixed Price</u> <u>Per Month</u>	<u>Transaction</u>	<u>Resource</u>	<u>Other</u>
Interactive	_____ %	_____ %	_____ %	_____ %
Remote Batch	_____ %	_____ %	_____ %	_____ %

If "Other," go to next question. If not, go to question 2.c.

- b. Please describe the "other" pricing method referred to in the previous question.

- c. For the "resource" pricing component of interactive and remote batch remote computing services, please rate the following pricing parameters in terms of their contribution to total remote computing services revenue (5=greatest contribution, 1=least contribution).

	<u>Interactive</u>	<u>Remote Batch</u>
Connect (communications)	_____	_____
Computer	_____	_____
Storage	_____	_____
Peripheral Usage (e.g., tape, printing, plotting)	_____	_____

- d. Considering modes of delivery of services, what pricing changes have you made in the last two years, and what changes do you expect? We are interested in percent change, up or down.

	<u>1978-Present</u>	<u>Balance of 1980</u>	<u>1981-82</u>
Interactive	_____ %	_____ %	_____ %
Remote Batch	_____ %	_____ %	_____ %
DDP from Services Vendors	_____ %	_____ %	_____ %
Professional Services	_____ %	_____ %	_____ %

- e. Does your remote computing organization have a separate group which provides software development professional services to clients?

Yes

No

If yes, go to the next question. If no, go to question 2.g.

f. For these professional services, what percent of the total billings are priced?

No Charge	_____	%
Hourly Rate Plus Resources	_____	%
Fixed Price	_____	%
Other	_____	%

If "other," please describe:

g. For professional services provided by staff of local sales/support offices, what percent of the services are priced?

No Charge	_____	%
Hourly Rate Plus Resources	_____	%
Fixed Price	_____	%
None Provided	_____	%
Other	_____	%

If "other," please describe:

h. Do your published price schedules provide rates for systems analysts and/or programming staff?

Yes

No

i. What are the minimum and maximum rates for the professional services staff?

	<u>Minimum</u>	<u>Maximum</u>
Analysts	\$ _____	\$ _____
Programmers	\$ _____	\$ _____

3. a. What discounting from basic list prices do you provide, and on what basis?

	<u>Minimum Discount</u>	<u>Maximum Discount</u>
Volume	_____	_____
Term Contract	_____	_____
Usage Pattern (e.g., non-prime usage, data entry mode, etc.)	_____	_____
Government Sector	_____	_____
Education Sector	_____	_____
Other	_____	_____

- b. Please describe the "other" discounting basis noted in the previous question:

- c. What trends do you foresee in discounting policies within the next two years?

	<u>Trend Direction (+ or -)</u>	<u>% Change</u>
Volume	_____	_____ %
Term Contract	_____	_____ %
Usage Pattern	_____	_____ %
Government Sector	_____	_____ %
Education Sector	_____	_____ %
Other	_____	_____ %

- d. What percent of your remote computing customers buy services at other than the basic retail rates quoted in the pricing schedule?

1978-Present _____ %

Balance of 1980 _____ %

1981-82 _____ %

e. What percentage of your total remote computing revenue do these "discounted" customers represent?

- 80 - 100% _____
- 60 - 80% _____
- 40 - 60% _____
- 20 - 40% _____
- 0 - 20% _____

4. a. What average percentage sales increase have you had over the last two years, and what are you projecting for the next two years?

<u>1978-Present</u>	<u>Present-1982</u>
_____ %	_____ %

b. What portion of the sales increases would you attribute to price increases?

<u>1978-Present</u>	<u>Present-1982</u>
_____ %	_____ %

c. As a result of past price increases, have you lost any customers?

- Yes
- No

If yes, what percentage of:

Customer Base	_____ %
Sales Volume	_____ %

If yes, go to the next question. If no, go to question 5.

d. What percent were lost to the following alternatives?

