ASSOCIATION OF DATA PROCESSING
SERVICE ORGANIZATIONS

COMPUTER SERVICES INDUSTRY
1984

INPUT

About ADAPSO

The Association of Data Processing Service Organizations (ADAPSO), founded in 1961, is a nonprofit business organization committed to meeting the needs of the multibillion dollar computer services industry. More than 700 members represent all phases of the industry — data centers, software products, professional services, timesharing, facilities management, and integrated systems companies. Corporate members range from large publicly owned companies and conglomerates with both national and international operations to small companies that serve local, regional, or specialty market segments of the industry.

ADAPSO's programs are designed to protect the interests of the computer services industry from unlawful competition and unwise governmental regulations and legislation while helping to improve industry standards and management performance. As the industry voice, it is dedicated to identifying the industry to the customer as being professional and capable; to the financial community for its growth and stability; and to government to support a vigorous, independent computer services industry.

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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 members 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.

Many of INPUT's professional staff members have 20 or more years of experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed in 1974, INPUT has become a leading international planning services firm. Clients include over 100 of the world's largest and most technically advanced companies.

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

EIGHTEENTH ANNUAL SURVEY OF THE COMPUTER SOFTWARE AND SERVICES INDUSTRY

BASED ON DATA FOR THE YEAR 1983

PUBLISHED AUGUST 1984

BY

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ANNUAL COMPUTER SOFTWARE AND SERVICES INDUSTRY REPORT FOR 1983

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EXHIBITS

1 INTRODUCTION

I INTRODUCTION

- This 18th annual report on the computer software and services industry has been prepared by INPUT under a commission from the Association of Data Processing Service Organizations (ADAPSO). It is designed for use by industry managers and financial analysts who wish to gain a fuller understanding of the size, growth, and trends of this important and rapidly changing industry.

  - ADAPSO consists of over 700 member companies and represents the interests of the computer software and services industry in such areas as industry statistics, government relations, legal representation, and communications with the financial community.

  - INPUT is a highly regarded international consulting services and marketing research company specializing in the information industry. INPUT has studied the information services industry since 1974 and maintains several ongoing research programs for the industry.

- INPUT's research programs supply information for this report in two ways:

  - INPUT's Company Analysis and Monitoring Program tracks 4,500 information services companies and specifically provides the data for this report on public companies and companies with over $10 million in annual information services revenues.

- INPUT's Market Analysis Program for the information services industry provides detailed forecasts for the next five years. Summary data from these forecasts are used in this report and the performance data obtained from users and vendors in this service is used to reconcile ADAPSO research findings.

- For the purposes of this report for ADAPSO, the industry is described as the "Computer Software and Services Industry." INPUT describes this industry as the "Information Services Industry."

- As in previous years, this report analyzes the computer software and services industry activities in terms of both mode of service and type of company.

  - "Mode of service" focuses on the end product--processing services, software products, professional services, or turnkey systems--in regard to the revenue sources of the vending companies. For this report the term "turnkey systems" is synonymous with last year's term "integrated systems."

  - "Type of company," on the other hand, is a means of classifying companies according to their primary source of revenue. For example, in this research, companies earning a majority of their revenues from processing services are classified as processing services companies, even though they may also receive revenue from sales of software products, professional services, or turnkey systems (see Appendix A for a list of definitions used in this report).

- The scope of the research for this year's report is essentially identical to that in the previous year's report, although a few adjustments were made. The major research activities included:

  - A census of all companies with more than $10 million annually in noncaptive U.S. information services revenue carried out as part of INPUT's continuing industry reserach.

  - More than 400 companies were researched.

  - Three-hundred-twelve (312) companies qualified for the final list and were included in the study.

- A stratified random sample of companies with annual revenue greater than $250,000 but less than $10 million in noncaptive U.S. information services revenue.

  - Over 300 companies were interviewed by telephone.

  - Two-hundred sixty-nine (269) companies met the criteria for inclusion in this report.

- The distribution of these companies by size and type of company is included as Exhibit I-1.

- Specific attention was paid this year to microcomputer-based companies and "traditional" companies with some portion of their revenue in one or more service modes derived from microcomputer products/services.

- Research was also performed on all publicly held, U.S.-based computer services companies.

  - Two-hundred-forty-three companies were analyzed.

  - Ninety-five (95) companies were selected for detailed analysis. The distribution of these companies by major type of service offered is included as Exhibit I-2.

  - To be included in this analysis, a company was required to derive at least 75% of its total revenue from information services with not more

EXHIBIT I-1

NUMBER OF COMPANIES IN RESEARCH BASE
BY TYPE AND SIZE OF COMPANY

TYPE OF COMPANY	SIZE OF COMPANY		
	< $10 MILLION	≥ $10 MILLION	TOTAL
Processing Services	91	120	211
Software Products	79	74	153
Professional Services	47	76	123
Turnkey Systems	52	42	94
Total	269	312	581

EXHIBIT I-2

NUMBER OF COMPANIES IN PUBLIC COMPANY ANALYSIS BY TYPE AND SIZE OF COMPANY

TYPE OF COMPANY	SIZE OF COMPANY		
	< $10 MILLION	⩾ $10 MILLION	TOTAL
Processing Services	9	23	32
Software Products	2	20	22
Professional Services	1	24	25
Turnkey Systems	2	14	16
Total	14	81	95

than 25% of total information services revenue coming from foreign sources.

- This year for the first time vendors of Value-Added Network (VAN) services were included in this analysis.

- The reader should also note the following:

  - All references to revenue include only U.S. noncaptive computer software and service revenue unless otherwise indicated.

  - The data for this study were gathered from February to May of 1984.

  - Appendix B contains a reconciliation of figures reported in last year's report compared to those included in this year's report.

  - A data base of industry statistics is included in Appendix C.

  - A copy of the telephone interview questionnaire is included as Appendix D.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. MARKET SIZE AND GROWTH OF COMPUTER SOFTWARE AND SERVICE COMPANIES

- The computer software and services industry continued its high rate of revenue growth in 1983.

  - Total industry revenue grew a healthy 22% in 1983, reaching $32.6 billion, as shown in Exhibit II-1.

- A summary of statistics for the 1983 industry is provided in Exhibit II-2.

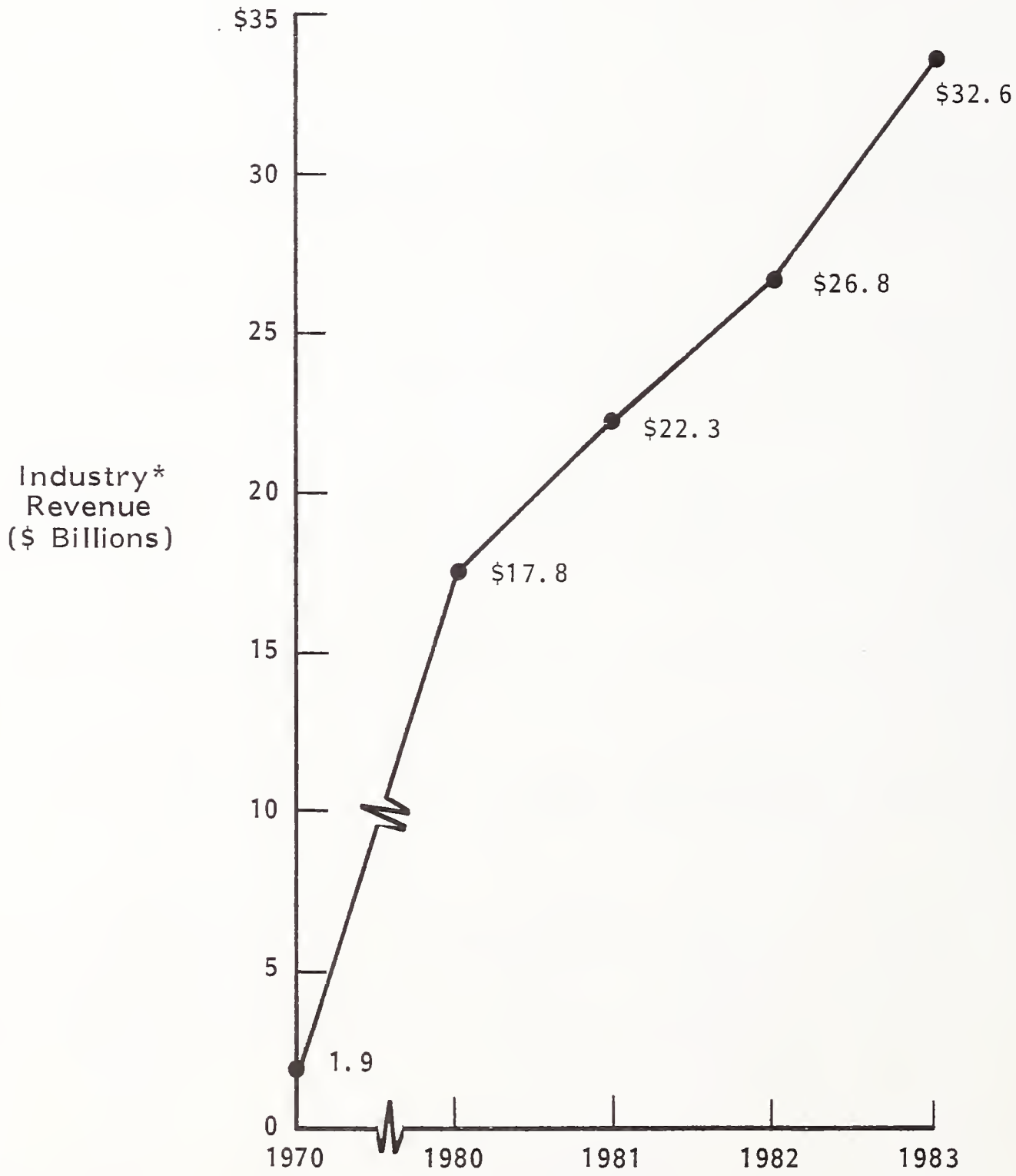
B. GROWTH RATES BY SEGMENT

- Processing services companies grew at 14% in 1983, as shown in Exhibit II-3 and continue to have the largest share of industry revenues. However, the revenue share held by these companies has fallen from 47% in 1982 to the current 45% share.

  - Software companies continued their explosive growth rate in 1983, advancing to a 23% share of industry revenue from 20% in 1982.

EXHIBIT II-1

REVENUE GROWTH IN THE
COMPUTER SOFTWARE AND SERVICES INDUSTRY, 1970-1983



* Note: Definition Changes Have Slightly Affected Gross Market Sizes on a Year-to-Year Basis

EXHIBIT II-2

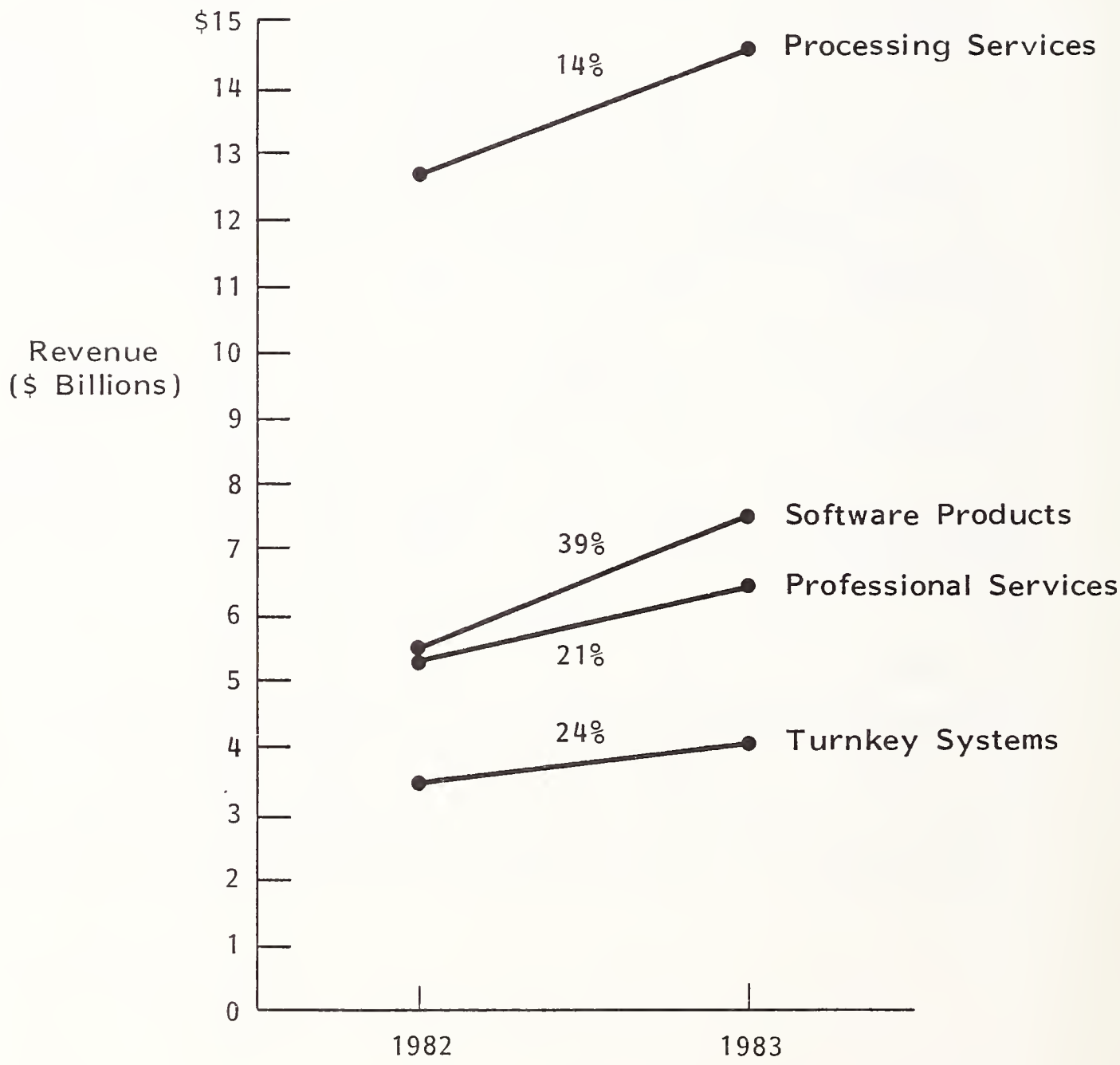
COMPUTER SOFTWARE AND SERVICES INDUSTRY
STATISTICAL OVERVIEW FOR 1983

TYPE OF COMPANY	NUMBER OF COMPANIES	NONCAPTIVE U.S. REVENUE 1983 ($ Billions)	EMPLOYEES (Thousands)	PUBLIC COMPANIES AFTER TAX PROFIT MARGINS* (Percent)
Processing Services	2,150	$14.6	215	5.3%
Software Products	2,250	7.5	94	7.8
Professional Services	1,400	6.4	98	3.6
Turnkey	1,200	4.1	52	7.5
Total	7,000	$32.6	459	5.6%

* Profit margins after tax are presented in this report rather than the pretax margins presented in previous reports.

EXHIBIT II-3

REVENUE GROWTH BY TYPE OF COMPANY



- Professional service companies grew at a rate of 21%, just under the industry average, while turnkey systems companies increased revenue at a rate of 24%, slightly faster than the 21% pace reported in 1982.

- By mode of service offered, regardless of the type of company offering the service, processing services held 39% of the market in 1983 with a growth rate of 13%, as shown in Exhibit II-4. Software products hold 25%, followed by professional services (22%), and turnkey systems (14%).

- By size of company there were no dramatic shifts in market share in 1983. Companies with revenue greater than $10 million receive approximately 58% of the industry revenue, and companies between $1 and $10 million and under $1 million receive approximately 31% and 11%, respectively.

- Significant contributors to this growth were products and services for microcomputers. Exhibit II-5 indicates the percent of vendors indicating microcomputer-related activity and their average percent of revenue attributed to these activities.

C. PRODUCTIVITY RATES

- Productivity, measured by the ratio of revenue per employee, exhibited improvement both by type of company, as shown in Exhibit II-6, and size of company for 1983. Software products companies, with the highest productivity ($80,000 per employee), increased their productivity growth rate from 8% in 1982 to 11% in 1983.

- Total industry employment reached 459,000 employees in 1983. For the industry to reach its anticipated growth during this decade, both employment and productivity must increase substantially.

