



ASSOCIATION OF DATA PROCESSING
SERVICES ORGANIZATIONS

COMPUTER SERVICES INDUSTRY
1979

INPUT

ABOUT INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

The company carries out continuous and in-depth research. Working closely with clients on important issues, INPUT's staff analyze and interpret the research data, then develop recommendations and innovative ideas to meet clients' needs. Clients receive reports, presentations, access to data on which analyses are based, and continuous consulting.

Professional staff have, on average, nearly 20 years experience in their areas of specialization. Most have held senior management positions in marketing, or planning. This enables INPUT to supply practical solutions to complex business problems.

Formed in 1974, INPUT is one of the leading international computer services companies. Clients include over 100 of the largest and most technologically advanced companies.

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ABOUT ADAPSO

The Association of Data Processing Service Organizations (ADAPSO), founded in 1961, is a non-profit business organization that is committed to meet the needs of the multi-billion dollar computer services industry. Members represent all phases of the industry - data centers, software services and products, timesharing and facility management companies. Corporate members range from larger publicly-owned companies, chains and conglomerates with both national and international operations to smaller companies serving local markets or specialty segments of the industry.

The ADAPSO program appeals to both large and small companies, and includes the full range of educational, legislative, informational and management programs that can be expected from an aggressive association.

ADAPSO's programs are designed to protect the computer services industry from unlawful competition and unwise government regulations and legislation -while promoting industry standards and consumer protection. As the industry grows, it is essential to identifying the industry as being professional and responsible to the financial health and stability, and to support a vigorous, growing computer services industry.

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A D A P S O

AUTHOR

Thirteenth Annual Survey of the

TITLE

Computer Services Industry, 1979

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ASSOCIATION OF DATA PROCESSING
SERVICES ORGANIZATIONS, INC.
(ADAPSO)

THIRTEENTH ANNUAL SURVEY
OF
THE COMPUTER SERVICES INDUSTRY

Based On Data For The Year 1978

Published JULY 1979



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Dear Reader:

ADAPSO and INPUT are pleased to present the 13th Annual Report on the Computer Services Industry.

The principal objective of this report is to be the authoritative statement of computer services industry performance with regard to revenues and profit margins.

The report confirms that 1978 was another good year for revenue growth and profitability. Industry revenues advanced 19% to \$7.5 billion, produced entirely in the available U.S. market. Profit margins remained constant at 11% of revenues. The relatively high level of investment in research and product development continued with an R&D investment of \$525 million for the year, or 7% of total industry revenues.

This year, for the first time, we have incorporated selected balance sheet information and an analysis of the impact of acquisitions and inflation on the three segments of the computer services industry. This is in addition to continued analysis of product and industry markets, and expenditure patterns.

This report will be of primary interest to computer services company management, financial analysts, investment managers, research firms, the media, shareholders, employees of computer services companies, and others who have a desire to see a quantification of the performance of the industry.

Jerome A. Chessler
Chairman, ADAPSO Research &
Statistics Committee

1979 ANNUAL ADAPSO REPORT
THE COMPUTER SERVICES INDUSTRY

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I INTRODUCTION

I INTRODUCTION

- This annual report of the computer services industry has been prepared by INPUT under a commission granted by the Association of Data Processing Service Organizations (ADAPSO). It is designed for use by industry management and financial analysts.
 - ADAPSO consists of over 370 member companies and represents the interests of the computer services industry in areas such as industry statistics, legal representation, and communications to the financial community.
 - INPUT is a leading business consulting and market research company which specializes in the information processing industry. INPUT has studied the computer services industry in-depth since 1974 and maintains several ongoing consulting programs for the industry.
- This thirteenth report differs from earlier reports in several important respects:
 - Growth is analyzed in greater detail, including impact of acquisitions and inflation.
 - New product categories are included for software products and professional services to provide more insight into these areas.

- Balance sheet data ^{and} is covered for the first time.
- More detailed expenditure data ^{are} is presented.
- The computer services industry adds value to computer hardware and communications resources to serve the needs of the end user. The economic role of this complementary services industry is to add value to the computer hardware utility by integrating into the service people, expertise, products, distribution networks, and education.
- This report excludes the computer services revenues of hardware manufacturers who offer services solely to support the use of the hardware manufactured by them.
 - Definitions of terms used in the report are incorporated where appropriate in the text. Also, a list of definitions is included in the Appendix.
 - A copy of the survey questionnaire is contained at the end of the report.
 - Revenues are segmented by type of company - processing services, software products or professional services - based on the dominant source of revenues for each company. This facilitates comparison between types of companies on parameters such as expenditures, industry sector emphasis, and type of service offered. An exception is in the section dealing with total industry markets and types of service (Chapter III), where weighted averages across company types were used.
 - Profits analyzed in the report are presented as before taxes and extraordinary items.
 - Revenues are usually presented as available U.S. revenues unless specifically labelled otherwise.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. COMPUTER SERVICES INDUSTRY 1978 PERFORMANCE

I. MARKET SIZE AND GROWTH

- 1978 was another year of solid revenue and profit growth for the computer services industry in the United States, as verified by the results of the 1979 survey carried out by INPUT on behalf of ADAPSO.
- Total available U.S. computer services revenues in 1978 were approximately \$7.5 billion as determined by this study and shown in Exhibit II-1.
- Companies participating in the 1979 survey had revenues totaling \$3.44 billion, equivalent to 45% of the total; this exceeds the 37% coverage obtained in the 1978 survey, and represents the highest percentage revenue coverage of any ADAPSO survey.
- The available U.S. revenue growth for 1978 versus 1977 is estimated to have been 19%, the same rate achieved in 1977 versus 1976 as detailed in last year's ADAPSO Annual Report of the Computer Services Industry. Twenty-two major publicly owned computer services companies tabulated in Section VII of this report actually achieved a 26% revenue growth increase.

EXHIBIT II-1

U.S. COMPUTER SERVICES INDUSTRY
1978 PERFORMANCE SUMMARY

TYPE OF COMPANY	NUMBER OF COMPANIES	1978 (1) AVAILABLE U.S. REVENUES (\$ MILLION)	ACTUAL (2) INDUSTRY GROWTH 1977-1978	REPORTED (3) AVERAGE GROWTH 1977-1978	GROSS PROFIT - 1978		
					1978 (4) PROFIT (\$ MILLION)	ACTUAL INDUSTRY PROFIT GROWTH 1977-1978 (2)	1978 PROFIT MARGIN
PROCESSING SERVICES	2,100	\$5,580	18%	22%	\$700	32%	13%
SOFTWARE PRODUCTS	750	760	27	38	85	6	11
PROFESSIONAL SERVICES	550	1,200	20	25	70	(30)	6
TOTAL	3,400	\$7,500	19%	23%	\$850	20%	11%

1. BASED ON 1978 RESPONDENTS FACTORED UP TO REPRESENT THE TOTAL INDUSTRY (ROUNDED).
2. COMPARED TO MARKET SIZE AS REPORTED IN 1978 ADAPSO COMPUTER SCIENCES INDUSTRY ANNUAL REPORT PUBLISHED IN JULY 1977.
3. BASED ON WEIGHTED AVERAGES OF U.S. AVAILABLE REVENUES OF 1978 SURVEY RESPONDENTS.
4. CALCULATED BY MULTIPLYING 1978 PROFIT MARGIN BY 1978 AVAILABLE U.S. REVENUES (ROUNDED).

- The growth rates in Exhibit II-1 are weighted averages from respondents, and are calculated from actual 1977 and 1978 revenues. They are higher than the industry average growth of 19% because:
 - Revenue from acquisitions is included in the annual figures even though the acquisition does not create additional industry revenue. Acquisitions are an increasingly important factor; 1978 acquisitions accounted for 3.6% of 1978 respondent revenues, compared to a corresponding 1977 figure of 1.4%.
 - A high proportion of leading companies are included among the respondents. These companies expect to increase their market share at the expense of other companies in the industry.
 - For these reasons the actual industry growth for 1977-1978 is estimated at 19% versus the 23% growth reported by the survey respondents.
- Profit totals in Exhibit II-1 are based on the 1979 survey. As such, they are conservative in that the profits reported by 22 leading public companies averaged 13% before tax compared to the 11% reported in the survey.
- In previous surveys respondents were asked to estimate their annual growth and profits in terms of a percentage figure. In the 1979 survey actual revenue and profit figures were used for 1977 and 1978, and the potential for bias through optimism was eliminated. The 1979 survey growth of 23% is therefore based on actual revenues attained.
- The total market size and growth were estimated from the survey results as follows:
 - For company size categories under \$10 million, the total was projected from survey responses. Based on statistical analysis, the market for these companies is accurate to within $\pm 11\%$ and the growth rate to between $\pm 5\%$.

- For company size categories over \$10 million the companies were individually identified and their revenues and growth were examined. Data from the survey, publicly available data and data from INPUT's files were included. The revenues for these companies is considered accurate within $\pm 10\%$ and the growth rate to between $\pm 3\%$.

2. FORECASTS OF SURVEY RESPONDENTS

- INPUT's forecast of computer services industry growth calculated from separate research in late 1978 is for an average 16% growth through 1983.
 - Applying a 16% growth rate to the \$7.5 billion 1978 U.S. available revenues yields a 1983 market size of \$15.8 billion.
 - Both the INPUT forecast and ADAPSO survey results agree on a 1977-1978 revenue growth of 19%.
 - INPUT's five-year forecast at 16% is conservative relative to the respondents to the 1979 ADAPSO survey who forecast a five-year growth of 23%, reflecting their aggressiveness and optimism.
- In addition to five year forecasts, respondents provided 1977-1978 and 1978-1979 forecasts. Results are tabulated in Exhibit II-2.
 - Processing services companies equalled their forecast for 1978, while software products companies and professional services companies fell short of their forecasts; however, the latter two forecasts were significantly higher than the processing services companies forecast and the growth of both software products companies and professional services companies exceeded the industry average.
 - The 1979 forecast at 22% and the five year forecast at 23% support the short and long term positive outlook of responding companies.

EXHIBIT II-2

COMPUTER SERVICES COMPANIES' ACTUAL GROWTH AND FORECASTS
OF TOTAL AVAILABLE U.S. REVENUES

TYPE OF COMPANY	RESPONDENTS TO SURVEY			
	FORECAST 1977 TO 1978	ACTUAL* 1977 TO 1978	FORECAST 1978 TO 1979	FORECAST FOR NEXT 5 YEARS
PROCESSING SERVICES	22%	22%	19%	21%
SOFTWARE PRODUCTS	48	38	37	32
PROFESSIONAL SERVICES	31	25	32	27
WEIGHTED AVERAGE ALL COMPANIES	22%	23%	22%	23%

*ACTUAL REPORTED GROWTH INCLUDES SOURCES OTHER THAN INCREMENTAL U.S. AVAILABLE REVENUES, PARTICULARLY ACQUISITIONS. THEREFORE, THIS GROWTH RATE IS OVERSTATED WHEN COMPARED TO THE ACTUAL 1977 TO 1978 GROWTH ESTIMATED TO HAVE BEEN 19% FOR THE TOTAL TOTAL INDUSTRY.

- Processing services companies forecast the lowest relative growth; however, the large existing revenue size of this category of companies results in this category providing almost 70% of total industry growth.
- Profitability of respondents is tabulated in Exhibit II-3.
 - Processing companies, particularly those with revenues over \$25 million, had a significant profit gain.
 - Overall, the profitability of the industry equalled 1977 levels.

B. KEY BALANCE SHEET DATA

- For the first time, the ADAPSO Survey gathered data on selected assets and liabilities of computer services companies. Summary results are presented in Exhibit II-4. Individual asset and liability data is presented in the body of the report.
 - Receivables increased, reflecting the growth in revenues. Trade receivables turnover increased only 3%, indicating that the industry is maintaining a constant receivables period.
 - Long-term debt grew at a rate significantly less than growth in net worth, indicating leverage possibilities for borrowing to fund new growth.
- Ratios calculated from the data reveal solid financial strength.
 - Current ratios increased by 12% to an average 1978 level of 2.9.
 - Since the ratios are calculated on a straight average, rather than weighted average basis, the individual ratios of small companies, which

EXHIBIT II-3

COMPUTER SERVICES COMPANIES' WEIGHTED AVERAGE
PROFITS BEFORE TAXES AS A PERCENT OF
1978 TOTAL REVENUES

TYPE OF COMPANY \ PROFIT-ABILITY	SIZE IN TOTAL 1978 ANNUAL REVENUES (\$ MILLION)			WEIGHTED AVERAGE
	LESS THAN \$2M	\$2-10M	GREATER THAN \$10M	
PROCESSING SERVICES	11%	13%	14% ⁽¹⁾	13%
SOFTWARE PRODUCTS	12	11	10	11
PROFESSIONAL SERVICES	6	8	5	6
WEIGHTED AVERAGE	11%	12%	11%	11%

(1) PROCESSING SERVICES COMPANIES IN THIS CATEGORY REPORTED PROFITS ARE AS FOLLOWS:

COMPANIES WITH REVENUES OF \$10-25 MILLION, 11%
COMPANIES WITH REVENUES OVER \$25 MILLION, 14%

EXHIBIT II-4

KEY FINANCIAL RATIOS OF
RESPONDING COMPUTER SERVICES COMPANIES

TYPE OF COMPANY	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(\$ THOUSAND)		
PROCESSING COMPANIES				
CURRENT RATIO	72	2.4	2.4	- %
AFTER TAX RETURN ON AVERAGE EQUITY	65	-	30%	-
TOTAL DEBT OVER TOTAL CAPITAL	47	0.442	0.449	2
LONG TERM DEBT OVER NET WORTH	50	1.22	0.81	(66)
TRADE RECEIVABLES TURNOVER (DAYS)	83	53	56	6
SOFTWARE COMPANIES				
CURRENT RATIO	16	3.0	4.6	53
AFTER TAX RETURN ON AVERAGE EQUITY	14	-	64%	-
TOTAL DEBT OVER TOTAL CAPITAL	5	0.312	0.241	(23)
LONG TERM DEBT OVER NET WORTH	8	-	-	-
TRADE RECEIVABLES TURNOVER (DAYS)	18	56	73	30
PROFESSIONAL SERVICES				
CURRENT RATIO	20	2.7	3.3	22
AFTER TAX RETURN ON AVERAGE EQUITY	19	-	34%	-
TOTAL DEBT OVER TOTAL CAPITAL	8	0.33	0.37	12
LONG TERM DEBT OVER NET WORTH	9	0.34	0.49	44
TRADE RECEIV. TURNOVER	26	74	69	(7)
<u>TOTAL</u>				
CURRENT RATIO	108	2.6	2.9	12
AFTER TAX RETURN ON AV. EQ.	98	-	37%	-
TOTAL DEBT OVER TOTAL CAP.	60	0.417	0.420	1
LONG TERM DEBT OVER NET WTH.	67	1.6	0.7	(44)
TRADE RECEIVABLES TURNOVER	127	64	66	3

NOTE: ABOVE AVERAGES ARE STRAIGHT AVERAGES, NOT WEIGHTED.

are often atypical, can have a major effect; this is the case for long-term debt as a percent of net worth which is overstated because of the impact of some small companies with low net worth. For example, the ratio for companies with revenues over \$10 million was 0.51 or less. Details are presented in the main body of the report.

- Return on average stockholders investment was a straight average of 37%. For the same reason given in the preceding paragraph, the weighted average is lower with a 1978 value of 20%.

C. MINI/MICRO COMPUTER IMPACT ON THE COMPUTER SERVICES INDUSTRY

- As determined in the 1978 ADAPSO survey and detailed in last year's report, computer services companies are both capitalizing on the availability of mini-micro computers and being impacted by them.
- Respondents to the 1979 survey expect to install mini/micro computers at customer sites at an increasing rate. The rate of installation, according to 1979 respondents, will increase by 129% in 1979 over 1978, compared to an 85% increase expected by 1978 respondents in the same time period.
- Computer services companies are marketing mini/micro computers in two ways:
 - As part of an integrated offering including extensive software, a communications network and access to the vendor's computers. Called User Site Hardware Services (USHS) by INPUT, these offerings allow the user to implement distributed data processing. Computer services vendors with current products include National CSS, ADP and General Electric Information Services.

- As a basically standalone system, often including applications software, usually called turnkey systems. These are typically targetted at the major minicomputer markets in the manufacturing and distribution industries.
- Impact of mini/micro computers being marketed by hardware manufacturers is being felt most severely by small processing services vendors.
 - The impact will continue as the monthly cost of the hardware drops from \$1,000 per month to less than \$500 per month.
 - General business applications are more vulnerable than industry specialized applications.
 - On average, services vendors feel that 25% of their business is vulnerable to replacement by mini/micro computers, based on the 1978 survey.
- Software products companies largely see mini/micro computers as an area of opportunity for applications and systems software.
- Professional services companies are benefitting from the need for custom programming which results when packaged software is not available, or not appropriate. Also, the need for training and consulting is proliferating with the wider base of installation of hardware.

D. ACQUISITION ACTIVITY OF COMPUTER SERVICES COMPANIES

- The current heavy acquisition activity in the industry -- INPUT estimates approximately 100 acquisitions will take place in 1979 -- will increase rather than decline. Forty-four percent of respondents to the 1979 survey expected to have acquisitions as part of their 1980 plan, up from 32% who had them as part of their 1979 plan.
- INPUT estimates that companies acquired in the computer services industry between now and 1983 will total approximately 700 and be equivalent to \$3.5 billion in revenue at their points of acquisition.
 - Acquisition activity is increasingly being viewed as a vital source of revenue growth.
 - A limiting factor to acquisition activity in the industry is the shortage of personnel skilled in finding acquisition candidates and consumating successful acquisitions.
 - Another limiting factor is the ability of companies to assimilate acquisitions.
- Acquisition activity is experiencing strong growth because it offers the acquiring company some or all of the following benefits:
 - A reduced failure rate compared to starting up a new activity from ground zero.
 - An immediate addition of competent staff and expertise.
 - Immediate broadening of product offerings.
 - Expanded geographic coverage.

- Accelerated corporate growth.

E. RELATIONSHIP BETWEEN PROFIT AND KEY PARAMETERS

- The following relationships are taken from quartile analyses and regression analyses done on the data provided by survey respondents.
- The quartile analysis of growth of all responding companies showed a constant profit achievement regardless of growth rate.
 - This indicates a capability of many companies to achieve growth without sacrificing current profit.
 - The larger companies tend to be in the second and third quartiles meaning that the fastest growth companies tend to be smaller and the slowest growth companies tend to be small or medium-sized.
- Processing companies were best able to combine growth and profit.
- Software products companies showed a marked decline in profits among the fastest growing companies.
- Professional services companies showed highest profit among those companies which grew at the respondent average rate of 25% between 1977 and 1978.
- Among processing companies, the relationship between high growth and high profit was strongest among the older companies; this indicates an ability to sustain growth and profits as the company matures.
- An extensive series of regression analyses reinforced the conclusions of the quartile analysis of growth and profits.

- The regression analysis did not reveal strong relationships to profit for expenditure variables such as sales or operations; this result reflects the diverse nature of companies in the industry and the difficulty in making a general statement which applies across the range of sizes or types of company.
- An exception is within the professional services companies where a strong relationship was found between higher profits and higher expenditures for new product development.

F. OPPORTUNITIES FOR PROCESSING SERVICES COMPANIES

- Industry specialized processing services continue to be the fastest growing segment.
 - Selection of the industry to be approached is critical with banking and finance being by far the largest and other industry sectors such as transportation and education being dormant.
 - Industry sub-sectors are often attractive targets; two examples of successes are trust departments within banks, and hospitals within the medical sector.
- Processing companies are finding that acquisition activity is often a means to obtain industry specialized products.
 - They can acquire a company, or group of companies, serving an industry sector such as insurance.

- They can acquire a hardware or software product which ties into an existing processing services offering, such as discrete manufacturing software combined with remote computing services offerings to the discrete manufacturing sector.
- Companies also have the opportunity to take their current generalized products and adapt them to an industry sector.
- The relatively low impact of inflation for processing services provides vendors with an opportunity to present themselves as lower cost long-term alternatives to more labor intensive solutions such as in-house systems.
- Lower cost hardware provides an opportunity to build offerings including mainframe, storage, input/output and other equipment at the user site.
- Caution must be exercised since the offering must support a price high enough to cover the hardware costs, often in competition with a hardware vendor. This is particularly true for standalone, "turnkey" offerings.
- Larger vendors who have a significant network capability have an opportunity to include hardware, software and communications, and offer the user "instant distributed processing."
- Non-U.S. markets continue to be a high growth area, with respondents to the survey reporting 50% and more growth in the 1977-1978 period.
- Facilities management is shown by the survey to be a viable alternative delivery vehicle over the longer term.

G. OPPORTUNITIES FOR SOFTWARE PRODUCTS COMPANIES

- Software products companies have an exclusive in systems products in that neither processing nor professional services companies have entered this segment.
 - There is a significant opportunity for systems products which address the emerging requirement for advanced distributed systems, particularly in data base systems software.
 - The opportunity is expanding to include the smaller user.
- Software companies can exploit industry specialization by developing industry specialized software or by adapting current generalized software to specific industries.
- Overseas markets continue to be opportunity areas for software products companies.
- Combining software and processing services is an opportunity to many vendors as a means of further exploiting expertise among existing clients, and in opening new markets. Processing services vendors also are a market for software.
- Combinations of software, firmware and hardware often provide the strongest market offering compared to software alone.
 - These offerings can take the form of an offering to an EDP manager, such as a DBMS processor.
 - Alternatively, the offering can be a standalone processor for low end users to do, for example, trust accounting.

H. OPPORTUNITIES FOR PROFESSIONAL SERVICES COMPANIES

- Industry sectors such as banking and finance, insurance and discrete manufacturing are developing a need for complex systems formerly needed primarily in the federal government.
 - Professional services companies have an opportunity to exploit their expertise in these commercial sectors.
 - Broader industry coverage also provides the opportunity to obtain higher profit business than is normally available in the government sectors.
- The continued shortage of qualified people provides an opportunity for professional services companies to market this resource to the "highest bidder" by investing more in marketing to find that bidder.
- New methodologies for project planning, programming and education offer a means to lower the labor content of professional services offerings.
- A combination of processing, software products and professional services is often a method for a professional services company to optimize growth and profit.
- The trend to distributed processing is an opportunity for professional services companies who have the expertise to combine systems design, communications expertise, hardware and software on behalf of a user or group of users.

III TOTAL COMPUTER SERVICES INDUSTRY PERFORMANCE

III TOTAL COMPUTER SERVICES INDUSTRY PERFORMANCE

A. HISTORIC PERFORMANCE

- The revenue growth 1977-1978 of 19% and before tax profits of 11% repeat the strong showing of the industry in the 1976-1977 period.
 - Relative to 1976-1977, profits of processing companies were significantly higher in 1977-1978 (13% versus 11%).
 - This was offset within the industry by declines in profitability by software products and professional services companies.
 - Software products and professional services companies again led the way in terms of revenue growth.
- 1978 represents a continuation of the unbroken history of revenue growth in processing services of at least 15% since 1967. The strong continued growth in software products and professional services is evidence of greater maturity in these segments, as their base of revenues averages \$1 billion each.
 - To put the current results in perspective, the 1978 performance summary, as shown in Exhibit III-1, can be compared to earlier ADAPSO reports as follows:

EXHIBIT III-1

U.S. COMPUTER SERVICES INDUSTRY 1978 PERFORMANCE SUMMARY

TYPE / SIZE OF COMPANIES	NUMBER OF COMPANIES	1978 ⁽¹⁾ AVAIL-ABLE U.S. (\$M)	REPORTED ⁽²⁾ AVERAGE GROWTH 1977 TO 1978	GROSS PROFIT-1978	
				(3) \$ MILLIONS	% OF TOTAL REVENUE (4)
PROCESSING SERVICES					
>\$25 MILLION	35	\$2,700	22%	\$380	14%
\$10-25 MILLION	24	380	19	40	11
\$2-10 MILLION	250	1,100	23	140	13
<\$2 MILLION	1,780	1,400	21	150	11
SUB TOTAL ⁽⁵⁾	2,100	\$5,580	22%	\$700	13%
SOFTWARE PRODUCTS					
>\$10 MILLION	12	\$ 170	41%	\$ 17	10%
\$2-10 MILLION	60	240	32	26	11
<\$2 MILLION	680	350	38	42	12
SUB TOTAL ⁽⁵⁾	750	\$ 760	38%	\$ 85	11%
PROFESSIONAL SERVICES					
>\$10 MILLION	10	\$ 670	24%	\$ 34	5%
\$2-10 MILLION	60	330	41	26	8
<\$2 MILLION	480	200	22	12	6
SUB TOTAL ⁽⁵⁾	550	\$1,200	25%	\$ 70	6%
TOTAL	3,400	\$7,500	23%	\$850	11%

(1) DUE TO CHANGES IN COMPANY MAKEUP IN SUB-CATEGORIES, THE REVENUES ARE NOT DIRECTLY COMPARABLE TO EXHIBIT II-1 OF THE 1978 ADAPSO REPORT.

(2) BASED ON WEIGHTED AVERAGES ON SURVEY RESPONDENTS U.S. AVAILABLE REVENUES ONLY.

(3) ROUNDED. CALCULATED BY MULTIPLYING 1978 AVAILABLE REVENUES BY 1978 PROFIT OF SURVEY RESPONDENTS.

(4) GROSS PROFIT BEFORE TAXES AND EXTRAORDINARY ITEMS.

(5) ROUNDED

- 1976 U.S. available revenues were \$5.3 billion and before tax profits were 10.8%.
 - 1977 U.S. available revenues were \$6.3 billion and after tax profits were 11%.
 - 1978 therefore represents the third straight year of strong revenue growth combined with maintenance of solid profits.
- In the following part of this chapter, 1978 industry revenues will be analyzed in a number of ways:
 - Starting with total revenues and breaking out captive and non-U.S. revenues.
 - Starting with incremental growth and isolating the impact of acquisitions and/or inflation.
 - Total revenues broken down by type of service.
 - Total revenues separated by user industry sector served.
 - Revenues segregated into growth quartiles and compared to profitability and vice versa.
 - The final section of this chapter deals with the following management issues, based on survey results:
 - Impact of mini/micros.
 - New product development costs.

- Those readers desiring to concentrate on a specific segment of the industry may want to go directly to that chapter. Chapters are designed to concentrate as follows:
 - Chapter IV - Processing Services Companies
 - Chapter V - Software Products Companies
 - Chapter VI - Professional Services Companies

B. SIZE AND GROWTH OF CAPTIVE AND OVERSEAS REVENUES

- Total computer services revenues include captive and overseas revenues. Exhibit III-2 defines these revenue categories for respondents. These are subtracted from total revenues to yield the base for most of the analysis in this report - total U.S. available revenues.
 - Respondents' captive revenues grew at 27% in 1977-1978, slightly faster than total revenues.
 - Captive revenues were almost totally in processing services.
- Overseas revenues were the fastest growing category among respondents with rates of 33-59% for 1977-1978 growth.
 - Processing services dominated European revenues and professional services dominated Canadian revenue growth.
 - European revenues were particularly important to software products companies, accounting for over 10% of 1978 respondent revenues after a 1977-1978 growth of 61%.

EXHIBIT III-2

REVENUE, PROFIT LEVELS AND GROWTH FOR RESPONDING
COMPUTER SERVICES COMPANIES - TOTAL
(\$ THOUSAND)

TYPE OF COMPANY	TOTAL REVENUES (\$ THOUSAND)	CAPTIVE REVENUES	CANADIAN REVENUES	EUROPEAN REVENUES	OTHER NON-U.S. REVENUES	TOTAL AVAILABLE U.S. REVENUES (\$ THOUSAND)
PROCESSING SERVICES						
1977	\$1,993,399	\$ 250,605	\$ 15,532	\$ 79,061	\$ 37,138	\$1,611,063
1978	2,490,260	318,454	17,179	116,516	76,919	1,961,192
% GROWTH	25%	27%	11%	47%	107%	22%
SOFTWARE PRODUCTS						
1977	\$ 111,974	\$ 1,000	\$ 3,259	\$ 11,493	\$ 5,035	\$ 91,187
1978	158,120	1,507	3,953	18,534	8,184	125,942
% GROWTH	41%	51%	21%	61%	63%	38%
PROFESSIONAL SERVICES						
1977	\$ 620,962	\$ 1,000	\$ 16,307	\$ 1,351	\$ 29,120	\$ 573,184
1978	773,845	1,000	25,385	2,614	28,248	716,598
% GROWTH	25%	0	56%	93%	(3%)	25%
TOTAL						
1977	\$2,726,335	\$ 252,605	\$ 35,098	\$ 91,905	\$ 71,293	\$2,275,434
1978	\$3,422,225	\$ 320,961	\$ 46,517	\$ 137,664	\$ 113,351	\$2,803,732
% GROWTH	26%	27%	33%	50%	59%	23%

- Overall, non-U.S. revenues accounted for 9% of 1978 total revenues.
- A final category of revenues - those from non-consolidated foreign affiliates - are tabulated in Exhibit III-3. These revenues are not included in total U.S. revenues, but profits from these revenues may be consolidated in total profits, thereby impacting profit margins.
- Non-consolidated foreign revenues totalled approximately 1% of U.S. revenues.
- Growing at only 11%, this form of reporting revenues is not becoming more popular among U.S. companies.
- There was a low response frequency to this question in the survey, and the non-consolidated revenue levels are felt to be understated for this reason.

C. IMPACT OF ACQUISITION AND INFLATION ON 1977-1978 GROWTH

- Acquisition activity was highest among responding processing services companies with 1978 acquisitions accounting for 20% of 1977 to 1978 growth.
- Clearly, processing companies are leading in the current acquisition surge. (As discussed in Chapter II, the responding companies are more aggressive than average and the acquisition activity among respondents is higher than the industry average. Even with this qualifier, however, acquisitions are a most important aspect of current industry activities.)
- As shown in Exhibit III-4, the actual growth net of acquisitions for the respondent group was 20% if the impact of 1978 acquisitions is removed.