- In-House DP _____ %
- Other Service Vendor _____ %
- Acquired Own Hardware _____ %
- Dropped Application _____ %
- Other _____ %

5. There are a number of factors which contribute to the price of services.

a. Rate the following factors in terms of their importance to your pricing policies (5=high, 1=low):

- Hardware Cost _____
- Personnel Cost _____
- Communications Cost _____
- Sales/Marketing Cost _____
- Profit Margin _____

b. Which is the most important factor?

6. a. For the next two years, please rate how the following factors will impact your pricing policies (5=high, 1=low):

- Federal Government Actions _____
- General Economic Conditions _____
- Competition from Service Vendors _____
- Competition from Hardware Vendors _____
- Competition from In-House DP _____
- Availability of New Technology _____

b. Which is the most important factor?

7. There are a variety of strategies which firms pursue in establishing prices.

a. Please rate the following strategic objectives in your price procedure (5=high, 1=low):

- Perceived Low Price _____
- Perceived High Price _____
- Meet Competition Prices _____
- Cover Costs _____
- "What the Market Will Bear" _____
- Value Added _____

b. Which is the most important strategic objective?

8. What percentage changes do you believe your clients expect in prices for your services?

	<u>Balance of 1980</u>	<u>1981-82</u>
Percentage Change (up or down)	_____ %	_____ %

9. How would you rate your customer understanding of your billing parameters and rates (5=high, 1=low)?

_____ Rating

10. Technology and other factors will affect your client's buying during the coming two-year period.

a. Please rate the following factors as you believe your clients will see them (5=high, 1=low):

Service Price _____

Service Quality (e.g., support, reliability, etc.) _____

In-House DP Option _____

Hardware Availability _____

Software Availability _____

b. Which is the most important factor?

TRENDS IN COMPUTER SERVICES PRICING
SOFTWARE VENDOR QUESTIONNAIRE

The purpose of this interview is to determine trends in pricing of software products through 1982. Your responses to this questionnaire will be kept confidential. We will aggregate all responses together for analysis, but will not divulge individual answers. For your participation, we will send you a summary of the results of the study.

1. a. What percentage of your company's software product revenue is derived from the following categories?

Systems Packages _____ %

Application Packages _____ %

- b. What do you expect those percentages to be in 1982?

Systems Packages _____ %

Application Packages _____ %

2. a. Within the two categories of software products, what percentage of your products are priced using the following methods?

	<u>Lump Sum Purchase</u>	<u>Annual Fee/ Rental</u>	<u>Installment Purchase</u>	<u>Other</u>
Systems Packages	_____ %	_____ %	_____ %	_____ %
Application Packages	_____ %	_____ %	_____ %	_____ %

If "other," go to the next question. If not, go to question 3.

- b. Please describe the "other" pricing method referred to in the previous question.

3. a. For each of the categories of software products, what pricing changes (+) have you made from the beginning of 1978 to the present?

Systems Packages: _____

Application Packages: _____

- b. What changes do you plan for the balance of 1980?

Systems Packages: _____

Application Packages: _____

- c. What changes do you plan for 1981-82?

Systems Packages: _____

Application Packages: _____

4. a. What percentage of your company's software product revenue is derived from the following phases of your relationship with your customers?

Installation _____ %

Training _____ %

Maintenance _____ %

- b. What do you expect those percentages to be in 1982?

Installation _____ %

Training _____ %

Maintenance _____ %

5. a. How do you charge for the phases of service noted in the preceding question?

	<u>No Charge</u>	<u>Included in Purchase</u>	<u>Fixed Price</u>	<u>Additional</u>	<u>Hourly Rate + Expenses</u>	<u>Other</u>
Installation	_____	_____	_____	_____	_____	_____
Training	_____	_____	_____	_____	_____	_____
Maintenance	_____	_____	_____	_____	_____	_____

If "other," go to the next question. If not, go to question 6.

b. Please describe the "other" method for charging referred to in the preceding question.

6. For each of the phases of your client relationship:

a. What pricing changes (+) have you made from the beginning of 1978 to the present?

Installation: _____

Training: _____

Maintenance: _____

b. What changes do you plan for the balance of 1980?

Installation: _____

Training: _____

Maintenance: _____

c. What changes do you plan for 1981-82?