EXHIBIT II-4

REVENUE GROWTH BY MODE OF SERVICE

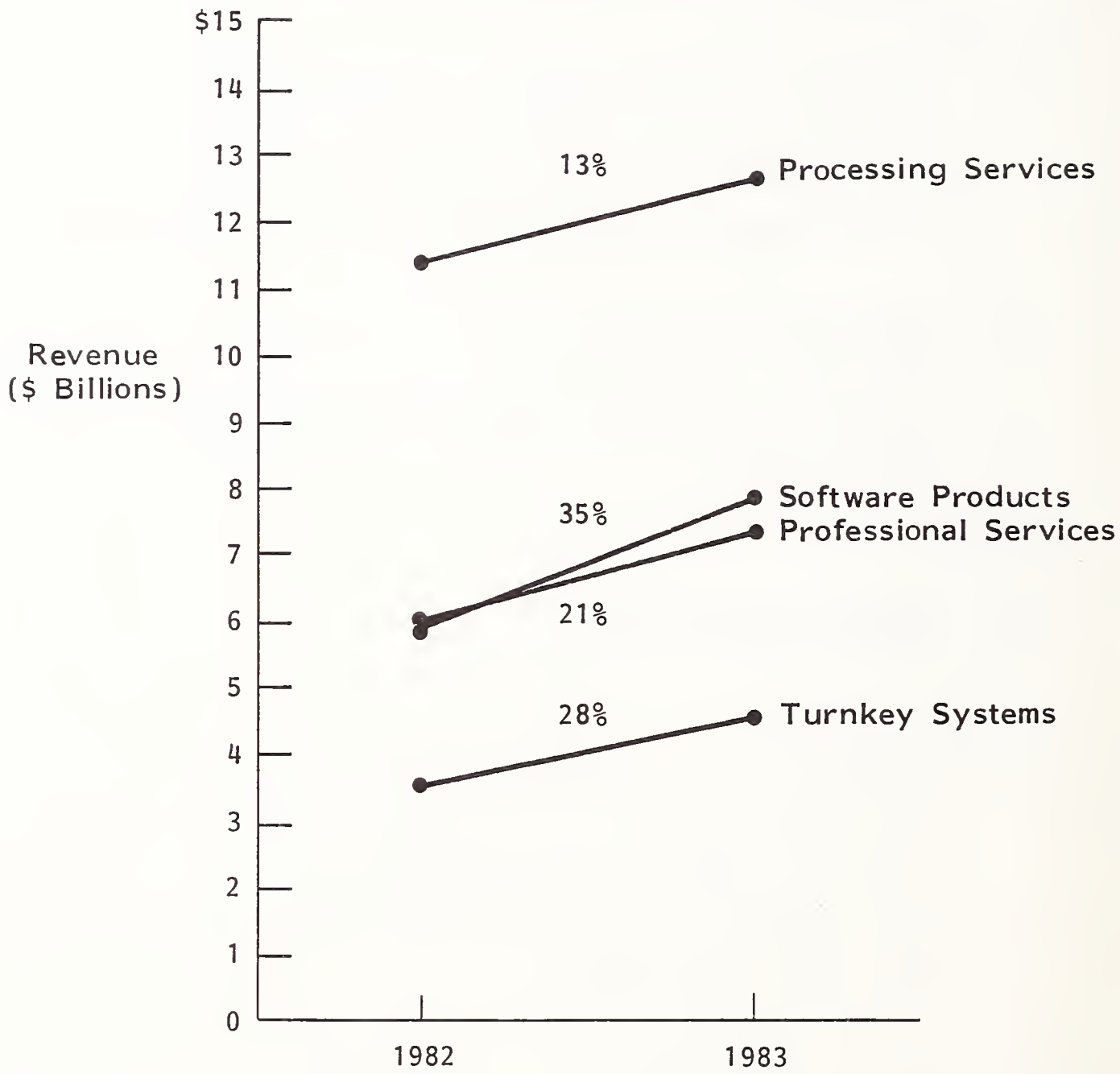


EXHIBIT II-5

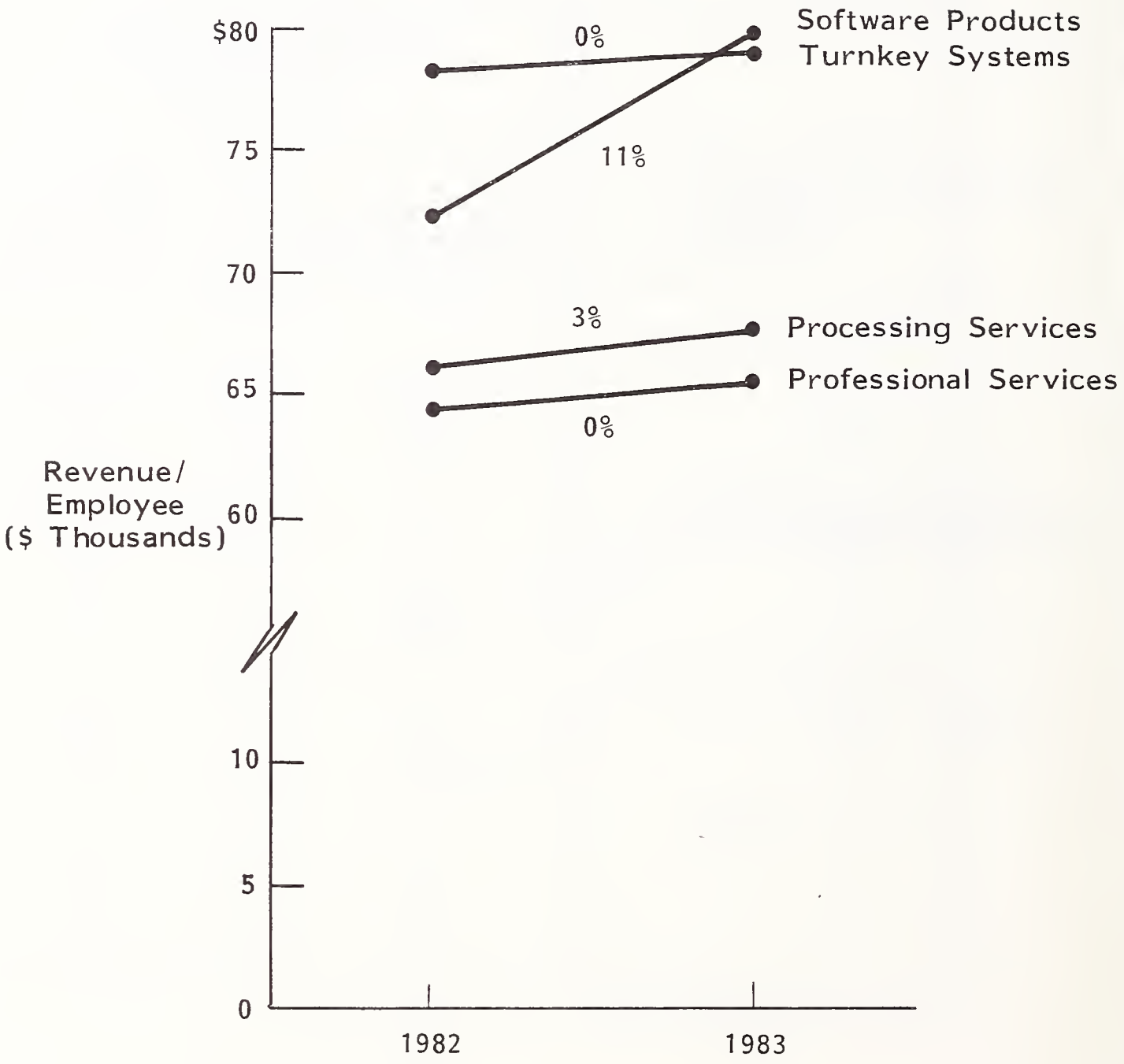
MICROCOMPUTER-RELATED REVENUES

TYPE OF COMPANY • SIZE ($ Millions)	RESPONDENTS WITH MICROCOMPUTER-RELATED REVENUES	
	PROPORTION OF RESPONDENTS	AVERAGE PROPORTION OF REVENUES
Processing Services		
• < $10	19%	13%
• ⩾ $10	31	17
Software Products		
• < $10	34	79
• ⩾ $10	35	76
Professional Services		
• < $10	40	13
• ⩾ $10	25	9
Turnkey Systems		
• < $10	51	64
• ⩾ $10	33	67

*Number of Respondents = 196.

EXHIBIT II-6

PRODUCTIVITY GROWTH BY TYPE OF COMPANY



D. PUBLIC COMPANY PERFORMANCE

- Public companies' revenue compared to their private counterparts revealed mixed results.

  - Revenue growth for processing services and turnkey systems grew faster than that of private companies, while revenue growth for public software products and professional services was at a slower pace.

  - Revenue growth for processing services companies increased by 17%, with software products companies increasing by 31%, professional services companies by 16%, and turnkey systems companies by 28%.

  - Profit margin (post-tax) showed mixed results.

    . Processing services company margins were down 21%.

    . Professional services margins were up 25%.

    . Software products margins were up 60%.

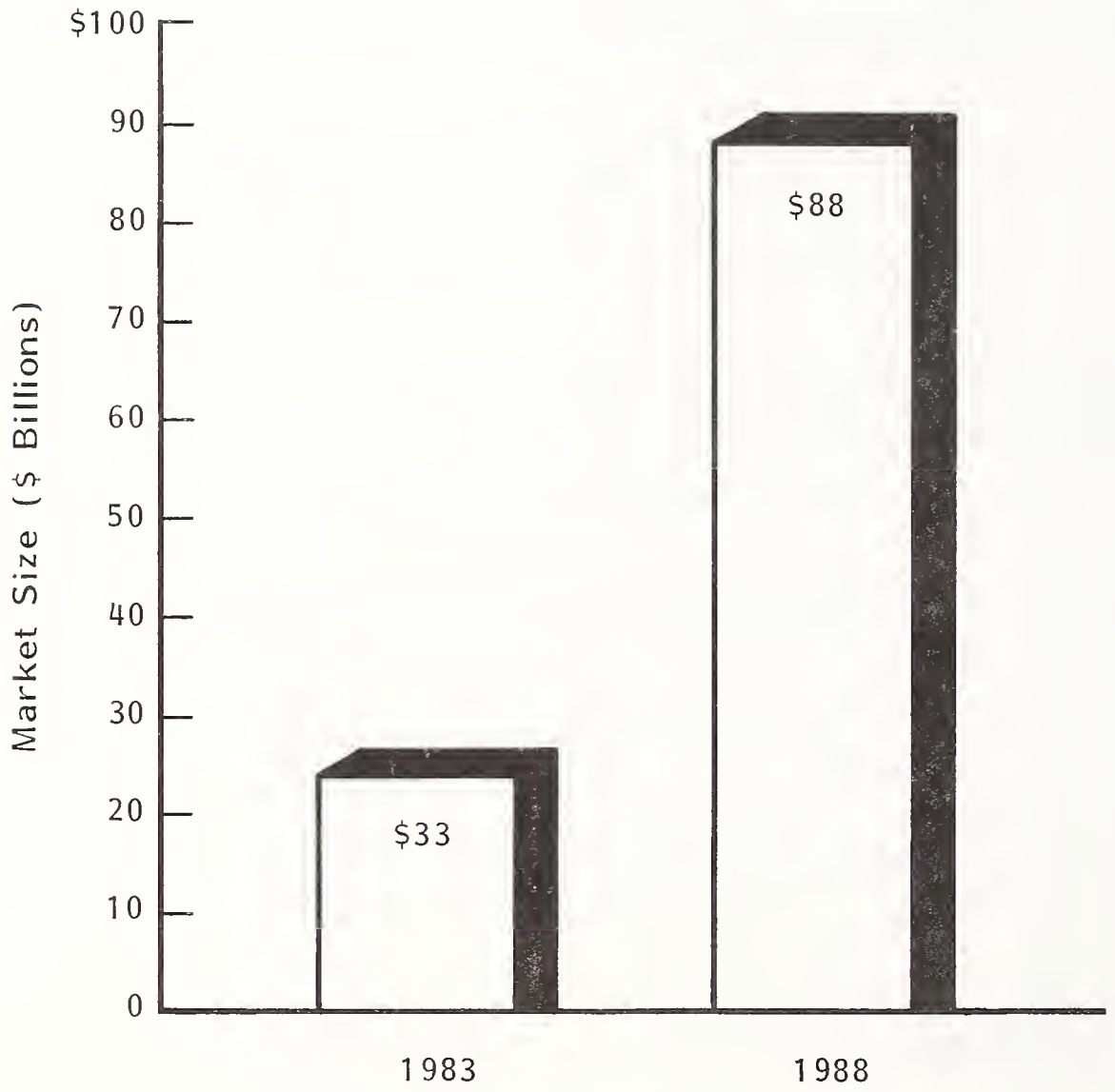
    . Turnkey systems were up 33%.

E. FORECAST

- Based on healthy growth and numerous opportunities, INPUT projects that the information services market will grow at an average annual growth rate of 22% through 1988 and reach a total industry size of $88 billion, as shown in Exhibit II-7.

EXHIBIT II-7

INPUT'S FORECAST OF THE U.S.
INFORMATION SERVICES MARKET, 1983-1988



III TOTAL COMPUTER SOFTWARE AND SERVICES INDUSTRY

III TOTAL COMPUTER SOFTWARE AND SERVICES INDUSTRY

- The companies that comprise the computer software and services industry continued their growth in 1983. In this section of the report, this growth and the factors that contributed to it are explored in detail.

A. INDUSTRY ANALYSIS

- Total revenue for all companies in the industry is comprised of captive revenue, U.S. noncaptive revenue, and foreign noncaptive revenue. Exhibits III-1 and III-2 depict the percentage of total noncaptive computer services revenue derived from U.S. and foreign sources, together with 1982 to 1983 growth rates for these revenues. For the industry as a whole, the proportion of total revenue from each source did not change significantly in the past year.

- Exhibit III-3 indicates the proportion of total company revenue derived from sales to other information services vendors. Overall, 26% of the respondents indicated that they had such sales, and that they represented an average of 27% of their revenue. (Sales to other computer services vendors who derive revenue from the resale of these products/services are excluded from this report to avoid double counting.)

EXHIBIT III-1

U.S. VERSUS FOREIGN REVENUE DISTRIBUTION BY TYPE OF COMPANY

TYPE OF COMPANY	NONCAPTIVE COMPUTER SERVICES REVENUE	
	FOREIGN	U.S.
Processing Services		
1982	9%	91%
1983	8	92
Software Products		
1982	24	76
1983	23	77
Professional Services		
1982	11	89
1983	12	88
Turnkey Systems		
1982	16	84
1983	15	85
All Types		
1982	14%	86%
1983	14%	86%

EXHIBIT III-2

U.S. VERSUS FOREIGN REVENUE GROWTH, 1982-1983

TYPE OF COMPANY	NONCAPTIVE REVENUE GROWTH 1982-1983	
	FOREIGN	U.S.
Processing Services	5%	14%
Software Products	25	39
Professional Services	31	21
Turnkey Systems	13	24
All Types	19%	22%

EXHIBIT III-3

INTRA-INDUSTRY SALES

TYPE OF COMPANY	PROPORTION OF RESPONDENTS WITH INTRA-INDUSTRY REVENUES	AVERAGE PROPORTION OF RESPONDENT REVENUE
Processing Services	18%	12%
Software Products	31	35
Professional Services	37	27
Turnkey Systems	16	39
Total	26%	27%

- Approximately 86% of the revenue of computer services companies comes from U.S. noncaptive sources. It is this revenue stream that will be the focal point for the remainder of this report.

- Nearly 7,000 companies comprise the information services industry. In 1983 these companies generated $32.6 billion in U.S. noncaptive revenue from computer software and services, as shown in greater detail in Exhibit III-4.

  - Processing services companies led the industry in U.S. noncaptive revenue ($14.6 billion) and number of employees. However, the increasing number of companies establishing their own in-house processing service and using microcomputers contributed to a revenue growth rate below that of the industry rate.

  - Software products companies, the second largest segment in terms of revenue within the year, continued their fast pace, growing at a rate of 39%, after growth rates of 41% in 1982 and 42% in 1981. This segment also experienced a dramatic 19% increase in new companies and now leads the industry in this category.

  - Professional services companies, the third largest sector in number of companies and revenue, grew at about the industry average.

  - Turnkey systems companies, independently recognized in the ADAPSO research for the first time in 1981, had revenue growth of 24%.

- When classified by their major source of revenue, companies indicate interesting changes in percent of total revenues they control, as shown in Exhibit III-5.

  - While all four types of companies grew in 1983, software products companies grew at rates faster than the industry average and, as a result, took market share from processing and professional services

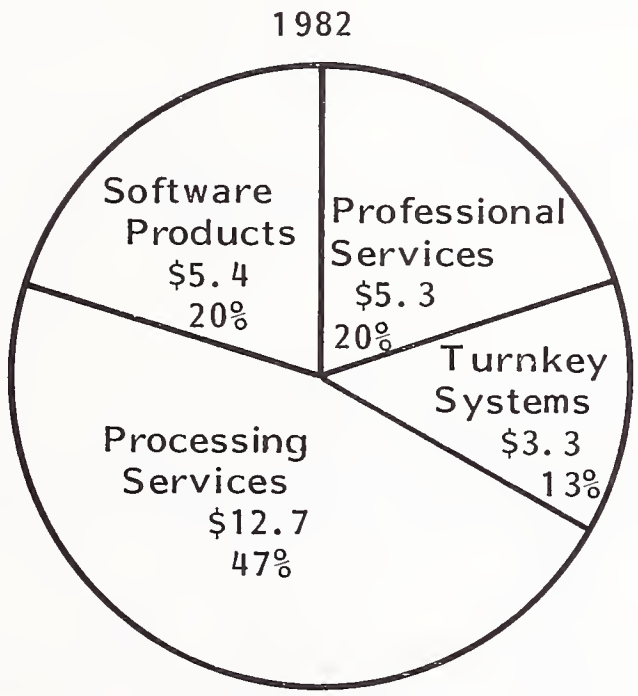
EXHIBIT III-4

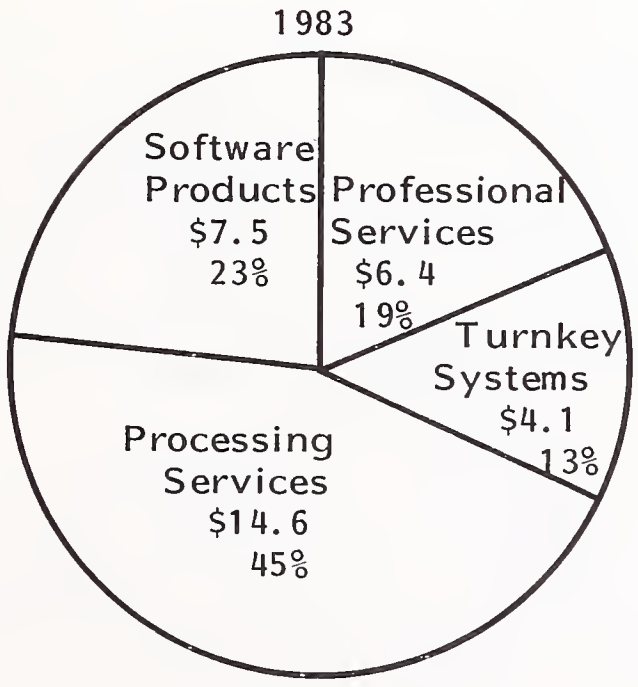
KEY COMPUTER SOFTWARE AND SERVICES INDUSTRY STATISTICS

TYPE OF COMPANY	NUMBER OF COMPANIES	NONCAPTIVE U.S. REVENUE			EMPLOYEES
		1982 ($ Billions)	1983 ($ Billions)	GROWTH (Percent)	NUMBER (Thousands)
Processing Services	2,150	$12.7	$14.6	14%	215
Software Products	2,250	5.4	7.5	39	94
Professional Services	1,400	5.3	6.4	21	98
Turnkey Systems	1,200	3.3	4.1	24	52
All Types	7,000	$26.7	$32.6	22%	459

EXHIBIT III-5

REVENUE DISTRIBUTION BY TYPE OF COMPANY





companies. Processing services companies now comprise approximately 45% of total industry revenues, down from over 50% two years ago.

- Software products companies, on the other hand, enhanced their industry position and have passed professional services companies as the second largest type of company in the industry.

- Professional services companies declined 1% to a 19% share, while turnkey systems companies held their positions at 13% of total revenue.

- By mode of service without regard for the type of company offering the service, processing services continued to hold a commanding market share at 39% but did lose share to the other services, as shown in Exhibit III-6.

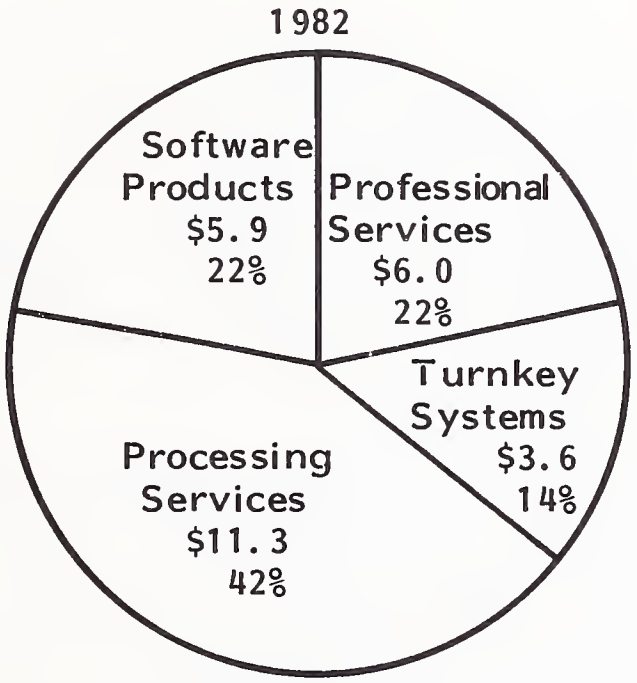
  - Software products increased in market share from 22% in 1982 to 25% in 1983. This 3% increase resulted in a decrease of 3% from the share of processing services.