EXHIBIT III-3

REVENUES FROM NON-CONSOLIDATED
FOREIGN AFFILIATES OF
RESPONDING COMPANIES

TYPE/SIZE (\$ MILLION) OF RESPONDENT	REVENUES IN THOUSANDS		PERCENTAGE GROWTH
	1977	1978	
<u>PROCESSING</u>			
<\$2M	0	0	-
\$2- 10M	0	0	-
\$10- 25M	\$ 583	\$ 1,897	*
>\$25M	17,400	19,100	*
SUBTOTAL	\$17,983	\$20,997	16.8%
<u>SOFTWARE PRODUCTS</u>			
<\$2M	0	0	-
\$2- 10M	\$ 5,599	\$ 8,942	*
>\$10M	0	0	-
SUBTOTAL	\$ 5,599	\$ 8,942	*
<u>PROFESSIONAL SERVICES</u>			
<\$2M	0	0	-
\$2- 10M	0	0	-
>\$10M	\$37,513	\$38,243	*
SUBTOTAL	\$37,513	\$38,243	*
TOTAL	\$61,095	\$68,182	11.6%

*FEWER THAN 5 RESPONSES

EXHIBIT III-4

IMPACT OF ACQUISITIONS AND INFLATION
ON RESPONDENTS' 1977-1978 GROWTH

GROWTH COMPONENT \ TYPE OF COMPANY	PROCESSING SERVICES	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	TOTAL
TOTAL ACTUAL AVAILABLE U.S. REVENUE GROWTH 1977-1978*	\$350,129	\$34,755	\$143,414	\$528,855
OVERALL GROWTH RATE 1977-1978	22%	39%	25%	23%
1978 GROWTH DUE TO 1978 ACQUISITIONS*	\$ 69,829	\$ 1,000	\$ 11,016	\$ 81,845
NET REVENUE GROWTH 1977-1978*	\$280,300	\$34,312	\$132,398	\$447,010
PERCENT ACTUAL GROWTH NET OF 1978 ACQUISITIONS	17%	38%	23%	20%
REVENUE GROWTH DUE TO INFLATION*	\$ 71,405	\$ 8,610	\$ 67,521	\$147,536
INFLATION RATE 1977-1978	4.4%	9.5%	11.8%	6.5%
REAL REVENUE GROWTH 1977-1978	\$208,895	\$25,702	\$ 64,877	\$299,474
PERCENT ACTUAL GROWTH NET OF ACQUISITIONS AND INFLATION-"REAL GROWTH"	13%	28%	11%	13%

* \$ IN THOUSANDS.

- The impact of 1977 acquisitions on 1977 growth was \$28 million for processing services companies, \$0.6 million for software products companies, and \$1.6 million for professional services companies.
- The impact of 1977 acquisitions on 1978 growth was \$71 million for processing services companies, \$2 million for software products companies and \$11 million for professional services companies.
- Inflation is perceived by professional services companies as having the greatest impact, as shown in Exhibit III-4.
 - Being more labor intensive, professional services companies see the impact as more than double that of processing services companies.
 - This undoubtedly relates to the profit pressure being felt by processing services companies reflected in their decreased profit levels versus 1977.
- If the growth less the perceived impact of inflation and acquisition is considered "real growth," then software products companies have by far the largest incremental growth having a lesser impact from these two factors.
- Companies foresee a slightly moderating inflation impact on 1979 revenues with the following weighted averages reflecting the attitude of the respondents:
 - Processing companies foresee a 4.4% impact due to inflation on 1979 prices; the same impact as 1978.
 - Software products companies foresee an 8.6% impact due to inflation on 1979 prices, down from 9.5% in 1978.
 - Professional services companies see an 11.2% impact on 1979 prices due to inflation, down from 11.8% in 1978.

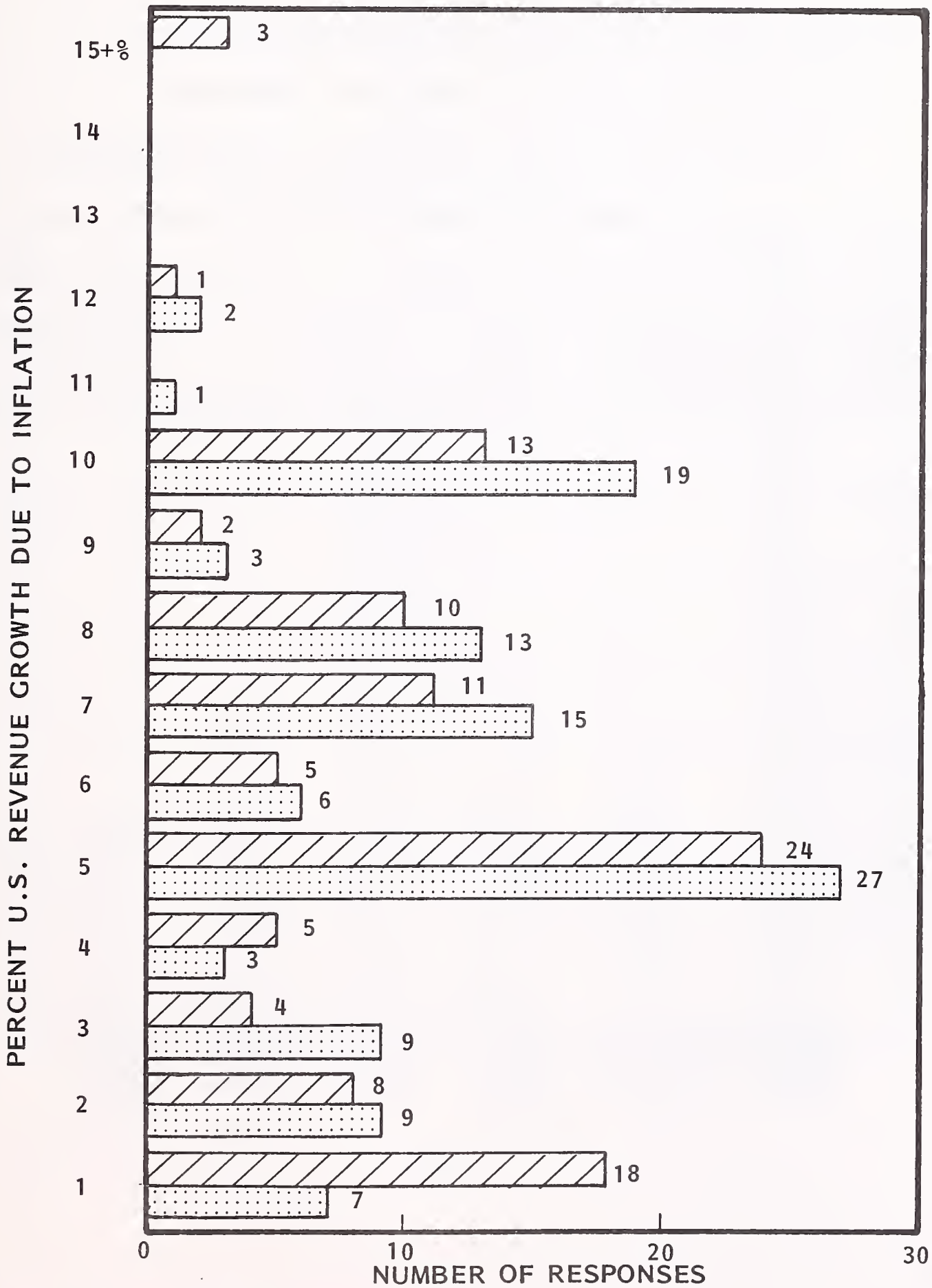
- Respondents' estimates of inflation varied widely, as shown in Exhibit III-5, with most estimates in the 5-10% range.
- Acquisition activity can be expected to increase from its already high level.
 - Processing companies, as shown in Exhibit III-6, will move to a posture where over half of the respondent companies have acquisition activity as part of their 1980 plan.
 - Only software products companies will remain in 1980 with a dominant part of their segment not active in acquisitions, according to survey respondents. Acquisition of several software companies by processing or hardware companies in 1978 indicates that some may be involved as acquired companies even though they do not anticipate such an event at this time.

D. QUARTILE ANALYSIS OF 1978 GROWTH AND PERFORMANCE

- To determine relationships between growth and performance, the responding companies were ranked in descending order of 1977 versus 1978 growth in available U.S. revenues, and 1978 percent before tax profit. Weighted average calculations were then made of each quarter (or "quartile") of the ranking. These averages are presented in the following exhibits.
- Exhibit III-7, a comparison of revenue growth for all respondents, reveals several key characteristics:
 - Profit margin is relatively constant across all quartiles, reflecting a capability of some companies to achieve both growth and profit.
 - A wide difference in average available U.S. revenues between quartiles shows a definite grouping of the larger companies in the second and

EXHIBIT III-5

RESPONDENTS ESTIMATES OF IMPACT OF INFLATION
ON PRICE INCREASES 1978-1979

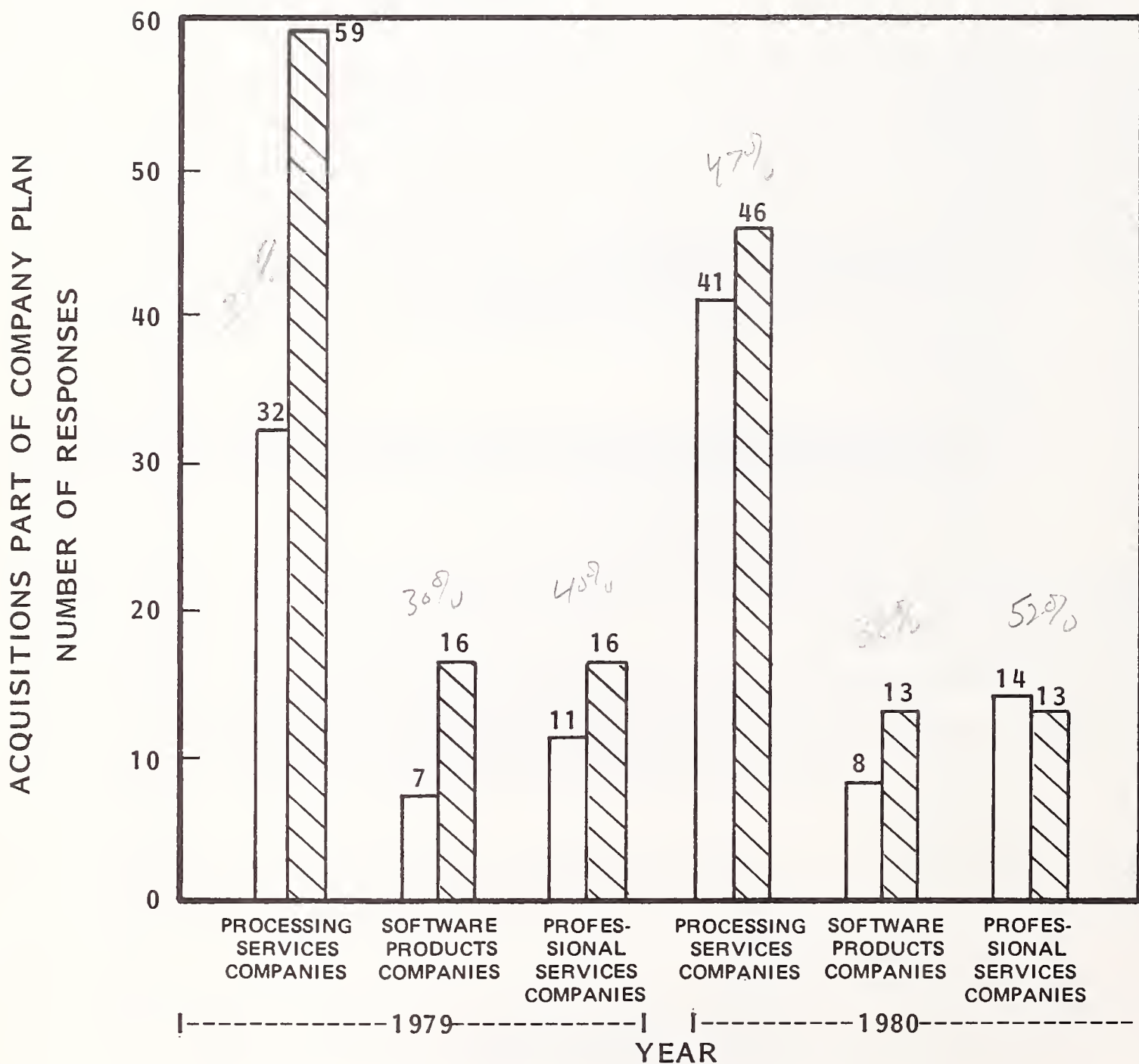


▨ GROWTH IN 1978 U.S. REVENUES DUE TO INFLATION

▤ ANTICIPATED GROWTH IN 1979 U.S. REVENUES DUE TO INFLATION

EXHIBIT III-6

CURRENT AND ANTICIPATED ACQUISITION ACTIVITY
OF RESPONDING COMPUTER SERVICES COMPANIES



YES
 NO

EXHIBIT III-7

REVENUE GROWTH QUARTILES VERSUS PROFIT MARGIN
OF RESPONDING COMPANIES

REVENUE GROWTH QUARTILE	REVENUE* GROWTH	PROFIT** MARGIN	NUMBER OF RESPONDENTS IN QUARTILE	AVERAGE 1978 AVAILABLE U.S. REVENUES (\$ THOUSAND)
QUARTILE 1	72%	13%	39	\$ 8,400
2	29	11	39	21,400
3	19	13	39	30,300
4	1	13	38	12,200
TOTAL	23%	12%	155	\$18,100

* 1977 VS. 1978 AVAILABLE REVENUES

** 1978 PROFIT BEFORE TAXES AND EXTRAORDINARY ITEMS

third quarters. Clearly, the extremes in growth and profit exist primarily among the smaller companies.

- Quartile 3, which has the largest average company size, comes closest to reflecting the growth and profit for the entire industry, as reported in Chapter II.
- Exhibit III-8, which presents the revenue growth quartiles of processing services companies, differs from the exhibits which follow for software products and professional services companies in that Quartile I, the fastest growing group of companies, also has above average profits.
 - The relatively narrow spread in average available U.S. revenues between quartiles, compared to software products and professional services companies, indicates that processing services companies have a more uniform growth/profit/size profile than do the other type of companies.
 - The very high profit percent in Quartile 4, being based on an actual revenue decline versus 1977, means that actual profits per company for comparison purposes are overstated when expressed as a percent of revenue.
- With regard to software products companies, there is an inverse relationship between profit and growth, as shown in Exhibit III-9.
 - The most impressive performers are in Quartiles 2 and 3 in that they maintained growths and profits above the industry average on top of the largest relative 1978 revenues in the category.
 - The analysis is hampered by the relatively small number of software companies responding.

EXHIBIT III-8

REVENUE GROWTH QUARTILES VERSUS PROFIT MARGIN OF RESPONDING
PROCESSING SERVICES COMPANIES

REVENUE GROWTH QUARTILE	REVENUE* GROWTH	PROFIT** MARGIN	NUMBER OF RESPONDENTS IN QUARTILE	AVERAGE 1978 AVAILABLE U.S. REVENUES (\$ THOUSAND)
QUARTILE 1	65%	15%	25	\$12,000
2	24	13	25	26,000
3	18	12	25	29,100
4	(1)	18	25	11,700
TOTAL	22%	14%	100	\$19,700

* 1977 VS. 1978 AVAILABLE REVENUES

** 1978 PROFIT BEFORE TAXES AND EXTRAORDINARY ITEMS

EXHIBIT III-9

REVENUE GROWTH QUANTILES VERSUS PROFIT MARGIN
OF RESPONDING SOFTWARE COMPANIES

REVENUE GROWTH QUANTILE	REVENUE* GROWTH	PROFIT** MARGIN	NUMBER OF RESPONDENTS IN QUANTILE	AVERAGE 1978 AVAILABLE U.S. REVENUES (\$ THOUSAND)
QUANTILE 1	70%	8%	6	\$4,000
2	40	14	6	9,700
3	28	15	6	6,200
4	9	15	6	1,100
TOTAL	39%	13%	24	\$5,300

* 1977 VS. 1978 AVAILABLE REVENUES

** 1978 PROFIT BEFORE TAXES AND EXTRAORDINARY ITEMS

- Professional services had the lowest relative 1978 profits, as defined in Chapter II, and this is reflected in Exhibit III-10.
 - The dominance of a few larger professional services companies is characteristic of this category, as shown by the 1978 revenue size of Quartile 3. Significantly, this quartile also has the highest profit attainment.
 - Clearly, revenue growth is not a problem confronting professional services companies as a group, but rather the problem is profit attainment.
- Exhibit III-11 summarizes the result of a quartile analysis based on ranking the responding companies by percent profit versus company growth rates.
 - Overall, the range of profits was similar between the categories of companies, with processing services exhibiting the widest range of both profit and growth.
 - The average size of companies in the profit quartiles was more uniform than in the growth quartiles, indicating that profits vary less across the range of company sizes than does growth.
 - Processing companies in this analysis, as was the case in the growth quartile analysis, were most likely to combine exceptional profit and revenue growth, although Quartile I for software products companies had the strongest individual performance.
 - It is significant that the highest profit professional services companies had the lowest growth, indicating a sacrifice of profit for growth by some respondents.

EXHIBIT III-10

REVENUE GROWTH QUANTILES VERSUS PROFIT MARGIN
OF RESPONDING PROFESSIONAL SERVICES COMPANIES

REVENUE GROWTH QUANTILE	REVENUE* GROWTH	PROFIT** MARGIN	NUMBER OF RESPONDENTS IN QUANTILE	AVERAGE 1978 AVAILABLE U.S. REVENUES (\$ THOUSAND)
QUANTILE 1	76%	9%	8	\$ 3,800
2	35	8	9	17,000
3	25	10	7	52,600
4	11	4	7	23,500
TOTAL	25%	8%	31	23,100

* 1977 VS. 1978 AVAILABLE REVENUES

** 1978 PROFIT BEFORE TAXES AND EXTRAORDINARY ITEMS

EXHIBIT III-11

PROFIT MARGIN VERSUS GROWTH QUARTILES
FOR RESPONDING COMPANIES

1978 PROFIT VERSUS GROWTH					
VARIABLE	PROFIT QUARTILES				
	1	2	3	4	TOTAL
<u>ALL RESPONDENTS</u> PERCENT PROFIT	26%	15%	9%	1%	12%
PERCENT GROWTH	20%	34%	24%	12%	22%
NUMBER OF RESPONDENTS	36	36	34	36	142
AVG. 1978 AVAILABLE U.S. REVENUE	\$15,900	\$15,100	\$28,300	\$15,300	
<u>PROCESSING COMPANIES</u> PERCENT PROFIT	26%	15%	9%	(2%)	14%
PERCENT GROWTH	20%	33%	19%	6%	20%
NUMBER OF RESPONDENTS	24	24	24	23	95
<u>SOFTWARE PRODUCTS</u> PERCENT PROFIT	23%	18%	8%	5%	21%
PERCENT GROWTH	30%	40%	47%	38%	40%
NUMBER OF RESPONDENTS	6	5	5	5	21
<u>PROFESSIONAL SERVICES</u> PERCENT PROFIT	19%	9%	7%	4%	7%
PERCENT GROWTH	14%	28%	47%	18%	25%
NUMBER OF RESPONDENTS	7	7	6	6	26

E. REVENUES BY TYPE OF SERVICE

- Over 50% of the revenues reported by respondents were for general business and industry specialty processing services, as shown in Exhibit III-12. (See the "Definitions" section of the Appendix for a clarification of terms used in this and following paragraphs.)
 - Growth for general business is seen by respondents to be consistent with recent growth, while respondents anticipate a decline in industry specialty growth in 1979.
 - INPUT's opinion, based on separate research, is that industry specialty growth will in fact continue strong across the entire industry. Also, in INPUT's opinion, the scientific and engineering and the utility services markets are understated in terms of relative size.
- The strong growth anticipated in software products goes across all categories with the exception of system operation products. The fact that the product categories used in the 1979 survey were new and unfamiliar with respondents may partially explain the uneven growth forecast. Certainly, DBMS products, which are an important part of systems operations products, are experiencing strong growth.
- With regard to professional services, time and materials is the major means of pricing and is anticipated to remain so by respondents.
 - The decline in fixed price contracts is a reflection of the pressure of inflation and the decline in professional services companies profits mentioned earlier.
 - The expected relative decline in the importance of consulting, education, and training is notable.

EXHIBIT III-12

PERCENT OF REVENUES BY TYPE OF SERVICE
OF ALL RESPONDING COMPANIES

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (\$ THOUSAND)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 820,295	36%	22.5%	22.7%
SCIENTIFIC AND ENGINEERING.	163,290	7	14.6	17.0
INDUSTRY SPECIALTY.	667,290	29	35.9	17.1
UTILITY.	112,074	5	24.3	13.9
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	\$ 49,149	2%	61.2%	50.2%
INDUSTRY SPECIALIZED.	54,723	2	36.8	26.3
SYSTEM PRODUCTS				
SYSTEM OPERATION.	\$ 28,843	1%	32.5%	12.2%
SYSTEM UTILIZATION.	18,817	1	49.8	47.2
IMPLEMENTATION SYSTEM	36,965	2	49.8	47.2
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	\$ 178,236	8%	40.4%	32.5%
CUSTOM SOFTWARE				
FIXED PRICE.	39,552	2	74.9	11.5
CUSTOM SOFTWARE				
COST PLUS FEE.	41,904	2	26.7	25.5
CONSULTING, EDUCATION, TRAINING.				
	57,934	3	35.0	13.2
TOTAL *	\$2,269,072	100% **	24.6%	18.8%

* FIGURES DO NOT TIE DIRECTLY TO EXHIBIT III-2 BECAUSE SOME RESPONDENTS DID NOT ALLOCATE ALL REVENUES BY TYPE OF SERVICE.

** MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING. - 39 -

- In Exhibit III-13, the distribution of revenues by type of service is compared to the category of responding company.
- Processing services companies tend to remain most closely identified with their specialty with 89% of their revenues in processing services.
 - Because of the much larger reported revenues in the processing category versus software products, the industry specialized software package sales of responding processing services companies actually exceeds the corresponding sales of software products companies.
 - The balanced activity of processing services companies across software products and professional services activities indicates a flexibility among respondents in their willingness to provide alternatives to clients.
- Software products respondents have 87% of their revenues in their specialty evenly split between application products and system products. Software products companies appear to have the systems products marketplace virtually to themselves.
- Professional services companies are the most likely to be active outside of their specialty with 22% of their revenues in processing services.
 - However, respondents show zero revenues in software products.
 - By far the dominant type of service is custom software - time and materials.

EXHIBIT III-13
 COMPARISON OF REVENUES BY TYPE
 OF SERVICE BETWEEN CATEGORIES
 OF RESPONDING COMPANIES

TYPE OF SERVICE	PERCENT OF TOTAL 1978 REVENUES			
	PROCESSING	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	TOTAL
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	41%	4%	15%	36%
SCIENTIFIC AND ENGINEERING.	8	-	-	7
INDUSTRY SPECIALTY.	34	2	6	29
UTILITY.	6	-	1	5
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	1%	27%	-	2%
INDUSTRY SPECIALIZED.	2	14	-	2
SYSTEM PRODUCTS				
SYSTEM OPERATION.	-	17%	-	1%
SYSTEM UTILIZATION.	-	10	-	1
IMPLEMENTATION SYSTEM	1	19	-	2
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	3%	3%	49%	8%
CUSTOM SOFTWARE				
FIXED PRICE.	1	-	10	2
CUSTOM SOFTWARE				
COST PLUS FEE.	2	1	3	2
CONSULTING EDUCATION				
TRAINING.	1	3	16	3
TOTAL	100%	100%	100%	100%

F. INDUSTRY SECTOR MARKETS

- The importance for vendors to have industry sector markets in perspective is demonstrated by respondent revenues presented in Exhibit III-14.
 - Federal government is by far the most concentrated in terms of participants with the average responding vendor having \$14 million in revenues in this sector; it is obviously a sector requiring a sizeable commitment.
 - Retail, on the other hand, has many more responding vendors active with an average revenue from the sector of less than \$2 million.
 - The largest commercial sector by far is banking and finance with the highest number of responding participants (68) and the second highest sector revenues per respondent (over \$5 million). This reflects the high degree of vendor activity and specialization in this sector.
 - Certain sectors, notably transportation and education, have proven to be barren markets for computer services.
- Exhibit III-15, the industry sector revenues are presented by category of responding company:
 - Processing companies are clearly the leading marketers of industry services with almost 70% of the total.
 - If the heavy participation by professional services companies in the federal government sector is removed from the chart, processing companies account for almost 90% of the total.

EXHIBIT III-14

INDUSTRY SECTOR MARKETS OF RESPONDING
COMPUTER SERVICES COMPANIES - TOTAL

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS 1978	AVERAGE REVENUE PER RESPONDENT (\$ THOUSAND)
DISCRETE MANUFACTURING	\$ 167,740	8.7%	59	\$ 2,843
PROCESS MANUFACTURING	86,208	4.5	42	2,053
TRANSPORTATION	22,124	1.2	30	737
UTILITIES	64,583	3.4	37	1,745
BANKING AND FINANCE	361,562	18.8	68	5,317
INSURANCE	107,372	5.6	51	2,105
MEDICAL	65,508	3.4	38	1,724
EDUCATION	8,574	0.4	31	277
RETAIL	101,629	5.3	56	1,815
WHOLESALE	49,101	2.6	47	1,045
FEDERAL GOVERNMENT	478,156	24.9	34	14,063
STATE AND LOCAL GOVERNMENT	114,843	6.0	45	2,552
SERVICES (CPA's, LAWYERS)	54,080	2.8	48	1,127
OTHER	238,177	12.4	61	3,905
TOTAL	\$ 1,919,657	100%	-	-

EXHIBIT III-15

COMPUTER SERVICES VENDOR 1978 REVENUES REPORTED BY
RESPONDENT COMPANIES BY USER INDUSTRY SECTOR

COMPUTER SERVICES VENDOR 1978 REVENUES REPORTED BY RESPONDENT COMPANIES BY USER INDUSTRY SECTOR (\$ THOUSAND)												
COMPUTER SERVICE VENDOR USER INDUSTRY SECTOR	VENDOR TYPE/SIZE				VENDOR TYPE/SIZE			VENDOR TYPE/SIZE			TOTAL	PERCENT OF TOTAL
	PROCESSING SERVICES				SOFTWARE PRODUCTS			PROFESSIONAL SERVICES				
	<\$2M	\$2-10M	\$10-25M	>\$25M	<\$2M	\$2-10M	>\$10M	<\$2M	\$2-10M	>\$10M		
DISCRETE MANUFACTURING	\$ 5,098	\$ 19,932	\$ 9,014	\$ 107,184	\$ 526	\$ 4,048	-	\$ 749	\$ 2,082	\$ 19,107	\$ 167,740	8.7%
PROCESS MANUFACTURING	2,537	6,929	4,220	56,042	162	-	-	211	2,678	13,429	\$ 86,208	4.5%
TRANSPORTATION	107	989	1,466	16,728	8	400	-	102	308	2,016	\$ 22,124	1.2%
UTILITIES	1,000	5,497	1,994	49,131	8	700	-		691	5,562	\$ 64,583	3.4%
BANKING AND FINANCE	4,800	44,268	34,939	254,554	1,099	1,500	-	167	5,325	14,910	\$ 361,562	18.8%
INSURANCE	3,211	4,580	3,233	68,659	550	1,500	11,122	11	3,689	10,817	\$ 107,372	5.6%
MEDICAL	1,330	5,803	1,403	43,047	17	-	-	14	4,100	9,794	\$ 65,508	3.4%
EDUCATION	511	1,320	827	2,098	315	3,300	-	15	52	136	\$ 8,574	0.4%
RETAIL	3,034	4,102	18,815	72,098	550	709	-	178	436	1,707	\$ 101,629	5.3%
WHOLESALE	2,116	4,976	4,175	31,722	664	2,266	-	63	227	2,892	\$ 49,101	2.6%
FEDERAL GOVERNMENT	75	790	10,677	110,534	503	300	2,426	1,370	5,006	346,475	\$ 478,156	24.9%
STATE AND LOCAL GOVERNMENT	1,351	1,235	13,006	56,753	14	1,000	-	10	482	40,992	\$ 114,843	6.0%
SERVICES (CPAs, LAWYERS, ETC.)	2,225	6,935	4,494	23,698	85	650	-	167	348	15,473	\$ 54,080	2.8%
OTHER	6,232	17,533	12,673	152,713	1,019	400	-	1,737	7,790	38,080	\$ 238,177	12.4%
TOTAL	\$33,627	\$124,889	\$ 120,936	\$1,044,961	\$5,520	\$16,773	\$13,548	\$ 4,794	\$33,214	\$521,395	\$1,919,657	-
PERCENT OF TOTAL	1.8%	6.5%	6.3%	54.4%	0.3%	0.9%	0.7%	0.2%	1.7%	27.2%	-	100%

- Responding software products companies have virtually ignored some industry sectors and account for less than 2% of the revenues in the exhibit.
- The percentage distribution of industry sector markets by category of company is shown in Exhibit III-16.
 - Processing services and software products companies have quite similar profiles.
 - As expected, professional services companies have over 70% of their industry sector revenues in the government sectors.