Installation: _____

Training: _____

Maintenance: _____

7. Does your software products organization have a separate group which provides customized professional services to clients?

Yes

No

If yes, go to the next question. If no, go to question 9.

8. For these professional services, what percent of the total billings are priced:

	<u>No</u> <u>Charge</u>	<u>Included in</u> <u>Purchase</u>	<u>Fixed Additional</u> <u>Price</u>	<u>Hourly Rate</u> <u>+ Expenses</u>	<u>Other</u>
Systems Packages	_____ %	_____ %	_____ %	_____ %	_____ %
Application Packages	_____ %	_____ %	_____ %	_____ %	_____ %

If "other," please describe:

9. Do your published price schedules provide rates for systems analysts and/or programming staff?

Yes

No

10. What are the minimum and maximum rates for these professional services staff?

	<u>Minimum</u>	<u>Maximum</u>
Analyst	\$ _____	\$ _____
Programmer	\$ _____	\$ _____

11. a. What discounting from basic list prices do you provide, and on what basis?

<u>Basis</u>	<u>Minimum Discount</u>	<u>Maximum Discount</u>
Volume (e.g., number of installations)	_____	_____
Term Contract	_____	_____
Optional Modules	_____	_____
Government Sector	_____	_____
Education Sector	_____	_____
Other	_____	_____

b. Please describe the "other" discounting basis referred to in the preceding question:

c. What trends do you foresee in discounting policies within the next two years?

<u>Basis</u>	<u>Trend Direction</u>	<u>% Change</u>
Volume	_____	_____ %
Term Contract	_____	_____ %
Usage Pattern	_____	_____ %
Government Sector	_____	_____ %
Education Sector	_____	_____ %
Other	_____	_____ %

d. What percent of your software product customers buy your products at other than the basic list prices quoted in the pricing schedule?

_____ %

What do you expect in the next two years?

_____ %

e. What percentage of your total software product revenue do these "discounted" customers represent?

80 - 100% _____

60 - 80% _____

40 - 60% _____

20 - 40% _____

0 - 20% _____

12. a. What average percentage sales increase have you had over the last two years, and what are you projecting in the next two years?

1978 - Present _____ %

Present - 1982 _____ %

b. What portion of these increases would you attribute to price increases?

1978 - Present _____ %

Present - 1982 _____ %

13. There are a number of cost factors which contribute to the price of software products.

a. Rate the following factors in terms of their importance to your pricing policies (5=high, 1=low):

- Hardware Cost _____
- Personnel Cost _____
- Communication Cost _____
- Sales/Marketing Cost _____
- Profit Margin _____

b. Which is the most important factor?

14. a. For the next two years, please rate how the following factors will impact your pricing policies (5=high, 1=low):

- Federal Government Action _____
- General Economic Conditions _____
- Competition from Service Vendors _____
- Competition from Hardware Vendors _____
- Competition from In-House DP _____
- Availability of New Technology _____

b. Which is the most important factor?

15. There are a variety of strategies which firms pursue in establishing prices.

a. Please rate the following strategic objectives as they relate to your pricing procedures (5=high, 1=low):

- Perceived Low Price _____
- Perceived High Price _____
- Meet Competition Prices _____
- Cover Costs _____
- "What the Market Will Bear" _____

b. Which is the most important strategic objective?

16. What percentage change do you believe your clients expect in prices for your products?

	<u>Balance of 1980</u>	<u>1981-82</u>
Percentage Change (up or down)	_____ %	_____ %

17. Technology and other factors will affect your clients' buying during the coming two years.

a. Please rate the following factors as you believe your clients will see them (5=high, 1=low):

- Software Product Price _____
- Service Quality _____
- In-House DP Development Option _____
- Hardware Availability _____
- Software Availability _____

b. Which is the most important factor?

18. Considering in-house development further:

a. Rate the following factors in terms of their importance from the point of view of the client (5=high, 1=low):

- Greater In-House Sophistication _____
- Better In-House Developed Software _____
- Better Software from Hardware Vendors _____
- Distributed Processing Requirements _____
- Tied to Other In-House Systems _____
- Cost _____

b. Which is the most important factor?