- Exhibit III-7 represents the proportion of the industry revenue captured by companies of various sizes as classified by their total U.S. noncaptive revenue. In general, there was little change in industry concentration. Large companies, although only 312 in number, comprise approximately 58% of the industry revenue, with medium-sized companies accounting for an additional 31% and small companies comprising 11%.

- The change in product mix for the four types of companies analyzed is depicted in Exhibit III-8. Except for the processing services revenue of turnkey systems companies, each type of company experienced revenue growth in each of the service modes.

EXHIBIT III-6

REVENUE DISTRIBUTION BY MODE OF SERVICE



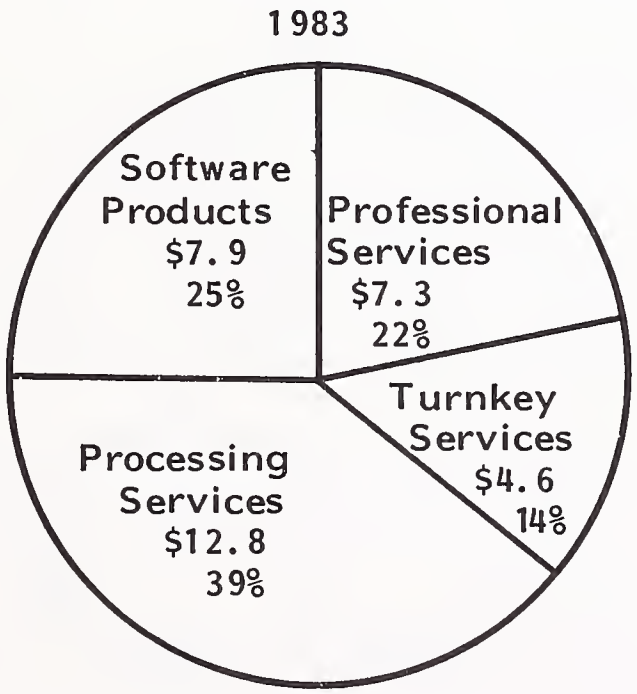
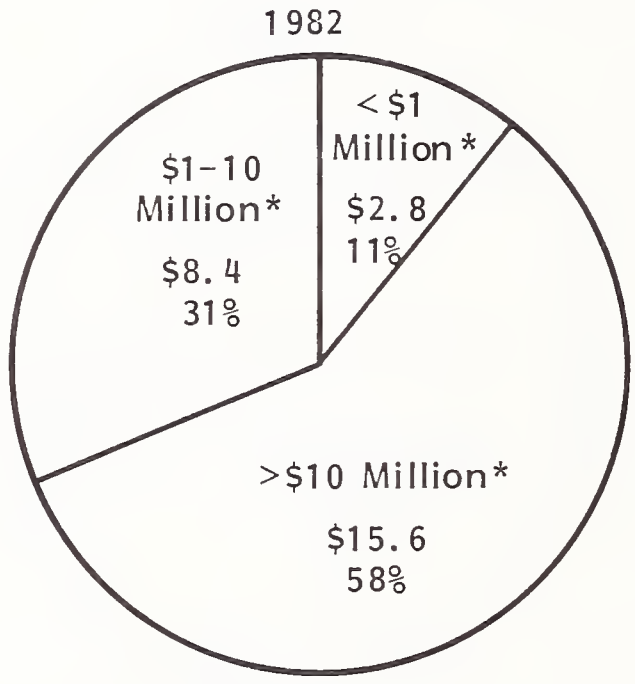
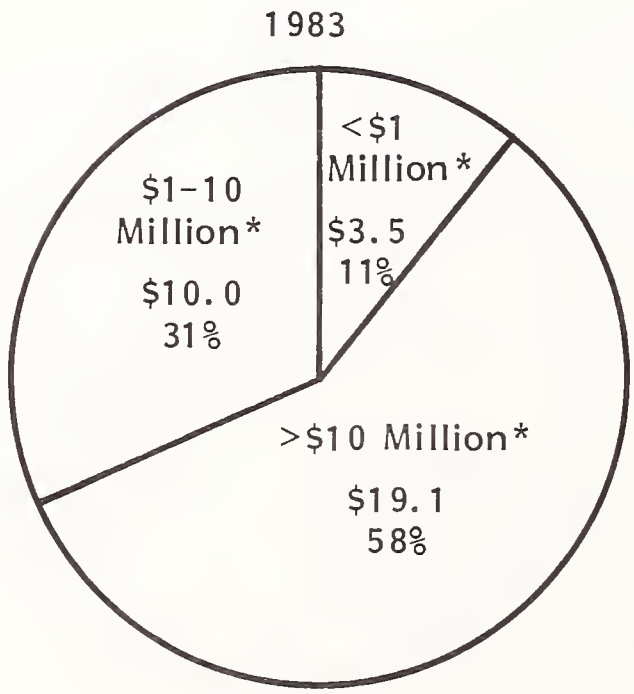


EXHIBIT III-7

REVENUE DISTRIBUTION BY SIZE OF COMPANY





* Company size in terms of total 1983 U.S. noncaptive information services revenue.

EXHIBIT III-8

REVENUE AND GROWTH RATES
BY TYPE OF COMPANY AND MODE OF SERVICE

TYPE OF COMPANY	MODE OF SERVICE REVENUES ($ Millions)				Total by Type
	Processing Services	Software Products	Professional Services	Turnkey Systems	
Processing Services					
1982 Revenues	$10,620	$685	$913	$525	$12,743
1983 Revenues	$12,063	$808	$987	$712	$14,570
Growth Rate	14%	18%	8%	36%	14%
Software Products					
1982 Revenues	$69	$4,733	$524	$83	$5,409
1983 Revenues	$74	$6,538	$774	$121	$7,507
Growth Rate	7%	38%	48%	46%	39%
Professional Services					
1982 Revenues	$426	$363	$4,442	$98	$5,329
1983 Revenues	$495	$465	$5,348	$116	$6,424
Growth Rate	16%	28%	20%	18%	21%
Turnkey Systems					
1982 Revenues	$226	$98	$101	$2,897	$3,322
1983 Revenues	$183	$132	$151	$3,659	$4,125
Growth Rate	(19%)	35%	50%	26%	24%
Total by Mode					
1982 Revenues	$11,341	$5,879	$5,980	$3,603	$26,803
1983 Revenues	$12,815	$7,943	$7,260	$4,608	$32,626
Growth Rate	13%	35%	21%	1.28%	1.22%

- Processing services companies experienced modest revenue growth in software products and professional services. Growth in turnkey systems was 36% after 1982's 35%. This provides a strong indication that processing services companies intend to combat the move to in-house processing by providing their own "in-house" alternative.

- Software companies had major revenue increases in professional services, turnkey systems, and processing services--although the latter increase was a small 7%.

- As expected, professional service companies continued their strong growth in software products revenue.

- Turnkey systems companies increased by 50% in professional services and a more modest 35% in software products while processing services revenue was down 19%.

• At a lower level of detail, Exhibit III-9 depicts the revenue and growth rates of submodes of service across type of company.

- For processing services, remote computing increased revenue by 14%, facilities management by 12%, and batch services by 11%. In addition, value added networks (VANs), added to the analysis as a separate item this year, grew 41%. However, the base on which this revenue grew was less than 4% of either remote computing or batch.

- Software product revenue growth was strong in applications software and in systems software with applications growing at a faster rate.

- Education was the fastest growing segment of professional services in 1983, followed by software development. These rates were somewhat offset by the growth in consulting and facilities management which grew at rates below the industry average.

EXHIBIT III-9

REVENUE AND GROWTH RATES OF SUBMODES OF SERVICE

MODE OF SERVICE	NONCAPTIVE U.S. REVENUE		
	1982 ($ Millions)	1983 ($ Millions)	GROWTH 1982-1983 (Percent)
Processing Services			
Remote Computing	$5,935	$6,764	14%
Value Added Networks (VAN)	180	253	41
Batch Services	3,939	4,353	11
Facilities Management	1,289	1,439	12
Subtotal	$11,343	$12,809	13%
Software Products			
Applications	$3,194	$4,423	38%
Systems	2,685	3,520	31
Subtotal	$5,879	$7,943	35%
Professional Services			
Software Development	$4,177	$5,017	20%
Consulting	850	948	12
Education	414	687	66
Facilities Management	539	608	13
Subtotal	$5,980	$7,260	21%
Turnkey Systems			
CAD/CAM	$949	$1,269	34%
Other	2,654	3,339	26
Subtotal	$3,603	$4,608	28%

- CAD/CAM revenue grew at a 34% rate, while cross-industry and industry-specific applications grew at a 26% rate.

- Exhibits III-10 and III-11, when viewed together, provide a clear picture of the revenue and growth rates of submodes of service by type of company.

  - While the primary service mode of each type of company accounts for over 80% of the total company revenue, there continues to be a development of revenue streams from related modes of service. Each type of company has at least one secondary service mode that accounts for 4% to 15% of the total revenue, with the other modes accounting for the remainder.

- When the 1983 revenue numbers are considered vis-a-vis the size of the companies generating that revenue, there is little change in market share held by companies of each size, regardless of the type of company, as shown in Exhibit III-12.

- Revenue growth rates of the public companies analyzed for the study are shown in Exhibit III-13. Compared to all software products companies, public software products companies grew at a slower rate, 31% versus 39%. Public processing services companies grew faster, as did public turnkey systems companies. Public professional services companies grew at a slower rate than professional services companies overall. Exhibits III-14 through III-17 depict the revenue growth on a quarter-by-quarter basis.

- In general, income for these public companies strengthened during 1982, except for processing services companies. Again Exhibits III-14 through III-17 indicate income for these public companies quarter-by-quarter.

EXHIBIT III-10

REVENUE OF SUBMODES OF SERVICE BY TYPE OF COMPANY

MODE OF SERVICE	TYPE OF COMPANY				TOTAL
	Processing Services	Software Products	Professional Services	Turnkey Systems	
Processing Services					
Remote Computing	$ 6,395	$ 48	$ 209	$ 112	$ 6,764
VAN	253	0	0	0	253
Batch Services	4,070	26	192	71	4,359
Facilities Management	1,345	0	94	0	1,439
All Processing	$12,063	$ 74	$ 495	$ 183	$12,815
Software Products					
Applications	$ 591	$3,464	$ 283	$ 85	$ 4,423
Systems	217	3,074	182	47	3,520
All Software	$ 808	$6,538	$ 465	$ 132	$ 7,943
Professional Services					
Software Development	$ 677	$ 392	$3,846	$ 102	$ 5,017
Consulting	109	108	699	32	948
Education	88	270	312	17	687
Facilities Management	113	4	491	0	608
All Professional	$ 987	$ 774	$5,348	$ 151	$ 7,260
Turnkey Systems					
CAD/CAM	$ 113	$ 17	$ 8	$1,131	$ 1,269
Other	599	104	108	2,528	3,339
All Turnkey	$ 712	$ 121	$ 116	$3,659	$ 4,608
Total	$14,570	$7,507	$6,424	$4,125	$32,626

EXHIBIT III-11

REVENUE GROWTH RATES OF SUBMODES
OF SERVICE BY TYPE OF COMPANY

MODE OF SERVICE	GROWTH RATE BY TYPE OF COMPANY, 1982-1983				TOTAL
	Processing Services	Software Products	Professional Services	Turnkey Systems	
Processing Services					
Remote Computing	15%	9%	9%	(18%)	14%
VAN	41	N/A	N/A	N/A	41
Batch Services	11	4	21	(21)	11
Facilities Management	11	N/A	25	N/A	12
All Processing	14%	7%	16%	(19%)	13%
Software Products					
Applications	24%	44%	17%	18%	38%
Systems	5	32	49	81	31
All Software	18%	38%	28%	35%	35%
Professional Services					
Software Development	11%	20%	21%	70%	20%
Consulting	0	16	13	7	12
Education	28	267	34	55	66
Facilities Management	(8)	1	19	N/A	13
All Professional	8%	48%	20%	50%	21%
Turnkey Systems					
CAD/CAM	20%	6%	14%	36%	34%
Other	39	55	19	22	26
All Turnkey	36%	46%	18%	26%	28%
Total	14%	39%	21%	24%	22%

EXHIBIT III-12

MARKET SHARE BY TYPE AND SIZE OF COMPANY

TYPE OF COMPANY • SIZE ($ Millions)	MARKET SHARE	
	1982	1983
Processing Services		
• $.25-1.0	2%	2%
• $1.1-10	14	13
• > $10	31	30
All Processing	47%	45%
Software Products		
• $.25-1.0	4%	4%
• $1.1-10	6	7
• > $10	10	12
All Software	20%	23%
Professional Services		
• $.25-1.0	2%	2%
• $1.1-10	5	5
• > $10	12	12
All Professional	20%	19%
Turnkey Systems		
• $.25-1.0	2%	2%
• $1.1-10	6	6
• > $10	5	5
All Turnkey	13%	13%
All Types	100%	100%

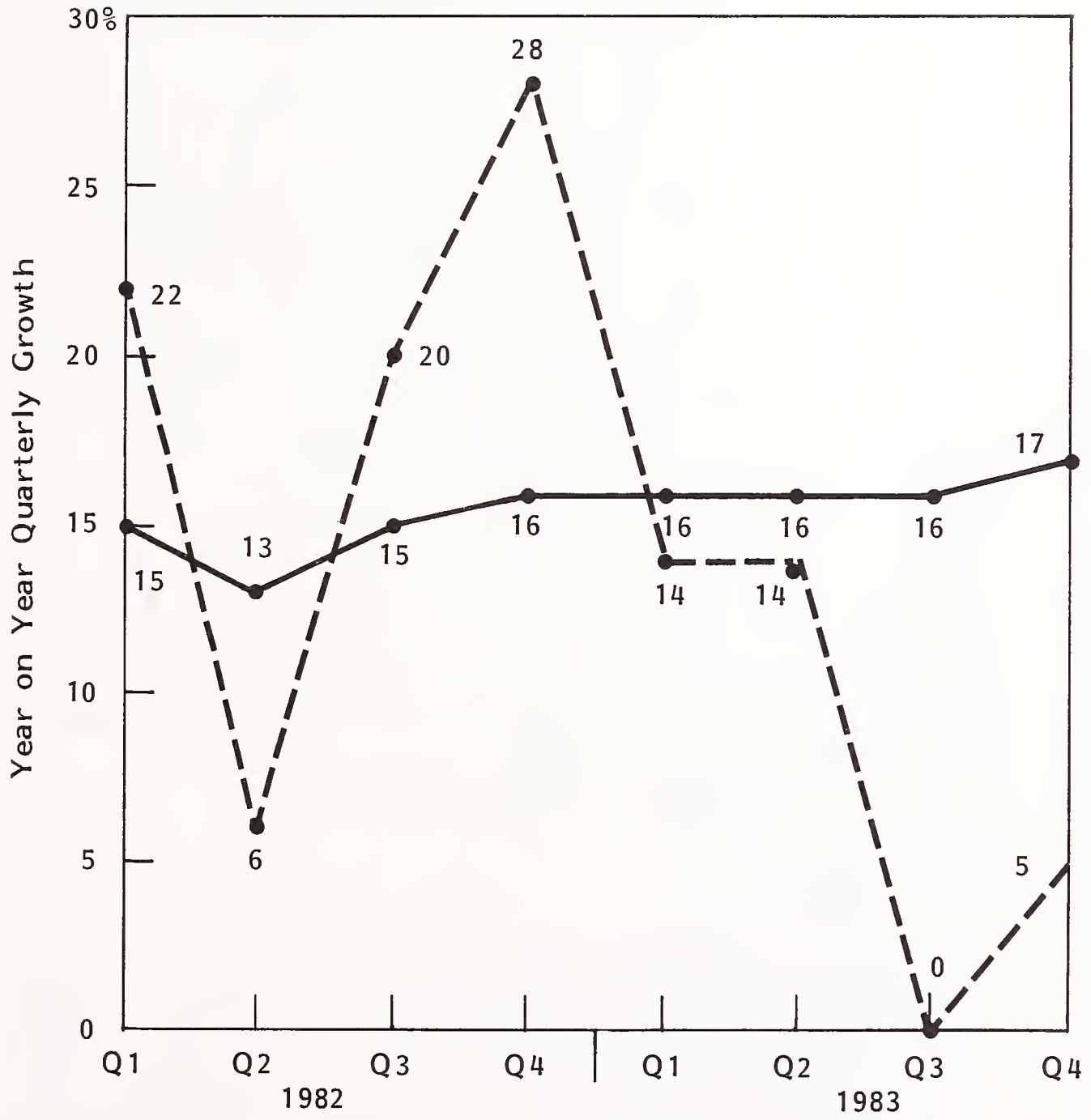
EXHIBIT III-13

REVENUE AND INCOME OF PUBLIC COMPANIES

TYPE OF COMPANY	REVENUE			INCOME		
	1982 ($ Millions)	1983 ($ Millions)	Change (Percent)	1982 ($ Millions)	1983 ($ Millions)	Change (Percent)
Processing Services	$2,854	$3,326	17%	$224	$177	(21%)
Software Products	918	1,202	31	58	94	62
Professional Services	2,003	2,315	16	66	83	26
Turnkey Systems	1,231	1,570	28	89	118	33

EXHIBIT III-14

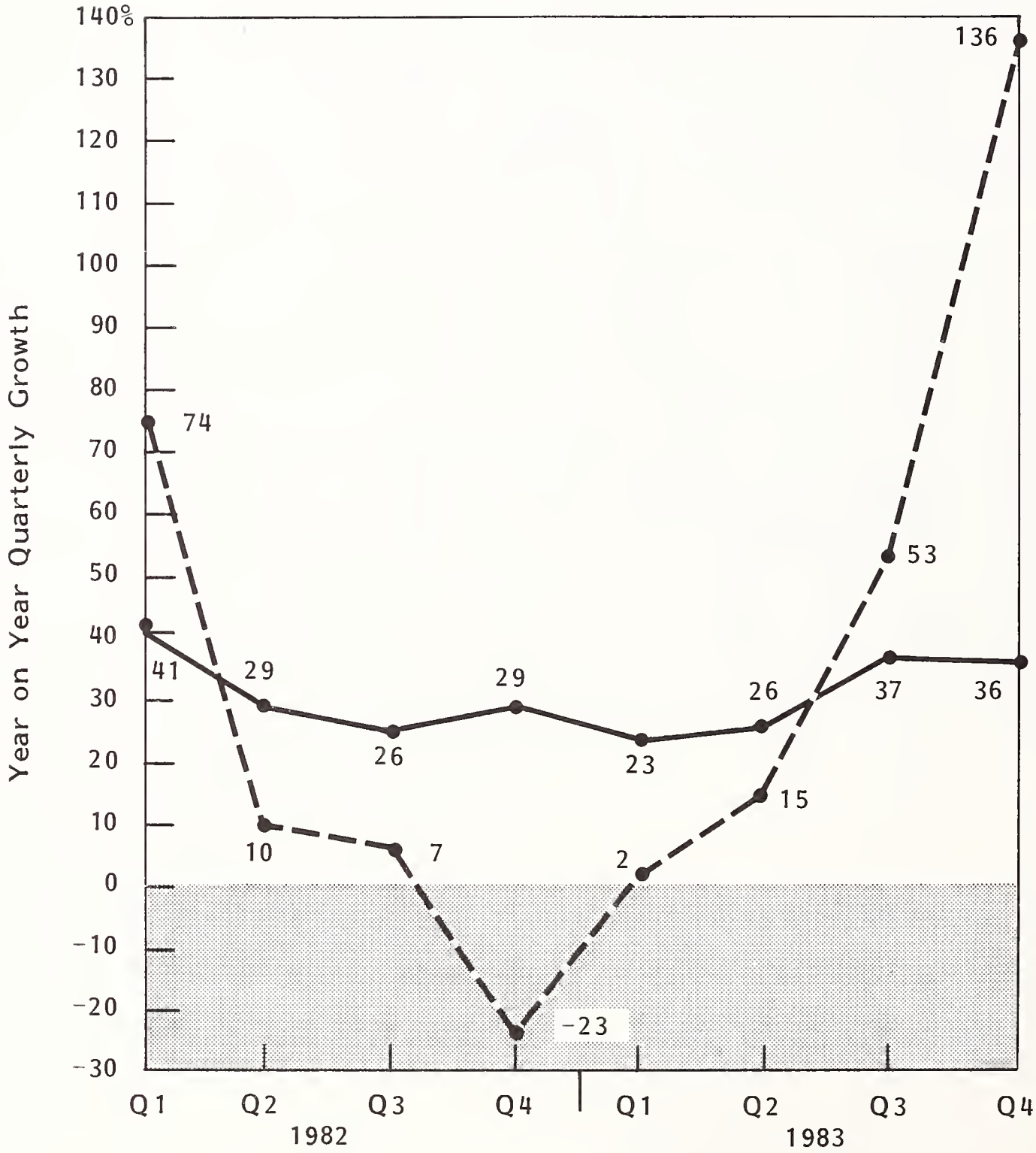
REVENUE AND INCOME OF
PUBLIC PROCESSING SERVICES COMPANIES