G. EXPENDITURE DISTRIBUTION

- Expenditure distribution of respondents was segregated in two ways: total expenditures and direct personnel compensation, as shown in Exhibit III-17.
 - One-third of expenditures were for market related activities of marketing, sales and R&D.
 - Twenty percent of expenditures were for overhead type items with the remainder in operations.
 - Sales and the personnel portions of operations were most labor intensive as expected.
- In Exhibit III-18, the three categories of companies can be compared relative to expenditure patterns.
 - Software products companies clearly expend the highest percentage on sales; double the average for total sales expenditures in processing

EXHIBIT III-16

COMPARISON OF INDUSTRY SECTOR MARKETS OF
RESPONDING COMPANIES BY CATEGORY OF COMPANY

CATEGORY OF COMPANY INDUSTRY SECTOR	PERCENT OF TOTAL U.S. 1978 REVENUES			
	PROCESS- ING	SOFTWARE PRODUCTS	PROFES- SIONAL SERVICES	TOTAL
DISCRETE MANUFACTURING	10%	19%	3%	9%
PROCESS MANUFACTURING	4	7	5	5
TRANSPORTATION	2	1	1	1
UTILITIES	5	2	1	3
BANKING AND FINANCE	24	27	5	19
INSURANCE	6	17	3	6
MEDICAL	5	1	-	3
EDUCATION	-	6	-	-
RETAIL	8	3	1	5
WHOLESALE	3	5	1	3
FEDERAL GOVERNMENT	10	3	63	25
STATE AND LOCAL GOVERNMENT	5	2	9	6
SERVICES (CPA'S, LAWYERS)	4	2	-	3
OTHER	14	5	8	12
TOTAL	100%	100%	100%	100%

EXPENDITURE DISTRIBUTION OF RESPONDING COMPUTER SERVICES COMPANIES - TOTAL

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	(\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	(\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$ 85,889	7.2%	80	\$34,224	7.8%	62
SALES	226,770	19.0	78	109,112	25.0	65
RESEARCH AND PRODUCT DEVELOPMENT	80,874	6.8	86	40,908	9.4	62
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	243,983	20.5	94	147,249	33.8	76
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS.	19,954	1.7	30	17,723	4.1	26
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	189,430	15.9	89	8,530	1.9	23
d. DATA COMMUNICATIONS	56,356	4.7	59	12,079	2.8	16
e. FACILITY OPERATIONS	59,510	5.0	69	2,668	0.6	21
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	20,273	1.7	45	-	-	-
GENERAL ADMINISTRATIVE	124,721	10.5	105	42,307	9.7	78
ALL OTHER	83,742	7.0	47	21,289	4.9	9
TOTAL	\$1,191,502	100%	113	\$436,089	100%	85

EXHIBIT III-18

COMPARISON OF EXPENDITURE PATTERNS
BETWEEN TYPES OF RESPONDING COMPANIES

CATEGORY OF EXPENDITURES	PERCENT OF TOTAL 1978 EXPENDITURES											
	PROCESSING		SOFTWARE PRODUCTS		PROFESSIONAL SERVICES		TOTAL INDUSTRY					
	TOTAL FISCAL 1978 EXPENDITURES	DIRECT PERSONNEL COMPENSATION IN CATEGORY	TOTAL FISCAL 1978 EXPENDITURES	DIRECT PERSONNEL COMPENSATION IN CATEGORY	TOTAL FISCAL 1978 EXPENDITURES	DIRECT PERSONNEL COMPENSATION IN CATEGORY	TOTAL FISCAL 1978 EXPENDITURES	DIRECT PERSONNEL COMPENSATION IN CATEGORY				
MARKETING	8%	9%	9%	8%	2%	4%	7%	8%				
SALES	19	26	37	37	7	10	19	25				
RESEARCH AND PRODUCT DEVELOPMENT	6	9	21	25	4	6	7	9				
OPERATIONS												
A. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	21	35	6	12	23	51	20	34				
B. PERSONNEL WORKING ON FIXED PRICE CONTRACTS	1	3	-	-	6	17	2	4				
C. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	17	2	3	2	9	-	16	2				
D. DATA COMMUNICATIONS	6	3	-	-	1	-	5	3				
E. FACILITY OPERATIONS	5	1	2	-	5	-	5	1				
PAYMENT TO THIRD PARTIES FOR SFW ROYALTIES	2	-	4	-	1	-	2	-				
GENERAL ADMINISTRATIVE	10	9	18	16	12	12	10	9				
ALL OTHER	5	3	-	-	30	-	7	5				
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%				

services, and five times the average total for professional services companies.

- The high R&D expenditure of software products companies is evident. This expenditure will be analyzed in a later section of this chapter.
- The relatively high expenditure for direct personnel working on fixed price contracts in the professional services category is significant and will be analyzed further in Chapter VI.

H. KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS

- The asset and liability items presented in Exhibit III-19 show increases in most categories consistent with the industry revenue growth of 23% shown earlier for respondents.
 - Long-term debt less current portion actually increased only 5%, indicating an increased opportunity for leveraging through debt financing.
 - Profits increased significantly more than revenues reflecting the higher profits in the large processing services companies.
- After tax return on stockholders' equity is shown in Exhibit III-19 to average 37% on a straight average basis. On a weighted average basis, the industry return based on respondents was 19%, reflecting the relatively lower return for the larger companies; many small companies have a small equity base and actually show individual returns of 50% and over.

EXHIBIT III-19

KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS
OF RESPONDING COMPUTER SERVICES COMPANIES

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	117	\$ 3,616	\$ 4,674	29%
TOTAL CURRENT ASSETS	118	5,724	7,798	36
TOTAL ASSETS	123	20,928	23,488	12
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	69	\$ 532	\$ 705	33%
TOTAL CURRENT LIABILITIES	109	3,733	5,040	35
LONG-TERM DEBT LESS CURRENT PORTION	76	3,747	3,945	5
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	113	6,483	8,012	24
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	127	\$ 1,865	\$ 2,525	35%
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	117	1,071	1,430	34
<u>FINANCIAL</u>				
CURRENT RATIO	109	2.6	2.9	12%
AFTER TAX RETURN ON AVERAGE EQUITY	98	-	37%	-
TOTAL DEBT OVER TOTAL CAPITAL	60	.417	.420	1
LONG-TERM DEBT OVER NET WORTH	68	1.6	0.7	(44)
TRADE RECEIVABLES TURNOVER, (DAYS)	117	64	66	3

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

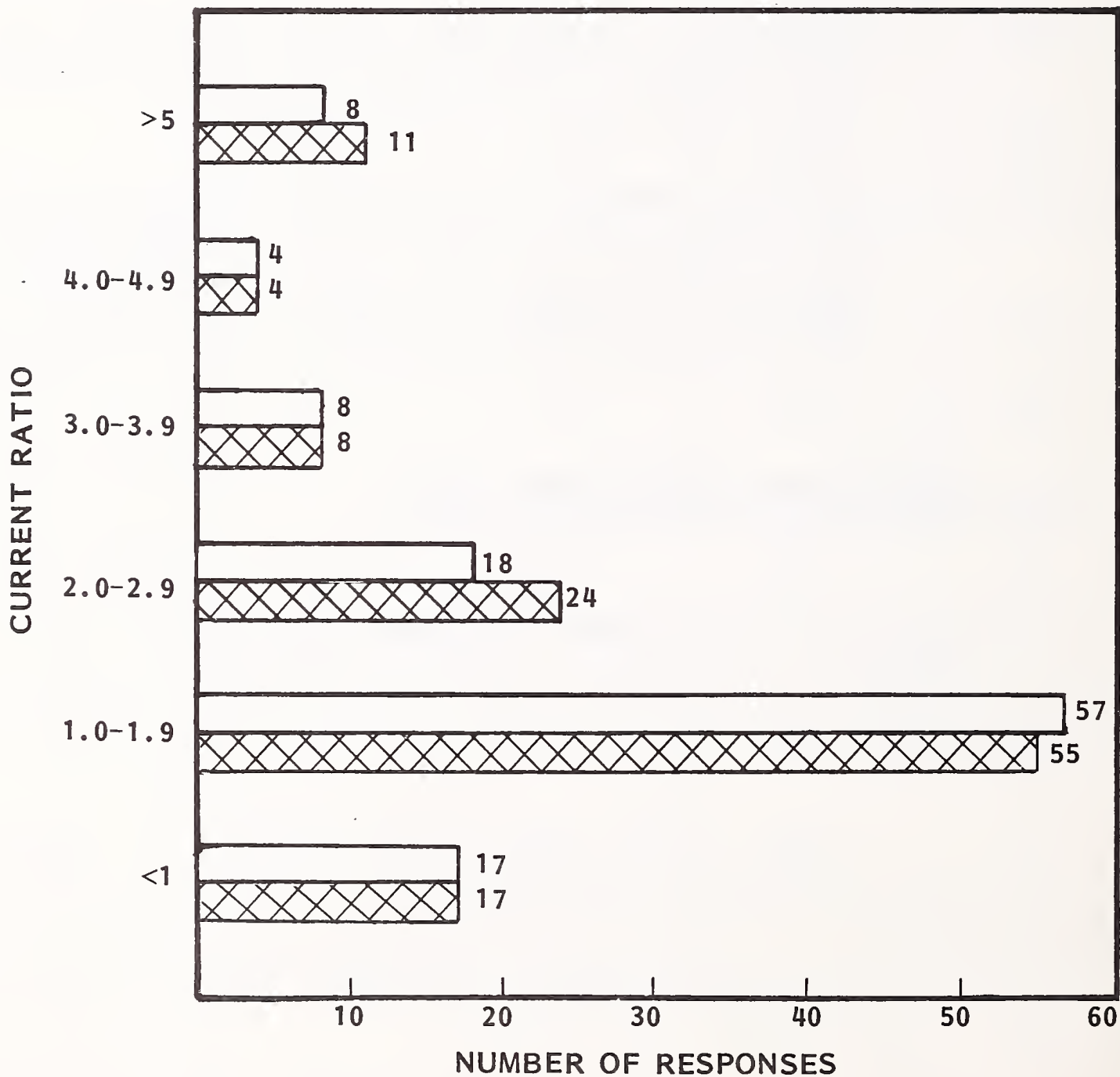
- Current ratio, a key measure of liquidity, increased in 1978 from an already healthy 1978 level, as shown in Exhibit III-19. The actual distribution of responses for current ratio are shown in Exhibit III-20; half of the responses are between 1 and 1.9.
- In Exhibit III-21, balance sheet items are compared between categories of companies.
 - Software products companies are the most liquid with highest current ratios and lowest total debt over total capital.
 - The straight average return on stockholders' equity is sensitive to the high percentages among smaller companies. Using weighted averages yields these percentages: processing services companies, 17%; software products companies, 26%; and professional services companies, 28%.

I. NEW PRODUCT DEVELOPMENT COSTS

- Investment in new product development expressed as a percent of total revenues will increase in 1979 after a period of stability in 1978, as shown in Exhibit III-22.
 - Software products expect a slight decline after heavy percentage investments in 1977 and 1978.
 - In all company categories, the smaller companies expend the highest percentage.
 - The low level of response to this portion of the questionnaire requires that these figures be viewed with caution.

EXHIBIT III-20

DISTRIBUTION OF CURRENT RATIOS
AMONG RESPONDING COMPANIES



□ 1977
▣ 1978

EXHIBIT III-21

COMPARISON OF RESPONSES TO BALANCE SHEET
ITEMS FROM PROCESSING SERVICES SOFTWARE PRODUCTS
AND PROFESSIONAL SERVICES COMPANIES

CATEGORY OF COMPANY ITEM OR RATIO	1978 AVERAGE PER RESPONDENT			
	PROCESSING SERVICES	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	TOTAL
	(\$ THOUSAND)	(\$ THOUSAND)	(\$ THOUSAND)	(\$ THOUSAND)
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	\$ 4,866	\$1,872	\$ 6,159	\$ 4,674
TOTAL CURRENT ASSETS	8,522	2,815	8,757	7,798
TOTAL ASSETS	30,621	3,664	12,779	23,488
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	\$ 730	\$ 213	\$ 915	\$ 705
TOTAL CURRENT LIABILITIES	5,089	1,714	7,688	5,040
LONG-TERM DEBT LESS CURRENT PORTION	4,058	454	6,805	3,945
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	10,612	1,634	4,084	8,012
<u>1978 TOTAL REVENUES</u>	\$24,950	\$6,375	\$24,962	\$22,000
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	3,116	686	2,015	2,525
AFTER TAXES AND BEFORE EXTRA-ORDINARY ITEMS	1,771	425	1,153	1,430
<u>FINANCIAL</u>				
CURRENT RATIO	2.4	4.6	3.3	2.9
AFTER TAX RETURN ON AVERAGE EQUITY	30%	64%	34%	37%
TOTAL DEBT AS A % OF TOTAL CAPITAL	.45	.24	.37	.42
LONG TERM DEBT AS A % OF NET WORTH	.81	0.67	.49	0.7
TRADE RECEIVABLES TURNOVER, (DAYS)	56	73	69	66

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT III-22
NEW PRODUCT DEVELOPMENT COSTS
OF RESPONDING COMPANIES

(1977-1979)

TYPE / SIZE	FISCAL 1977		FISCAL 1978			FISCAL 1979		
	NUMBER OF RESPONSES	WEIGHTED AVERAGE EXPENDITURE	NUMBER OF RESPONSES	WEIGHTED AVERAGE EXPENDITURE	PERCENT CHANGE 1977-1978	NUMBER OF RESPONSES	WEIGHTED AVERAGE EXPENDITURE	PERCENT CHANGE 1978-1979
PROCESSING	25	9%	28	13%	4%	31	14%	44%
	19	6	22	8	2	22	9	33
	6	4	6	4	-	6	5	0
	16	7	16	6	(1)	13	7	(14)
SUBTOTAL	66	7%	72	7%	0	72	8%	0%
SOFTWARE PRODUCTS	5	30	6	26	(4)	6	19	(14%)
	4	22	4	21	(1)	4	27	(5)
	2	14	3	17	3	3	13	21
	11	14%	13	17%	3%	13	16%	21%
SUBTOTAL								
PROFESSIONAL SERVICES	5	9	7	10	1	7	11	11
	4	4	4	4	-	4	5	0
	4	7	5	6	(1)	5	7	(14)
	13	7%	16	6%	(1)	16	7%	(14%)
SUBTOTAL								
TOTAL	90	7%	101	7%	0	101	8%	0%

NOTE: ABOVE COSTS ARE EXPRESSED AS A WEIGHTED AVERAGE PERCENT OF TOTAL COMPUTER SERVICES REVENUES.

J. MINI/MICROCOMPUTER IMPACT

- In the 1978 ADAPSO survey, a number of questions were asked regarding mini/microcomputer impact. Key findings were:
 - Eighty percent of processing companies felt some vulnerability to mini/micros.
 - Software products and professional services companies felt little vulnerability.
 - Industry specialized applications were perceived to be less vulnerable than general business applications.
 - Smaller companies felt more vulnerable than large companies.
- As the price/performance of mini/micros continues to improve and the cost of storage declines, the use of hardware at the user site will continue to increase. To track this development, some questions regarding mini/micros were repeated in the 1979 survey. Results are presented in Exhibits III-23 and III-24.
- Exhibit III-23 reflects the intentions of respondents relative to installing minicomputers on customer sites.
 - In the 1978 survey, respondents did not forecast increased activity beyond 1978. In the current survey, respondents do not forecast increased involvement beyond 1979, as shown by the level number of affirmative responses in 1979 and 1980.
 - Evidently, the industry is still taking a "wait and see" attitude with one-half of the companies withholding entry into the user-site minicomputer area.

EXHIBIT III-23

NUMBER OF RESPONDENTS PROJECTING MINICOMPUTER
INSTALLATIONS AT CUSTOMER SITES

COMPANY TYPE/SIZE OF RESPONDENTS	TOTAL NUMBER OF RESPONDENTS TO THE SURVEY	NUMBER OF RESPONDENTS REPORTING INSTALLED MINICOMPUTERS			
		1977	1978	1979	1980
<u>PROCESSING SERVICES</u>					
<\$2M	42	12	20	28	29
\$2-10M	30	10	13	20	18
\$10-25M	7	1	2	5	5
>\$25M	22	4	8	9	9
<u>SOFTWARE PRODUCTS</u>					
<\$2M	11	2	4	7	7
\$2-10M	7	2	2	2	2
>\$10M	7	2	3	3	3
<u>PROFESSIONAL SERVICES</u>					
<\$2M	13	2	7	8	8
\$2-10M	8	2	2	2	2
>\$10M	10	1	1	2	2
TOTAL	157	38	62	86	85

- The number of minicomputers at user sites continues to grow based on the respondents who currently offer minis.
 - Exhibit III-24 shows a 50% compounded growth rate between 1979-1983. This continues the growth trend since 1977.
 - The figures for software products companies are distorted somewhat by one respondent in the less than \$2 million category and one respondent in the more than \$10 million category who anticipate very heavy activity.
- On balance, the conclusions are unchanged from the 1978 survey in that user-site minicomputers will play a growing role in the computer services industry, and that the role will evolve steadily over the next two to four years.
- Comments from individual respondents on the minicomputer issue are included as Chapters IV, V, and VI.

K. CHANGES IN MODES OF DELIVERY

- Changes in modes of delivery among remote computing, batch services, and facilities management are presented in Exhibit III-25.
 - Continuing the currently recognized trends, remote computing is growing at a compounded average rate of 16% between 1979 and 1983 based on survey responses.
 - Batch service revenues grow slightly.
 - The number of respondents expecting to have remote computing FM revenues by 1983 doubles from the 1977 level, while the number expecting batch revenues remains constant.

EXHIBIT III-24

RESPONDENTS' PROJECTED MINICOMPUTER INSTALLATIONS
AT CUSTOMER SITES

YEAR TYPE/SIZE OF VENDOR	MINICOMPUTERS INSTALLED AT USER SITES											
	FISCAL 1977			FISCAL 1978			FISCAL 1979 (EST.)			FISCAL 1983 (EST.)		
	NUMBER OF INSTALLA- TIONS	AVERAGE NUMBER PER RESPONDENT	NUMBER OF INSTALLA- TIONS	AVERAGE NUMBER PER RESPONDENT	NUMBER OF INSTALLA- TIONS	AVERAGE NUMBER PER RESPONDENT	NUMBER OF INSTALLA- TIONS	AVERAGE NUMBER PER RESPONDENT	NUMBER OF INSTALLA- TIONS	AVERAGE NUMBER PER RESPONDENT	NUMBER OF INSTALLA- TIONS	AVERAGE NUMBER PER RESPONDENT
<u>PROCESSING SERVICES</u>	<\$2M	42	4	86	4	284	10	621	21			
	\$2-10M	83	8	220	17	474	24	952	53			
	\$10-25M	3	3	12	6	70	14	160	32			
	>\$25M*	101	25	211	26	435	48	802	89			
<u>SOFTWARE PRODUCTS</u>	<\$2M	90	45	175	44	1,775	254	4,964	709			
	\$2-10M	22	11	33	17	50	25	80	40			
	>\$10M	901	451	1,507	502	2,222	741	3,040	1,013			
<u>PROFESSIONAL SERVICES</u>	<\$2M	7	4	50	7	99	12	203	25			
	\$2-10M	65	33	95	48	150	75	210	105			
	>\$10M	20	20	30	30	58	29	100	50			
TOTAL	1,334	35	2,419	39	5,617	65	11,132	131				

*EXCLUDES ONE RESPONDENT WHO ESTIMATED 12,000 INSTALLED BY 1983 WITH HALF THAT AMOUNT INSTALLED BY 1979.

EXHIBIT III-25

CHANGES IN MODE OF DELIVERY OF RESPONDING
COMPUTER SERVICES COMPANIES (1977-1983)

FISCAL YEAR	REMOTE COMPUTING		BATCH SERVICES	
	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES
1977	\$10,477	60	\$2,881	76
1978	11,800	70	4,277	82
1979	11,004	66	3,836	74
1983	20,054	69	5,506	62
AMOUNT OF ABOVE DELIVERED AS FM				
1977	\$ 2,337	9	\$1,461	17
1978	2,351	13	2,364	20
1979	2,271	15	2,703	18
1983	3,702	18	2,659	18

NOTE: THE DIFFERENT NUMBER OF RESPONDENTS REPORTING FM REVENUES VERSUS THOSE REPORTING TOTAL RCS AND BATCH REVENUES MEANS THAT DIRECT COMPARISONS BETWEEN THE RESPONSES CANNOT BE MADE BECAUSE THE RESPONDENT GROUP IN EACH CASE IS DIFFERENT. HOWEVER THE TREND WITHIN EACH MODE OF DELIVERY IS SIGNIFICANT. ALSO SIGNIFICANT IS THE NUMBER OF RESPONSES PER MODE SINCE IT INDICATES THE RELATIVE NUMBER OF VENDORS ACTIVE IN RCS, BATCH AND/OR FM.

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IV PROCESSING SERVICES COMPANIES PERFORMANCE

IV PROCESSING SERVICES COMPANIES PERFORMANCE

A. TOTAL PROCESSING REVENUE ANALYSIS

- Companies whose revenues were derived primarily from remote computing, batch, and facilities management services are classified as processing services companies. Their revenues comprise 74% of the 1979 ADAPSO survey respondent total.
 - Since two-thirds of the responding companies are processing services companies, survey results for this category of company are presented in greater detail than could be done for software companies and professional services companies (Chapters V and VI) where less data is available.
 - In the first section of this chapter, an analysis is made of the total category and comparisons are made between sizes of processing services company.
 - In the second section, each size category is discussed separately:
 - Companies with 1978 revenues of less than \$2 million.
 - Companies with 1978 revenues of \$2-10 million.

- Companies with 1978 revenues of \$10-25 million.
- Companies with 1978 revenues of over \$25 million.

I. SOURCES OF 1977-1978 REVENUE

- As shown in Exhibit IV-1, non-U.S. revenues (Canadian, European and other non-U.S.) were the fastest growing source of revenues.
 - They accounted for almost 10% of the revenues for companies over \$25 million.
 - The average non-U.S. revenues for all respondents was \$1,330.
 - European revenues dominate.
- Captive revenues among respondents grew slightly faster than total revenues and significantly faster than the category of revenues on which most of this analysis is based - total available U.S. revenues.
- The large companies (those with 1978 revenues over \$25 million) dominate the category with 88% of the total.

2. IMPACT OF ACQUISITIONS, INFLATION

- Acquisitions were extremely important to the 1977-1978 growth of processing companies, with 20% of the incremental growth being due each to 1977 acquisitions and 1978 acquisitions made by responding companies. Acquisition revenues are presented in Exhibit IV-2.
 - The acquisition activity was concentrated among the largest companies.

EXHIBIT IV-1
 REVENUE, PROFIT LEVELS AND GROWTH FOR RESPONDING
 PROCESSING SERVICES COMPANIES - TOTAL
 (\$ THOUSAND)

ANNUAL 1978 REVENUES	TOTAL REVENUES	CAPTIVE REVENUES	CANADIAN REVENUES	EUROPEAN REVENUES	OTHER NON-U.S. REVENUES	TOTAL AVAILABLE U.S. REVENUES
<\$2M 1977	\$ 33,179	\$ 1,209	\$ 0	\$ 0	\$ 0	\$ 31,970
1978	40,012	1,241	0	0	0	38,771
% GROWTH	21%	3%	-	-	-	21%
\$2-\$10M 1977	\$ 111,714	\$ 5,671	\$ 4,539	\$ 426	\$ 0	\$ 101,078
1978	134,451	6,019	4,412	0	0	124,020
% GROWTH	20%	6%	*	*	-	23%
\$10-\$25M 1977	\$ 102,883	\$ 599	\$ 60	\$ 757	\$ 1,598	\$ 99,869
1978	127,643	964	152	5,608	2,243	118,676
% GROWTH	24%	*	*	*	*	19%
>\$25M 1977	\$1,745,623	\$243,126	\$10,933	\$ 77,878	\$35,540	\$1,378,146
1978	2,188,154	310,230	12,615	110,908	74,676	1,679,725
% GROWTH	25%	28%	15%	42%	*	22%
TOTAL 1977	\$1,993,399	\$250,605	\$15,532	\$ 79,061	\$37,138	\$1,611,063
1978	2,490,260	318,454	17,179	116,516	76,919	1,961,192
% GROWTH	25%	27%	11%	47%	107%	22%

*FEWER THAN 5 RESPONSES

EXHIBIT IV-2

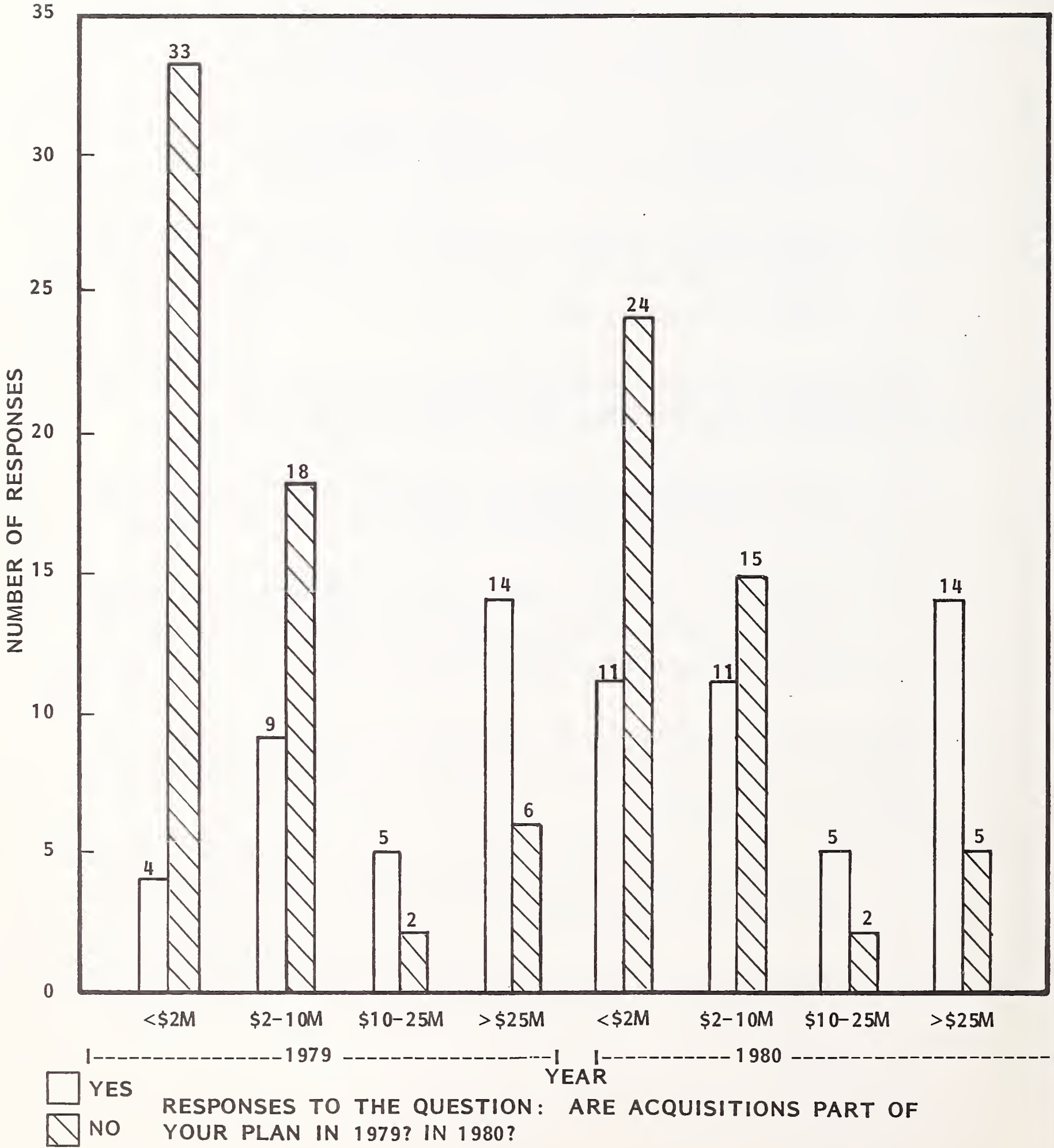
IMPACT OF ACQUISITIONS AND INFLATION ON RESPONDING
PROCESSING SERVICES COMPANIES
(\$ THOUSAND)

GROWTH COMPONENT	SIZE CATEGORY	<\$2M	\$2-10M	\$10-25M	>\$25M	TOTAL
	TOTAL ACTUAL AVAILABLE U.S. REVENUE GROWTH 1977-1978*		\$6,801	\$22,942	\$18,807	\$301,579
OVERALL GROWTH RATE 1977-1978		21%	23%	19%	22%	22%
1978 GROWTH DUE TO 1978 ACQUISITIONS		\$ 415	\$ 50	\$ 4,592	\$ 64,772	\$ 69,829
NET REVENUE GROWTH 1977 - 1978*		\$6,386	\$22,892	\$14,215	\$236,807	\$280,300
PERCENT ACTUAL GROWTH NET OF 1978 ACQUISITIONS		20%	23%	14%	17%	17%
REVENUE GROWTH DUE TO INFLATION*		\$2,027	\$ 4,821	\$ 2,816	\$ 61,741	\$ 71,405
INFLATION RATE 1977-1978		6.3%	4.8%	2.8%	4.5%	4.4%
REAL REVENUE GROWTH 1977-1978		\$4,359	\$18,071	\$11,399	\$175,066	\$208,895
PERCENT ACTUAL GROWTH NET OF ACQUISITIONS AND INFLATION-"REAL GROWTH"		14%	18%	11%	13%	13%

- The revenue contribution of 1978 acquisitions to 1978 revenues was double the contribution of 1977 acquisitions to 1977 revenues; evidence of the accelerated acquisition pace in 1978.
 - 1977 growth due to 1977 acquisitions was \$28 million of which \$26 million was in companies with revenues over \$25 million.
 - 1978 growth due to 1977 acquisitions was \$70 million of which \$68 million was in companies with revenues over \$25 million.
 - Among smaller companies, the acquisition activity was a minor contribution to growth. Of course, these smaller companies are often themselves acquisition targets.
- The impact of inflation is perceived to have a smaller effect than is the case with software products or professional services companies.
 - As shown in Exhibit IV-2, only companies with 1978 revenues of less than \$2 million saw an impact even approaching the national average.
 - Companies in the \$10-25 million category, which tend to be heavily involved in remote computing services with a low labor content, see an impact on prices due to inflation of less than 3%.
- The acquisition activity among processing services companies is expected to continue to grow if the responding companies are successful in implementing their 1979 and 1980 plans.
 - As shown in Exhibit IV-3, a number of smaller companies are planning to initiate acquisition activity.
 - Among the large companies, a minority of companies evidently plan to resist acquisition activity through 1980 and rely on internally generated growth.

EXHIBIT IV-3

ACQUISITION PLANS OF RESPONDING
PROCESSING SERVICES COMPANIES



B. ANALYSIS OF REVENUES BY TYPE OF SERVICE

- Although companies were categorized according to their dominant source of revenue (processing services, software products or professional services), some companies offer services in more than one category, as shown in Exhibit IV-4.
 - Processing services dominate, as would be expected, but interestingly, processing services companies have some participation in each of the other categories as well.
 - All categories are expected to grow in 1979, according to respondents, except for fixed price custom software in the professional services category; evidently, processing services companies are also feeling the negative impact on profits experienced by professional services companies who participate in this sub-category in an inflationary economy.
- The dominant type of service is general business, those processing services for applications which are common to users across industry categories. Software is provided by the vendor. This can be a complete package, such as a payroll package, or an application "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.
 - Growth is expected by respondents to continue at the 1977-1978 rate of 22%.
 - As shown in Exhibit IV-5, general business services tend to be even more dominant among those processing services companies with revenues of less than \$2 million. These revenues are a target of manufacturers who aim to replace them with on-site minicomputers.

EXHIBIT IV-4

PERCENT OF REVENUES BY TYPE OF SERVICE OF
RESPONDING PROCESSING SERVICES COMPANIES

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 777,943	41.3%	21.5%	21.7%
SCIENTIFIC AND ENGINEERING.	163,288	8.7	14.6	17.4
INDUSTRY SPECIALTY.	648,397	34.4	34.3	16.6
UTILITY.	109,943	5.8	23.0	13.1
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	\$ 10,872	0.6%	35.8%	30.3%
INDUSTRY SPECIALIZED.	35,185	1.9	20.2	5.9
SYSTEM PRODUCTS				
SYSTEM OPERATION.	5,411	0.3	*	*
SYSTEM UTILIZATION.	5,605	0.3	*	*
IMPLEMENTATION SYSTEM.	11,514	0.6	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	\$ 52,832	2.8%	21.3%	16.7%
CUSTOM SOFTWARE				
FIXED PRICE.	14,911	0.8	11.8	(9.5)
CUSTOM SOFTWARE				
COST PLUS FEE.	33,020	1.8	22.6	21.6
CONSULTING EDUCATION				
TRAINING.	15,108	0.8	4.8	7.0
TOTAL**	\$ 1,884,029	100%***	22.8%	17.3%

*FEWER THAN 5 RESPONSES.

**BECAUSE RESPONDENTS DID NOT CATEGORIZE ALL REVENUES BY TYPE, THE REVENUE TOTAL IS SMALLER THAN SHOWN IN EXHIBIT IV-1.

***MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

EXHIBIT IV-5

REVENUE DISTRIBUTION BY TYPE OF SERVICE -
COMPARISON BY SIZE OF RESPONDING
PROCESSING SERVICES COMPANY

TYPE OF SERVICE \ SIZE OF COMPANY	PERCENT OF TOTAL 1978 U.S. REVENUES			
	<\$2M MILLION	\$2-10 MILLION	\$10-25 MILLION	>\$25M MILLION
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	64%	40%	32%	42%
SCIENTIFIC AND ENGINEERING .	2	4	-	10
INDUSTRY SPECIALTY	24	40	38	34
UTILITY.	3	11	14	5
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY1	1	-	1
INDUSTRY SPECIALIZED1	1	13	1
SYSTEM PRODUCTS				
SYSTEM OPERATION.	-	-	-	-
SYSTEM UTILIZATION.	-	-	-	-
IMPLEMENTATION SYSTEM	-	-	-	1
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS	4	2	2	3
CUSTOM SOFTWARE				
FIXED PRICE.	1	1	2	1
CUSTOM SOFTWARE				
COST PLUS FEE	-	-	-	2
CONSULTING EDUCATION				
TRAINING	-	-	-	1
TOTAL*	100%	100%	100%	100%

*MAY NOT ADD UP TO 100 BECAUSE OF ROUNDING

- Scientific and engineering services are a solid revenue contributor, particularly with the larger companies. These services offer 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.
 - Growth lags the industry average, as shown in Exhibit IV-4.
 - These services are often the oldest in the mix of services, and represent a relatively mature market.

- Industry specialty had the most rapid growth (34% in 1977-1978) in the view of respondents and shown in Exhibit IV-4. These 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 application "tool" which the user employs to produce its 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.
 - Respondents were less optimistic regarding growth in 1978-1979, anticipating something less than the industry average. INPUT's research indicates that respondents are overly conservative and that industry specialty services will continue to grow at greater than the industry average.

- As shown in Exhibit IV-5, companies in the \$2-10 million category are particularly committed to industry specialty applications. This reflects the characteristic of this size category of company in that they are often successful in one industry specialized application in an industry sector such as banking and finance or medical.
- Utility services had a healthy growth among respondents in 1977-1978 but a slowdown is expected in 1978-1979, as reported in Exhibit IV-4. 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.
 - Some segments of this type of service, such as DBMS services, are forecasted by INPUT to grow rapidly.
 - Some other segments, particularly the sale of processing time, will decline.
 - As shown in Exhibit IV-5, utility services tend to be most important to mid-sized processing companies.

C. ANALYSIS OF REVENUES BY INDUSTRY SECTOR

- Banking and finance represents, by far, the largest industry sector market for processing services, as shown in Exhibit IV-6.
 - It attracted the greatest number of respondents and a relatively high revenue per respondent (second only to federal government).

EXHIBIT IV-6

INDUSTRY SECTOR MARKETS FOR PROCESSING SERVICES
OF RESPONDING COMPANIES

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS 1978	AVERAGE REVENUE PER RESPONDENT (\$ THOUSAND)
DISCRETE MANUFACTURING	\$138,323	9.8%	46	\$3,007
PROCESS MANUFACTURING	62,487	4.4	33	1,894
TRANSPORTATION	23,475	1.7	23	1,021
UTILITIES	63,955	4.6	30	2,132
BANKING AND FINANCE	330,695	23.5	55	6,013
INSURANCE	85,412	6.1	40	2,135
MEDICAL	75,495	5.4	36	2,097
EDUCATION	4,510	0.3	23	196
RETAIL	113,330	8.1	46	2,464
WHOLESALE	48,397	3.4	39	1,241
FEDERAL GOVERNMENT	139,261	9.9	19	7,330
STATE AND LOCAL GOVERNMENT	66,787	4.7	34	1,964
SERVICES (CPA's, LAWYERS)	59,924	4.3	43	1,394
OTHER	194,494	13.8	47	4,138
TOTAL	\$1,406,545	100%	-	-

- Other major markets include manufacturing, insurance, medical, and retailing.
- Several sectors, notably transportation and education, are still minor processing services markets.
- In Exhibit IV-7, the industry sector markets are segregated by type and size of vendor to show the mix of total revenues by category of company.
 - Large professional services companies are also active in the processing services market; this includes activities outside of the federal government, indicative of diversification efforts by these companies.
 - Software products companies have little activity in processing services.
 - The large processing services companies account for almost three-fourths of the market.
- Industry sector markets vary significantly by size of processing services company, as shown in Exhibit IV-8.
 - Smaller processing services companies tend to have their revenues spread more evenly across the industry sectors.
 - Companies in the \$10-25 million category have the most focus, tending to select and concentrate on a few sectors.

EXHIBIT IV-7

COMPUTER SERVICES VENDOR 1978 REVENUES REPORTED BY
RESPONDENT COMPANIES BY USER INDUSTRY SECTOR

PROCESSING SERVICES VENDOR 1978 REVENUES REPORTED BY RESPONDENT COMPANIES BY USER INDUSTRY SECTOR IN (\$ THOUSAND)												
PROCESSING SERVICE VENDOR USER INDUSTRY SECTOR	VENDOR TYPE/SIZE				VENDOR TYPE/SIZE			VENDOR TYPE/SIZE			TOTAL	PERCENT OF TOTAL
	PROCESSING SERVICES				SOFTWARE PRODUCTS			PROFESSIONAL SERVICES				
	<\$2M	\$2-10M	\$10-25M	>\$25M	<\$2M	\$2-10M	>\$10M	<\$2M	\$2-10M	>\$10M		
DISCRETE MANUFACTURING	\$ 4,711	\$ 16,974	\$ 6,400	\$ 100,476	-	\$ 600	-	\$ 127	\$ 1,182	\$ 7,853	\$ 138,323	9.8%
PROCESS MANUFACTURING	2,359	6,366	1,861	48,535	-	-	-	63	273	3,025	\$ 62,487	4.4%
TRANSPORTATION	102	948	1,072	20,118	-	-	-	2	8	1,225	\$ 23,475	1.7%
UTILITIES	948	5,467	1,492	52,947	-	-	-	-	91	3,010	\$ 63,955	4.6%
BANKING AND FINANCE	4,446	43,174	28,557	248,027	400	-	-	36	2,405	3,650	\$ 330,695	23.5%
INSURANCE	2,712	4,400	3,083	70,499	-	-	836	-	489	3,393	\$ 85,412	6.1%
MEDICAL	1,346	5,453	1,324	54,524	-	-	-	-	3,920	8,928	\$ 75,495	5.4%
EDUCATION	506	1,170	827	1,979	-	-	-	1	2	25	\$ 4,510	0.3%
RETAIL	3,119	3,943	18,256	86,667	-	359	-	-	136	850	\$ 113,330	8.1%
WHOLESALE	2,053	4,515	4,322	36,028	-	300	-	9	107	1,250	\$ 48,397	3.4%
FEDERAL GOVERNMENT	75	605	4,322	87,728	-	-	-	-	-	46,531	\$ 139,261	9.9%
STATE AND LOCAL GOVERNMENT	1,327	1,034	10,527	52,294	-	-	-	-	2	1,603	\$ 66,787	4.7%
SERVICES (CPAs, LAWYERS, ETC.)	2,503	6,785	2,548	31,992	-	600	-	21	148	15,327	\$ 59,924	4.3%
OTHER	5,667	16,577	12,570	131,298	8	-	-	-	800	27,574	\$ 194,494	13.8%
TOTAL	\$31,874	\$117,411	\$96,974	\$1,023,112	\$408	\$1,859	\$ 836	\$259	\$9,568	\$124,244	\$1,406,545	-
PERCENT OF TOTAL	2.3%	8.3%	6.9%	72.7%	0.03%	1.0%	0.06%	0.02%	0.7%	8.8%	-	100%

EXHIBIT IV-9

EXPENDITURE DISTRIBUTION OF RESPONDING
PROCESSING SERVICES COMPANIES

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	\$ (THOUSANDS)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	\$ (THOUSANDS)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$ 77,477	7.6%	58	\$ 30,246	8.5%	46
SALES	195,458	19.2	59	93,817	26.5	51
RESEARCH AND PRODUCT DEVELOPMENT	62,554	6.2	61	30,706	8.7	45
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	216,104	21.2	70	123,745	35.0	56
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS.	10,906	1.1	19	9,165	2.6	16
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	177,425	17.4	74	7,825	2.2	17
d. DATA COMMUNICATIONS	55,609	5.5	50	11,951	3.4	13
e. FACILITY OPERATIONS	53,352	5.2	54	2,451	0.7	15
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	17,136	1.7	35	-	-	-
GENERAL ADMINISTRATIVE	100,500	9.9	75	32,307	9.1	54
ALL OTHER	50,850	5.0	33	11,665	3.3	7
TOTAL	\$1,017,371	100%	80	\$353,878	100%	60

EXHIBIT IV-10

EXPENDITURE DISTRIBUTION - COMPARISON BY SIZE
OF RESPONDING PROCESSING SERVICES COMPANY

CATEGORY OF EXPENDITURE	SIZE OF COMPANY	PERCENT OF TOTAL 1978 EXPENDITURES			
		<\$2M	\$2-10M	\$10-25M	>\$25M
MARKETING		3%	4%	9%	8%
SALES		5	7	14	22
RESEARCH AND PRODUCT DEVELOPMENT		5	5	5	7
OPERATIONS					
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS		31	27	16	21
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS		6	5	1	-
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE		21	22	22	17
d. DATA COMMUNICATIONS		2	2	7	6
e. FACILITY OPERATIONS		6	6	5	5
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES		1	1	2	-
GENERAL ADMINISTRATIVE		15	16	20	8
ALL OTHER		6	5	1	5
TOTAL*		100%	100%	100%	100%

*MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING

EXHIBIT IV-8

INDUSTRY SECTOR MARKETS - COMPARISON BY
SIZE OF RESPONDING PROCESSING SERVICES COMPANY

INDUSTRY SECTOR FORECAST	SIZE OF COMPANY	PERCENT OF TOTAL 1978 U.S. REVENUES			
		<\$2M	\$2-10M	\$10-25M	>\$25M
DISCRETE MANUFACTURING		15%	15%	7%	10%
PROCESS MANUFACTURING		7	5	2	5
TRANSPORTATION		-	1	1	2
UTILITIES		3	5	2	5
BANKING AND FINANCE		14	37	30	24
INSURANCE		9	4	3	7
MEDICAL		4	5	1	5
EDUCATION		2	1	1	-
RETAIL		10	3	19	9
WHOLESALE		6	4	4	4
FEDERAL GOVERNMENT		-	1	5	9
STATE AND LOCAL GOVERNMENT		4	1	11	5
SERVICES (CPAs, LAWYERS)		8	6	3	3
OTHER		18	14	13	13
TOTAL		100%	100%	100%	100%

*MAY NOT ADD UP TO 100 BECAUSE OF ROUNDING

D. ANALYSIS OF EXPENDITURES

- In the 1979 survey, the expenditure data was gathered in terms of total expenditures and in terms of direct personnel compensation only. Results are tabulated in Exhibit IV-9.
 - Over 60% of direct personnel compensation is in two categories: sales and operational personnel.
 - Computer system equipment and maintenance understandably has a high total expenditure but a low direct compensation content.
- Exhibit IV-10 reveals the very significant differences between the expenditure patterns of responding companies depending on revenue size.
 - Companies with revenues below \$10 million spend less than half of the percentage on marketing and sales as do their larger contemporaries.
 - The sharp drop off in general administrative expenses for companies with revenues over \$25 million is evidence of some economies of scale. This also relates to the higher profits of the larger companies as presented in Chapters II and III.

E. ANALYSIS OF BALANCE SHEET DATA

- Balance sheet data gathered from respondents shows the processing services companies to be in a liquid, healthy condition, as presented in Exhibit IV-11.
 - Asset and liability items are growing, consistent with the 22% revenue growth reported by respondents.

EXHIBIT IV-11

KEY BALANCE SHEET, PROFIT AND FINANCIAL
ITEMS OF RESPONDING PROCESSING SERVICES COMPANIES

ITEM OR RATIO	NUMBER OF RESPON- DENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	78	\$3,706	\$4,866	31%
TOTAL CURRENT ASSETS	77	6,402	8,522	33
TOTAL ASSETS	82	28,042	30,621	9
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	52	555	730	32
TOTAL CURRENT LIABILITIES	72	4,024	5,089	26
LONG-TERM DEBT LESS CURRENT PORTION	56	3,947	4,058	3
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	74	8,680	10,612	22
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	83	2,216	3,116	41
AFTER TAXES AND BEFORE EXTRA- ORDINARY ITEMS	75	1,279	1,771	38
<u>FINANCIAL</u>				
CURRENT RATIO	72	2.4	2.4	-
RETURN ON AVERAGE EQUITY	65	-	30%	13
TOTAL DEBT OVER TOTAL CAPITAL	47	0.442	0.449	2
LONG TERM DEBT OVER NET WORTH	50	1.22	0.81	(66)
TRADE RECEIVABLES TURNOVER, (DAYS)	83	53	56	6

NOTE: SELECTED ASSETS, SELECTED LIABILITIES, PROFITS, AND RETURN ON INVESTMENT ARE WEIGHTED AVERAGES. OTHER FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- Profits before and after tax are growing faster than revenues.
- Current ratios are holding constant.
- Return on average equity is a healthy 30% on a straight average basis. On a weighted average basis, it is lower reflecting the impact of the large companies, but is still a very respectable 18%.
- Balance sheet data is presented by company size in Exhibit IV-12.
 - The smaller companies (those with less than \$2 million in 1978 revenues) are most liquid with an average current ratio of 3.2.
 - The weighted average return on average equity is as follows depending on company revenue size: less than \$2 million, 33%; \$2-10 million, 26%; \$10-25 million, 16%; and greater than \$25 million, 17%. These reflect the somewhat higher returns of the smaller companies in each category.
 - With regard to managing receivables turnover, there is a definite relationship between size and trade receivables period in that smaller companies collect in 30% less time than do the larger companies. This reflects a difference in business base in that smaller companies are typically dealing with a smaller, local client base.

F. CHANGES IN MODES OF DELIVERY

- The continued existence of batch services in 1983 is reflected in Exhibit IV-13.
 - Respondents expect continued revenues in batch services although the growth is clearly in remote computing services.

EXHIBIT IV-12

BALANCE SHEET DATA - COMPARISON BY SIZE
OF RESPONDING PROCESSING SERVICES COMPANY

ITEM OR RATIO	SIZE OF COMPANY	\$ THOUSAND - 1978 FISCAL YEAR DATA			
		<\$2M	\$2-10M	\$10-25M	>\$25M
<u>SELECTED ASSETS</u>					
TRADE RECEIVABLES		\$136	\$ 784	\$ 3,468	\$ 22,406
TOTAL CURRENT ASSETS		249	1,459	5,828	41,368
TOTAL ASSETS		501	3,366	14,182	136,275
<u>SELECTED LIABILITIES</u>					
CURRENT PORTION OF LONG TERM DEBT		59	425	1,090	2,362
TOTAL CURRENT LIABILITIES		167	997	2,830	24,794
LONG-TERM DEBT LESS CURRENT PORTION		228	1,087	3,895	13,844
TOTAL STOCKHOLDERS EQUITY (NET WORTH)		253	1,458	7,019	46,513
<u>PROFIT</u>					
BEFORE TAXES AND EXTRAORDINARY ITEMS		112	575	2,023	14,192
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS		84	382	1,138	8,123
<u>FINANCIAL</u>					
CURRENT RATIO		3.2	1.9	2.2	1.6
RETURN ON AVERAGE EQUITY		41%	35%	22%	22%
TOTAL DEBT OVER TOTAL CAPITAL		.5	.6	.4	.2
LONG TERM DEBT OVER NET WORTH		1.3	.9	.5	.3
TRADE RECEIVABLES TURNOVER, (DAYS)		45	55	61	65

NOTE: SELECTED ASSETS, SELECTED LIABILITIES, PROFITS, AND RETURN ON INVESTMENT ARE WEIGHTED AVERAGES. OTHER FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT IV-13

CHANGES IN MODE OF DELIVERY OF RESPONDING
PROCESSING SERVICES COMPANIES (1977-1983)

FISCAL YEAR	REMOTE COMPUTING		BATCH SERVICES	
	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES
1977	\$10,939	51	\$3,198	64
1978	13,022	57	4,858	68
1979	13,207	54	4,398	61
1983	23,577	57	6,498	49
AMOUNT OF ABOVE DELIVERED AS FM				
1977	\$2,625	8	\$1,452	15
1978	2,766	11	2,441	18
1979	2,812	12	2,976	15
1983	4,246	15	2,665	14

NOTE: THE DIFFERENT NUMBER OF RESPONDENTS REPORTING FM REVENUES VERSUS THOSE REPORTING TOTAL RCS AND BATCH REVENUES MEANS THAT DIRECT COMPARISONS BETWEEN THE RESPONSES CANNOT BE MADE BECAUSE THE RESPONDENT GROUP IN EACH CASE IS DIFFERENT. HOWEVER THE TREND WITHIN EACH MODE OF DELIVERY IS SIGNIFICANT. ALSO SIGNIFICANT IS THE NUMBER OF RESPONSES PER MODE SINCE IT INDICATES THE RELATIVE NUMBER OF VENDORS ACTIVE IN RCS, BATCH AND/OR FM.

- The weighted average revenue figures, being lower for batch for the period 1977-1983, is a result of smaller companies tending to have a higher proportion of batch services.
- Facilities management was defined in the survey as the management of all or part of a user's data processing function 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. Simply providing resources, even though under a long-term contract and/or for all of users' processing needs, does not necessarily qualify as FM. Respondents expect growth of FM in an RCS mode:
 - Twenty-six percent of those responding in Exhibit IV-13 expect to offer RCS based FM by 1983, double the amount offering it in 1977.
 - Those offering batch FM services, however, decline slightly over the 1977-1983 period.

G. ANALYSIS BY SIZE OF RESPONDING COMPANIES

- I. PROCESSING SERVICES COMPANIES WITH REVENUES LESS THAN \$2 MILLION
 - The 42 respondents to the survey in this category had 1978 U.S. available revenues of \$38.7 million or 2% of the total from all respondents to the survey in the processing services category (Exhibit IV-1).
 - All of the revenues of firms in this category came from U.S. sources.
 - Captive revenues were \$1.2 million or 0.4% of total survey captive revenues from processing.

- Gross 1978 profits of U.S. companies in this category were \$150 million or 11%. This compares to 13% for all processing companies and to 11% for the total industry.
- Respondents represent 2% of the estimated 1,760 U.S. companies in this category. The category comprises 50% of all computer services firms in the U.S.
- Respondents reported:
 - Average revenues per respondent company in 1978 were \$1 million.
 - The total number of employees in this category was 1,486 (U.S. and foreign), an average of 35 per respondent company.
 - The average revenue per employee was \$27,000.
 - The average profit per employee was \$3,200, the lowest among processing firm categories.
- Expenditure profiles are shown in Exhibit IV-14.
 - Personnel compensation as a percentage of total expenditures was slightly higher in this category: 44.8% compared to 32-35% in the larger companies.
 - Hardware and maintenance costs in this category averaged 21.1% compared to 16-22% in the larger firms.
 - Data communication costs were lower for these respondents: 1.5% compared to 2-6% in the larger companies.
- Balance sheet data from respondents is presented in Exhibit IV-15.

EXHIBIT IV-14

EXPENDITURE DISTRIBUTION OF RESPONDING PROCESSING SERVICES COMPANIES WITH REVENUES OF <\$2 MILLION

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	\$ (THOUSANDS)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	\$ (THOUSANDS)	PERCENT** OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$ 1,072	3.3%	24	\$659	4.5%	19
SALES	1,714	5.3	25	751	5.2	21
RESEARCH AND PRODUCT DEVELOPMENT	1,579	4.9	26	882	6.1	19
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	9,974	30.7	32	7,492	51.5	24
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS	1,931	6.0	7	1,791	12.3	6
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	6,857	21.1	37	871	6.0	7
d. DATA COMMUNICATIONS	481	1.5	18	*	*	*
e. FACILITY OPERATIONS	1,797	5.5	25	147	1.0	5
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	263	0.8	17	-	-	-
GENERAL ADMINISTRATIVE	4,929	15.2	37	1,956	13.4	24
ALL OTHER	1,856	5.7	15	*	-	*
TOTAL	\$32,453	100%	39	\$14,549	100%	29

*LESS THAN 5 RESPONDENTS

**PERCENT OF TOTAL BASED ON THOSE CATEGORIES WITH 5 OR MORE RESPONDENTS.

EXHIBIT IV-15
KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING PROCESSING SERVICES COMPANIES WITH REVENUES <\$2 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	34	\$117	\$136	16%
TOTAL CURRENT ASSETS	34	212	249	17
TOTAL ASSETS	35	412	501	22
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	17	43	59	37
TOTAL CURRENT LIABILITIES	31	135	167	24
LONG-TERM DEBT LESS CURRENT PORTION	19	169	228	35
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	31	203	253	25
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	37	84	112	33
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	32	62	84	35
<u>FINANCIAL</u>				
CURRENT RATIO	31	3.4	3.2	< 6 >
RETURN ON AVERAGE EQUITY	27		41%	
TOTAL DEBT OVER TOTAL CAPITAL	15	0.428	0.465	9
LONG TERM DEBT OVER NET WORTH	15	1.18	1.3	10
TRADE RECEIVABLES TURNOVER (DAYS)	34	47	45	< 4 >

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- Respondents in this category had 1978 profits of \$112,000, a 33% change from 1977 profits of \$84,000 (before taxes and extraordinary items). Return on average equity was 41% in 1978, based on a straight average in the exhibit.
- Trade receivables turnover was 45 days in 1978 compared to 47 in 1977.
- As shown in Exhibit IV-16, almost 94% of 1978 processing services companies' revenues were concentrated in processing services. In addition:
 - General business revenues were very high with 64.2% of the total. This area of business is particularly attractive to minicomputer use.
 - While the industry specialty application comprises a smaller percentage (24.2%) of revenues than does general business, it had an actual growth rate of 43.8% in 1978 versus 24% for general business. However, forecasted growth in 1979 is 25.9% for general business compared to 23.3% for industry specialty.
 - Utility services, which include data base management systems services, are forecasted to grow at 65.1% in 1979, the highest of any category except custom software.
- The distribution of revenues by industry reflects the tendency of the smaller services firms to deal with smaller local clients.
 - As shown in Exhibit IV-17, discrete manufacturing and banking and finance are the leading sources of revenue to processing services companies in this category. However, no single industry reaches higher than 15% of the total.
 - Wholesale, which was the second highest revenue source in 1977, has been overtaken by several other industries in 1978.

EXHIBIT IV-16
 PERCENT OF REVENUES BY TYPE OF SERVICE
 PROCESSING SERVICES COMPANIES WITH REVENUES
 <\$2 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 26,003	64.2%	24.0%	25.9%
SCIENTIFIC AND ENGINEERING.	892	2.2	*	*
INDUSTRY SPECIALTY.	9,817	24.2	43.8	23.3
UTILITY.	1,066	2.6	42.1	65.1
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY	309	0.8	*	*
INDUSTRY SPECIALIZED	269	0.7	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION		-	-	-
SYSTEM UTILIZATION	0	-	-	-
IMPLEMENTATION SYSTEM	0	-	-	-
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	1,727	4.3	24.1	70.4
CUSTOM SOFTWARE				
FIXED PRICE	324	0.8	83.3	38.9
CUSTOM SOFTWARE				
COST PLUS FEE	5	-	*	*
CONSULTING EDUCATION				
TRAINING	91	0.2	*	*
TOTAL	\$ 40,503	100% **	23.5%	29.8%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

EXHIBIT IV-17

INDUSTRY SECTOR MARKETS OF RESPONDING
PROCESSING SERVICES COMPANIES WITH
REVENUES < \$2 MILLION

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS 1978	AVERAGE REVENUE PER RESPONDENT (\$ THOUSAND)
DISCRETE MANUFACTURING	\$ 4,711	14.8%	17	\$ 277
PROCESS MANUFACTURING	2,359	7.4	13	181
TRANSPORTATION	102	0.3	5	20
UTILITIES	948	3.0	13	73
BANKING AND FINANCE	4,446	13.9	15	296
INSURANCE	2,712	8.5	15	181
MEDICAL	1,346	4.2	17	79
EDUCATION	506	1.6	11	46
RETAIL	3,119	9.8	21	149
WHOLESALE	2,053	6.4	19	108
FEDERAL GOVERNMENT	75	0.2	1	75
STATE AND LOCAL GOVERNMENT	1,327	4.2	13	102
SERVICES (CPA's, LAWYERS)	2,503	7.9	16	156
OTHER	5,667	17.8	18	315
TOTAL	\$31,874	100%	42	-

- Exhibit IV-18 shows the changes in mode of delivery of responding companies in this category.
 - Batch services was the predominant mode with \$778,000 in revenues in 1978 compared to \$390,000 from remote computing.
 - Batch services is anticipated to be the major mode of processing again in 1979 (\$919,000 versus \$474,000 for remote computing).
 - The amount delivered as FM, however, was \$529,000 (remote computing) versus \$229,000 (batch) in 1978. As FM, remote computing is forecasted to again outweigh batch in 1979.

- The majority of respondents (62%) felt that the installation of mini/micro-computers at the user site would have a definite impact on their plans within the next few years. Only 9% of the respondents had considered and rejected mini/micros, and 29% had no comment on the subject.
 - Those with definite mini/micro plans had such positive comments as:
 - "The basic growth of the company will come from this activity."
 - We are going from intelligent terminals to a mini "to (1) pre-edit more data and (2) be able to return reports to disk for the printer."
 - We plan to "start on a timesharing computer then install a scaled-down in-house system when time and storage charges go over \$1,500/month."
 - Some firms, however, had a note of caution. For example:
 - One firm planned to introduce minicomputers with packaged software "after this recession has come and gone."