SOURCE: INPUT's Vendor Financial Watch

EXHIBIT III-15

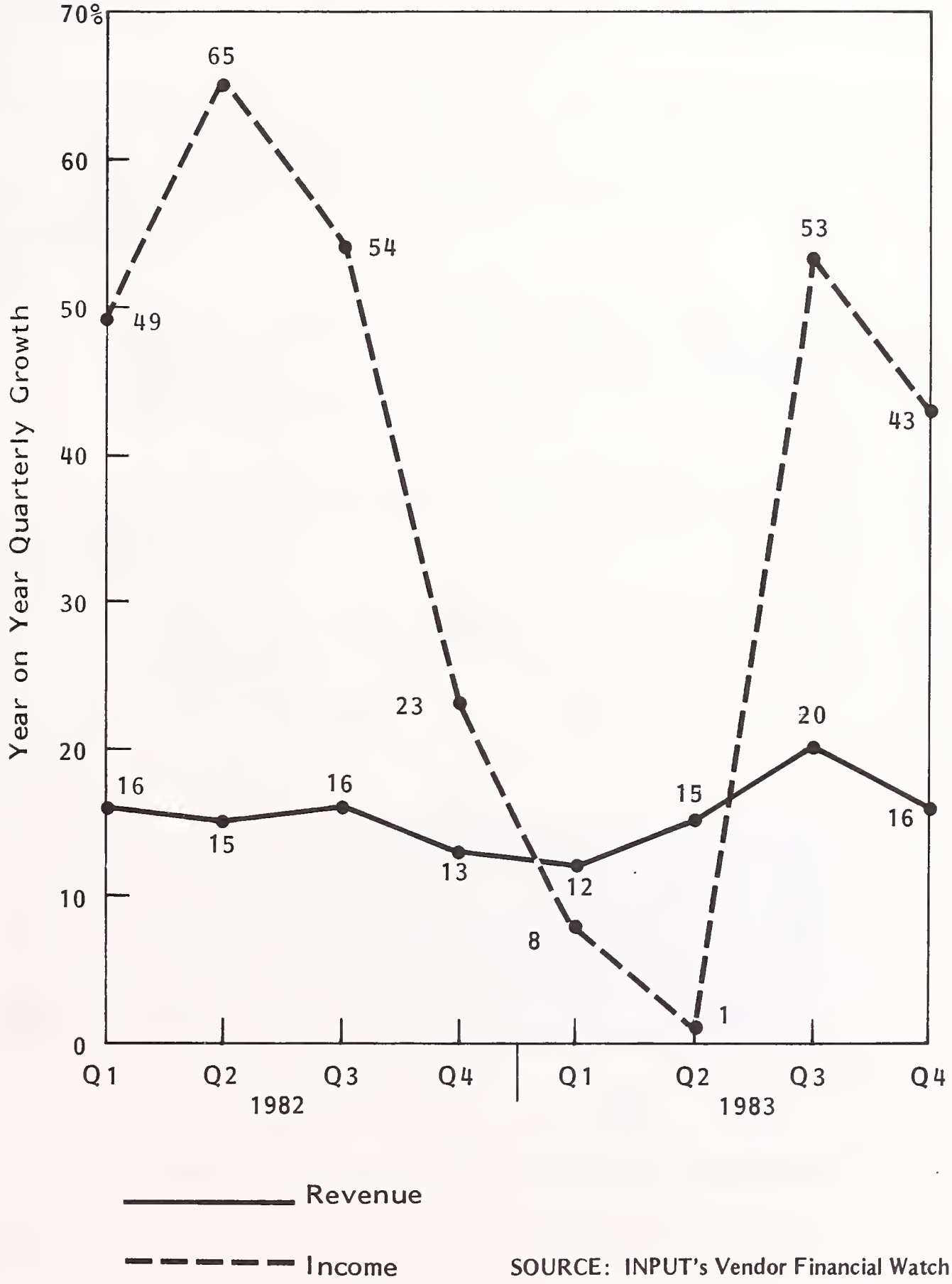
REVENUE AND INCOME OF
PUBLIC SOFTWARE PRODUCT COMPANIES



SOURCE: INPUT's Vendor Financial Watch

EXHIBIT III-16

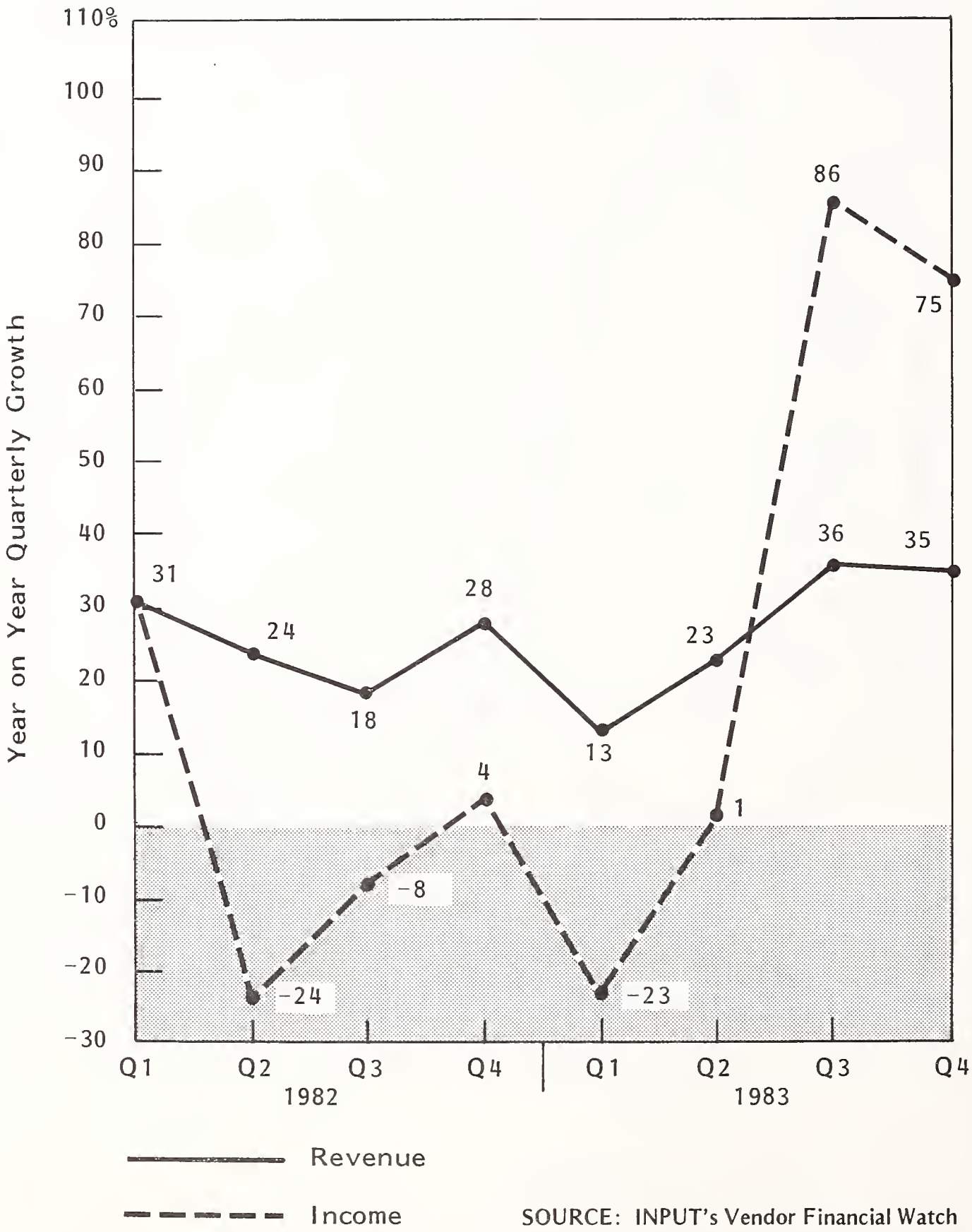
REVENUE AND INCOME OF
PUBLIC PROFESSIONAL SERVICES COMPANIES



SOURCE: INPUT's Vendor Financial Watch

EXHIBIT III-17

REVENUE AND INCOME OF
PUBLIC TURNKEY SYSTEMS COMPANIES



SOURCE: INPUT's Vendor Financial Watch

B. INDUSTRY TRENDS

- The information services industry continued healthy revenue growth in nearly all modes of service regardless of the size or type of company. Will this growth continue into 1984? Clues to the answer to this question are presented in this section.

- Productivity rates provide a gross indication both of the extent of the "people intensity" of each business and the extent to which companies are expanding or subtracting from staff in response to business conditions, as shown in Exhibit III-18.

  - By type of service, software products companies increased their productivity rates the most, followed by processing services, professional services, and turnkey systems.

  - Software products companies continue to show the highest productivity rates.

  - In turnkey system increased people productivity was offset by declining hardware prices.

- Much of the 1983 growth discussed above was attributed by respondents to "real growth" in the marketplace as opposed to revenue advances from price increases, or as the result of acquisitions or divestitures, as shown in Exhibit III-19. In only two instances--small software products companies and larger professional services companies--were price increases identified as a revenue growth contributor larger than 5%. (It should be noted that revenue growth impacts lag the price increases that cause them--thus the buyer impact of a 1982 price increase would be in 1983 rather than 1982). And in only one instance--large professional services companies--was acquisition/divestiture activity identified as a revenue growth contributor larger than 4%.

EXHIBIT III-18

PRODUCTIVITY RATES BY TYPE AND SIZE OF COMPANY

TYPE OF COMPANY • SIZE ($ Millions)	AVERAGE REVENUE PER EMPLOYEE		
	1982 ($ Thousands)	1983 ($ Thousands)	PERCENT CHANGE
Processing Services			
• < $10	$49	$50	2%
• ⩾ $10	82	84	2
All Processing	$66	$68	3%
Software Products			
• < $10	$68	$72	6%
• ⩾ $10	78	89	14
All Software	$72	$80	11%
Professional Services			
• < $10	$69	$69	0%
• ⩾ $10	62	63	1
All Processing Services	$65	$65	0%
Turnkey Systems			
• < $10	$79	$76	(4%)
• ⩾ $10	78	83	6
All Turnkey Systems	$79	$79	0%

EXHIBIT III-19

FACTORS CONTRIBUTING TO REVENUE GROWTH

TYPE OF COMPANY • SIZE ($ Millions)	1982			1983		
	Price Increases	Acquisitions / Divestitures	Real Growth	Price Increases	Acquisitions / Divestitures	Real Growth
Processing Services						
• < $10	6%	3%	91%	5%	4%	91%
• ⩾ $10	4	4	92	2	4	94
Software Products						
• < $10	9	2	89	9	2	89
• ⩾ $10	5	0	95	5	1	94
Professional Services						
• < $10	6	2	92	5	1	94
• ⩾ $10	13	3	84	8	8	84
Turnkey Systems						
• < $10	3	0	97	2	0	98
• ⩾ $10	3	5	92	2	4	94

- The specific opportunities and concerns identified by industry vendors are discussed as they pertain to each type of service in the following chapters.

IV PROCESSING SERVICES COMPANIES: ANALYSIS AND TRENDS

IV PROCESSING SERVICES COMPANIES: ANALYSIS AND TRENDS

- While still capturing the largest share of information services revenues, processing services' rate of growth lagged behind the industry as a whole, as shown in Exhibit IV-1. As a result, their share of the industry revenue decreased slightly in 1982, falling to 45%.

- Exhibit IV-2 depicts the proportion of the revenue of processing services companies provided by each mode of service.

- Remote computing service remains the largest mode of delivery for processing service companies, generating 50% of the revenue, as shown in Exhibit IV-3. Applications processing is reported to be the predominant service for both RCS and batch processing, regardless of company size, as shown in Exhibit IV-4.

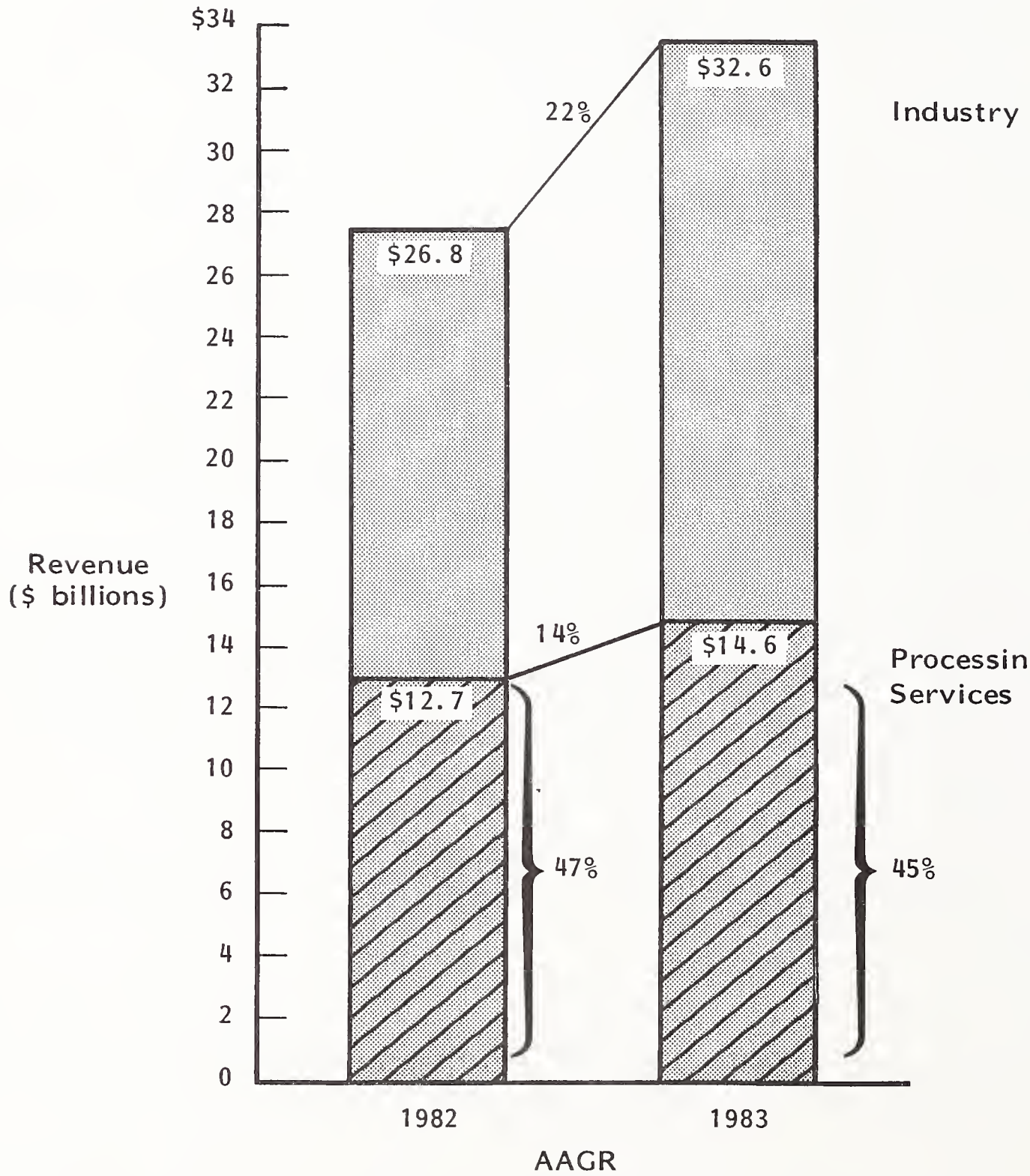
- Almost two-thirds of processing service revenue is generated by companies over $10 million in size.

- VAN revenue growth led the rates for processing companies with a 41% growth. RCS's rate was slightly ahead of the overall processing rate at 15%, while batch and facilities management revenue grew at 11%.

- The largest revenue-generating areas, as identified by processing services companies, are presented in Exhibit IV-5. In general, the application areas are a little more likely to be cross-industry, especially administration and finan-

EXHIBIT IV-1

REVENUE GROWTH OF PROCESSING SERVICES COMPANIES
COMPARED TO INDUSTRY GROWTH



AAGR = Average Annual Growth Rate

EXHIBIT IV-2

DISTRIBUTION OF PROCESSING SERVICES COMPANIES' REVENUE BY MODE OF SERVICE

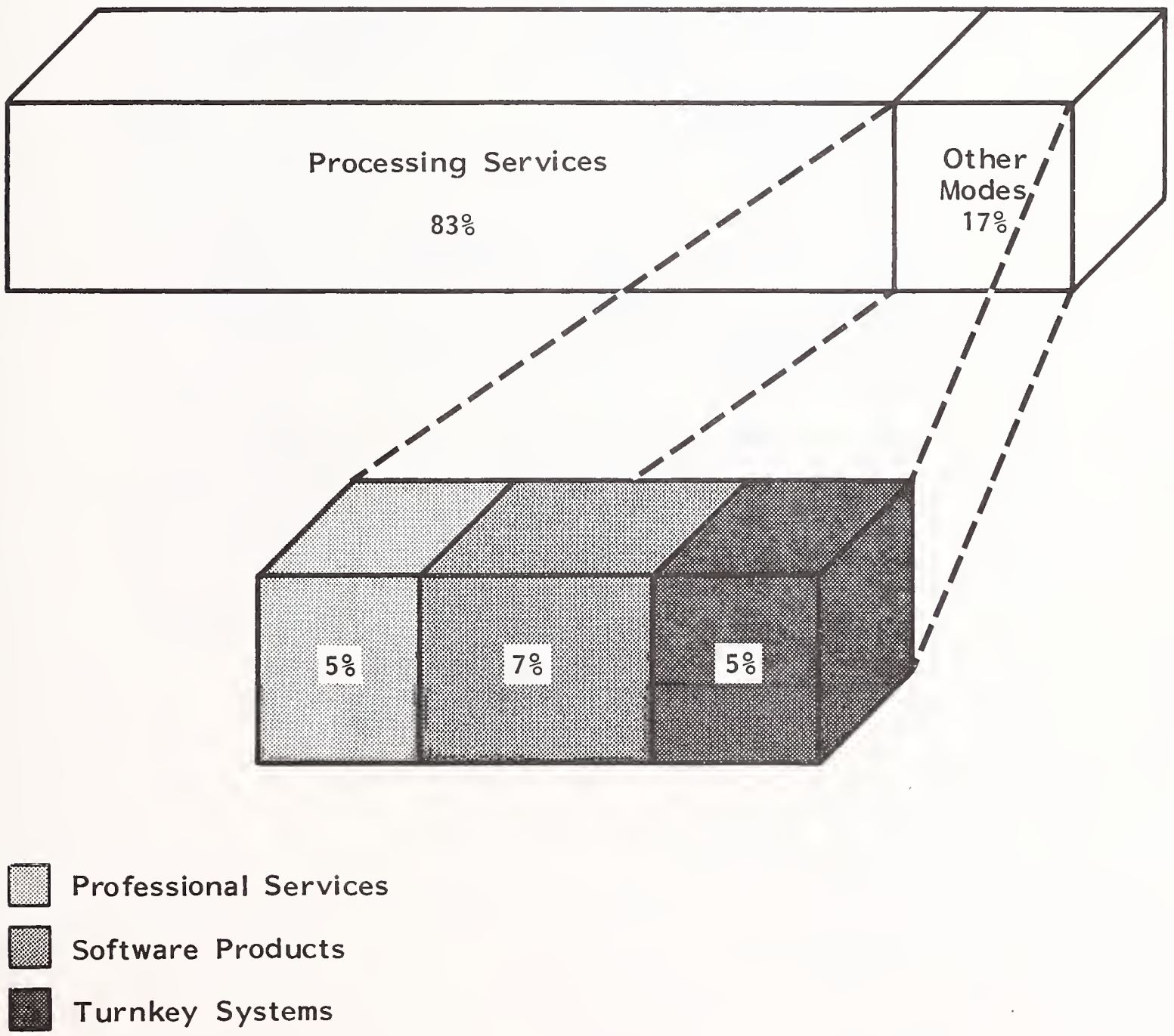
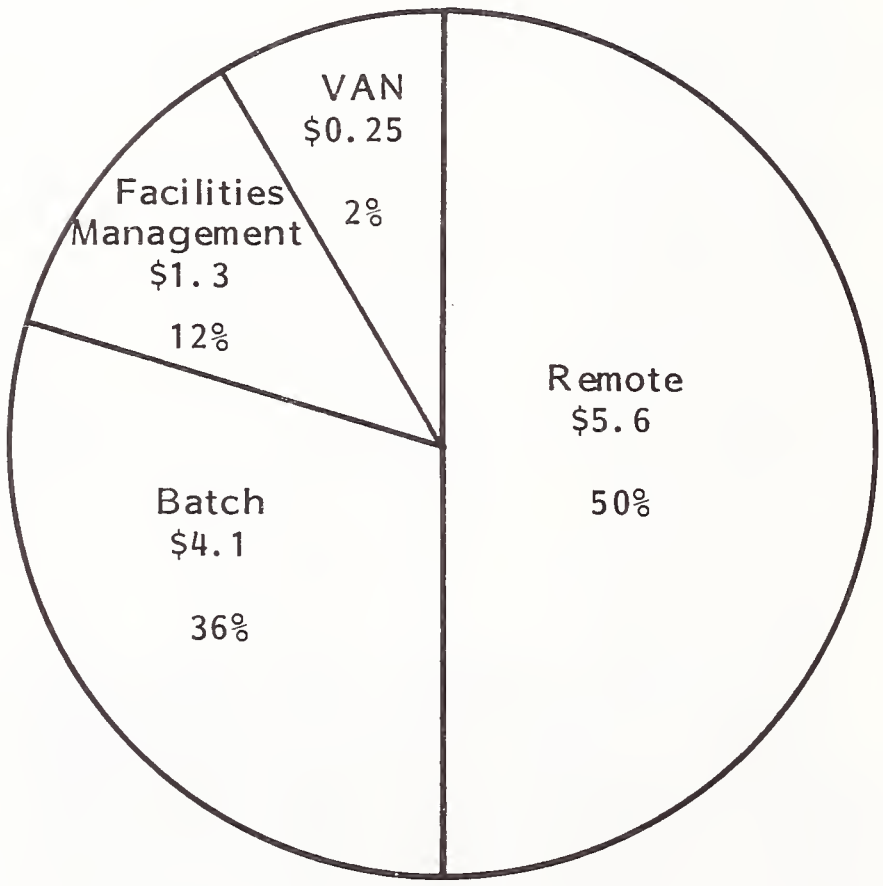


EXHIBIT IV-3

DISTRIBUTION OF SUBMODE REVENUE OF
PROCESSING SERVICES COMPANIES



($ Billions)

EXHIBIT IV-4

DISTRIBUTION OF PROCESSING SERVICES REVENUE BY TYPE OF SUBMODE APPLICATION

TYPE OF APPLICATION	SIZE OF COMPANY	
	<$10 MILLION (Percent)	≥$10 MILLION (Percent)
RCS		
Applications	73%	68%
On-Line Data Base	24	31
Utility	3	1
Subtotal	100%	100%
Batch		
Applications	96%	92%
Utilities	4	8
Subtotal	100%	100%

Number of Respondents = 123

EXHIBIT IV-5

LARGEST REVENUE-GENERATING APPLICATION AREAS IN PROCESSING SERVICES

APPLICATION AREA	PERCENT OF MENTIONS
Cross-Industry:	
Administration	17%
Financial	28
Scientific	7
Other	5
Cross-Industry Total	57%
Industry-Specific:	
Banking and Finance	20
Government	4
Health Care	5
Education	2
Insurance	5
Manufacturing	3
Transportation/Utilities	2
Other	2
Industry-Specific Total	43%

Total Mentions = 166

cial, although industry-specific applications in banking and finance appear quite strong.

- Among the most frequently mentioned reasons for the 1983 growth are:
  - A more favorable economy.
  - New markets.
  - New products.
- Understandably, these positive reasons are also the opportunities envisioned by respondents, as shown in Exhibit IV-6.
  - One-third see new products/markets as an opportunity.
  - One-fifth look to a better economic environment for revenue growth.
- But respondents also identify threats to revenue growth, as shown in Exhibit IV-7:
  - An economic downturn.
  - Changes in customer attitudes toward processing services, with increased activity in-house, perhaps on a microcomputer.
- To negate these threats and continue strong growth, processing services vendors must establish their directions in vertical markets and/or by offering the integration of services that meet customer needs.

EXHIBIT IV-6

OPPORTUNITIES ENVISIONED BY PROCESSING SERVICES VENDORS

OPPORTUNITY	PERCENT OF MENTIONS
New Products/Services	32%
More Favorable Environment	20
New Service Mode	11
New Vertical Markets	11
New Marketing Techniques	11
Other	15

Total Mentions = 247

EXHIBIT IV-7

POTENTIAL THREATS IDENTIFIED BY PROCESSING SERVICES VENDORS

THREATS	PERCENT OF MENTIONS
Competition	24%
General Economic Conditions	16
Regulatory Change	6
In-House Timesharing, Use of Microcomputer	11
Customer Demands	13
Organizational Issues	6
Marketing Issues	5
Other	19

Total Mentions = 164

V SOFTWARE PRODUCTS COMPANIES: ANALYSIS AND TRENDS

V SOFTWARE PRODUCTS COMPANIES: ANALYSIS AND TRENDS

- Software products continued to grow in 1983 at a rate far exceeding that for the industry as a whole, capturing a larger share of the market for computer software and services, as shown in Exhibit V-1.

  - The growth rate for software products was 39% as compared to 22% for the computer services industry.

  - Software products captured 23% of the market as compared to 20% in 1982.

- As depicted in Exhibit V-2, 87% of software companies' revenue comes from software products, with professional services accounting for an additional 10%, and turnkey systems and processing services contributing 2% and 1%, respectively.

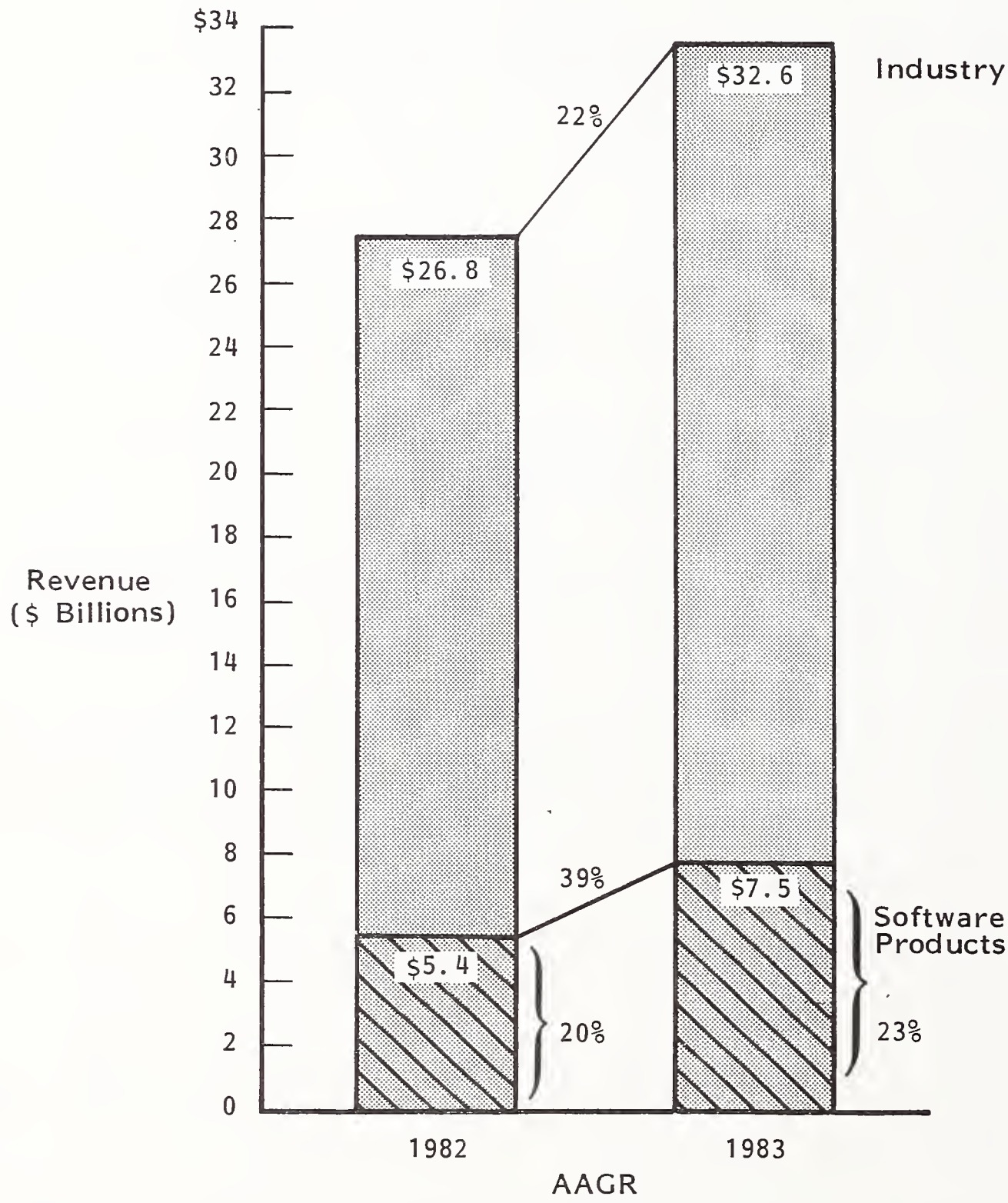
- Software products companies had the highest growth rate in productivity, advancing 11% for the year.

- Companies with revenue of $10 million or more generate 63% of software product revenue.

- Software products companies receive slightly more revenue from applications than systems software, as shown in Exhibit V-3. This is, in part, the result of a large proportion of applications software revenue from smaller companies

EXHIBIT V-1

REVENUE GROWTH OF SOFTWARE PRODUCTS COMPANIES
COMPARED TO INDUSTRY GROWTH



AAGR = Average Annual Growth Rate

EXHIBIT V-2

DISTRIBUTION OF SOFTWARE PRODUCTS COMPANIES' REVENUE
BY MODE OF SERVICE

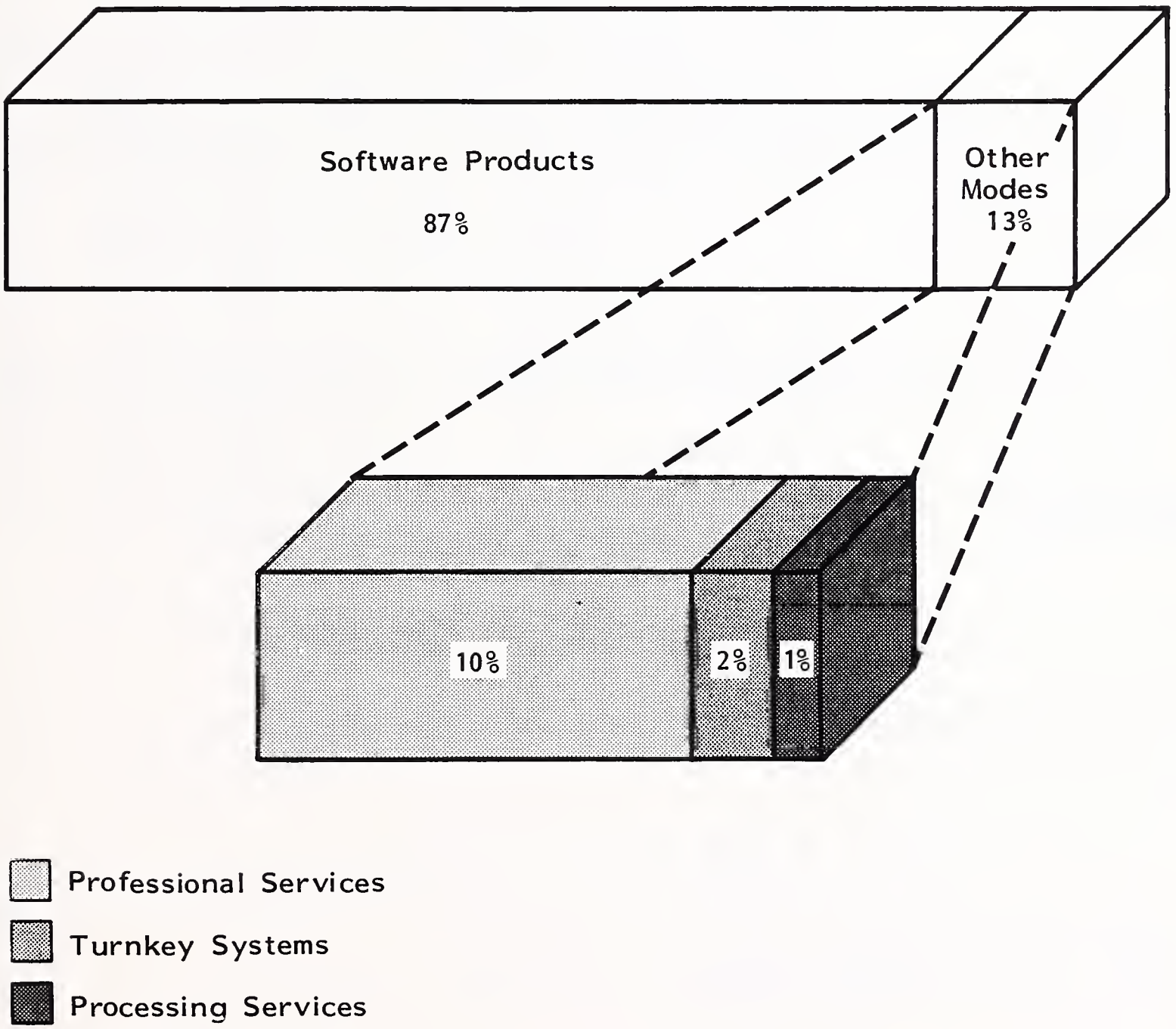


EXHIBIT V-3

DISTRIBUTION OF SOFTWARE PRODUCTS REVENUE BY MAJOR TYPE OF PRODUCT

TYPE OF PRODUCT	SIZE OF COMPANY		
	<$10 Million (Percent)*	≥$10 Million (Percent)*	Total (Percent)
Applications Software	32%	21%	53%
Systems Software	17	30	47
Total	49%	51%	100%

*Weighted Average

offsetting the more equal proportion of applications and systems software revenue of larger industry members.

- By application area, approximately two-thirds of the largest revenue-producing applications were cross-industry, primarily financial-related. The industry-specific applications identified included nearly equal proportions of banking and finance, health care, and manufacturing, as shown in Exhibit V-4.

- Exhibit V-5 indicates distribution of software products revenue by size of target machine. The target machine for applications and systems software was minicomputers or mainframe computers approximately three-fourths of the time, according to the respondents. This relationship did not vary significantly by size of company except for systems software produced by companies with revenue greater than or equal to $10 million. In this category only one-sixth was related to microcomputers.

- As shown in Exhibit V-6, opportunities identified included:

  - New products.

  - Marketing and financial strength of the company.

  - New vertical industries.

- As shown in Exhibit V-7, major threats to this strong growth pattern include the following:

  - Increasing competition from new vendors.

  - The ability of management to maintain financial stability during periods of high growth.

  - Increases in customer demands.

  - Technical changes that demand constant product upgrades.

EXHIBIT V-4

LARGEST REVENUE-PRODUCING APPLICATION AREAS IN SOFTWARE PRODUCTS

APPLICATION AREA	PERCENT OF MENTIONS
Cross-Industry:	
Administrative	12%
Financial	30
Operations*	12
Scientific	7
Other	3
Cross-Industry Total	64%
Industry-Specific:	
Banking and Finance	7
Government	5
Health Care	8
Manufacturing	8
Insurance	2
Education	1
Other	5
Industry-Specific Total	36%

Total Mentions = 196

* Inventory, Scheduling, Personnel

EXHIBIT V-5

DISTRIBUTION OF SOFTWARE PRODUCTS REVENUE BY SIZE OF TARGET MACHINE

SIZE OF MACHINE	SIZE OF COMPANY	
	< $10 Million (Percent)*	≥$10 Million (Percent)*
Applications Software		
Mini/Mainframe	74%	77%
Microcomputer	26	23
Systems Software		
Mini/Mainframe	76	84
Microcomputer	24	16

* Weighted Average

EXHIBIT V-6

OPPORTUNITIES ENVISIONED BY SOFTWARE PRODUCTS VENDORS

OPPORTUNITY	PERCENT OF MENTIONS
New Product	28%
Marketing/Financial Strength	17
Favorable Economy	15
Vertical Industry	13
New Service Mode	9
Other	18

Total Mentions = 278

EXHIBIT V-7

POTENTIAL THREATS IDENTIFIED BY SOFTWARE PRODUCTS VENDORS

THREATS	PERCENT OF MENTIONS
Competitive Activity	25%
General Economic Condition	21
Customer Demands	14
Hardware/Software Changes	12
Price Changes	8
Regulation/De-Regulation	7
New Product Development	2
Financial Stability	4
Other	7

- Software products companies are definitely on the "fast track." The issue for these companies seems to be how to avoid the "shooting star" effect of high growth followed by "burnout"--represented by the inability to match increased competition, pricing, the demand for new products, and so on.