EXHIBIT IV-18

CHANGES IN MODE OF DELIVERY OF RESPONDING
PROCESSING SERVICES COMPANIES
WITH REVENUES <\$2 MILLION

FISCAL YEAR	REMOTE COMPUTING		BATCH SERVICES	
	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES
1977	\$ 225	17	\$ 712	36
1978	390	20	778	39
1979	474	23	919	37
1983	1,229	28	1,557	31
AMOUNT OF ABOVE DELIVERED AS FM				
1977	\$ *	*	\$ 254	10
1978	*	*	229	12
1979	387	5	293	11
1983	753	7	166	10

* LESS THAN 5 RESPONDENTS

NOTE: THE DIFFERENT NUMBER OF RESPONDENTS REPORTING FM REVENUES VERSUS THOSE REPORTING TOTAL RCS AND BATCH REVENUES MEANS THAT DIRECT COMPARISONS BETWEEN THE RESPONSES CANNOT BE MADE BECAUSE THE RESPONDENT GROUP IN EACH CASE IS DIFFERENT. HOWEVER THE TREND WITHIN EACH MODE OF DELIVERY IS SIGNIFICANT. ALSO SIGNIFICANT IS THE NUMBER OF RESPONSES PER MODE SINCE IT INDICATES THE RELATIVE NUMBER OF VENDORS ACTIVE IN RCS, BATCH AND/OR FM.

- . Several firms will not start a mini/micro phase-in until at least 1980.
2. PROCESSING SERVICES COMPANIES WITH REVENUES OF \$2-10 MILLION
- The 30 respondents to the survey in this category had 1978 U.S. available revenues of \$124 million (Exhibit IV-1).
 - Gross 1978 profits of U.S. companies in this category were \$110 million or 13%. This compares to 13% for all processing companies and to 11% for the total industry.
 - Respondents reported:
 - Average revenues per respondent company in 1978 were \$4.6 million.
 - The total number of employees in this category was 3,524 (U.S. and foreign), an average of 117 per respondent company.
 - The average revenue per employee was \$38,000, and the average profit per employee was \$4,915.
 - Expenditure profiles are shown in Exhibit IV-19.
 - Personnel compensation as a percentage of total expenditures was 35.6%.
 - Hardware and maintenance costs for companies in this category averaged 22%, one of the highest compared to smaller and larger firms.
 - Data communications costs were 2.4%, about average for processing firms.
 - Balance sheet data from respondents is presented in Exhibit IV-20.

EXHIBIT IV-19

EXPENDITURE DISTRIBUTION OF RESPONDING PROCESSING SERVICES COMPANIES WITH REVENUES OF \$2-10 MILLION

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	\$ (THOUSANDS)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	\$ (THOUSANDS)	PERCENT** OF TOTAL	NUMBER OF RESPONDENTS
MARKETING.	\$ 3,486	3.5%	20	\$ 1,562	4.4%	15
SALES.	7,343	7.3	20	4,418	12.3	18
RESEARCH AND PRODUCT DEVELOPMENT.	5,235	5.2	21	2,975	8.3	15
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS.	27,577	27.4	25	16,451	45.8	20
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS.	4,777	4.7	9	4,359	12.2	7
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	22,342	22.2	22	*	-	*
d. DATA COMMUNICATIONS.	2,473	2.4	18	142	0.4	5
e. FACILITY OPERATIONS.	5,584	5.5	16	158	0.4	5
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	801	0.8	11	-	-	-
GENERAL ADMINISTRATIVE	16,240	16.1	25	5,820	16.2	18
ALL OTHER.	4,934	4.9	10	*	-	*
TOTAL	\$100,792	100%	26	\$35,885	100%	19

*LESS THAN 5 RESPONDENTS

**PERCENT OF TOTAL BASED ON THOSE CATEGORIES WITH 5 OR MORE RESPONDENTS

EXHIBIT IV-20
KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING PROCESSING SERVICES COMPANIES WITH REVENUES OF \$2-10 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	23	\$ 609	\$ 784	29%
TOTAL CURRENT ASSETS	23	985	1,459	48
TOTAL ASSETS	23	2,552	3,366	32
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	19	208	425	104
TOTAL CURRENT LIABILITIES	22	676	997	47
LONG-TERM DEBT LESS CURRENT PORTION	18	1,060	1,087	3
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	21	975	1,458	50
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	23	411	575	39
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	22	261	382	46
<u>FINANCIAL</u>				
CURRENT RATIO	22	1.7	1.9	12
RETURN ON STOCKHOLDERS INVESTMENT	18	-	35%	<4>
TOTAL DEBT OVER TOTAL CAPITAL	18	0.552	0.569	3
LONG TERM DEBT OVER NET WORTH	17	2.05	0.89	<57>
TRADE RECEIVABLES TURNOVER (DAYS)	22	55	61	11%

NOTE: SELECTED ASSETS, SELECTED LIABILITIES, PROFITS, AND RETURN ON INVESTMENT ARE WEIGHTED AVERAGES. OTHER FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- Respondents in this category had 1978 profits of \$575,000, a 39% change from 1977 profits of \$411,000 (before taxes and extraordinary items).
- Trade receivables turnover was 53 days in 1977 compared to 55 in 1978.
- As shown in Exhibit IV-21, processing services with \$119 million in revenues was the largest revenue category of firms in the \$2-10 million range.
 - Industry specialty was the largest application in processing services with revenues of over \$50 million, 39.8% of the total industry revenues.
 - General business was a close second with revenues comprising 39.5% of the industry total.
 - The highest 1977-1978 growth rate was industry specialty with 39.7%. However, the highest projected growth rate for 1978-1979 is utility with 51.4%.
- Banking and finance accounted for 36.8% of 1978 revenues for processing firms in this category. As shown in Exhibit IV-22, this illustrates the high degree of industry specialization in these firms.
 - Companies in this category often concentrate all their efforts on a single industry sector.
 - The relatively low compensation for the marketing staff in this category of companies, 4.4% versus, for example, 9.9% in companies with over \$25 million in revenues, may reflect this industry targeting.
- Exhibit IV-23 shows the changes in mode of delivery of responding companies.
- The impact of mini/micros will influence the operations of most respondents in 1978-1979. Almost 49% of respondents either were currently using

EXHIBIT IV-21
 PERCENT OF REVENUES BY TYPE
 OF SERVICE OF RESPONDING PROCESSING
 SERVICES COMPANIES WITH REVENUES OF \$2-10 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 49,803	39.5%	15.6%	10.8%
SCIENTIFIC AND ENGINEERING.	4,860	3.9	39.3	*
INDUSTRY SPECIALTY.	50,139	39.8	39.7	25.0
UTILITY.	14,140	11.2	37.8	51.4
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	1,731	1.4	*	*
INDUSTRY SPECIALIZED.	1,392	1.1	31.5	35.3
SYSTEM PRODUCTS				
SYSTEM OPERATION.	50	-	*	*
SYSTEM UTILIZATION.	0	-	*	*
IMPLEMENTATION SYSTEM	50	-	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	2,426	1.9	52.7	25.4
CUSTOM SOFTWARE				
FIXED PRICE.	872	0.7	26.2	32.4
CUSTOM SOFTWARE				
COST PLUS FEE.	251	0.2	*	*
CONSULTING EDUCATION				
TRAINING.	219	0.2	*	*
TOTAL	\$125,933	100%**	27.5%	23.6%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

EXHIBIT IV-22
INDUSTRY SECTOR MARKETS OF RESPONDING
PROCESSING SERVICES COMPANIES WITH
REVENUES OF \$2-10 MILLION

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	AVERAGE REVENUE PER RESPONDENTS (\$ THOUSAND)
DISCRETE MANUFACTURING	\$ 16,974	14.5%	14	\$1,212
PROCESS MANUFACTURING	6,366	5.4	8	796
TRANSPORTATION	948	.8	7	135
UTILITIES	5,467	4.7	6	911
BANKING AND FINANCE	43,174	36.8	18	2,399
INSURANCE	4,400	3.7	11	400
MEDICAL	5,453	4.6	8	682
EDUCATION	1,170	1.0	6	195
RETAIL	3,943	3.4	10	394
WHOLESALE	4,515	3.8	8	564
FEDERAL GOVERNMENT	605	.5	4	151
STATE AND LOCAL GOVERNMENT	1,034	.9	8	129
SERVICES (CPA s, LAWYERS)	6,785	5.8	12	565
OTHER	16,577	14.1	10	1,658
TOTAL	\$117,411	100%	30	-

EXHIBIT IV-23

CHANGES IN MODE OF DELIVERY OF RESPONDING
PROCESSING SERVICES COMPANIES
WITH REVENUES OF \$2-10 MILLION

FISCAL YEAR	REMOTE COMPUTING		BATCH SERVICES	
	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES
1977	\$2,517	20	\$1,919	19
1978	3,230	20	2,168	19
1979	4,488	17	2,522	16
1983	7,966	17	3,741	11
AMOUNT OF ABOVE DELIVERED AS FM				
1977	\$ 552	2	\$1,931	3
1978	579	2	1,805	4
1979	637	1	2,452	2
1983	1,407	3	539	2

NOTE: THE DIFFERENT NUMBER OF RESPONDENTS REPORTING FM REVENUES VERSUS THOSE REPORTING TOTAL RCS AND BATCH REVENUES MEANS THAT DIRECT COMPARISONS BETWEEN THE RESPONSES CANNOT BE MADE BECAUSE THE RESPONDENT GROUP IN EACH CASE IS DIFFERENT. HOWEVER THE TREND WITHIN EACH MODE OF DELIVERY IS SIGNIFICANT. ALSO SIGNIFICANT IS THE NUMBER OF RESPONSES PER MODE SINCE IT INDICATES THE RELATIVE NUMBER OF VENDORS ACTIVE IN RCS, BATCH AND/OR FM.

mini/microcomputers or had definite plans to integrate them into their services in the near future. Although 19% of respondents had no present mini/micro plans, three of these firms were "carefully observing industry trends." Thirty-two percent of respondents had no comment on mini/micros.

- The extent of the mini/micro impact was registered by such comments as:
 - . "We feel this will become a very important growth area (therefore) we have become a DEC OEM."
 - . "We are designing and employing micro processor technologies now for near-term applications along with IBM 4300 series computers."
- One respondent with the majority of its operations now in processing planned to become "100% mini and maxi software without mainframe processing services."
- None of the respondents in this category seemed to be cautious of the economic climate. Those who were not already offering mini/micro services planned to do so this year.

3. PROCESSING SERVICES COMPANIES WITH REVENUES OF \$10-25 MILLION

- The seven respondents to the survey in this category had 1978 U.S. available revenues of \$118.6 million (Exhibit IV-1).
- Gross 1978 profits of U.S. companies in this category were \$40 million or 11%, the lowest of the processing categories and equal to the 11% for the entire industry.
- Respondents represent 29% of the estimated 24 U.S. companies in this category.

- Respondents reported:
 - Average revenues per company in 1978 were \$18.3 million.
 - The total number of employees in this category was 2,850 (U.S. and foreign), an average of 407 per respondent company.
 - The average revenue per employee was \$45,000, and the average profit per employee was \$4,971.
- Expenditure profiles are shown in Exhibit IV-24.
 - Personnel compensation as a percentage of total expenditures was 38%.
 - Data communications costs were 7%, the highest among processing company categories.
- Balance sheet data from respondents is presented in Exhibit IV-25.
 - Respondents in this category had 1978 profits of \$2 million, a 17% change from 1977 profits of \$1.7 million (before taxes and extraordinary items).
 - Trade receivables turnover was 55 days in 1977 compared to 61 in 1978.
- As shown in Exhibit IV-26, processing services with \$85.3 million in revenues was the largest revenue source of firms in the \$10-25 million category.
- Banking and finance was the largest single sector of business for firms in this category, comprising 29.4% of total revenues in 1978. Exhibit IV-27 shows total revenues from the banking and finance sector as \$28.5 million.
- Exhibit IV-28 shows the changes in mode of delivery of responding companies.

EXHIBIT IV-24

EXPENDITURE DISTRIBUTION OF RESPONDING PROCESSING SERVICES COMPANIES WITH REVENUES OF \$10 - 25 MILLION

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	\$ (THOUSANDS)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	\$ (THOUSANDS)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$ 5,467	8.9%	4	\$ 2,346	10.2%	3
SALES	8,772	14.3	4	5,109	22.2	4
RESEARCH AND PRODUCT DEVELOPMENT	2,748	4.5	3	1,369	5.9	2
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	9,795	16.0	3	7,005	30.5	3
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS.	604	0.9	1	491	2.1	1
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	13,384	21.9	4	1,393	6.0	3
d. DATA COMMUNICATIONS	4,299	7.0	4	115	0.5	1
e. FACILITY OPERATIONS	3,100	5.1	4	376	1.5	1
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES		1.2	3	-	-	-
GENERAL ADMINISTRATIVE	11,905	19.5	4	4,509	19.6	4
ALL OTHER	398	0.7	1	321	1.4	1
TOTAL	\$61,197	100%	4	\$23,034	100%	4

EXHIBIT IV-25

KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING PROCESSING SERVICES COMPANIES WITH RESPONSES OF \$10-25 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	6	\$ 2,444	\$ 3,468	42%
TOTAL CURRENT ASSETS	6	4,648	5,828	25
TOTAL ASSETS	7	12,484	14,182	14
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	7	1,199	1,090	<9>
TOTAL CURRENT LIABILITIES	6	2,634	2,830	7
LONG-TERM DEBT LESS CURRENT PORTION	6	3,949	3,895	<1>
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	7	5,287	7,019	33
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	7	1,724	2,023	17
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	7	989	1,138	15
<u>FINANCIAL</u>				
CURRENT RATIO	6	1.8	2.2	22
RETURN ON AVERAGE EQUITY	7	-	22%	-
TOTAL DEBT OVER TOTAL CAPITAL	6	0.432	0.355	<18>
LONG TERM DEBT OVER NET WORTH	6	0.92	0.51	<45>
TRADE RECEIVABLES TURNOVER, (DAYS)	6	55	61	11

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT IV-26
 PERCENT OF REVENUES BY TYPE OF SERVICE
 OF RESPONDING PROCESSING SERVICES COMPANIES
 WITH REVENUES OF \$10-25 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 32,385	31.8%	*	*
SCIENTIFIC AND ENGINEERING.	0	-	-	-
INDUSTRY SPECIALTY.	38,422	37.7	40.6%	*
UTILITY.	14,517	14.3	*	*
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	0	-	-	-
INDUSTRY SPECIALIZED.	12,679	12.5	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION.	0	-	-	-
SYSTEM UTILIZATION.	0	-	-	-
IMPLEMENTATION SYSTEM	0	-	-	-
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	1,662	1.6	*	*
CUSTOM SOFTWARE				
FIXED PRICE.	1,850	1.8	*	*
CUSTOM SOFTWARE				
COST PLUS FEE.	315	.3	*	*
CONSULTING EDUCATION				
TRAINING.	0	-	-	-
TOTAL	\$101,830	100%**	*	*

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

EXHIBIT IV-27

INDUSTRY SECTOR MARKETS OF RESPONDING
PROCESSING SERVICES COMPANIES WITH
REVENUES OF \$10-25 MILLION

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	AVERAGE REVENUE PER RESPONDENTS (\$ THOUSAND)
DISCRETE MANUFACTURING	\$ 6,400	6.6%	2	\$3,200
PROCESS MANUFACTURING	1,861	1.9	1	1,861
TRANSPORTATION	1,072	1.1	3	357
UTILITIES	1,492	1.5	3	497
BANKING AND FINANCE	28,557	29.4	5	5,711
INSURANCE	3,083	3.2	2	1,541
MEDICAL	1,324	1.4	2	662
EDUCATION	827	.8	1	827
RETAIL	18,256	18.8	4	4,564
WHOLESALE	4,135	4.3	1	4,135
FEDERAL GOVERNMENT	4,322	4.5	2	2,161
STATE AND LOCAL GOVERNMENT	10,527	10.9	3	3,509
SERVICES (CPA's, LAWYERS)	2,548	2.6	2	1,274
OTHER	12,570	13.0	3	4,190
TOTAL	\$ 96,974	100%	7	-

EXHIBIT IV-28

CHANGES IN MODE OF DELIVERY OF RESPONDING
PROCESSING SERVICES COMPANIES
WITH REVENUES OF \$10-25 MILLION

FISCAL YEAR	REMOTE COMPUTING		BATCH SERVICES	
	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES
1977	\$11,140	4	*	*
1978	12,801	4	*	*
1979	16,178	4	*	*
1983	30,091	4	*	*
AMOUNT OF ABOVE DELIVERED AS FM				
1977	\$5,156	3	*	*
1978	5,914	3	*	*
1979	7,366	3	*	*
1983	9,848	3	*	*

*ONLY ONE RESPONSE

NOTE: THE DIFFERENT NUMBER OF RESPONDENTS REPORTING FM REVENUES VERSUS THOSE REPORTING TOTAL RCS AND BATCH REVENUES MEANS THAT DIRECT COMPARISONS BETWEEN THE RESPONSES CANNOT BE MADE BECAUSE THE RESPONDENT GROUP IN EACH CASE IS DIFFERENT. HOWEVER THE TREND WITHIN EACH MODE OF DELIVERY IS SIGNIFICANT. ALSO SIGNIFICANT IS THE NUMBER OF RESPONSES PER MODE SINCE IT INDICATES THE RELATIVE NUMBER OF VENDORS ACTIVE IN RCS, BATCH AND/OR FM.

- Remote computing was the major mode with a weighted average of \$12.8 million in revenues in 1978 compared to \$8.3 million for batch services.
- Of these amounts, \$5.9 million of remote computing was delivered as FM, and \$5.4 million of batch revenues was delivered as FM in 1978.
- Most (71%) of the seven respondents in this category had either moved to mini/micro integration or had immediate plans to do so. Only one firm did not have current mini/micro computer plans. The majority of comments were positive; one firm stated:
 - "We anticipate the installation of mini/micros as front ends for both batch and on-line processing."

4. PROCESSING SERVICES COMPANIES WITH REVENUES OVER \$25 MILLION

- The 22 respondents to the survey in this category had 1978 U.S. available revenues of \$1.7 billion (Exhibit IV-1).
 - Revenues from non-U.S. sources amounted to \$198.2 million or 94% of total non-U.S. source revenues in 1978 from the total survey.
 - Captive revenues were \$310.2 million or 97% of total survey captive revenues from processing.
- Gross 1978 profits of U.S. companies in this category were \$380 million or 14%. This compares to 13% for all processing companies and to 11% for the total industry.
- Respondents reported:
 - Average revenues per respondent company in 1978 were \$77 million.

- The total number of employees in this category was 51,713 (U.S. and foreign), an average of 2,351 per respondent company.
- The average revenue per employee was \$43,000, and the average profit per employee was \$6,000, the highest in the processing category.
- Expenditure profiles are shown in Exhibit IV-29.
 - Personnel compensation as a percentage of total expenditures was 32%, a lower figure than that for companies smaller in size.
 - Data communications costs for companies in this category averaged 4.5%, one of the highest among processing firms but not as high as the 7% figure in companies with revenues of \$10-25 million.
- Balance sheet data from respondents is presented in Exhibit IV-30.
 - Respondents in this category had 1978 profits of \$14.1 million, a 43% change from 1977 when profits were \$9.9 million (before taxes and extraordinary items).
 - Trade receivables turnover was 63 days in 1977 compared to 65 in 1978.
- As shown in Exhibit IV-31, processing services, with 1978 total revenues of \$1,457.5 million, was the largest revenue source of firms in this category, representing 90% of total revenues from all sources.
- Banking and finance was the largest single sector of business for these firms with 24.2% of total revenues. As shown in Exhibit IV-32, total revenues from the banking and finance sector were \$248 million in 1978. The second largest single sector in 1978 was discrete manufacturing with 9.8% of revenues. In 1977, discrete manufacturing accounted for 8.1% of revenues for these firms and was behind several other industries including process manufacturing and insurance.

EXHIBIT IV-29
EXPENDITURE DISTRIBUTION OF RESPONDING PROCESSING
SERVICES COMPANIES WITH REVENUES OF >\$25 MILLION

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	\$ (THOUSANDS)	PERCENT ** OF TOTAL	NUMBER OF RESPONDENTS	\$ (THOUSANDS)	PERCENT ** OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$ 67,452	8.4%	10	\$ 25,679	9.9%	9
SALES	177,629	22.1	10	83,539	32.2	8
RESEARCH AND PRODUCT DEVELOPMENT	52,992	6.6	11	25,480	9.8	9
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	163,758	21.0	10	92,797	35.8	9
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS. COMPUTER SYSTEM	*		*	*		*
EQUIPMENT AND MAINTENANCE	134,842	16.8	11	*		*
d. DATA COMMUNICATIONS	48,356	6.0	10	11,526	4.5	5
e. FACILITY OPERATIONS	42,871	5.3	9	*		*
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	*	-	*	-	-	-
GENERAL ADMINISTRATIVE	67,426	8.4	9	20,022	7.7	8
ALL OTHER	43,662	5.4	7	*	-	*
TOTAL	\$ 803,988	100%	11	\$259,043	100%	-

*=LESS THAN 5 RESPONDENTS
**=PERCENT OF TOTAL BASED ON THOSE CATEGORIES WITH 5 OR MORE RESPONDENTS

EXHIBIT IV-30
KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING PROCESSING SERVICES COMPANIES WITH REVENUES OF >\$25 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	15	\$ 17,092	\$ 22,406	31%
TOTAL CURRENT ASSETS	14	31,085	41,368	33
TOTAL ASSETS	17	125,817	136,275	8
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	9	1,755	2,362	35
TOTAL CURRENT LIABILITIES	13	19,607	24,794	26
LONG-TERM DEBT LESS CURRENT PORTION	13	13,465	13,844	3
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	15	38,570	46,513	21
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	16	9,956	14,192	43
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	14	5,806	8,123	40
<u>FINANCIAL</u>				
CURRENT RATIO	13	1.5	1.6	7
RETURN ON AVERAGE EQUITY	13		22%	13
TOTAL DEBT OVER TOTAL CAPITAL	8	0.229	0.219	<4>
LONG TERM DEBT OVER NET WORTH.	12	0.34	0.26	<24>
TRADE RECEIVABLES TURNOVER, (DAYS)	15	63	65	3

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT IV-31

PERCENT OF REVENUES BY TYPE OF SERVICE OF
RESPONDING PROCESSING SERVICES COMPANIES
WITH REVENUES OF >\$25 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 669,752	41.5%	20.5%	22.9%
SCIENTIFIC AND ENGINEERING.	157,536	9.7	13.9	16.5
INDUSTRY SPECIALTY.	550,019	34.0	35.7	17.8
UTILITY.	80,220	5.0	29.1	5.0
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	8,832	0.5	*	*
INDUSTRY SPECIALIZED.	20,845	1.3	*	5.5
SYSTEM PRODUCTS				
SYSTEM OPERATION.	5,361	0.3	*	*
SYSTEM UTILIZATION.	5,605	0.3	*	*
IMPLEMENTATION SYSTEM	11,464	0.7	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	47,017	2.9	19.1	17.6
CUSTOM SOFTWARE				
FIXED PRICE.	11,865	0.7	*	*
CUSTOM SOFTWARE				
COST PLUS FEE.	32,449	2.0	*	*
CONSULTING EDUCATION				
TRAINING.	14,798	0.9	*	*
TOTAL	\$ 1,615,763	100%**	28.2%	23.9%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

EXHIBIT IV-32

INDUSTRY SECTOR MARKETS OF RESPONDING
PROCESSING SERVICES COMPANIES WITH
REVENUES OF >\$25 MILLION

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	AVERAGE REVENUE PER RESPONDENTS (\$ THOUSAND)
DISCRETE MANUFACTURING	\$ 100,476	9.8%	7	14,354
PROCESS MANUFACTURING	48,535	4.7	7	6,934
TRANSPORTATION	20,118	2.0	4	5,030
UTILITIES	52,947	5.2	5	10,589
BANKING AND FINANCE	248,027	24.2	12	20,669
INSURANCE	70,499	6.9	7	10,071
MEDICAL	54,524	5.3	3	18,175
EDUCATION	1,979	.2	2	990
RETAIL	86,667	8.5	7	12,381
WHOLESALE	36,028	3.5	6	6,005
FEDERAL GOVERNMENT	87,728	8.6	9	9,748
STATE AND LOCAL GOVERNMENT	52,294	5.1	6	3,716
SERVICES (CPA s, LAWYERS)	31,992	3.2	4	7,998
OTHER	131,298	12.8	9	14,588
TOTAL	\$1,023,112	100%	22	-

- Exhibit IV-33 shows the changes in mode of delivery for these firms.
 - Remote computing was by far the major mode with a weighted average of \$47.6 million in revenues in 1978 compared to \$27.8 million for batch services.
 - Respondents again anticipate remote computing to have higher returns than batch services in 1978; \$56 million compared to \$26 million, respectively.
- The majority of respondents in this category have made a major commitment to integrating mini/micros into their services. Fifty percent of the respondents either use mini/micros at present or have plans for their use in the immediate future; 5% had no plans for mini/micro computers.
- A significant 45% of respondents had no comment on their future plans in this area. However, a substantial number of these firms either presently have user-site mini/micros or will have shortly. Moreover, these firms plan to substantially increase the number of user-site installations by 1980.
- Among those firms stating mini/micro plans in 1978-1979:
 - Distributed data processing was viewed both positively and as being significant. Fifty-four percent of these respondents had definite mini-micro plans within the next year.
 - Some typical general statements were:
 - "We have been engaged in developing specific mini-based applications."
 - "We will introduce a standalone, user-site system in 1980."

EXHIBIT IV-33

CHANGES IN MODE OF DELIVERY OF RESPONDING
 PROCESSING SERVICES COMPANIES
 WITH REVENUES OF >\$25 MILLION

FISCAL YEAR	REMOTE COMPUTING		BATCH SERVICES	
	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES	(\$ THOUSAND) WEIGHTED AVERAGE REVENUES PER RESPONDENT	NUMBER OF RESPONSES
1977	\$ 45,916	10	\$17,010	8
1978	47,590	13	27,835	9
1979	56,127	10	25,992	7
1983	131,707	8	35,600	6
AMOUNT OF ABOVE DELIVERED AS FM				
1977	\$ 2,165	2	*	*
1978	2,618	4	*	*
1979	3,024	3	*	*
1983	12,325	2	*	*

*ONLY ONE RESPONSE

NOTE: THE DIFFERENT NUMBER OF RESPONDENTS REPORTING FM REVENUES VERSUS THOSE REPORTING TOTAL RCS AND BATCH REVENUES MEANS THAT DIRECT COMPARISONS BETWEEN THE RESPONSES CANNOT BE MADE BECAUSE THE RESPONDENT GROUP IN EACH CASE IS DIFFERENT. HOWEVER THE TREND WITHIN EACH MODE OF DELIVERY IS SIGNIFICANT. ALSO SIGNIFICANT IS THE NUMBER OF RESPONSES PER MODE SINCE IT INDICATES THE RELATIVE NUMBER OF VENDORS ACTIVE IN RCS, BATCH AND/OR FM.

V SOFTWARE PRODUCTS COMPANIES PERFORMANCE

V SOFTWARE PRODUCTS COMPANIES PERFORMANCE

A. TOTAL SOFTWARE PRODUCTS REVENUE ANALYSIS

- Companies whose revenues were derived primarily from the sale of software products make up this category which includes users' 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 users' sites. Fees for work performed by organizations other than the package vendor are counted in professional services.
 - Respondent revenues in the software product company category comprised 5% of the total revenues of all companies responding to the survey. This relatively low participation limits the degree of detail possible in the analysis of software products companies. However, the data is more than adequate to develop a unique profile and analysis of this very important category of companies within the computer services industry.
 - In the first section of this chapter, an analysis is made of total software products revenues from respondents.
 - In the second section, each size category is discussed separately:

- Companies with 1978 revenues of less than \$2 million.
- Companies with 1978 revenues of \$2-10 million.
- Companies with 1978 revenues of over \$10 million.

I. SOURCES OF 1977-1978 REVENUE

- As shown in Exhibit V-1, European and other non-U.S. revenues more than doubled in 1978 over 1977 among responding companies.
 - Captive revenues continue to be a minor contributor.
 - Canadian revenues lagged in terms of relative growth.
 - The over \$10 million category of companies dominates non-U.S. revenues with 94% of European revenues, 83% of Canadian revenues, and 69% of other non-U.S. revenues.
 - All size categories of companies greatly exceeded the total survey respondent growth of 23%.
- Large companies were the major contributor of respondent revenues with 76% of the total.

2. IMPACT OF ACQUISITIONS, INFLATION

- Of the incremental 1977-1978 growth of respondent software companies of \$35,312,000, only \$1 million was due to 1978 acquisitions.
 - This is equivalent to 3% of the growth compared to 20% of the comparable growth for processing services companies.