VI PROFESSIONAL SERVICES COMPANIES: ANALYSIS AND TRENDS

VI PROFESSIONAL SERVICES COMPANIES: ANALYSIS AND TRENDS

- Professional services' growth rate in 1983 was slightly below the rate of growth of the industry, as shown in Exhibit VI-1. The growth rate for professional services was 21%, as compared to 22%. The share of the computer software and services market for professional services companies remained unchanged from 1982 at 19%.

- Productivity increased only modestly over the 1982 revenue/employee rate.

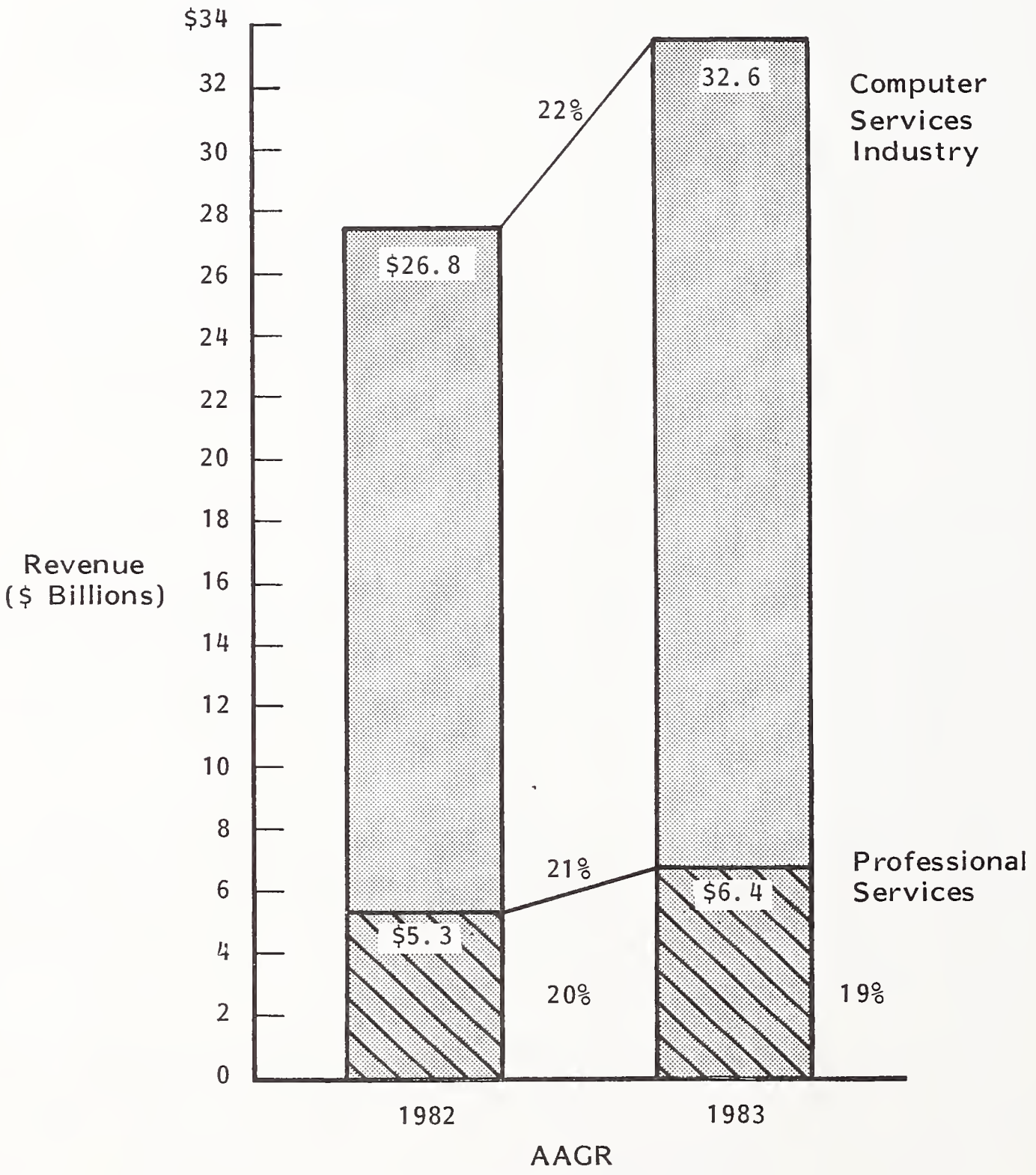
- Sixty-two percent of professional services revenue is generated by companies with revenues over $10 million; companies with revenues of $1 to $10 million and those with revenues under $1 million generated 27% and 11%, respectively.

- The distribution of revenue by service mode did not change dramatically for these companies in 1983. Professional services firms continue to derive over 80% of their revenue from their main source of business--professional services--as shown in Exhibit VI-2.

- Software development continues to dominate as the primary source of revenue, generating $3.8 billion last year, as shown in Exhibit VI-3. Consulting has the second highest share of revenue at 13% of the total services of professional services companies. It is important to note, however, that professional services firms do not completely agree on the definitions of these two terms. Consequently, these proportions may vary in individual companies depending on the tasks included in each category.

EXHIBIT VI-1

REVENUE GROWTH OF PROFESSIONAL SERVICES COMPANIES
COMPARED TO INDUSTRY GROWTH



AAGR = Average Annual Growth Rate

EXHIBIT VI-2

DISTRIBUTION OF PROFESSIONAL SERVICES COMPANIES' REVENUE
BY MODE OF SERVICE

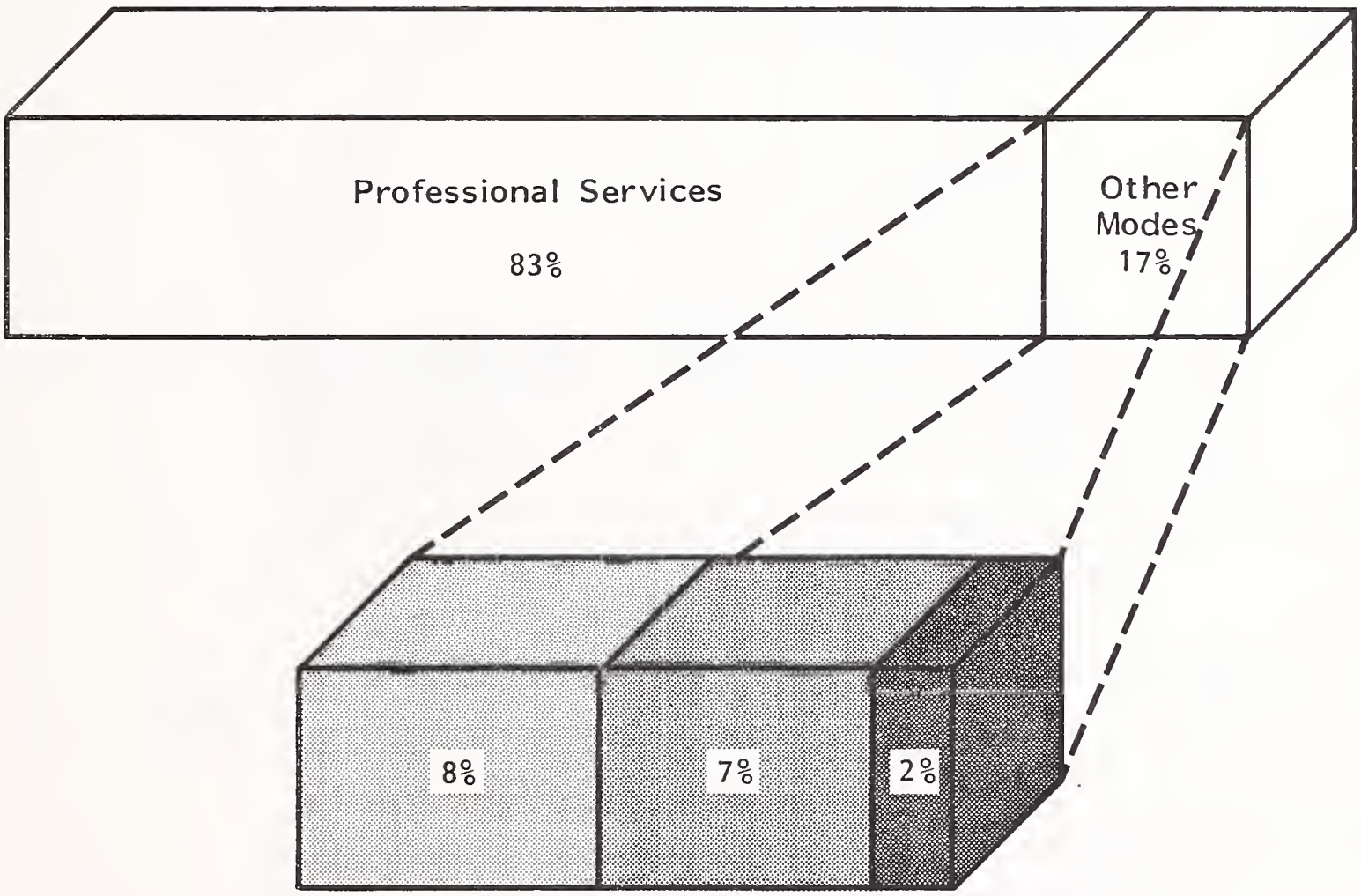
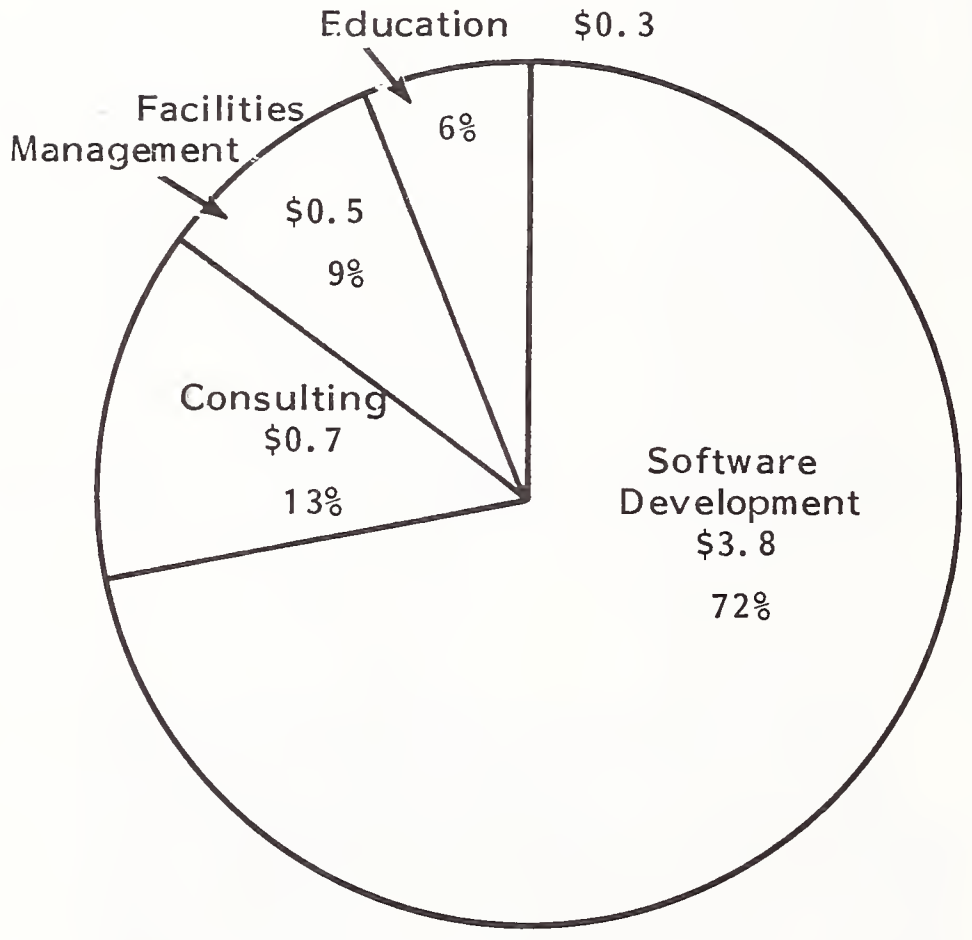


EXHIBIT VI-3

DISTRIBUTION OF SUBMODE REVENUE OF
PROFESSIONAL SERVICES COMPANIES



($ Billions)

- The largest professional services applications were more likely to be cross-industry than industry-specific, 70% to 30%, respectively. Financial applications were the most dominant cross-industry application, representing 35% of the total. Industry-specific applications were used primarily in government and manufacturing. A comparison of these and other applications is shown in Exhibit VI-4.

- Professional services revenue is obtained from commercial sources and government sources. Exhibit VI-5 illustrates the distribution of submode revenue.

  - In general, the distribution of revenue did not differ by size of company.

  - By submode, however, the government/commercial mix varies widely. The commercial marketplace is the source of as much as three-fourths of the reported revenue for software development and consulting. This proportion starts to reach parity with education and training revenue (about 60%) and with facilities management (about 50%).

- Opportunities envisioned by professional services respondents are presented in Exhibit VI-6.

  - Some companies indicated that major opportunities will result from the movement to offer additional types of professional services.

  - Other companies indicated that these opportunities are to be found in vertical markets.

  - The most frequent response was that a strong economy will present the best opportunity.

EXHIBIT VI-4

LARGEST REVENUE-GENERATING APPLICATION AREAS IN PROFESSIONAL SERVICES

APPLICATION AREA	PERCENT OF MENTIONS
Cross-Industry:	
Administration	10%
Financial	35
Operations	15
Other	10
Cross-Industry Total	70%
Industry-Specific:	
Government	15
Banking	7
Services	4
Manufacturing	1
Insurance	3
Industry-Specific Total	30%

Total Mentions = 46

EXHIBIT VI-5

DISTRIBUTION OF PROFESSIONAL SERVICES SUBMODE REVENUE BY MARKET

SUBMODE ● MARKET	SIZE OF COMPANY	
	<$10 MILLION (Percent)*	≥$10 MILLION (Percent)*
Software Development		
● Government	27%	38%
● Commercial	73	62
Consulting		
● Government	25	39
● Commercial	75	61
Facilities Management		
● Government	49	51
● Commercial	51	49
Education and Training		
● Government	43	38
● Commercial	57	62

* Distribution of Revenue Indicated by Respondents

EXHIBIT VI-6

OPPORTUNITIES ENVISIONED BY PROFESSIONAL SERVICES VENDORS

OPPORTUNITY	PERCENT OF MENTIONS
New Service Mode	16%
Vertical Industry	17
New Product/Service	20
Favorable Environment	22
Marketing Strategies	10
Customer Attitudes	5
Other	10

Total Mentions = 201

- The strong growth in education and training (34% increase in revenue in 1983) suggests that this sector may be a good revenue stream for these companies and the industry.

- Exhibit VI-7 defines the potential threats of concern to professional services vendors. Professional services companies, like processing services and software products before, indicated a strong concern over the extent of competitive activity. Others were concerned with keeping up with the advances in technology and the ever-increasing customer demands.

EXHIBIT VI-7

POTENTIAL THREATS IDENTIFIED BY PROFESSIONAL SERVICES VENDORS

THREATS	PERCENT OF MENTIONS
Competitive Activity	26%
Customer Demands	15
General Economic Condition	11
Marketing	10
Changing Technical Environment	15
Other*	23

Total Mentions = 93
*Product Development, Staffing, Organizational Changes

VII TURNKEY SYSTEMS COMPANIES: ANALYSIS AND TRENDS

VII TURNKEY SYSTEMS COMPANIES: ANALYSIS AND TRENDS

- Turnkey systems companies grew at a faster rate than the information services industry, as shown in Exhibit VII-1. Their share of the information services market did not change from 1982.

  - The growth rate for turnkey systems companies was 24% compared with 22% for the computer software and services industry.

  - Turnkey systems companies captured 13% of the market, identical to 1982.

- Productivity per employee held steady at approximately $79,000.

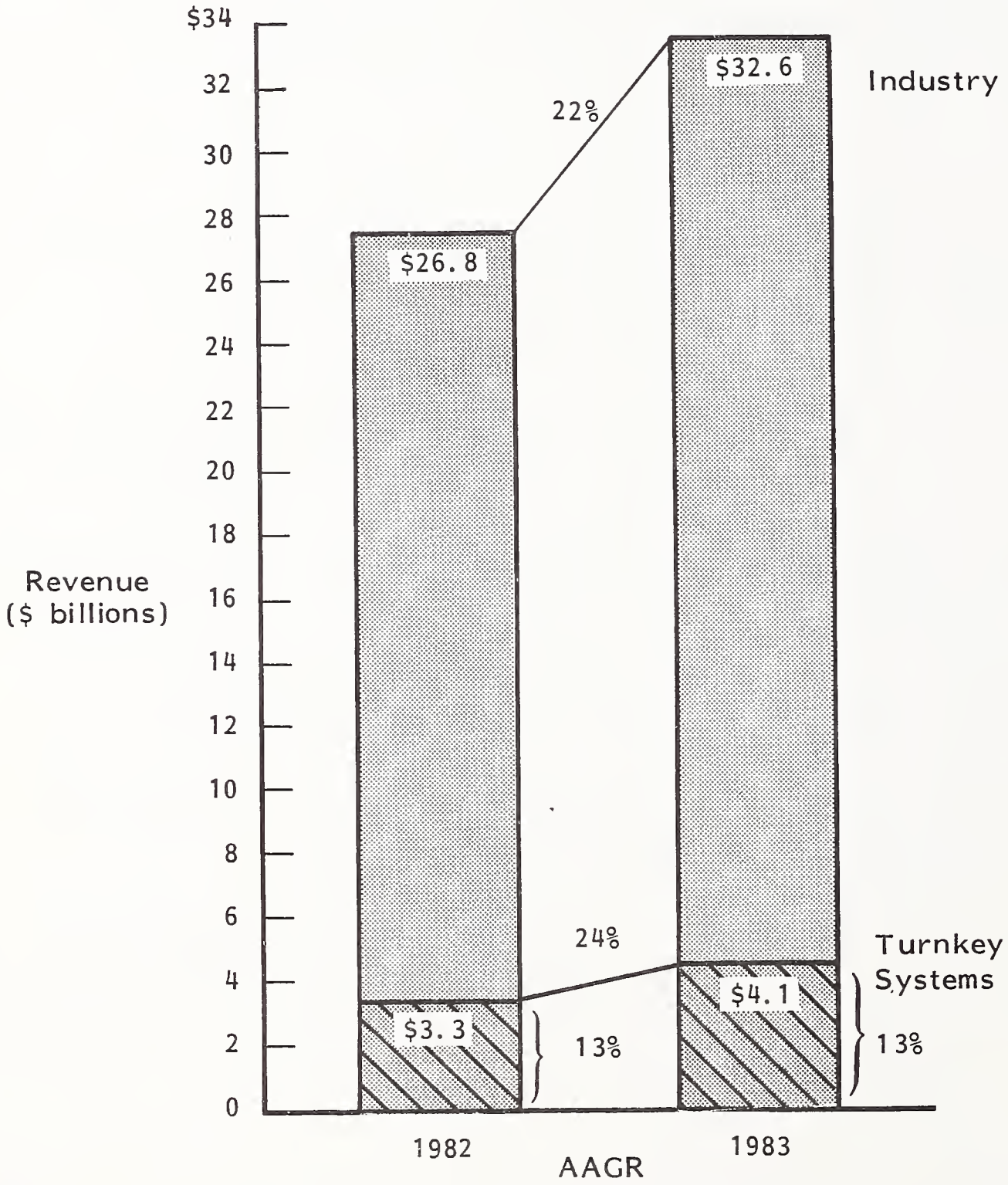
- Eighty-nine percent of the turnkey systems companies' revenue was derived from integrated systems, as shown in Exhibit VII-2.