EXHIBIT V-1
REVENUE, PROFIT LEVELS AND GROWTH FOR RESPONDING
SOFTWARE PRODUCTS COMPANIES
(\$ THOUSAND)

ANNUAL 1978 REVENUES	TOTAL REVENUES (\$THOUSAND)	CAPTIVE REVENUES	CANADIAN REVENUES	EUROPEAN REVENUES	OTHER NON-U.S. REVENUES	TOTAL AVAILABLE U.S. REVENUES (\$THOUSAND)
(< \$2M)						
1977	\$ 4,627	\$ 0	\$ 50	\$ 116	\$ 87	\$ 4,374
1978	6,417	0	106	179	83	\$ 6,049
% GROWTH	39%	-	*	*	*	38%
(\$2-10M)						
1977	\$ 23,336	\$ 100	\$ 450	\$ 351	\$1,445	\$ 20,990
1978	31,775	207	567	917	2,421	27,663
% GROWTH	36%	*	*	*	*	32%
(>\$10M)						
1977	\$ 84,011	\$ 900	\$2,759	\$11,026	\$3,503	\$ 65,823
1978	119,928	1,300	3,280	17,438	5,680	92,230
% GROWTH	43%	*	*	58%	*	40%
TOTAL						
1977	\$111,974	\$1,000	\$3,259	\$11,493	\$5,035	\$ 91,187
1978	\$158,120	\$1,507	\$3,953	\$18,534	\$8,184	\$125,942
% GROWTH	41%	51%	21%	61%	61%	38%

*FEWER THAN 5 RESPONSES

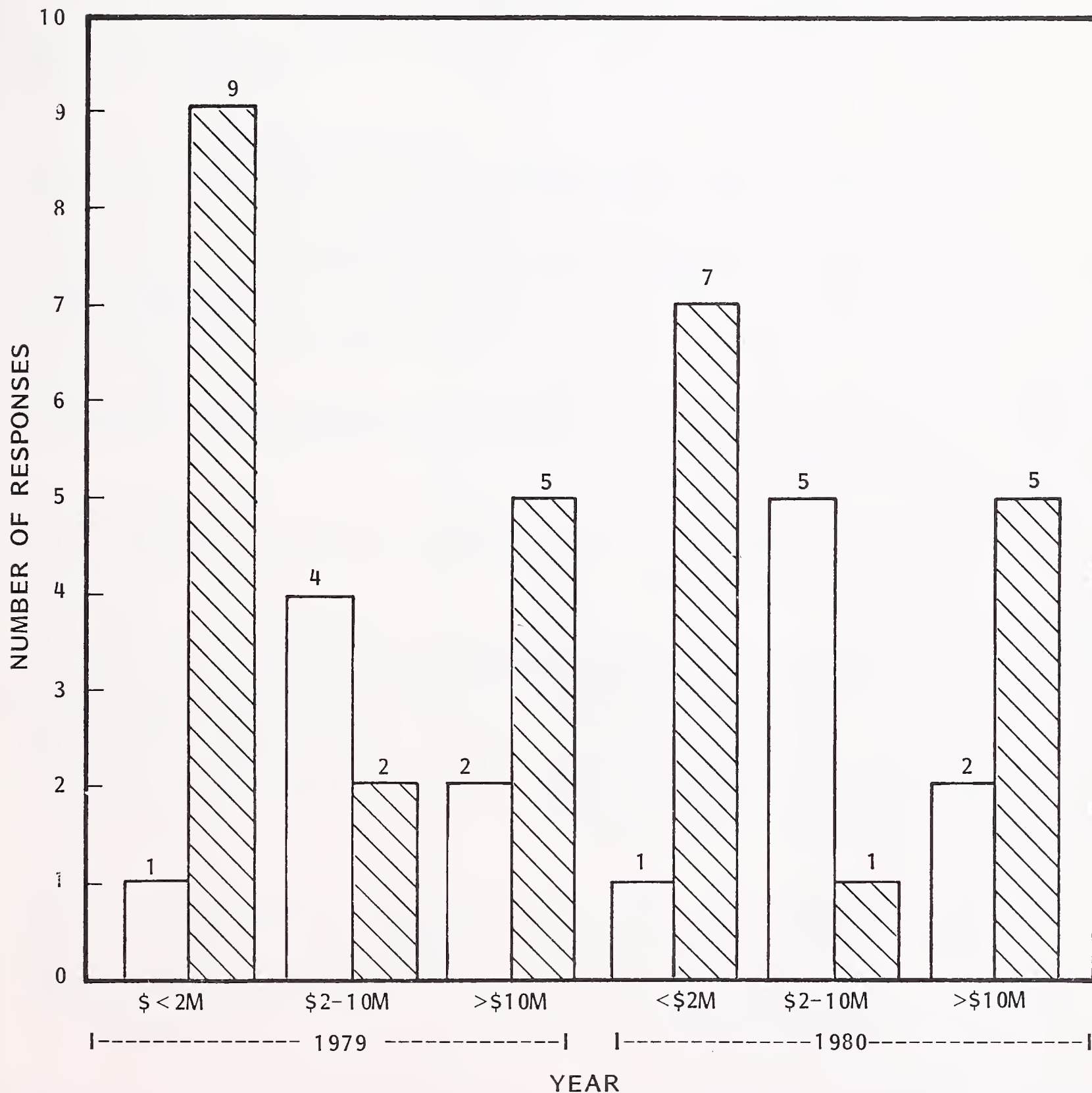
- This low impact of acquisitions is expected to continue as most software products companies continue to exclude acquisitions in their 1979 and 1980 plans. Survey results are shown in Exhibit V-2.
- With regard to inflation, responding software products companies estimated that inflation driven price increases accounted for 9.5% of the 1977-1978 growth. This compares to 4.4% for processing services companies and 11.8% for professional services companies, and reflects the moderate labor intensity of software products companies relative to the other two categories.

B. ANALYSIS OF REVENUES BY TYPE OF SERVICE

- In preparing for the 1977 ADAPSO survey, a special effort was made to develop more meaningful categories of software products. Software products companies belonging to ADAPSO were contacted and the following categories were defined in a joint effort between ADAPSO and INPUT.
- Application Products are software which 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:

EXHIBIT V-2

ACQUISITION PLANS OF RESPONDING SOFTWARE PRODUCTS COMPANIES



YES
 NO

RESPONSES TO THE QUESTION: ARE ACQUISITIONS PART OF YOUR PLAN IN 1979? IN 1980?

- Systems operations 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.
 - Implementation system products which are used to prepare applications for execution by assisting in design, 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.
- The new categories replace the limited "applications products" and "systems products" used in earlier surveys.
 - As shown in Exhibit V-3, the new categories provide new insight into the software products market.
 - Although two-thirds of respondent revenues for application products are in the cross industry category, respondents forecasted a higher growth in the industry specialized category. Among all respondents, however, as reported earlier in Exhibit III-12, the higher growth was anticipated in the cross industry category.
 - Although the response from software products companies was not sufficient to allow presentation of growth rates for systems products, the response of the total survey sample did result in the following, as presented earlier in Exhibit III-12:

EXHIBIT V-3

PERCENT OF REVENUES BY TYPE OF SERVICE OF
RESPONDING SOFTWARE PRODUCTS COMPANIES

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 5,753	4.2%	*	*
SCIENTIFIC AND ENGINEERING.	0			
INDUSTRY SPECIALTY.	2,844	2.1	*	*
UTILITY.	0			
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	37,641	27.5	62.3%	42.4%
INDUSTRY SPECIALIZED.	19,163	14.0	60.0	57.4
SYSTEM PRODUCTS				
SYSTEM OPERATION.	23,382	17.1	*	*
SYSTEM UTILIZATION.	13,162	9.6	*	*
IMPLEMENTATION SYSTEM	25,450	18.6	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	3,822	2.8	*	*
CUSTOM SOFTWARE				
FIXED PRICE.	160	0.1	*	*
CUSTOM SOFTWARE				
COST PLUS FEE.	1,214	0.9	*	*
CONSULTING EDUCATION				
TRAINING.	4,041	3.0	*	*
TOTAL	\$136,632	100%**	47.6%	43.0%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- System operation products had a 1977 to 1978 growth of 33% and a forecasted 1978 to 1979 growth of 12%.
 - System utilization and implementation system products both had a 1977 to 1978 growth of 50% and a 1978 to 1979 growth forecast of 47%.
- Software products respondents also derived revenues from processing services (6%) and professional services (7%).
- With regard to distribution of revenues by size of company, the over \$10 million companies tended to have the widest range of products with emphasis on cross industry applications products, as shown in Exhibit V-4.
 - Respondents in the \$2-10 million range reported 70% of their revenues in systems products.
 - The companies with revenues of less than \$2 million reported no revenues in processing services and concentrated almost all of their effort in software products.

C. ANALYSIS OF REVENUES BY INDUSTRY SECTOR

- Sale of software products by industry shows a concentration of 64% of sales in three industry sectors: discrete manufacturing, banking and finance, and insurance, as shown in Exhibit V-5.
 - Significant markets for processing services (such as medical and federal government) show minor revenues from responding companies.

EXHIBIT V-4
REVENUE DISTRIBUTION BY TYPE OF SERVICE -
COMPARISON BY SIZE OF RESPONDING
SOFTWARE PRODUCTS COMPANY

SIZE OF COMPANY TYPE OF COMPANY	PERCENT OF TOTAL 1978 U.S. REVENUES		
	< \$2M	\$2-10M	> \$10M
<u>PROCESSING SERVICES</u>			
GENERAL BUSINESS	-	6%	4%
SCIENTIFIC AND ENGINEERING . . .	-	-	-
INDUSTRY SPECIALTY.	-	-	3
UTILITY.	-	-	-
<u>SOFTWARE PRODUCTS</u>			
APPLICATION PRODUCTS			
CROSS INDUSTRY	32%	6	34
INDUSTRY SPECIALIZED.	27	15	13
SYSTEM PRODUCTS			
SYSTEM OPERATION	1	21	17
SYSTEM UTILIZATION	24	23	5
IMPLEMENTATION SYSTEM.	14	26	17
<u>PROFESSIONAL SERVICES</u>			
CUSTOM SOFTWARE			
TIME AND MATERIALS	1	-	4
CUSTOM SOFTWARE			
FIXED PRICE	2	-	-
CUSTOM SOFTWARE			
COST PLUS FEE.	-	-	1
CONSULTING EDUCATION			
TRAINING.	-	3	3
TOTAL	100%	100%	100%

*MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING

EXHIBIT V-5

INDUSTRY SECTOR MARKETS OF RESPONDING
SOFTWARE PRODUCTS COMPANIES - TOTAL

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS 1978	AVERAGE REVENUE PER RESPONDENTS (\$ THOUSAND)
DISCRETE MANUFACTURING	\$12,341	18.7%	21	\$588
PROCESS MANUFACTURING	4,476	6.8	6	746
TRANSPORTATION	710	1.1	6	118
UTILITIES	1,538	2.3	7	220
BANKING AND FINANCE	18,258	27.6	20	913
INSURANCE	11,605	17.5	11	1,055
MEDICAL	430	0.7	4	108
EDUCATION	3,766	5.7	7	538
RETAIL	2,125	3.2	12	177
WHOLESALE	3,467	5.2	10	347
FEDERAL GOVERNMENT	1,908	2.9	8	239
STATE AND LOCAL GOVERNMENT	1,549	2.3	6	258
SERVICES (CPA s, LAWYERS)	976	1.5	6	163
OTHER	2,994	4.5	14	214
TOTAL	\$66,143	100%	-	-

- Process manufacturing has significant sales from a small number of respondents.
- Banking and finance and insurance have a fairly high concentration of sales with respondents reporting sales in these sectors averaging \$1 million per year, per sector.
- Industry revenues by type of vendor are detailed in Exhibit V-6. This tabulation reveals several meaningful characteristics of respondent sales of software products.
 - Processing services companies over \$25 million in revenues reported more software product sales on an industry segmented basis than did software products companies. (This is due largely to the larger response from processing services companies; however, it also reflects the greater industry orientation of processing services companies.)
 - Federal government is relatively unpenetrated by any respondent category, including professional services companies.

D. ANALYSIS OF EXPENDITURES

- The most striking characteristic of the expenditure pattern of software products companies is the high expenditures for sales and R&D, as shown in Exhibit V-7. Where software products companies expend 37% and 21% respectively on these categories, the industry as a whole expends 19% and 7%. The difference is even more dramatic when expenditures for direct personnel compensation are evaluated; software products companies expenditures for these two categories exceed 60% of all direct personnel compensation expenditures.

EXHIBIT V-6

COMPUTER SERVICES VENDOR 1978 REVENUES REPORTED BY
RESPONDENT COMPANIES BY USER INDUSTRY SECTOR

SOFTWARE PRODUCTS VENDOR 1978 REVENUES REPORTED BY RESPONDENT COMPANIES BY USER INDUSTRY SECTOR IN (THOUSANDS \$)												
SOFTWARE PRODUCTS VENDOR USER INDUSTRY SECTOR	VENDOR TYPE/SIZE				VENDOR TYPE/SIZE			VENDOR TYPE/SIZE			TOTAL	PERCENT OF TOTAL
	PROCESSING SERVICES				SOFTWARE PRODUCTS			PROFESSIONAL SERVICES				
	<\$2M	\$2-10M	\$10-25M	>\$25M	<\$2M	\$2-10M	>\$10M	<\$2M	\$2-10M	>\$10M		
DISCRETE MANUFACTURING	\$154	\$1,857	-	\$6,935	\$395	\$2,972	-	-	\$3	\$25	\$12,341	18.7%
PROCESS MANUFACTURING	-	100	-	4,214	162	-	-	-	-	-	\$4,476	6.8%
TRANSPORTATION	1	1	-	300	8	400	-	-	-	-	\$710	1.1%
UTILITIES	25	10	-	795	8	700	-	-	-	-	\$1,538	2.3%
BANKING AND FINANCE	293	767	3,893	11,006	699	1,500	-	-	100	-	\$18,258	27.6%
INSURANCE	154	10	-	334	550	1,500	8,957	-	100	-	\$11,605	17.5%
MEDICAL	-	300	13	100	17	-	-	-	-	-	\$430	0.7%
EDUCATION	-	-	-	101	315	-	3,300	-	-	50	\$3,766	5.7%
RETAIL	114	159	-	1,002	550	300	-	-	-	-	\$2,125	3.2%
WHOLESALE	100	211	-	1,486	664	1,000	-	6	-	-	\$3,467	5.2%
FEDERAL GOVERNMENT	-	120	-	626	483	-	300	-	375	4	\$1,908	2.9%
STATE AND LOCAL GOVERNMENT	-	201	-	200	14	1,000	-	-	-	134	\$1,549	2.3%
SERVICES (CPAS, LAWYERS, ETC.)	-	150	-	716	85	-	-	-	-	25	\$976	1.5%
OTHER	43	105	-	725	1,011	-	-	145	400	565	\$2,944	4.5%
TOTAL	\$884	\$3,991	\$3,906	\$28,540	\$4,961	\$9,372	\$12,557	\$151	\$978	\$803	\$66,143	-
PERCENT OF TOTAL	1.3%	6.0%	5.9%	43.2%	7.5%	14.2%	19.0%	0.2%	1.5%	1.2%	-	100%

EXHIBIT V-7

EXPENDITURE DISTRIBUTION OF RESPONDING
SOFTWARE PRODUCT COMPANIES

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	(\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	(\$ THOUSAND)	PERCENT** OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$ 5,983	9.1%	9	\$ 2,554	8.2%	7
SALES	24,108	36.6	6	11,376	36.4	6
RESEARCH AND PRODUCT DEVELOPMENT	13,905	21.1	11	7,907	25.3	9
OPERATIONS						
a. PERSONNEL EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	4,248	6.4	7	3,782	12.1	5
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS	*	-	*	*	-	*
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	2,187	3.3	7	505	1.6	5
d. DATA COMMUNICATIONS	*		*	*		*
e. FACILITY OPERATIONS	1,182	1.8	5	*	-	*
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	2,581	3.9	5	-	-	-
GENERAL ADMINISTRATIVE	11,737	17.8	11	5,129	16.4	9
ALL OTHER	*		*	*		*
TOTAL	\$65,931	100%	11	\$31,253	100%	9

* = LESS THAN 5 RESPONDENTS

** = PERCENT OF TOTAL BASED ON THOSE CATEGORIES WITH 5 OR MORE RESPONDENTS.

- The expenditure items which are lower for software products companies compared to other computer services companies are for operations personnel and computer system equipment and maintenance.
- Again compared to the total industry, as presented in Exhibit III-17, expenditures for payments to third parties for software royalties and general administrative expenditures are high.

E. ANALYSIS OF KEY BALANCE SHEET ITEMS AND RATIOS

- Responding software products companies balance sheet results are presented in Exhibit V-8.
 - The very high return on average equity of 64% on a straight average basis is impacted by responses over 100%. On a weighted average basis the return is 26% with a range of 6% to 240%. The latter value is for a small company with a small equity base.
 - The high percent increase in trade receivables is significant. In terms of days, the receivable period increased as follows by revenue size of software company:
 - Revenues of less than \$2 million - from 48 days in 1977 to 76 days in 1978.
 - Revenues of \$2-10 million - from 62 days in 1977 to 75 days in 1978.
 - Revenues greater than \$10 million - from 55 days in 1977 to 73 days in 1978.

EXHIBIT V-8
KEY BALANCE SHEET, PROFIT AND FINANCIAL
ITEMS OF RESPONDING SOFTWARE PRODUCTS COMPANIES

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	17	\$1,011	\$1,872	85%
TOTAL CURRENT ASSETS	16	1,632	2,815	72
TOTAL ASSETS	16	2,450	3,664	50
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	7	\$ 272	\$ 213	<22%>
TOTAL CURRENT LIABILITIES	17	968	1,714	77
LONG-TERM DEBT LESS CURRENT PORTION	10	436	454	4
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	16	1,124	1,634	45
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	20	\$ 438	\$ 686	57%
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	19	267	425	59
<u>FINANCIAL</u>				
CURRENT RATIO	16	3.0	4.6	53
RETURN ON AVERAGE EQUITY	14	-	64%	-
TOTAL DEBT OVER TOTAL CAPITAL	5	0.312	0.241	<22>
LONG TERM DEBT OVER NET WORTH	8	-	0.67	-
TRADE RECEIVABLES TURNOVER, (DAYS)	18	56	73	30

NOTE: SELECTED ASSETS, SELECTED LIABILITIES, PROFITS, AND RETURN ON INVESTMENT ARE WEIGHTED AVERAGES. OTHER FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- Some of this increase in trade receivables may be due to an increase in the use of extended "trial periods" before initial payment is due.
- The increased receivables period combined with a relatively low current ratio, shown for medium and larger companies in Exhibit V-9, could indicate a growing need for working capital.
- With regard to return on average equity for companies in the \$2-10 million and over \$10 million categories, the weighted average returns are 24% and 29%, indicating that the smaller companies in these categories have higher returns since the straight averages shown in Exhibit V-9 are significantly higher. (Equity data on companies with revenues of less than \$2 million was inadequate to develop return figures for this category.)

F. ANALYSIS OF RESPONDING COMPANIES BY SIZE

I. SOFTWARE PRODUCTS COMPANIES WITH REVENUES LESS THAN \$2 MILLION

- The 11 respondents to the survey in this category had 1978 U.S. available revenues of \$6 million, as shown in Exhibit V-1.
 - Revenue from non-U.S. sources amounted to \$368,000 or 1.2% of total non-U.S. source revenues in the software category in 1978.
 - Captive revenues in this category were zero.
- Gross 1978 profits of U.S. companies in this category were \$42 million or 12%. This compares to 11% for all software companies and to 11% for the industry as a whole.

EXHIBIT V-9
BALANCE SHEET DATA - COMPARISON BY SIZE OF
RESPONDING SOFTWARE PRODUCTS COMPANY

SIZE OF COMPANY ITEM OR RATIO	FISCAL YEAR DATA 1978 (\$ THOUSAND)		
	< \$2M	\$2-10M	> \$10M
<u>SELECTED ASSETS</u>			
TRADE RECEIVABLES	\$207	\$1,286	\$4,024
TOTAL CURRENT ASSETS	646	1,737	5,702
TOTAL ASSETS	744	3,115	8,190
<u>SELECTED LIABILITIES</u>			
CURRENT PORTION OF LONG TERM DEBT	5	161	335
TOTAL CURRENT LIABILITIES	120	1,216	3,723
LONG-TERM DEBT LESS CURRENT PORTION	355	387	587
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	517	1,281	3,328
<u>PROFIT</u>			
BEFORE TAXES AND EXTRAORDINARY ITEMS	79	525	1,657
AFTER TAXES AND BEFORE EXTRA-ORDINARY ITEMS	53	313	970
<u>FINANCIAL</u>			
CURRENT RATIO	10.1	1.3	1.5
RETURN ON AVERAGE EQUITY	-	35%	38%
TOTAL DEBT OVER TOTAL CAPITAL	-	.205	.265
LONG TERM DEBT OVER NET WORTH	1.4	.23	.26
TRADE RECEIVABLES TURNOVER, (DAYS)	76	75	73

- Respondents reported:
 - Average revenues per respondent company in 1978 were \$583,000.
 - The total number of employees in this category was 285 (U.S. and foreign), an average of 26 per respondent company.
 - The average revenue per employee was \$23,000, and the average pre-tax profit per employee was \$2,770.
- Balance sheet data from respondents is presented in Exhibit V-10.
 - Respondents in this category had 1978 profits of \$79,000 (before taxes and extraordinary items), a 36% change from 1977 when profits were \$58,000.
- As shown in Exhibit V-11, cross industry software products was the highest single source of revenues for firms in this category with \$1.9 million in revenues in 1978 or 31.8% of the total.
- In general, respondents in this category had a positive response to mini/micro-computers. Most (54%) have current plans to provide mini/micro applications or to convert their software.
 - One firm, for example, plans to convert its current software package to the WANG 2200 VS mini.
 - Another firm plans to expand its on-site micro system processing and develop specialty terminals for graphic displays.

EXHIBIT V-10

KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING SOFTWARE PRODUCTS COMPANIES WITH REVENUES OF <\$2 MILLION

ITEM OR RATIO	NUMBER OF RESPON- DENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(\$ IN THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	6	\$ 89	\$207	132%
TOTAL CURRENT ASSETS	6	237	646	173
TOTAL ASSETS	7	350	744	113
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	1	8	5	< 37 >
TOTAL CURRENT LIABILITIES	6	61	120	97
LONG-TERM DEBT LESS CURRENT PORTION	4	198	355	79
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	6	278	517	86
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	8	58	79	36
AFTER TAXES AND BEFORE EXTRA-ORDINARY ITEMS	7	38	53	39
<u>FINANCIAL</u>				
CURRENT RATIO	6	5.5	10.1	84
RETURN ON AVERAGE EQUITY	4		119%	
TOTAL DEBT OVER TOTAL CAPITAL	-	-	-	-
LONG TERM DEBT OVER NET WORTH	3	-	1.37	-
TRADE RECEIVABLES TURNOVER (DAYS)	6	48	76	58

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT V-11
 PERCENT OF REVENUES BY TYPE OF SERVICE
 OF RESPONDING SOFTWARE PRODUCTS COMPANIES
 WITH REVENUES OF LESS THAN \$2 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 0	-	-	-
SCIENTIFIC AND ENGINEERING.	0	-	-	-
INDUSTRY SPECIALTY.	8	-	*	*
UTILITY.	0	-	-	-
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY	1,939	31.8%	*	*
INDUSTRY SPECIALIZED	1,634	26.8	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION	30	0.5	*	*
SYSTEM UTILIZATION	1,488	24.4	*	*
IMPLEMENTATION SYSTEM	837	13.7	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	30	0.5	*	*
CUSTOM SOFTWARE				
FIXED PRICE	100	1.6	*	*
CUSTOM SOFTWARE				
COST PLUS FEE	0	-	-	-
CONSULTING EDUCATION				
TRAINING	22	0.4	*	*
TOTAL	\$6,088	100%**	29.2%	33.3%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- While a significant 36% of respondents had no comment on mini/micro plans, several of them planned to expand their present on-site mini/micro installations. One firm, for example, made no comment on its future plans but anticipated having 150 user-site mini/micros in 1980, a 50% increase in one year.

2. SOFTWARE PRODUCTS COMPANIES WITH REVENUES OF \$2-10 MILLION

- The seven respondents to the survey in this category had 1978 U.S. available revenues of \$27.6 million, as shown in Exhibit V-1.
 - Revenue from non-U.S. sources amounted to \$3.9 million or 12.8% of the total non-U.S. source revenues in the software category in 1978.
 - Captive revenues in this category were \$207,000.
- Gross 1978 profits of U.S. companies in this category were \$26 million or 11%. This compares to 11% for all software companies and to 11% for the industry as a whole.
- Respondents reported:
 - Average revenues per respondent company in 1978 were \$4.6 million.
 - The total number of employees in this category was 589 (U.S. and foreign), an average of 84 per company.
 - The average revenue per employee was \$54,000, and the average pre-tax profit per employee was \$6,250, the highest among the software companies.
- Balance sheet data from respondents is presented in Exhibit V-12.

EXHIBIT V-12
KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING SOFTWARE PRODUCTS COMPANIES WITH REVENUES OF \$2-10 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	5	\$ 805	\$1,286	60%
TOTAL CURRENT ASSETS	4	1,313	1,737	32
TOTAL ASSETS	4	2,133	3,115	46
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	3	108	161	49
TOTAL CURRENT LIABILITIES	5	774	1,216	57
LONG-TERM DEBT LESS CURRENT PORTION	2	353	387	10
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	5	883	1,281	45
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	6	420	525	25
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	6	247	313	27
<u>FINANCIAL</u>				
CURRENT RATIO	4	1.4	1.3	<7>
RETURN ON AVERAGE EQUITY	5			-
TOTAL DEBT OVER TOTAL CAPITAL	2	0.237	0.205	<14>
LONG TERM DEBT OVER NET WORTH	2	0.29	0.23	<21>
TRADE RECEIVABLES TURNOVER, (DAYS)	5	62	75	21%

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- Respondents in this category had 1978 profits of \$525,000 (before taxes and extraordinary items), a 25% change from 1977 when profits were \$420,000.
- Trade receivables turnover was 75 days in 1978 compared to 62 in 1977.
- As shown in Exhibit V-13, system products were the highest source of revenues for firms in this category, comprising 69% of total revenues in 1978.
- Respondents showed an increasing interest in mini/micro computers as a market for future business, although not as much as respondents in other categories.
- Two respondents mentioned plans for on-site turnkey minis by 1980, and one firm stated it was "leading the way for distributed processing."

3. SOFTWARE PRODUCTS COMPANIES WITH REVENUES OVER \$10 MILLION

- The seven respondents to the survey in this category had 1978 U.S. available revenues of \$92.2 million, as shown in Exhibit V-1.
 - Revenues from non-U.S. sources amounted to \$26.3 million or 86% of the total non-U.S. source revenues in the software category in 1978.
 - Captive revenues in this category were \$1.3 million in 1978.
- Gross 1978 profits of U.S. companies in this category were \$17 million or 10%. This compares to 11% for all software companies and to 11% for the industry as a whole.
- Respondents represented 58% of the estimated 12 U.S. companies in this category, which in turn is estimated to be 0.3% of all computer services firms in the U.S.

EXHIBIT V-13
 PERCENT OF REVENUES BY TYPE OF SERVICE
 OF RESPONDING SOFTWARE PRODUCTS COMPANIES WITH REVENUES
 OF \$2 - 10 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 1,859	6.1%	*	*
SCIENTIFIC AND ENGINEERING.	0	-	-	-
INDUSTRY SPECIALTY.	0	-	-	-
UTILITY.	0	-	-	-
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY	1,856	6.1	*	*
INDUSTRY SPECIALIZED.	4,572	15.0	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION.	6,319	20.7	*	*
SYSTEM UTILIZATION.	6,994	22.9	*	*
IMPLEMENTATION SYSTEM	7,800	25.6	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	0	-	-	-
CUSTOM SOFTWARE				
FIXED PRICE	60	0.2	*	*
CUSTOM SOFTWARE				
COST PLUS FEE	0	-	-	-
CONSULTING EDUCATION				
TRAINING	1,026	3.4	*	*
TOTAL	\$ 30,486	100% **	28.5%	33.9%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- Respondents reported:
 - Average revenues per respondent company were \$17 million in 1978.
 - The total number of employees in this category were 2,452 (U.S. and foreign), an average of 350 per respondent company.
 - The average revenue per employee was \$49,000.
 - The average pre-tax profit per employee was \$4,734.
- Balance sheet data from respondents is presented in Exhibit V-14.
 - Respondents in this category had 1978 profits of \$1.6 million (before taxes and extraordinary items), a 72% change from 1977 when profits were \$961,000.
 - Trade receivables turnover was 73 days in 1978 compared to 55 in 1977.
- As shown in Exhibit V-15, software products provided the major source of revenue to firms in this category, accounting for 47% of total revenues.
- Respondents had a generally positive approach to mini/microcomputers, although not as great as respondents in some other categories.
- A slight majority (four of the seven respondents) planned significant mini/micro integration into their services. One firm planned an acquisition approach to this market. Other comments were:
 - "We use a minicomputer at the user site for data entry, validation and inquiry in connection with remote computing services."

EXHIBIT V-14
KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING SOFTWARE PRODUCTS COMPANIES WITH REVENUES OF >\$10 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	6	\$2,105	\$4,024	91%
TOTAL CURRENT ASSETS	6	3,239	5,702	76
TOTAL ASSETS	5	5,644	8,190	45
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	3	524	335	<36>
TOTAL CURRENT LIABILITIES	6	2,036	3,723	83
LONG-TERM DEBT LESS CURRENT PORTION	4	716	587	<18>
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	5	2,379	3,328	40
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	6	961	1,657	72
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	6	554	970	75
<u>FINANCIAL</u>				
CURRENT RATIO	6	1.5	1.5	-
RETURN ON AVERAGE EQUITY	5		38%	
TOTAL DEBT OVER TOTAL CAPITAL	3	0.362	0.265	<27>
LONG TERM DEBT OVER NET WORTH	3	0.30	0.26	<13>
TRADE RECEIVABLES TURNOVER (DAYS)	6	55	73	33

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND, PROFITS, ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT V-15
 PERCENT OF REVENUES BY TYPE OF SERVICE
 OF RESPONDING SOFTWARE PRODUCTS COMPANIES WITH REVENUES
 OF MORE THAN \$10 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 3,894	3.9	*	*
SCIENTIFIC AND ENGINEERING.	0	-	-	-
INDUSTRY SPECIALTY.	2,836	2.8	*	*
UTILITY.	0	-	-	-
<u>SOFTWARE PRODUCTS</u>				
<u>APPLICATION PRODUCTS</u>				
CROSS INDUSTRY.	33,846	33.8	*	*
INDUSTRY SPECIALIZED.	12,957	12.9	*	*
<u>SYSTEM PRODUCTS</u>				
SYSTEM OPERATION.	17,033	17.0	*	*
SYSTEM UTILIZATION.	4,680	4.7	*	*
IMPLEMENTATION SYSTEM	16,813	16.8	*	*
<u>PROFESSIONAL SERVICES</u>				
<u>CUSTOM SOFTWARE</u>				
TIME AND MATERIALS.	3,792	3.8	*	*
<u>CUSTOM SOFTWARE</u>				
FIXED PRICE.	0	-	-	-
<u>CUSTOM SOFTWARE</u>				
COST PLUS FEE.	1,214	1.2	*	*
<u>CONSULTING EDUCATION</u>				
TRAINING.	2,993	3.0	*	*
TOTAL	\$100,058	100%**	48.3%	42.2%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- "We manufacture a micro-based mini equivalent." This firm, incidentally, anticipates 4,500 mini/micro installations by 1980, a 150% increase in one year.

VI PROFESSIONAL SERVICES COMPANIES PERFORMANCE

VI PROFESSIONAL SERVICES COMPANIES PERFORMANCE

A. TOTAL PROFESSIONAL SERVICES REVENUE ANALYSIS

- Companies whose revenues were derived primarily from the sale of professional services make up this category; this category is made up of services related to EDP including systems 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.

- Respondent revenues in the professional services company category comprised 22% of the total revenues of all companies responding to the survey. Although the revenues represent a significant part of the total, 94% came from the large (greater than \$10 million) size category, and the amount of analysis which can be done on the data for the smaller companies is, therefore, limited relative to what was done with processing company data in Chapter IV.

- In the first section of this chapter, an analysis is made of total professional services revenues.
- In the second section, each size category is discussed separately:
 - Companies with 1978 revenues of less than \$2 million.
 - Companies with 1978 revenues of \$2-10 million.
 - Companies with 1978 revenues of over \$10 million.

I. SOURCES OF 1977-1978 REVENUE

- Revenues of responding professional services companies are primarily available U.S. revenues in that:
 - Captive revenues are insignificant.
 - Non-U.S. revenues are growing, but represent only 7% of total 1978 revenues.
- Survey results are presented in Exhibit VI-1, and show the dominant impact of the large (revenues over \$10 million) companies on the totals.

2. IMPACT OF ACQUISITIONS, INFLATION

- Acquisitions in 1978, of responding professional services companies added \$11 million to 1978 growth.
 - This is equivalent to 15% of the total incremental growth in U.S. available revenues 1977-1978.

EXHIBIT VI-1

REVENUE, PROFIT LEVELS AND GROWTH FOR RESPONDING
PROFESSIONAL SERVICES COMPANIES - TOTAL

SIZE	TOTAL REVENUES (\$ THOUSAND)	CAPTIVE REVENUES (\$ THOUSAND)	CANADIAN REVENUES (\$ THOUSAND)	EUROPEAN REVENUES (\$ THOUSAND)	OTHER NON-U.S. REVENUES (\$ THOUSAND)	TOTAL AVAILABLE U.S. REVENUES (\$ THOUSAND)
(< \$2M)						
1977	\$ 3,977	0	\$ 60	0	0	\$ 3,917
1978	4,798	0	0	0	\$ 40	4,758
% GROWTH	21%	-	*	-	*	22%
(\$2-10M)						
1977	\$ 28,854	0	\$ 0	\$ 200	0	\$ 28,654
1978	40,901	0	0	325	\$ 114	40,462
% GROWTH	42%	-	-	*	*	41%
(> \$10M)						
1977	\$588,131	\$1,000	\$16,247	\$1,151	\$29,120	\$540,613
1978	728,146	1,000	25,385	2,289	28,094	671,378
% GROWTH	24%	-	*	*	*	24%
TOTAL						
1977	\$620,962	\$1,000	\$16,307	\$1,351	\$29,120	\$573,184
1978	773,845	1,000	25,385	2,614	28,248	716,598
% GROWTH	25%	0	56%	93%	(3%)	25%

*LESS THAN 5 RESPONSES

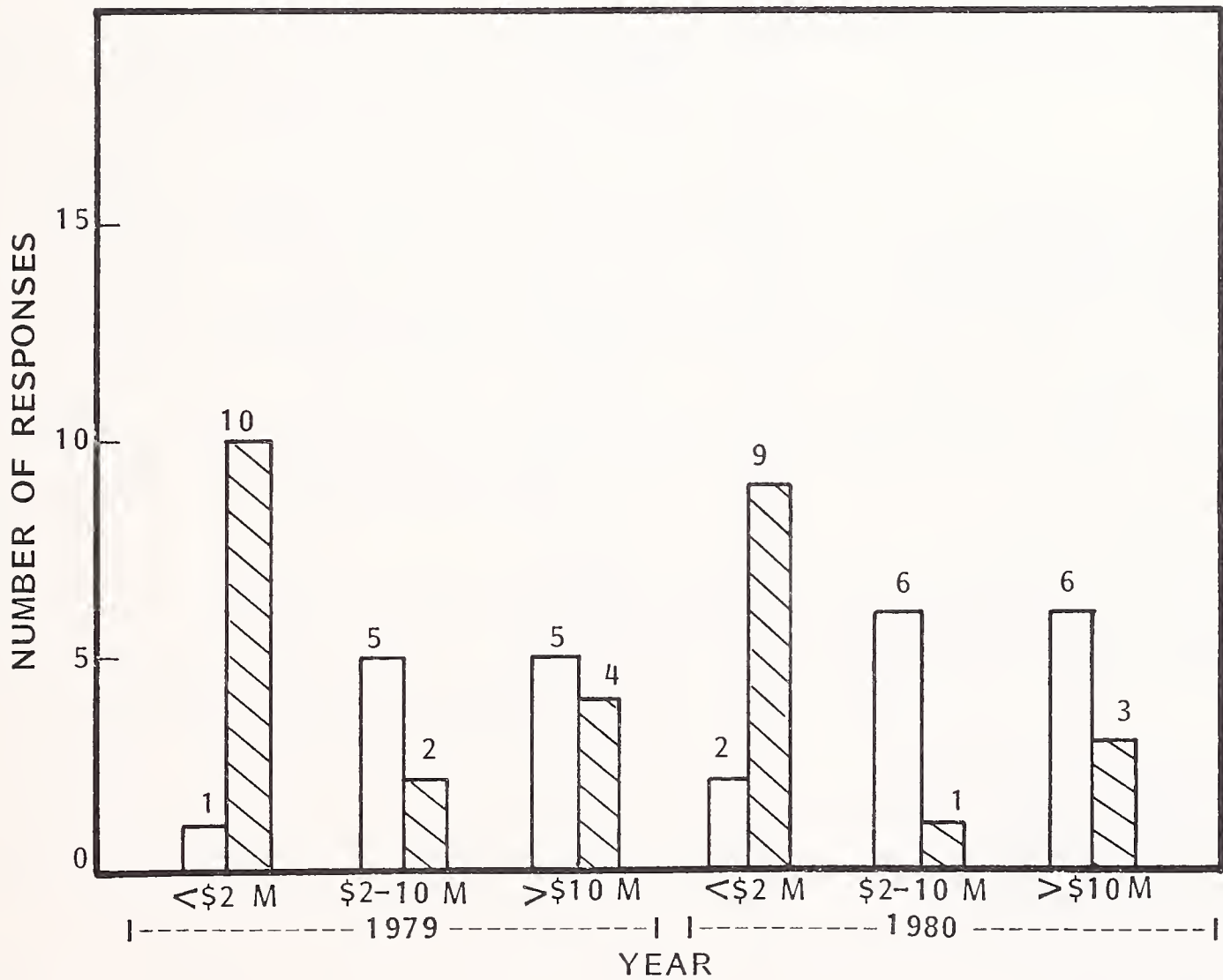
- As such, acquisition activity of responding professional services companies is not as active as that of processing companies, but exceeds that of software products companies.
- Inflation is felt to have the greatest impact by professional services companies.
 - The price increase due to inflation in 1978 versus 1977 among responding professional services companies was 11.8%, compared to 9.5% for software products companies and 4.4% for processing services companies.
 - This high inflation impact is reflective of the expected high labor content in professional services, aggravated by the bidding for a short supply of competent personnel.
- Acquisition activity can be expected to increase in professional services companies as more companies include acquisitions in their plans for 1980 as shown on Exhibit VI-2.

B. ANALYSIS OF REVENUES BY TYPE OF SERVICE

- In the 1979 survey, three sub-categories of custom software were defined for the first time - time and materials, fixed price, and cost plus fee. These were added to give more insight into the major business areas of professional services.
- Revenues for professional services companies include a significant amount (22%) of processing services as shown in Exhibit VI-3. Growth in processing services is expected to continue among respondents, particularly in general business applications.

EXHIBIT VI-2

ACQUISITION PLANS OF RESPONDING
PROFESSIONAL SERVICES COMPANIES



YES
NO

RESPONSES TO THE QUESTION: ARE ACQUISITIONS PART OF
YOUR PLAN IN 1979? IN 1980?

EXHIBIT VI-3

PERCENT OF REVENUES BY TYPE OF SERVICE
OF RESPONDING PROFESSIONAL SERVICES COMPANIES

SUMMARY

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (THOUSANDS)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78	FORECASTED GROWTH '78 VS '79
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 36,599	14.7%	46.1%	47.6%
SCIENTIFIC AND ENGINEERING.	2	-	*	*
INDUSTRY SPECIALTY.	16,049	6.5	45.0	29.2
UTILITY.	2,131	0.9	*	*
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY.	636	0.3	*	*
INDUSTRY SPECIALIZED.	375	0.2	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION.	50	-	*	*
SYSTEM UTILIZATION.	50	-	*	*
IMPLEMENTATION SYSTEM	1	-	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	121,582	48.9	51.6	43.9
CUSTOM SOFTWARE				
FIXED PRICE.	24,481	9.9	153.7	27.3
CUSTOM SOFTWARE				
COST PLUS FEE.	7,670	3.1	*	*
CONSULTING EDUCATION				
TRAINING.	38,785	15.6	3.9	5.5
TOTAL	\$248,411	100%**	24.2%	17.5%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- Software products revenues are very small, reflecting a tendency among respondents to continue focus on custom software.
- Consulting, education and training had a small growth in 1977-1978 and respondents expect a similarly small growth in 1978-1979.
- The high growth in fixed price custom software in 1977 versus 1978, and the much smaller growth forecast in 1978 versus 1979 is the most dramatic shift among the type of service categories.
 - Fixed price contracts in an inflationary economy can turn out to be unprofitable by the time they are completed.
 - The reduced profitability of professional services companies in 1978 versus 1977 which was pointed out in Chapter II is very probably limited to the reduced anticipated use of fixed price contracts in 1979.
- The distribution of revenues by size of responding professional services company is presented in Exhibit VI-4.
 - The smaller companies (less than \$2 million in 1978 revenues) tend to be most concentrated in their specialty, with 93% of revenues coming from professional services.
 - Medium sized companies concentrated in two areas - industry specialized processing services and time and materials custom software as is documented later in this chapter. This size category also had the highest profit increase in 1977-1978 among professional services companies.
 - The largest companies (1978 revenues over \$10 million) were most active in non-custom programming activities, with 40% of revenues coming from processing services or consulting, education, training.

EXHIBIT VI-4
REVENUE DISTRIBUTION BY TYPE OF SERVICE -
COMPARISON BY SIZE OF RESPONDING
PROFESSIONAL SERVICES COMPANY

TYPE OF SERVICE \ SIZE OF COMPANY	PERCENT OF TOTAL 1978 U.S. REVENUES		
	<\$2M MILLION	\$2-10 MILLION	>\$10 MILLION
<u>PROCESSING SERVICES</u>			
GENERAL BUSINESS	6%	6%	17%
SCIENTIFIC AND ENGINEERING .	-	-	-
INDUSTRY SPECIALTY	-	20	4
UTILITY	-	1	1
<u>SOFTWARE PRODUCTS</u>			
APPLICATION PRODUCTS			
CROSS INDUSTRY	-	-	-
INDUSTRY SPECIALIZED	2	1	-
SYSTEM PRODUCTS			
SYSTEM OPERATION	-	-	-
SYSTEM UTILIZATION	-	-	-
IMPLEMENTATION SYSTEM	-	-	-
<u>PROFESSIONAL SERVICES</u>			
CUSTOM SOFTWARE			
TIME AND MATERIALS	38	57	48
CUSTOM SOFTWARE			
FIXED PRICE	19	6	11
CUSTOM SOFTWARE			
COST PLUS FEE	20	9	2
CONSULTING, EDUCATION, TRAINING	16	2	18
TOTAL*	100%	100%	100%

*MAY NOT ADD UP TO 100 BECAUSE OF ROUNDING

C. ANALYSIS OF REVENUES BY INDUSTRY SECTOR

- The industry sector revenue profile of professional services companies differs significantly from the other categories of computer services companies.
 - As shown in Exhibit VI-5, over 70% of reported revenues are in the two government sectors - federal, and state and local.
 - The high average revenue per respondent in the government sectors is a further indicator of concentration.
 - The major overall computer services industry market - banking and finance - gets minor attention from professional services companies.
 - Interestingly, sectors which have a great amount of government interface because of regulation - transportation, utilities, medical and education - together account for less than 3% of respondent's industry sector markets.
- Industry sector revenues for professional services segregated by type and size of vendor company are presented in Exhibit VI-6.
 - In the non-government sectors, responding processing services companies often have equal or greater professional services revenues than do professional services companies themselves.
 - Other than some activity by large software products companies in the insurance and federal government sectors, responding software products companies are inactive in professional services. This tends to support the contention that software products companies do not expend significant resources in customizing their products.

EXHIBIT VI-5

INDUSTRY SECTOR MARKETS OF RESPONDING
PROFESSIONAL SERVICES COMPANIES

INDUSTRY SECTOR	1978 REVENUES (\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS 1978	AVERAGE REVENUE PER RESPONDENT (\$ THOUSAND)
DISCRETE MANUFACTURING	\$ 17,578	3.4%	26	\$ 676
PROCESS MANUFACTURING	24,886	4.7	19	1,310
TRANSPORTATION	3,179	0.6	10	318
UTILITIES	7,824	1.5	10	782
BANKING AND FINANCE	26,205	4.9	19	1,379
INSURANCE	13,046	2.5	17	767
MEDICAL	1,320	0.3	8	165
EDUCATION	298	0.1	7	43
RETAIL	6,306	1.2	18	350
WHOLESALE	4,322	0.8	15	288
FEDERAL GOVERNMENT	331,654	63.3	17	19,509
STATE AND LOCAL GOVERNMENT	46,245	8.8	15	3,083
SERVICES (CPA's, LAWYERS)	961	0.2	11	37
OTHER	40,326	7.7	24	1,680
TOTAL	\$524,150	100%	27	-

EXHIBIT VI-6

PROFESSIONAL SERVICES VENDOR 1978 REVENUES REPORTED
RESPONDENT COMPANIES BY USER INDUSTRY SECTOR

COMPUTER SERVICES VENDOR 1978 REVENUES REPORTED BY RESPONDENT COMPANIES BY USER INDUSTRY SECTOR (\$ THOUSAND)

COMPUTER SERVICE VENDOR USER INDUSTRY SECTOR	VENDOR TYPE/SIZE				VENDOR TYPE/SIZE			VENDOR TYPE/SIZE			TOTAL	PERCENT OF TOTAL
	PROCESSING SERVICES				SOFTWARE PRODUCTS			PROFESSIONAL SERVICES				
	<\$2M	\$2-10M	\$10-25M	>\$25M	<\$2M	\$2-10M	>\$10M	<\$2M	\$2-10M	>\$10M		
DISCRETE MANUFACTURING	\$ 348	\$1,101	-	\$ 2,773	\$132	\$ 476	-	\$ 619	\$ 900	\$11,229	\$ 17,578	3.4%
PROCESS MANUFACTURING	178	463	-	11,293	-	-	-	148	2,400	10,404	\$ 24,886	4.7%
TRANSPORTATION	4	40	17	1,927	-	-	-	100	300	791	\$ 3,179	0.6%
UTILITIES	27	20	20	4,605	-	-	-	-	600	2,552	\$ 7,824	1.5%
BANKING AND FINANCE	61	327	503	11,102	1	-	-	131	2,820	11,260	\$ 26,205	4.9%
INSURANCE	185	170	-	827	-	-	1,329	11	3,100	7,424	\$ 13,046	2.5%
MEDICAL	144	50	66	-	-	-	-	14	180	866	\$ 1,320	0.3%
EDUCATION	5	150	-	18	-	-	-	14	-	111	\$ 298	0.1%
RETAIL	184	-	356	4,381	-	50	-	178	300	857	\$ 6,306	1.2%
WHOLESALE	88	250	-	1,208	-	966	-	48	120	1,642	\$ 4,322	0.8%
FEDERAL GOVERNMENT		65	22	23,180	20	-	2,426	1,370	4,631	299,940	\$331,654	63.3%
STATE AND LOCAL GOVERNMENT	24	-	2,214	4,259	-	-	-	10	480	39,258	\$ 46,245	8.8%
SERVICES (CPAs, LAWYERS, ETC.)	32	-	-	407	-	50	-	146	200	126	\$ 961	0.2%
OTHER	262	851	-	20,690	-	400	-	1,592	6,590	9,941	\$ 40,326	7.7%
TOTAL	\$1,542	\$3,487	3,198	\$86,670	\$153	\$1,942	\$3,755	\$4,381	\$22,621	\$396,401	\$524,150	-
PERCENT OF TOTAL	0.3%	0.7%	0.6%	16.5%	0.03%	0.4%	0.7%	0.8%	4.3%	75.6%	-	100%

D. ANALYSIS OF EXPENDITURES

- Almost half of responding professional services companies expenditures were for operations.
 - As shown in Exhibit VI-7, direct personnel compensation for operations accounted for an even higher percentage of the total, with personnel working on fixed priced contracts being dominant.
 - Marketing and sales expenditures are relatively low compared to processing services and software products companies at less than 10% of the total.
- The limited response to the survey from professional services companies made an analysis of expenditure patterns by company size impractical. There was indication from available responses, however, that larger companies spend more on sales and less on operations than the smaller companies.

E. ANALYSIS OF KEY BALANCE SHEET ITEMS AND RATIOS

- Responding professional services balance sheet results are presented in Exhibit VI-8.
 - Both total current assets and total current liabilities had high growth with the net effect being a relative growth in current ratio from 1977 to 1978.
 - Return on average equity was 28% on a weighted average basis versus the 34% shown for a straight average; this reflects the very high return stated by some smaller companies who are working from a small equity base.

EXHIBIT VI-7
EXPENDITURE DISTRIBUTION OF RESPONDING
PROFESSIONAL SERVICES COMPANIES

CATEGORY OF EXPENDITURES	TOTAL FISCAL 1978 EXPENDITURES			DIRECT PERSONNEL COMPENSATION IN CATEGORY		
	(\$ THOUSAND)	PERCENT OF TOTAL	NUMBER OF RESPONDENTS	(\$ THOUSAND)	PERCENT** OF TOTAL	NUMBER OF RESPONDENTS
MARKETING	\$2,429	2.3%	13	\$1,424	3.7%	9
SALES	7,204	6.9	13	3,919	10.1	8
RESEARCH AND PRODUCT DEVELOPMENT	4,415	4.3	14	2,295	5.9	8
OPERATIONS						
a. PERSONNEL, EXCLUDING THOSE WORKING ON FIXED PRICE CONTRACTS	23,631	22.8	17	19,722	51.0	15
b. PERSONNEL WORKING ON FIXED PRICE CONTRACTS	6,804	6.5	9	6,451	16.7	8
c. COMPUTER SYSTEM EQUIPMENT AND MAINTENANCE	9,818	9.5	8	*	-	*
d. DATA COMMUNICATIONS	594	0.6	6	*	-	*
e. FACILITY OPERATIONS	4,976	4.8	10	*	-	*
PAYMENTS TO THIRD PARTIES FOR SOFTWARE ROYALTIES	556	0.5	5	-	-	-
GENERAL ADMINISTRATIVE	12,484	12.0	19	4,871	12.6	15
ALL OTHER	30,967	29.8	10	*	-	*
TOTAL	\$103,878	100%**	22	\$38,682	100%**	16

*LESS THAN 5 RESPONDENTS

**PERCENT OF TOTAL BASED ON THOSE CATEGORIES WITH 5 OR MORE RESPONDENTS

EXHIBIT VI-8
KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF
RESPONDING PROFESSIONAL SERVICES COMPANIES
TOTAL PROFESSIONAL SERVICES

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	22	\$5,309	\$6,159	16%
TOTAL CURRENT ASSETS	25	6,257	8,757	40
TOTAL ASSETS	25	9,420	12,779	36
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	10	596	915	54
TOTAL CURRENT LIABILITIES	20	5,034	7,688	53
LONG-TERM DEBT LESS CURRENT PORTION	10	5,940	6,805	15
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	23	3,140	4,084	30
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	24	1,843	2,015	9
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	23	1,056	1,153	9
<u>FINANCIAL</u>				
CURRENT RATIO	20	2.7	3.3	22
AVERAGE RETURN ON EQUITY	19		34%	
TOTAL DEBT OVER TOTAL CAPITAL	8	0.33	0.37	10
LONG TERM DEBT OVER EQUITY NET WORTH	9	0.34	0.49	44
TRADE RECEIVABLES TURNOVER (DAYS)	26	74	69	(7)

NOTE: SELECTED ASSETS, SELECTED LIABILITIES, PROFITS, AND RETURN ON INVESTMENT ARE WEIGHTED AVERAGES. OTHER FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- The long receivables period is significant.
 - To an extent, this long period is characteristic of the billing practices among professional services companies.
 - The reduction of 7% between 1977 and 1978 is particularly significant because other categories of services companies reported an increased receivables period.
- Balance sheet data segregated by size of company is presented in Exhibit VI-9.
 - The great difference in average size of respondents is reflected in the weighted average responses.
 - The lower current ratio among large companies is particularly significant in view of their long receivables period; much of their current assets are in receivables.
- The corresponding weighted average returns on average equity were 23%, 28%, and 23% with the straight averages in Exhibit VI-9 reflecting the higher returns of the smaller companies in the category.

F. ANALYSIS OF RESPONDING COMPANIES BY SIZE

I. PROFESSIONAL SERVICES COMPANIES WITH REVENUES LESS THAN \$2 MILLION

- The thirteen respondents to the survey in this category had 1978 U.S. available revenues of \$4.8 million, as shown in Exhibit VI-1.
 - Revenues from non-U.S. sources amounted to \$40,000.

EXHIBIT VI-9
BALANCE SHEET DATA - COMPARISON BY SIZE OF
RESPONDING PROFESSIONAL SERVICES COMPANY

SIZE OF COMPANY ITEM OR RATIO	FISCAL YEAR DATA 1978 (\$ THOUSAND)		
	< \$2M	\$2-10M	> \$10M
<u>SELECTED ASSETS</u>			
TRADE RECEIVABLES	\$ 87	\$ 929	\$15,943
TOTAL CURRENT ASSETS	104	1,389	25,858
TOTAL ASSETS	139	2,008	37,769
<u>SELECTED LIABILITIES</u>			
CURRENT PORTION OF LONG TERM DEBT	4	34	1,808
TOTAL CURRENT LIABILITIES	106	679	18,561
LONG-TERM DEBT LESS CURRENT PORTION	3	151	13,519
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	75	1,268	10,409
<u>PROFIT</u>			
BEFORE TAXES AND EXTRAORDINARY ITEMS	24	549	4,383
AFTER TAXES AND BEFORE EXTRA-ORDINARY ITEMS	17	349	2,397
<u>FINANCIAL</u>			
CURRENT RATIO	4.9	4.3	1.5
RETURN ON AVERAGE EQUITY	38%	37%	27%
TOTAL DEBT OVER TOTAL CAPITAL	.041	.142	.519
LONG TERM DEBT OVER EQUITY NET WORTH	.01	.12	.81
TRADE RECEIVABLES TURNOVER (DAYS)	44	54	70

- There were no captive revenues for respondents in this category.
- Gross 1978 profits for U.S. companies in this category were \$12 million or 6%. This compares to 6% for all professional services companies and to 11% for the industry as a whole.
- Respondents reported:
 - Average revenues per respondent company in 1978 were \$369,000.
 - The total number of employees in this category was 205 (U.S. and foreign), an average of 16 per respondent company.
 - The average revenue per employee was \$23,000.
 - The average pre-tax profit per employee was \$1,500, the lowest in the professional services group.
- Balance sheet data from respondents is presented in Exhibit VI-10.
 - Respondents in this category had 1978 profits of \$24,000 (before taxes and extraordinary items), a 27% drop from 1977 profits of \$33,000.
 - Trade receivables turnover was 44 days in 1978 compared to 36 days in 1977.
- As shown in Exhibit VI-11, time and materials custom software was the largest single source of revenues for firms in this category, with \$1.8 million in revenues or 37.6% of the total for professional services firms.
- The majority of respondents (66%) had definite plans to integrate mini/micro computers into their operations in the near future.
 - One typical comment was, "We are moving in the mini direction."

EXHIBIT VI-10

KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF RESPONDING PROFESSIONAL SERVICES COMPANIES WITH REVENUES OF LESS THAN \$2 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	6	\$ 63	\$ 87	38%
TOTAL CURRENT ASSETS	9	87	104	20
TOTAL ASSETS	9	113	139	23
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	2	7	4	(43)
TOTAL CURRENT LIABILITIES	5	85	106	25
LONG-TERM DEBT LESS CURRENT PORTION	2	2	3	50
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	7	62	75	21
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	6	33	24	(27)
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	6	25	17	(32)
<u>FINANCIAL</u>				
CURRENT RATIO	5	2.3	4.9	113
AVERAGE RETURN ON EQUITY	4	-	38%	-
TOTAL DEBT OVER TOTAL CAPITAL	1	0.114	0.041	(64)
LONG TERM DEBT OVER EQUITY NET WORTH	1	0.04	0.01	(75)
TRADE RECEIVABLES TURNOVER (DAYS)	6	36	44	22

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES. FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT VI-11

PERCENT OF REVENUES BY TYPE OF SERVICE
OF RESPONDING PROFESSIONAL SERVICES COMPANIES
WITH REVENUES OF LESS THAN \$2 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (\$ THOUSAND)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78 (%)	FORECASTED GROWTH '78 VS '79 (%)
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 280	5.8%	*	*
SCIENTIFIC AND ENGINEERING.	2	-	*	*
INDUSTRY SPECIALTY.	0	-	-	-
UTILITY.	0	-	-	-
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY	8	0.2	*	*
INDUSTRY SPECIALIZED	100	2.1	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION	0	-	-	-
SYSTEM UTILIZATION	0	-	-	-
IMPLEMENTATION SYSTEM. . . .	1	-	*	*
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	1,805	37.6	47.8%	27.9%
CUSTOM SOFTWARE				
FIXED PRICE	894	18.6	*	*
CUSTOM SOFTWARE				
COST PLUS FEE	960	20.0	*	*
CONSULTING, EDUCATION, TRAINING				
	746	15.6	*	*
TOTAL	\$4,796	100%**	35.2%	48.8%

* FEWER THAN 5 RESPONSES.
**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- Two respondents mentioned the use of minis with turnkey systems in 1979.
 - Expressing an interest of this group in the increasing cost of labor, one respondent hoped clients would "assume labor intensive repetitious operations."
2. PROFESSIONAL SERVICES COMPANIES WITH REVENUES OF \$2-10 MILLION
- The eight respondents to the survey in this category had 1978 U.S. available revenues of \$40.5 million, as shown in Exhibit VI-1.
 - Revenues from non-U.S. sources amounted to \$439,000.
 - There were no captive revenues for respondents in this category.
 - Gross 1978 profits of U.S. companies in this category were \$26 million or 8%. This compares to 6% for all professional services companies and to 11% for the industry as a whole. This profit return was the highest for professional services firms.
 - Respondents reported:
 - Average revenues per respondent company in 1978 were \$5.1 million.
 - The total number of employees in this category was 1,181 (U.S. and foreign), an average of 147 per respondent company.
 - The average revenue per employee was \$34,632, and the average pre-tax profit per employee was \$3,735, the highest among the professional services categories.
 - Balance sheet data from respondents is presented in Exhibit VI-12.

EXHIBIT VI-12

KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF RESPONDING
PROFESSIONAL SERVICES COMPANIES WITH REVENUES OF \$2-10 MILLION

ITEM OR RATIO	NUMBER OF RESPON- DENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	8	\$ 732	\$ 929	27%
TOTAL CURRENT ASSETS	8	1,086	1,389	28
TOTAL ASSETS	8	1,580	2,008	27
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	3	25	34	36
TOTAL CURRENT LIABILITIES	7	585	679	16
LONG-TERM DEBT LESS CURRENT PORTION	3	85	151	78
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	8	951	1,268	33
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	8	464	549	18
AFTER TAXES AND BEFORE EXTRAORDINARY ITEMS	7	271	349	29
<u>FINANCIAL</u>				
CURRENT RATIO	7	4.3	4.3	-
AVERAGE RETURN ON EQUITY	7		37%	-
TOTAL DEBT OVER TOTAL CAPITAL	2	0.097	0.142	46
LONG TERM DEBT OVER EQUITY NET WORTH	3	0.08	0.12	50
TRADE RECEIVABLES TURNOVER (DAYS)	8	60	54	(10)

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES.
FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

- Respondents in this category had 1978 profits of \$549,000 (before taxes and extraordinary items), an 18% change from 1977 when profits were \$464,000.
 - Trade receivables turnover was 54 days in 1978 compared to 60 days in 1977.
- As shown in Exhibit VI -13, time and materials custom software was the largest single source of revenue for firms in this category, with \$22.5 million in revenues or 56.8% of the total of revenues in this category of firms.
 - Although the number of respondents in this group was small, the overall reaction to mini/micros was negative. One firm, however, with 100 mini/micro installations in 1979 and 150 planned for 1980 was obviously established in the minicomputer area.
3. PROFESSIONAL SERVICES COMPANIES WITH REVENUES OVER \$10 MILLION
- The 10 respondents to the survey in this category had 1978 U.S. available revenues of \$671 million, as shown in Exhibit VI-1.
 - Revenues from non-U.S. sources amounted to \$56 million.
 - Captive revenues were \$1 million.
 - Gross 1978 profits of U.S. companies in this category were \$34 million or 5%, the lowest percentage in this category and compared to 6% for all professional services companies and 11% for the industry as a whole.
 - Respondents reported:
 - Average revenues per respondent company in 1978 were \$73 million.