- Unlike the other service modes, smaller turnkey companies play a more significant role in the generation of total segment revenue. In 1983, companies with revenues under $10 million generated 63% of the total, compared with 37% by larger companies.

- Exhibit VII-3 indicates that CAD/CAM systems account for approximately 43% of the systems, with cross-industry and other industry-specific systems accounting for the larger percentage (57%).

EXHIBIT VII-1

REVENUE GROWTH OF TURNKEY SYSTEMS COMPANIES
COMPARED TO INDUSTRY GROWTH



AAGR = Average Annual Growth Rate

EXHIBIT VII-2

DISTRIBUTION OF TURNKEY SYSTEMS COMPANIES' REVENUE BY MODE OF SERVICE

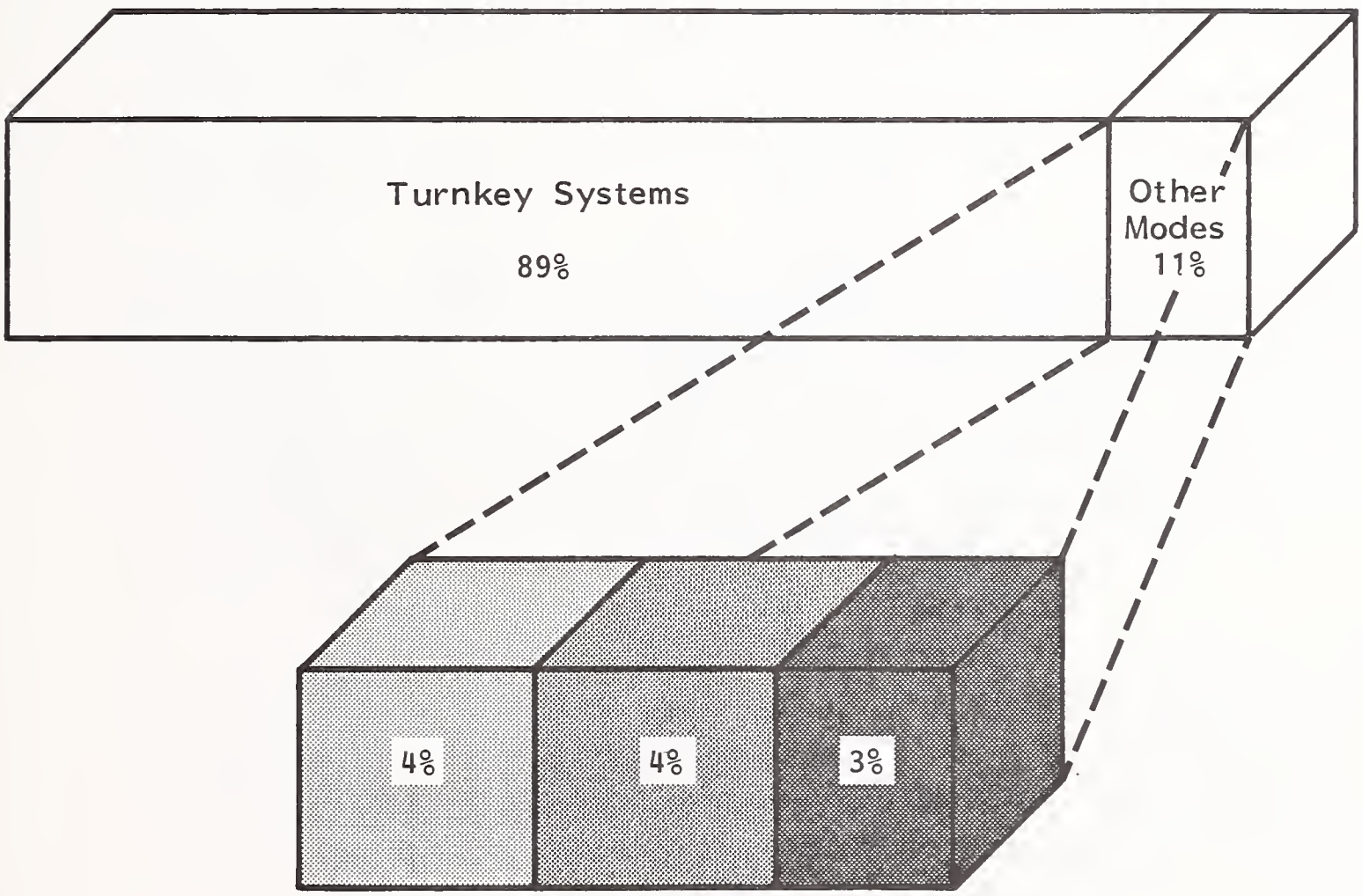
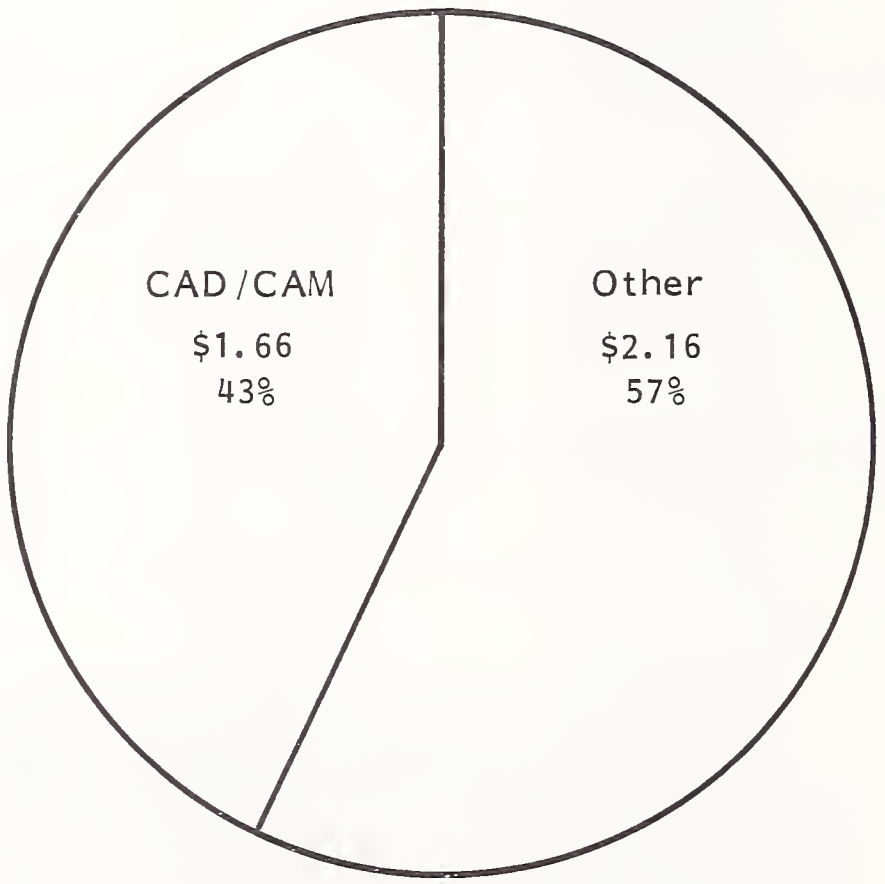


EXHIBIT VII-3

DISTRIBUTION OF SUBMODE REVENUE OF TURNKEY SYSTEMS COMPANIES



($ Billions)

- Major application areas mentioned are 60% cross-industry and 40% industry-specific, as shown in Exhibit VII-4.

- Exhibit VII-5 indicates the distribution of turnkey systems submode revenue by target machine. Size of company appears to be a small factor in this mix, with proportionately more microcomputer-based revenue being generated by smaller companies.

- Turnkey vendors attributed much of their 1982 growth to a more favorable economic climate. Many respondents felt that new products or an increased marketing effort also contributed significantly. These vendors expect that new products and new marketing efforts provide the keys to future opportunities, as shown in Exhibit VII-6.

- Regardless of the environment's favorable influence in 1983, turnkey vendors see the uncertainty of the environment as a threat to continued growth. General economic conditions ranked second as a concern identified by vendors, according to Exhibit VII-7. Of greater concern is the amount of competitive activity. Increasing customer demands were identified as a third potential threat.

- In sum, turnkey vendors seem to have a bright future in store. They will need to keep up with the changing technology to meet customer demands and find strategies to beat the increasing amount of competition. They will also need to develop the ability to deliver an integrated set of services so that they will be perceived by the customer as a "full-service" vendor.

EXHIBIT VII-4

LARGEST REVENUE-GENERATING APPLICATION AREAS IN TURNKEY SYSTEMS

APPLICATION AREA	PERCENT OF MENTIONS
Cross-Industry:	
Administration	13%
Financial	23
Scientific	6
Operations	18
Cross-Industry Total	60%
Industry-Specific:	
Government	7%
Health Care	11
Banking	3
Manufacturing	9
Insurance	1
Other*	9
Industry-Specific Total	40%

Total Mentions = 109
* Education, Transportation/Utilities

EXHIBIT VII-5

DISTRIBUTION OF TURNKEY SYSTEMS
SUBMODE REVENUE BY TARGET MACHINE

SUBMODE • TARGET MACHINE	SIZE OF COMPANY	
	< $10 Million (Percent)*	≥ $10 Million (Percent)*
CAD/CAM		
• Mini/Mainframe	50%	71%
• Microcomputer	50	29
Other		
• Mini/Mainframe	68	81
• Microcomputer	32	19

* Weighted Average

EXHIBIT VII-6

OPPORTUNITIES ENVISIONED BY TURNKEY SYSTEMS VENDORS

OPPORTUNITY	PERCENT OF MENTIONS
New Service Mode	9%
Vertical Industry	12
Product Development	27
Favorable Environment	16
Marketing Strategies / Customer Attitudes	22
Other	14

Total Mentions = 147

EXHIBIT VII-7

POTENTIAL THREATS IDENTIFIED BY TURNKEY VENDORS

THREATS	PERCENT OF MENTIONS
Competitive Activity	34%
General Economic Conditions	22
Customer Demands	18
Regulation/De-Regulation	6
Financial Stability	3
Other*	12
Staffing/Organization	5

Total Mentions = 82
* Product Development, Marketing

VIII MICROCOMPUTER COMPANIES: ANALYSIS AND TRENDS

VIII MICROCOMPUTER COMPANIES: ANALYSIS AND TRENDS

- Software and services for microcomputers are an important and distinctive part of the industry. In recognition of their role, information on these companies is provided separately in this report for the first time.

A. INDUSTRY ANALYSIS

- Over 27% of the companies included in this industry research had microcomputer-related revenue and, therefore, were included in the microcomputer analysis, as shown in Exhibit VIII-1.

  - Seventeen percent of these companies derive 100% of their revenue from microcomputer software or turnkey systems.

- Exhibit VIII-2 details the percent of revenue related to microcomputers for companies that provide microcomputer products and services but are not solely microcomputer companies.

  - Processing companies with microcomputer activity receive 17% of their processing services revenue from activities related to microcomputers. These activities may extend from the use of microcomputers as data entry devices to intelligent terminals linked to central processing services. In most cases the microcomputer is not the central source of the service.

EXHIBIT VIII-1

MICROCOMPUTER COMPANIES IN RESEARCH BASE BY TYPE AND SIZE OF COMPANY

TYPE OF COMPANY • SIZE ($ Millions)	ALL REVENUE MICRO RELATED	SOME REVENUE MICRO RELATED	TOTAL
Processing Services			
• < $10	0	23	23
• ⩾ $10	0	17	17
Software Products			
• < $10	7	10	17
• ⩾ $10	13	12	25
Professional Services			
• < $10	0	25	25
• ⩾ $10	0	22	22
Turnkey Systems			
• < $10	3	9	12
• ⩾ $10	5	15	20
Total	28	133	161

EXHIBIT VIII-2

AVERAGE PERCENT OF REVENUE RELATED TO MICROCOMPUTERS FOR COMPANIES WITH SOME MICROCOMPUTER REVENUE

TYPE OF COMPANY	MODE OF SERVICE			
	Processing Services (Percent)	Software Products (Percent)	Professional Services (Percent)	Turnkey Systems (Percent)
Processing Services	17%	57%	14%	N/A
Number of Respondents	31	9	10	
Software Products	N/A	35	N/A	N/A
Number of Respondents		18		
Professional Services	N/A	57	11	69%
Number of Respondents		14	32	8
Turnkey Systems	N/A	45	N/A	55
Number of Respondents		7		22
Total	17%	47%	12%	61%
Number of Respondents	31	48	42	30

N/A = Insufficient data – 5 or less respondents.

- Similarly, professional services companies and processing services companies that provide professional services receive approximately 11-14% of their professional service revenue from microcomputer-related activity. Such activities as microcomputer programming, consulting, and education/training are sources of revenue.

- The majority of the microcomputer-related revenue of these companies, however, comes from software products and turnkey systems. Across all of these companies, software products for microcomputers generate nearly 50% of the software revenue. That proportion is even larger for the turnkey systems mode, where over 60% of the revenue is from microcomputer products.

- Overall, then, companies that are not solely microcomputer companies have developed strong and important revenue contributions with the commitment to "get into microcomputers."

• As shown in Exhibit VIII-3, the most frequently mentioned applications areas for these companies, other than systems software, involved administrative applications, particularly word processing, decision support systems, and graphics, as well as financial applications (accounting, billing, etc.). The banking and finance, manufacturing, insurance, and services industries were cited.

• The importance of microcomputers as a revenue producer for those who have entered the markets is evident in Exhibit VIII-4, which indicates the average microcomputer-related revenue by mode of service for these companies.

  - Processing and professional services companies with under $10 million in revenue, understandably average less than $1 million from microcomputers. These smaller companies, unlike their larger counterparts, rely more on single modes of service and concentrate on "traditional" businesses.

EXHIBIT VIII-3

APPLICATION AREAS OF MICROCOMPUTER COMPANIES

APPLICATION AREAS	FREQUENCY OF MENTIONS
Systems Software	27%
Office Applications	20
Financial	17
Administration	15
Health Care	7
Manufacturing	10
Other	4

* Number of Mentions = 41

EXHIBIT VIII-4

AVERAGE MICROCOMPUTER-RELATED REVENUE BY
TYPE OF COMPANY AND SIZE OF COMPANY

MODE OF SERVICE	SIZE OF COMPANY		
	< $10 Million ($ Million)	⩾ $10 Million ($ Million)	All Companies Total ($ Million)
Processing Services	$0.52	$7.10	$4.20
Software Products	2.3	23.5	10.7
Professional Services	0.69	3.6	2.0
Turnkey Systems	1.4	16.7	6.9

- Software products and turnkey systems companies report, on average, microcomputer revenue of $11 million and $7 million, respectively. In these companies, both large and small, microcomputer revenue is a significant part of overall revenue.

- Exhibit VIII-5 further details this analysis for software products and turnkey systems of microcomputer and "traditional" companies.

B. INDUSTRY TRENDS

- Microcomputer companies expect their annual revenue growth rates over the next two years to far surpass the industry average, as shown in Exhibit VIII-6.

  - Companies that vend only microcomputer software and service expect rates exceeding 75% per year.

  - Companies that engage in microcomputer business in addition to "traditional" modes of service also expect annual growth to range above 50 percent annually.

- The expected proportion of revenue from microcomputer-related software and services, according to the respondents, ranges from 29% for "traditional" professional services to 100% for microcomputer turnkey vendors, as shown in Exhibit VIII-7.

  - In between, microcomputer software vendors expect to broaden their base with revenues that are not microcomputer-related.

  - The microcomputer portion of processing and professional services, as well as turnkey systems vendors, will increase to nearly 50% of total revenue in these service modes for these companies.

EXHIBIT VIII-5

AVERAGE MICROCOMPUTER-RELATED REVENUE BY LEVEL OF MICROCOMPUTER ACTIVITY

MODE OF SERVICE	LEVEL OF ACTIVITY	
	Microcomputer Only Companies ($ Millions)	Microcomputer "Partial" Companies ($ Millions)
Software Products	$16.5	$3.4
Turnkey Systems	3.3	8.1

EXHIBIT VIII-6

EXPECTED MICROCOMPUTER PRODUCT GROWTH RATES

MODE OF SERVICE	AVERAGE ANNUAL REVENUE GROWTH RATE, 1983-1985	
	MICROCOMPUTER ONLY COMPANIES (PERCENT)	MICROCOMPUTER "PARTIAL" COMPANIES (PERCENT)
Processing Services	N/A	80%
Software Products	120%	83
Professional Services	N/A	54
Turnkey Systems	75	69

N/A = Not Applicable

EXHIBIT VIII-7

EXPECTED PROPORTION OF REVENUE RELATED TO MICROCOMPUTERS IN 1985

MODE OF SERVICE	PROPERTIES OF 1985 REVENUE FROM MICRO PRODUCTS	
	MICROCOMPUTER ONLY COMPANIES (PERCENT)	MICROCOMPUTER "PARTIAL" COMPANIES (PERCENT)
Processing Services	N/A	41%
Software Products	82%	49
Professional Services	N/A	29
Turnkey Systems	100	52

N/A = Not Applicable

- To achieve these expectations, vendors of microcomputer software and services will need to take advantage of important opportunities, as identified in Exhibit VIII-8, while avoiding threats to their revenue identified in Exhibit VIII-9.

  - The opportunities include the development of new applications and the use of new and improved marketing strategies to sell these new products as well as existing ones. Interestingly, environmental factors outside the vendors' direct sphere of influence are also seen as significant.

  - The major threat--and an obvious one given the data in this report--comes from the number and sophistication of the competitors. Microcomputer vendors will likely be seriously tested on their product and marketing skills in the coming year. Competition is no longer primarily from small start-ups; it is coming from major computer hardware and software vendors as well as from established publishers, communication companies, and others.

EXHIBIT VIII-8

OPPORTUNITIES ENVISIONED BY MICROCOMPUTER COMPANIES

OPPORTUNITY	PERCENT OF MENTIONS*
New Application Areas	31%
New Marketing Strategies	24
More Favorable Environment	22
New Service Modes	9
New Industries	7
Other	7

* Number of Mentions = 17

EXHIBIT VIII-9

THREATS IDENTIFIED BY MICROCOMPUTER SERVICES COMPANIES

THREATS	PERCENT OF MENTIONS*
Competitive Activity	59%
Changing Technology	12
Regulation/Deregulation	6
Other	23

* Number of Mentions = 17

APPENDIX A: DEFINITION OF TERMS

APPENDIX A: DEFINITION OF TERMS

A. REVENUE

- TOTAL COMPANY REVENUE - Revenue received from total computer services and other sources of revenue.