EXHIBIT VI-13
 PERCENT OF REVENUES BY TYPE OF SERVICE
 OF RESPONDING PROFESSIONAL SERVICES COMPANIES
 WITH REVENUES OF \$2-10 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (\$ THOUSAND)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78 (%)	FORECASTED GROWTH '78 VS '79 (%)
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 2,256	5.7%	*	*
SCIENTIFIC AND ENGINEERING.	0	-	-	-
INDUSTRY SPECIALTY.	7,745	19.5	*	*
UTILITY.	368	0.9	*	*
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY	0	-	-	-
INDUSTRY SPECIALIZED.	200	0.5	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION	50	0.1	*	*
SYSTEM UTILIZATION	50	0.1	*	*
IMPLEMENTATION SYSTEM	0	-	-	-
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	22,564	56.8	*	*
CUSTOM SOFTWARE				
FIXED PRICE	2,168	5.5	*	*
CUSTOM SOFTWARE				
COST PLUS FEE	3,518	8.9	*	*
CONSULTING, EDUCATION, TRAINING.	788	2.0	*	*
TOTAL	\$39,707	100%**	42.0%	38.9%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

- The total number of employees in this category was 20,916 (U.S. and foreign), an average of 2,092 per company.
- The average revenue per employee was \$35,000, and the average pre-tax profit per employee was \$2,095.
- Balance sheet data from respondents is presented in Exhibit VI-14.
 - Respondents in this category had 1978 profits of \$4.4 million (before taxes and extraordinary items), a 9% increase from 1977 profits of \$4 million.
 - Trade receivables turnover was 70 days in 1978 compared to 75 days in 1977.
- As shown in Exhibit VI-15, time and materials custom software was the biggest source of revenue for firms in this category, with \$97 million in revenues or 47.7% of the total. Actual 1977-1978 growth for this category was almost 45%.
- Respondents in this group did not react in an overall positive manner to mini/micros. Only a minority of them (27%) had future plans to integrate mini/micros into their services.

EXHIBIT VI-14

KEY BALANCE SHEET, PROFIT AND FINANCIAL ITEMS OF RESPONDING PROFESSIONAL SERVICES COMPANIES WITH REVENUES OF MORE THAN \$10 MILLION

ITEM OR RATIO	NUMBER OF RESPONDENTS	FISCAL YEAR		PERCENT CHANGE
		1977	1978	
		(IN \$ THOUSAND)		
<u>SELECTED ASSETS</u>				
TRADE RECEIVABLES	8	\$13,821	\$15,943	15%
TOTAL CURRENT ASSETS	8	18,369	25,858	41
TOTAL ASSETS	8	27,731	37,769	36
<u>SELECTED LIABILITIES</u>				
CURRENT PORTION OF LONG TERM DEBT	5	1,173	1,808	54
TOTAL CURRENT LIABILITIES	8	12,021	18,561	54
LONG-TERM DEBT LESS CURRENT PORTION	5	11,828	13,519	14
TOTAL STOCKHOLDERS EQUITY (NET WORTH)	8	8,023	10,409	30
<u>PROFIT</u>				
BEFORE TAXES AND EXTRAORDINARY ITEMS	10	4,032	4,383	9
AFTER TAXES AND BEFORE EXTRA-ORDINARY ITEMS	10	2,224	2,397	8
<u>FINANCIAL</u>				
CURRENT RATIO	8	1.7	1.5	(12)
RETURN ON AVERAGE EQUITY	8		27%	
TOTAL DEBT OVER TOTAL CAPITAL	5	0.471	0.519	10
LONG TERM DEBT OVER EQUITY NET WORTH	5	0.56	0.81	45
TRADE RECEIVABLES TURNOVER (DAYS)	8	75	70	(7)

NOTE: SELECTED ASSETS, SELECTED LIABILITIES AND PROFITS, ARE WEIGHTED AVERAGES. FINANCIAL RATIOS ARE STRAIGHT AVERAGES.

EXHIBIT VI-15
 PERCENT OF REVENUES BY TYPE OF SERVICE
 OF RESPONDING PROFESSIONAL SERVICES COMPANIES
 WITH REVENUES OF MORE THAN \$10 MILLION

TYPE OF SERVICE	1978 TOTAL U.S. REVENUES OF RESPONDENTS (\$ THOUSAND)	PERCENT OF TOTAL	ACTUAL GROWTH '77 VS '78 (%)	FORECASTED GROWTH '78 VS '79 (%)
<u>PROCESSING SERVICES</u>				
GENERAL BUSINESS.	\$ 34,063	16.7%	*	*
SCIENTIFIC AND ENGINEERING.	0			
INDUSTRY SPECIALTY.	8,304	4.1	*	*
UTILITY.	1,763	0.9	*	*
<u>SOFTWARE PRODUCTS</u>				
APPLICATION PRODUCTS				
CROSS INDUSTRY	628	0.3	*	*
INDUSTRY SPECIALIZED	75	-	*	*
SYSTEM PRODUCTS				
SYSTEM OPERATION	0	-	-	-
SYSTEM UTILIZATION	0	-	-	-
IMPLEMENTATION SYSTEM. . . .	0	-	-	-
<u>PROFESSIONAL SERVICES</u>				
CUSTOM SOFTWARE				
TIME AND MATERIALS.	97,213	47.7	44.7%	34.2%
CUSTOM SOFTWARE				
FIXED PRICE	21,419	10.5	*	18.5
CUSTOM SOFTWARE				
COST PLUS FEE	3,192	1.6	*	*
CONSULTING, EDUCATION, TRAINING	37,251	18.3	*	*
TOTAL	\$203,908	100%**	22.8%	15.7%

* FEWER THAN 5 RESPONSES.

**MAY NOT ADD UP TO 100% BECAUSE OF ROUNDING.

VII VENDOR PERFORMANCE

VII VENDOR PERFORMANCE

A. FINANCIAL DATA ON PUBLIC COMPANIES

- Published results on 22 public services companies are shown in Exhibit VII-1.
 - These companies represent 0.6% of the 3,500 computer services companies in the U.S., and 22% of estimated total 1978 computer services industry revenues.
 - They are predominantly processing services firms.
 - Their average growth in revenues in 1978 compared to 1977 was 25% (weighted average rounded); this compares to a 19% industry growth estimate based on the ADAPSO survey.
 - Their average profit before taxes on revenues was 13% in 1977 and 13% in 1978, compared to 11% in both years for the respondents to the ADAPSO survey.
 - The above comparisons add substance to the ADAPSO survey in that public companies in the industry are actually performing at growth and profit levels better than the average of the over 150 companies included in the survey (many of the public companies in Exhibit VII-1 also participated in the survey).

EXHIBIT VII-1

PUBLISHED RESULTS OF PUBLIC COMPUTER SERVICES COMPANIES

COMPANY NAME	FISCAL YEAR END		1978 (IN MILLIONS)	1977	% GROWTH 1977-1978	% PROFIT ON REVENUES	
ANACOMP	6/30	R P	\$ 21.62 3.18	\$ 16.18 2.45	34% 30	77 78	15% 15
APPLIED DATA RESEARCH	12/31	R P	22.63 1.97	16.93 3.03	34 <54> ✓	77 78	18 9
ADP	6/30	R P	299.26 54.03	245.49 45.97	22 18	77 78	19 18
BRADFORD NATIONAL	12/31	R P	118.74 7.4	94.02 5.74	26 29	77 78	6 6
COMNET	3/31	R P	16.60 1.80	7.30 0.80	27 ✓ 25 ✓	77 78	11 11
CARS	12/31	R P	20.20 1.50	16.50 1.50	22 0	77 78	9 7
COMPUSERV	12/31	R P	15.84 1.37	14.33 1.66	11 ✓ <21> ✓	77 78	12 9
COMPUTER SCIENCES CORP.	3/31	R P	276.90 26.10 ✓	234.70 21.20	18 23	77 78	9 9
COMSHARE	6/30	R P	25.64 3.76	18.21 2.27	41 66	77 78	12 13
ELECTRONIC DATA SYSTEMS	6/30	R P	217.84 32.47	164.19 28.51	33 14	77 78	17 15

R = REVENUES (GROSS)

P = PROFITS (BEFORE TAXES & EXTRAORDINARY ITEMS)

EXHIBIT VII-1 (CONTD)

PUBLISHED RESULTS OF PUBLIC COMPUTER SERVICES COMPANIES

COMPANY NAME	FISCAL YEAR END		1978		1977		% GROWTH 1977-1978	% PROFIT ON REVENUES	
			(IN MILLIONS)						
KEYDATA	6/30	R P	\$ 15.07 <.31>	\$ 14.56 .38	4% N.A.	77 78	3% <2>		
MDSI	8/31	R P	28.80 6.30	22.20 5.00	30 26	77 78	23 22		
MATHEMATICA	6/30	R P	26.50 0.45	22.70 1.36	17 <67>	77 78	6 2		
NATIONAL CSS	2/28	R P	48.89 7.49 ⁵	41.70 5.48	17 37	77 78	13 15		
NATIONAL DATA CORPORATION	5/31	R P	35.80 ^{CR} 4.97	30.70 4.16	17 19	77 78	14 14		
ON-LINE SYSTEMS	4/30	R P	22.62 2.92	16.00 2.27	41 29	77 78	14 13		
QUOTRON	12/31	R P	39.38 6.51	33.35 5.31	18 23	77 78	23 17		
RAND INFORMATION SYSTEMS	2/25	R P	11.67 1.10	7.59 0.78	54 41	77 78	10 9		
RAPIDATA	12/31	R P	19.11 2.52	17.91 1.84	7 37	77 78	10 13		
SHARED MEDICAL	12/31	R P	63.05 18.03	45.69 13.27	38 36	77 78	29 29		

R = REVENUES (GROSS)

P = PROFITS (BEFORE TAXES & EXTRAORDINARY ITEMS)

EXHIBIT VII-1 (CONTD)

PUBLISHED RESULTS OF PUBLIC COMPUTER SERVICES COMPANIES

COMPANY NAME	FISCAL YEAR END		1978		1977		% GROWTH 1977-1978	% PROFIT ON REVENUES	
			(IN MILLIONS)		(IN MILLIONS)				
SYSTEMS DEVELOPMENT CORPORATION	6/30	R	\$145.04	\$130.09	11% <8>	77	4%	3	
		P	4.51	4.86					
TYMSHARE	12/31	R	149.56	101.17	48*	77	16*		
		P	19.39	15.81				23*	78
TOTAL	-	R	1,640.76	1,311.51	25*	77	13*		
		P	207.46	173.65				19*	78

R = REVENUES (GROSS)

P = PROFITS (BEFORE TAXES & EXTRAORDINARY ITEMS)

* WEIGHTED AVERAGES

- The very large companies - Automatic Data Processing, Computer Sciences Corporation, Electronic Data Systems, and Tymshare - are all growing as fast or faster than the industry average.

APPENDIX A: DEFINITION OF TERMS

APPENDIX A: DEFINITION OF TERMS

COMPUTER SERVICES. These are services provided by vendors which perform data processing functions using vendor computers (processing services), or assist users to perform such functions on their own computers (software products and/or professional services).

CAPTIVE REVENUES. Computer services revenues received from users who are part of the same parent corporation as the vendor.

REVENUES FROM NON-CONSOLIDATED FOREIGN AFFILIATES: Revenues from foreign affiliates which are not included in non-U.S. revenues; profits from these revenues may be consolidated in total profits.

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 which are common to users across industry categories. Software is provided by the vendor; this can be a complete package, such as a payroll package, or an application "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 application "tool" which the user employs to produce its 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.

SOFTWARE PRODUCTS. This category includes users' 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 users' sites. Fees for work performed by organizations other than the package vendor are counted in professional services. The sub-categories of software products are:

- Application Products are software which 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:
 - Systems operations 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.
 - Implementation system products which are used to prepare applications for execution by assisting in design, 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.

PROFESSIONAL SERVICES. This category is made up of services related to EDP including systems 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.

User industry sectors include:

DISCRETE MANUFACTURING: Apparel; Furniture; Printing; Leather; Metal; Machinery; Electronics; Transportation; Scientific and Control Instruments; Miscellaneous Manufacturing.

PROCESS MANUFACTURING: Metal Mining; Anthracite Mining; Coal Mining; Oil and Gas Extraction; Food Products; Tobacco; Textile Products; Lumber And Wood Products; Paper Products; Chemicals; Petroleum; Rubber and Plastics; Stone, Glass, Clay; Primary Metals.

TRANSPORTATION: Railroad; Local Transit; Motor Freight; U.S. Postal Service; Water Transportation; Air; Pipelines; Transportation Services.

UTILITIES: Communications; Electric, Gas, and Sanitary.

BANKING AND FINANCE: Banks; Savings and Loans; Credit Agencies; Credit Unions; Security and Commodity Brokers; Holding and Investment Companies.

INSURANCE: Insurance (Life, Health, Etc.); Insurance Agents.

MEDICAL: Hospitals; Clinics; Nursing Homes; Physicians Services; Dentists Services.

EDUCATION: Educational Services.

RETAIL: Building Materials, Hardware; General Merchandise; Food; Automotive Dealers and Gas Stations; Apparel; Furniture; Eating and Drinking; Miscellaneous Retail.

WHOLESALE: Durable Goods; Non-Durable Goods.

STATE AND LOCAL GOVERNMENT: As Appropriate.

FEDERAL GOVERNMENT: As Appropriate.

SERVICES: Business Services. Accountants, CPAs, architects and engineers, business consultants, lawyers, research institutions.

OTHER: Agriculture, Forestry, and Fishing; Construction; Real Estate; Hotels, Rooming Houses, Camps, and Other Lodging Places; Personal Services; Automotive Repair, Services, and Garages; Miscellaneous Repair Services; Motion Pictures; Amusement and Recreation Services; Social Services; Museums, Art Galleries, Botanical and Zoological Gardens; Membership Organizations; Miscellaneous Services.

NOTE: Appropriate SIC codes for the above sectors are available from INPUT on request.

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. The three sub-modes of RCS are:

- 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.

BATCH SERVICES. This includes data processing performed at vendors' sites of user programs and/or data which 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 which take their data to a vendor site which has a terminal connected to a remote computer 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. Simply providing resources, even though under a long-term contract and/or for all of a users' processing needs, does not necessarily qualify as FM.

- Trade Receivables. Receivables from clients. Exclude rent from tenants, income due from subsidiaries and other non-client receivables.
- Total Current Liabilities. Include current portion of long term debt which is also identified as a separate item in the questionnaire.
- Total Dollars. Includes all costs in the category, including the all personnel fully burdened.
- Direct Personnel Compensation. Includes only wages, salaries, and commissions of personnel in the category and excludes burden. This data will be used to compare to last year's survey.

CATEGORIES:

- Marketing. Includes corporate marketing, product planning, market research, advertising, training, and related functions.

- Sales. Includes field sales offices, account representatives, technical representatives, branch management and support, and related functions.
- Research and Product Development. Includes R&D personnel, amortization of software purchases, maintenance, enhancement of existing products, and development of new products. Excludes internal computer costs.
- Operations:
 - Personnel. Operators, analysts, programmers, and those involved in related functions. Includes direct revenue producing personnel in professional services. Excludes maintenance personnel for the three sub-categories which follow. In-house maintenance personnel costs should be shown in the appropriate operations sub-category.
 - Computer System Equipment and Maintenance. Includes hardware cost, interest, depreciation, property tax, and related expenditures.
 - Data Communications. Includes hardware cost, carrier services, maintenance and related expenditures.
 - Facility Operations. Includes rent, utilities, taxes and related expenditures.
- General And Administrative. Finance and administrative expenses, interest on loans but excluding federal and state taxes.
- Other. Any expense that cannot be allocated to the previous categories. Please make every effort, however, to apply expenses to the previous categories so that more valid category totals can be developed.

APPENDIX B: METHODOLOGY

APPENDIX B: METHODOLOGY

- The methodology followed was to mail the questionnaire to 3,500 potential respondents.
 - All companies with revenues of \$10 million and over were contacted by phone to expedite the response.
 - ADAPSO made a special effort in developing responses from its members.
 - Of 175 responses obtained, 157 contained the data required and were incorporated in the analyses.
 - Data gathering took place in March and April, 1978, with analysis and writing being completed in June.
 - Data from INPUT's library and research facilities are included to complete the analysis and expand on the survey findings where appropriate. Where this has been done, the data is identified as INPUT's.

- To ensure the validity of the analysis, a special test was made to determine the statistical reliability of the results. The total market size estimate of companies with revenues under \$10 million was evaluated under the relationship

$$\bar{X} \pm 1.96 \frac{S}{\sqrt{n}} \sqrt{\frac{N-n}{N-1}}$$

Where:

- \bar{X} = The sample mean.
- S= The standard deviation.
- n= The sample size.
- N= The population size.

- The results of the calculations are reported in the Executive Summary.

- Categorization of Companies by Product

- Section C of the questionnaire requested percentage revenues by type of product. The products were grouped into three categories: Processing Services, Software Products, and Professional Services.
- A company was placed in the category which accounted for over 50% of its 1977 revenues.

- Categorization by Size

- Section A of the questionnaire requested total 1978 Computer Services Revenues. Companies were categorized based on these revenues into three groupings: Less than \$2 million, \$2-10 million, and over \$10 million. Because of the importance of processing companies over \$25 million, a separate category was created to analyze these companies.

- Captive revenues and non-U.S. revenues were included in the total figure; they are broken out where appropriate in the report itself to provide available U.S. revenues. Revenues for non-consolidated foreign affiliates were reported separately and are not included in total revenues.

APPENDIX C: OTHER STATISTICS

APPENDIX C
 RESPONSE TO 1979 ADAPSO SURVEY
 BY TYPE AND SIZE OF COMPANY

TYPE/SIZE	NUMBER OF RESPONDENTS	EST. NO. OF CO.'S IN U.S.	TOTAL REP'D 1978 REVS. (\$M)	TOTAL NUMBER OF EMPLOYEES	
				U.S.	NON-U.S.
<u>PROCESSING SERVICES</u>					
>\$25 M	22	35	\$2,213	46,766	4,947
\$10-25 M	7	24	128	2,641	209
\$2-10 M	30	250	139	3,318	206
<\$2 M	42	1,760	42	1,359	127
TOTAL	101	2,100	2,522	54,084	5,489
<u>SOFTWARE PRODUCTS</u>					
>\$10 M	7	12	120	2,221	231
\$2-10 M	7	60	32	570	19
<\$2 M	11	680	8	260	25
TOTAL	25	752	160	3,051	275
<u>PROFESSIONAL SERVICES</u>					
>\$10 M	10	10	728	19,717	1,199
\$2-10 M	8	60	41	1,179	2
<\$2 M	13	480	5	203	2
TOTAL	31	550	774	21,099	1,203
GRAND TOTAL	157	3,500	\$3,456	78,234	6,967

APPENDIX D: QUESTIONNAIRE

GENERAL INSTRUCTIONS

This questionnaire is designed to be completed by management. The questionnaire asks for data describing your computer services business activity for fiscal year 1978. The data will be held confidential, and will be used to produce an overall industry analysis for the industry and for the financial community. Terms used in the questionnaire are defined in the attached "Definitions" section. Contact INPUT if additional copies are required.

A) GENERAL INFORMATION

1. The information requested in this questionnaire is primarily for Fiscal Year 1978. If your fiscal year is not equivalent to calendar year 1978, please indicate the applicable time period.

mo. yr. mo. yr.
 to
11-18

2. In what year did you enter the computer services business? 19
19 20

3. a.) What were your computer services revenues as follows (*in thousands*)?

	Fiscal Year 1977	Fiscal Year 1978
Total Revenues	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>21-32</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>
Less: Captive Revenues	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>33-44</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>
Less: Non-U.S. Revenues		
Canada	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>45-56</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>
Europe	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>57-68</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>
Other (<i>specify</i>) _____	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>69-80</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>
Equals: Total Available U.S. Revenues	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>11-22</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>

b.) What were the revenues of non-consolidated foreign affiliates (*in thousands*)?

1977 \$,
24-35 1978 \$,

4. How many employees did you have as of the end of your last fiscal year?

a.) U.S.
36-45 b.) Non-U.S.

5. Is your company a (*check one*)

1. public company 2. private company

B) FINANCIAL PERFORMANCE

1. PROFIT. What was your profit (*in thousands*)

a.) Before taxes and extraordinary items

b.) After taxes and before extraordinary items

	Fiscal Year 1977	Fiscal Year 1978
a.)	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>48-59</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>
b.)	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>60-71</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>

c.) If you are a public company will you also attach your most recent annual report? (*Check one*)

1. Yes 2. No

2. EARNINGS PER SHARE. What were your:

a.) Earnings per share after taxes and before extraordinary items (*in dollars and cents*).

b.) Total shares outstanding (*in thousands*)

	Fiscal Year 1977	Fiscal Year 1978
a.)	\$ <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <small>11-20</small>	\$ <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>
b.)	<input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/> <small>21-30</small>	<input type="text"/> <input type="text"/> , <input type="text"/> <input type="text"/> <input type="text"/>

3. **GROWTH.** What percent *internal (not including acquisitions)* growth in available U.S. revenues
- a.) did you forecast in 1978 vs. 1977? 32-34 %
- b.) do you forecast for 1979 vs. 1978? 35-37 %
- c.) do you forecast as a compounded growth rate for the next 5 years? 38-40 %
4. **INFLATION.** By what percent did your available U.S. revenues
- a.) grow in 1978 vs. 1977 due to inflationary price increases? 41-42 %
- b.) What % do you anticipate they will grow in 1979 vs. 1978 due to inflationary price increases? 43-44 %
5. **ACQUISITIONS.** Of U.S. available revenues as stated above:
- a.) What amount of Fiscal 1977 and 1978 revenues were due to acquisitions of companies completed in Fiscal 1977 (*in thousands*)? 1977 \$, 1978 \$,
- b.) What amount of Fiscal 1978 revenues were due to acquisitions of companies completed in Fiscal 1978 (*in thousands*)? 1978 \$,
- c.) Are acquisitions part of your plan: (*check one*) 1979: Yes ___ No ___ 1980: Yes ___ No ___

C) COMPUTER SERVICES REVENUE ANALYSIS

Please analyze your company's fiscal 1978 U.S. computer services revenues and estimate appropriate total U.S. revenues (*include captive, exclude non-U.S.*) and growth percentages.

PRODUCT CATEGORY	1978 Revenues (in thousands)	Actual Growth '77 vs. '78	Forecasted Growth '78 vs. '79
Processing			
General Business	65-76 \$, 	 %	 %
Scientific and Engineering	11-22 \$, 	 %	 %
Industry Specialty	23-34 \$, 	 %	 %
Utility	35-46 \$, 	 %	 %
Software Products			
Application Products			
Cross Industry	48-59 \$, 	 %	 %
Industry Specialized	60-71 \$, 	 %	 %
System Products			
System Operation	11-22 \$, 	 %	 %
System Utilization	23-34 \$, 	 %	 %
Implementation System	35-46 \$, 	 %	 %
Professional Services			
Custom Software — time and materials	48-59 \$, 	 %	 %
Custom Software — fixed price	60-71 \$, 	 %	 %
Custom Software — cost plus fee	11-22 \$, 	 %	 %
Consulting, Education, Training	23-34 \$, 	 %	 %
TOTAL 1978 REVENUES (Processing, Software Products, Professional Services)	35-46 , 	 %	 %

D) INDUSTRY MARKETS

CATALOG NO. A D 7 9

Please indicate approximate 1978 total U.S. revenues (including captive) by user industry sector (*in thousands*).

User Industry Sector	Processing Services	Software Products	Professional Services	Total
Discrete Manufacturing . . .	\$, 	\$, 	\$, 	\$,
<small>50-73</small> Process Manufacturing . . .	\$, 	\$, 	\$, 	\$,
<small>11-34</small> Transportation	\$, 	\$, 	\$, 	\$,
<small>36-59</small> Utilities	\$, 	\$, 	\$, 	\$,
<small>61-72 11-22</small> Banking and Finance	\$, 	\$, 	\$, 	\$,
<small>24-47</small> Insurance	\$, 	\$, 	\$, 	\$,
<small>49-72</small> Medical	\$, 	\$, 	\$, 	\$,
<small>11-34</small> Education	\$, 	\$, 	\$, 	\$,
<small>36-59</small> Retail	\$, 	\$, 	\$, 	\$,
<small>61-72 11-22</small> Wholesale	\$, 	\$, 	\$, 	\$,
<small>24-47</small> Federal Government	\$, 	\$, 	\$, 	\$,
<small>49-72</small> State and Local Government .	\$, 	\$, 	\$, 	\$,
<small>11-34</small> Services (CPAs, Lawyers, etc.) .	\$, 	\$, 	\$, 	\$,
<small>36-59</small> Other (<i>please identify</i>) _____	\$, 	\$, 	\$, 	\$,
<small>61-72</small> _____	\$, 	\$, 	\$, 	\$,
TOTAL	\$, 	\$, 	\$, 	\$,
	<small>11-34</small>			

E) CHANGES IN MODE OF DELIVERY AND TYPES OF SERVICES OFFERED.

1. With increasing integration of hardware in services offerings and the trend to distributed processing, a new look at modes of delivery is necessary. Please indicate the breakdown of your total U.S. revenues for each of the following categories (*in thousands*):

	<u>Fiscal 1977</u>	<u>Fiscal 1978</u>	<u>Fiscal 1979 (est)</u>	<u>Fiscal 1983 (est)</u>
Remote Computing Services	\$, 	\$, 	\$, 	\$,
Batch Services	\$, 	\$, 	\$, 	\$,
<small>36-59</small>				
% of each of above delivered as facilities management:				
Remote Computing	 %	 %	 %	 %
Batch Services	 %	 %	 %	 %
	<small>24-35</small>			
	<small>36-47</small>			

2. Please comment on your plans for integrating mini/micro computers at the user site combined with your specific processing/software/professional services offerings. _____

3. How many of your user sites did have, or will have, your mini/micro offerings installed in:

1977 1978 1979 1980

50-69

F) NEW PRODUCT DEVELOPMENT

What research and product development costs, excluding internal computing costs, did you incur and do you expect to incur for *new* product development as a percent of total revenues (include captive and foreign) in fiscal

1977 %, 1978 %, 1979 %

70-75

G) BALANCE SHEET DATA *(Please give dollar amounts in thousands)*

SELECTED ASSETS

Trade Receivables
 Total Current Assets
 Total Assets

		Fiscal 1977	Fiscal 1978
11-22	\$, 	 ,
23-34	\$, 	 ,
35-46	\$, 	 ,
48-59	\$, 	 ,
61-72	\$, 	 ,
11-22	\$, 	 ,
23-34	\$, 	 ,

SELECTED LIABILITIES

Current portion of long term debt
 Total Current Liabilities
 Long term debt less current portion
 Total Stockholder's equity (net worth)

H) EXPENDITURES *(Please give dollar amounts in thousands)*

Category		Total Fiscal Yr. 1978 Expenditures		Direct Personnel Compensation in Category
Marketing	36-47	\$, 	\$,
Sales	48-59	\$, 	\$,
Research and Product Development	61-72	\$, 	\$,
Operations				
a) Personnel, excluding those working on fixed price contracts	11-22	\$, 	\$,
b) Personnel working on fixed price contracts	23-34	\$, 	\$,
c) Computer System Equipment & Maintenance	35-46	\$, 	\$,
d) Data Communications	48-59	\$, 	\$,
e) Facility Operations	61-72	\$, 	\$,
Payments to Third Parties for Software Royalties	11-16	\$, 	\$,
General Administrative	36-47	\$, 	\$,
All Other (<i>Define</i>) _____	48-54	\$, 	\$,
TOTAL	61-72	\$, 	\$,

Thank you for your participation.

APPENDIX E: REPLY FORM

REPLY FORM

TO: USERS OF THE 1979 ADAPSO ANNUAL REPORT

To help us continue improvement of the Annual Report series, please complete this form and return it to me.

1. Please rate the sections of the report. (5 = excellent, 0 = poor)

Section	Rating		Comments
	Clarity	Acceptability	
II Executive Summary			
III Industry Performance			
IV Processing Services Performance			
V Software Products Performance			
VI Professional Services Performance			
VII Vendor Performance			
Appendix			

2. The report has several objectives. Please rate how well it succeeded. (5 = excellent, 0 = poor)

	<u>Rating</u>
Provides a basic reference source on size, profits, and growth of the industry	_____
Is easy to read and use	_____
Individual companies can compare performance to the industry	_____
Is a tool for use in planning	_____
Is a tool for financial analyses	_____
Is timely	_____

Detach Here

3. If you have used earlier ADAPSO Annual Reports, please compare this report to the earlier reports: _____

4. Please comment on the overall 1979 Report, including suggestions for the 1980 Report: _____

Please return to: Jerry Dreyer
ADAPSO
1925 North Lynn Street
Arlington, Virginia 22209