- TOTAL COMPUTER SOFTWARE AND SERVICES REVENUE - Revenue received from services provided by vendors that perform data processing using vendor computers (processing services) or that assist users to perform such functions on their own computers (software products and/or professional services) or a combination of hardware and software integrated into a total system (turnkey systems). Revenue derived from computer services games or entertainment are excluded as are revenue derived solely from the resale of computer services on a retail basis.

- CAPTIVE COMPUTER SERVICES REVENUE - Revenue received from users who are part of the same parent corporation as the vendors.

- NONCAPTIVE U.S. COMPUTER SERVICES REVENUE - Revenue received for computer services provided within the United States from users who are not part of the same parent corporation as the vendor.

- NONCAPTIVE FOREIGN COMPUTER SERVICES REVENUE - Revenue received for computer services provided outside the United States from users who are not part of the same parent corporation as the vendor.

- OTHER REVENUE - Revenue derived from lines of business other than those defined above.

B. SERVICE MODES

- PROCESSING SERVICES - Remote computing services, value-added networks, batch services, and facilities management.

  - REMOTE COMPUTING SERVICES - Provision of data processing to a user by means of terminals at the user's site connected by a data communications network to the vendor's central computer.

  - VALUE-ADDED NETWORKS (VAN) - Intercommunication services between computing resources to move data and/or textual information. Provided by vendors through common carrier or special-purpose transmission facilities to move data and/or textual information. Special features of VANs that set them apart from conventional public networks include store-and-forward mesage switching, terminal interfacing, error detection and correction, and host computer interfacing.

  - BATCH SERVICES - This includes data processing performed at vendors' sites of user programs and/or data that are physically transported (as opposed to electronically by telecommunications media) to and from those sites. Data entry and data output services, such as keypunching and computer output microfilm processing, are also included. Batch services include those expenditures by users who take their data to a vendor site that has a terminal connected to a remote computer 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). This would include both remote computing and batch services. 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 modes. Simply providing resources, even though under a long-term contract and/or for all of a user's processing needs, does not necessarily qualify as FM.

- PROFESSIONAL SERVICES - This category is made up of services related to EDP, including software development, consulting, education and training, and facilities management. Services are sold to:

  - GOVERNMENT - which includes federal, state, and local governments and their agencies.

  - COMMERCIAL - which includes all nongovernment organizations.

- TURNKEY SYSTEMS - An integration of systems and applications software with hardware packaged as a single entity. The value added by the vendor is primarily in the software, either packaged or custom developed. Most CAD/CAM systems and many small business systems are turnkey systems. This does not include specialized hardware systems such as word processors, cash registers, and process control systems. In previous reports these companies have been referred to as "integrated systems" but the name was changed this year to the more common "turnkey systems."

- SOFTWARE PRODUCTS - This category includes users' purchases of applications and systems packages for use on in-house computer systems. Included are lease and purchase revenues, as well as fees for work performed by the vendor to implement and maintain the package at the user's site. Fees for work performed by organizations other than the package vendor are counted

in professional services. There are several subcategories of software products.

- APPLICATIONS PRODUCTS - These are software products that perform processing to service 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.

- SYSTEMS PRODUCTS - These are software products that enable the computer/communications system to perform basic functions. They consist of system operations products, systems utilization products, and application development products.

C. TRENDS AND ISSUES

- REVENUE GROWTH - Derived from one or more of the following:

  - PRICE INCREASE - Proportion of revenue increase derived solely from increasing the price of services.

  - ACQUISITION - Proportion of revenue increase derived from the acquisition of other companies.

- REAL GROWTH - Proportion of revenue increase derived from all sources net of the effect of price increases and acquisitions.

- PROFIT MARGINS - Profits after taxes and extraordinary items.

- EMPLOYEE PRODUCTIVITY - Average U.S. noncaptive revenue generated per employee.

APPENDIX B: METHODOLOGY AND RECONCILIATION

APPENDIX B: METHODOLOGY AND RECONCILIATION

- Industry performance data in 1982 and 1983 were established by two methods:
  - A census of all known computer services firms with U.S. noncaptive revenue exceeding $10 million.
  - A stratified random sample of companies from a pool of all known companies with U.S. noncaptive revenue greater than $250,000 but less than $10 million.
- Data on the random sample companies were obtained through telephone interviews with company representatives. Data for the census companies were obtained from interviews and INPUT file data. In addition, data for public companies were obtained from published reports.
- Exhibit B-1 shows the reconciliation in number of companies between 1982 and 1983. In general, the industry increased in known member companies by 8% to 6,965.
- Six companies with revenues over $10 million in 1982 were recategorized this year because they had 1983 revenue under $10 million.
  - Thirty-seven companies were added to the census of companies with over $10 million in revenue. This represents a 13% increase in the number of these companies in 1983.

EXHIBIT B-1

CHANGE IN NUMBER OF COMPANIES, 1982-1983

TYPE OF COMPANY • SIZE ($ Millions)	NUMBER OF COMPANIES		CHANGE	PERCENT
	1982	1983		
Processing Services				
• $.25-1.0	1,000	1,005	5	.5%
• $1.1-10	1,010	1,010	0	0
• >$10	120	120	0	0
All Processing	2,130	2,135	5	.2%
Software Products				
• $.25-1.0	1,390	1,660	270	19%
• $1.1-10	440	500	60	14
• >$10	49	74	25	51
All Software	1,879	2,234	355	19%
Professioal Services				
• $.25-1.0	950	965	15	2%
• $1.1-10	325	346	21	6
• >$10	73	76	3	4
All Professional	1,348	1,387	39	3
Turnkey Systems				
• $.25-1.0	660	725	65	10%
• $1.1-10	420	442	22	5
• >$10	33	42	9	27
All Turnkey	1,113	1,209	96	9%
All Types	6,470	6,965	495	8%

- INPUT estimates that the number of companies with over $250,000 and less than $10 million in revenue increased by 458 in 1983. Each type of company increased in number with the largest increase occurring in the number of small software companies.

- The revenue reconciliation between the 1982 report on 1982 revenue and the 1983 report on 1982 revenue is included as Exhibit B-2.

  - Overall, the 1982 revenue base increased 1% over the revenue reported in 1982. This increase is within acceptable confidence limits for this type of research report.

  - The category of processing services companies was increased by 2%.

    . Value-added network revenue was included for the first time in this report. $180 million was added to the 1982 revenue amount for this new inclusion.

    . Due to increased sophistication in methodology coupled with increasing awareness of the impact of this research an additional $79 million in 1982 revenue was identified in 1983.

  - Software products companies' base revenue was increased by a net amount of $114 million according to research findings.

EXHIBIT B-2

CHANGE IN 1982 REVENUE AS REPORTED IN 1983 RESEARCH

TYPE OF COMPANY • SIZE ($ Millions)	1982 REVENUE ($ Millions)		CHANGE	
	1982 REPORT	1983 REPORT	$ Millions	Percent
Processing Services				
• $.25-1.0	$ 618	$ 619	$ 1	0
• $1.1-10	3,808	3,821	13	0
• >$10	8,058	8,303	245	3%
All Processing	$12,484	$12,743	$259	2%
Software Products				
• $.25-1.0	1,084	1,127	43	4
• $1.1-10	1,619	1,543	(76)	(5)
• >$10	2,592	2,739	147	6
All Software	$ 5,295	$ 5,409	$114	2%
Professional Services				
• $.25-1.0	609	609	0	0
• $1.1-10	1,409	1,409	0	0
• >$10	3,311	3,311	0	0
All Professional	$ 5,329	$ 5,329	$ 0	0%
Turnkey Systems				
• $.25-1.0	493	493	0	0
• $1.1-10	1,599	1,599	0	0
• >$10	1,230	1,230	0	0
All Turnkey	3,322	3,322	0	0%
All Types	$26,430	$26,803	$373	1%

APPENDIX C: DATA BASE OF COMPUTER SERVICES REVENUE

APPENDIX C

DATA BASE OF COMPUTER SERVICES REVENUE

TYPE OF COMPANY • SIZE ($ Millions)	Year	Companies	REVENUE BY MODE OF DELIVERY ($ Millions) Total	Processing Services	Software Products	Professional Services	Turnkey Systems
Processing Services							
• < $1	1982	1,000	$ 619	$ 545	$ 30	$ 34	$ 10
	1983	1,005	695	629	46	0	20
• $1-10	1982	1,010	3,821	3,262	290	139	130
	1983	1,010	4,229	3,577	341	116	195
• ⩾ $10	1982	120	8,303	6,813	365	740	385
	1983	120	9,646	7,857	421	871	497
Total	1982	2,130	$12,743	$10,620	$ 685	$913	$525
	1983	2,135	$14,570	$12,063	$ 808	$987	$712
Software Products							
• < $1	1982	1,390	$ 1,127	$ 0	$1,022	$ 95	$ 10
	1983	1,660	1,449	0	1,306	133	10
• $1-10	1982	440	1,543	20	1,389	109	25
	1983	500	2,104	20	1,903	152	29
• ⩾ 10	1982	49	2,739	49	2,322	320	48
	1983	74	3,954	54	3,329	489	82
Total	1982	1,879	$ 5,409	$ 69	$4,733	$524	$ 83
	1983	2,234	7,507	74	6,538	774	121

DATA BASE OF COMPUTER SERVICES REVENUE

TYPE OF COMPANY • SIZE ($ Millions)	Year	Companies	REVENUE BY MODE OF DELIVERY ($ Millions) Total	Processing Services	Software Products	Professional Services	Turnkey Systems
Professional Services							
• < $1	1982	$ 950	$ 609	$ 0	$ 136	$ 450	$ 23
	1983	965	732	0	175	531	26
• $1-10	1982	325	1,409	126	55	1,190	38
	1983	346	1,707	160	74	1,429	44
• ⩾ $10	1982	73	3,311	300	172	2,802	37
	1983	76	3,985	335	216	3,388	46
Total	1982	1,348	5,329	426	363	4,442	98
	1983	1,387	6,424	495	465	5,348	116
Turnkey Systems							
• < $1	1982	660	493	30	10	10	443
	1983	725	593	30	12	13	538
• $1-10	1982	420	1,599	76	44	38	1,441
	1983	442	1,992	0	71	66	1,855
• ⩾ $10	1982	39	1,230	120	44	53	1,013
	1983	42	1,540	153	49	72	1,266
Total	1982	$1,119	$ 3,322	$ 226	$ 98	$ 101	$2,897
	1983	1,209	4,125	183	132	151	3,659
Total Computer Software and Services	1982	$6,476	$26,803	$11,341	$5,879	$5,980	$3,603
	1983	6,965	32,626	12,815	7,943	7,260	4,608

APPENDIX D: QUESTIONNAIRE

GENERAL INFORMATION

Company Name: _____ (27)

1. In what month did your last fiscal year end? Month ☐☐ (28)

   (Note: If the company's fiscal year end is between October 1 and March 31, collect their data for the last two actual fiscal years. If the fiscal year is between April 1 and September 30, collect the data for the last two fiscal years and all data between their last fiscal year end and the date of the interview.)

2. Is this company public or private? *(Check one)*

   ☐ Public ☐ Private (29)

3. Are you a subsidiary of another company? ☐ Yes ☐ No (30)

   If yes, please specify: *(Company Name)* _____ (31)

4. Does your company own or control any other subsidiaries? If so, please list:

COMPANY NAME	COMPANY NAME
_____ (32)	_____ (33)
_____ (34)	_____ (35)
_____ (36)	_____ (37)

5. *Note: If the company has subsidiaries. . .*
   Which of these, if any, were acquired in the most recently completed fiscal year?

COMPANY NAME	DATE
_____ (38)	_____ (39)
_____ (40)	_____ (41)
_____ (42)	_____ (43)
_____ (44)	_____ (45)

6. How many employees were engaged in the generation of U.S. NONCAPTIVE INFORMATION SERVICE in your most recently completed fiscal year and the previous fiscal year?

Most Recently Completed FY _____ (46)

Previous FY _____ (47)

Financial Table

Note: Please specify whether the following is represented in dollar amount or percent.

REVENUE SOURCES (Please Consult Definitions for a Full Explanation of Terms)	Most Recently Completed Fiscal Year ($ thousands or % of Revenue)	Previous Fiscal Year ($ thousands or % of Revenue)	____ Months from Last Fiscal Year End to Present ($ thousands or % of Revenue) (91)
(7) Total worldwide company revenue	(48)	(70)	(92)
(8) Total Information Services revenue	(49)	(71)	(93)
(9) Total noncaptive information service revenue	(50)	(72)	(94)
(10) Total U.S. noncaptive information service revenue	(51)	(73)	(95)
For U.S. Noncaptive Information Services Revenue			
(11) PROCESSING SERVICES (total)	(52)	(74)	(96)
(12) Remote Computing	(53)	(75)	(97)
(12) Value-Added Networks (VANS)	(54)	(76)	(98)
(12) Batch	(55)	(77)	(99)
(12) Facilities Management	(56)	(78)	(100)
(11) SOFTWARE PRODUCTS (total)	(57)	(79)	(101)
(12) Applications	(58)	(80)	(102)
(12) Systems	(59)	(81)	(103)
(11) PROFESSIONAL SERVICES (total)	(60)	(82)	(104)
(12) Software Development	(61)	(83)	(105)
(12) Consulting	(62)	(84)	(106)
(12) Education	(63)	(85)	(107)
(12) Professional Services Facilities Management	(64)	(86)	(108)
(11) TURNKEY SYSTEMS (total)	(65)	(87)	(109)
(12) CAD/CAM	(66)	(88)	(110)
(12) Other (67) (Except CAD/CAM and Process Control	(68)	(89)	(111)
TOTAL *(Sum of 11 must equal Question 10)*	$(or %) (69)	$(or %) (90)	$(or %) (112)

13. What percentage of your company's U.S. noncaptive Information Service revenue growth (decline) resulted from each of the following:

	FISCAL YEAR 1982	FISCAL YEAR 1983
Price Increases	_____% (113)	_____% (114)
Acquisitions/Divestiture	_____% (115)	_____% (116)
Real Growth	_____% (117)	_____% (118)
Total	100%	100%

14. What other factors, including environmental influence, financial conditions, marketing approaches, products, etc., contributed to the company's change in revenue position? Please specify:

_____ (119)

_____ (120)

_____ (121)

GENERAL

1. What was the U.S. noncaptive information services revenue in your company in the most recently completed fiscal year? In the previous fiscal year?

   Most recently completed FY _____(132)

   Previous FY _____(133)

2. What amount of this revenue was derived from each of the following service modes? *(Ask for percent of actual revenue if not offered)*

SERVICE MODE	Most Recently Completed Fiscal Year ($ thousands or %)	Previous Fiscal Year ($ thousands or %)
Processing Services	_____(134)	_____(135)
Software Products	_____(136)	_____(137)
Professional Services	_____(138)	_____(139)
Turnkey Systems	_____(140)	_____(141)
Total	_____(142)	_____(143)

(Note: These eight revenue figures should agree with those of Question 13 (Page 4R). If they do not, please ask the respondent to explain each major discrepancy.)

3. What proportion of your total U.S. noncaptive information services revenue growth/loss resulted from price increases, acquisitions, and real growth?

	Most Recently Completed FY	Previous FY
Price Increase	_____%(144)	_____%(145)
Acquisition	_____%(146)	_____%(147)
Real Growth	_____%(148)	_____%(149)
Total	100%	100%

4. For each of the following modes what proportion of your revenue was derived from sales to other information services vendors in the most recently completed fiscal year?

Processing Services _____%(150)

Software Products _____%(151)

Professional Services _____%(152)

Turnkey Systems _____%(153)

PROCESSING SERVICES

5. What are the major revenue-producing service applications? What industries or cross-industry applications does each serve?

Major Application	Cross-Industry	Industry-Specific
(154)		(155)
(157)		(158)
(160)		(161)

Processing Services Table

MODE	SUB-MODE	INDUSTRY	PERCENT OF REVENUE
(6) RCS			_____% (163)
	(6a) Applications		_____ (164)
		(6b) Cross-Industry	_____ (165)
		(6b) Industry-Specific	_____ (166)
		_____ (167)	
		_____ (168)	
	(6a) On-Line Data Base		_____ (169)
	(6a) Utility		_____ (170)
(6) Value-Added Networks			_____% (171)
(6) Batch			_____% (172)
	(7a) Applications		_____ (173)
		(7b) Cross-Industry	_____ (174)
		(7b) Industry-Specific	_____ (175)
		_____ (176)	
		_____ (177)	
	(7a) Utility		_____ (178)
(6) Facilities Management			_____% (179)
		(8) Cross-Industry	_____ (180)
		(8) Industry-Specific	_____ (181)
		_____ (182)	
		_____ (183)	
Totals			100%

9. Of your processing services revenue, what percent had personal computers as an integral part of the service in your most recently completed year and the previous fiscal year?

Most recently Completed FY _____% (184)

Previous FY _____% (185)

10. What annual revenue growth rates do you expect for your firm over the next two years for mainframe/mini-related services? For microcomputer-related services?

Mainframe/Mini _____% (186) Microcomputer _____% (187)

11. What percent of your firm's information service revenue do you expect to be related to microcomputer-related services in two years?

_____% of Revenue (188)

12. What percent of your U.S. processing services sales were generated by the following distribution channels?

(189) _____% Direct Sales Force

(190) _____% Mail/Telephone Sales

(191) _____% Distributor's Sales Force

(192) _____% Other *(Please specify)* _____ (193)

100%

13. What areas (product, services, key markets, or technologies) do you see as the greatest opportunities for success in the next two years? Why?

_____ (194)

_____ (195)

_____ (196)

_____

14. What areas (products, services, key markets, or technologies) do you see as the greatest threats to success in the next two years? Why?

_____ (197)

_____ (198)

_____ (199)

_____

SOFTWARE PRODUCTS

15. What are the major revenue-producing software applications? What industries or cross-industry applications does each serve?

Major Application	Cross-Industry	Industry-Specific
(200)		(201)
(203)		(204)
(206)		(207)

Software Products Table

MODE	SUB-MODE	INDUSTRY	PERCENT OF REVENUE
(16) Applications			_____% (209)
	(17a) Mainframe/ Mini		_____ (210)
		(17b) Cross-Industry	_____ (211)
		(17b) Industry-Specific	_____ (212)
		_____ (213)	
		_____ (214)	
	(17a) Microcomputer		_____ (215)
		(17c) Cross-Industry	_____ (216)
		(17c) Industry-Specific	_____ (217)
		_____ (218)	
		_____ (219)	
(16) Systems			_____% (220)
	(18a) Mainframe/ Mini		_____ (221)
		(18b) Application Development Tools	_____ (222)
		(18b) Other	_____ (223)
		_____ (224)	
		_____ (225)	
	(18a) Microcomputer		_____ (226)
		(18c) Application Development Tools	_____ (227)
		(18c) Other	_____ (228)
		_____ (229)	
		_____ (230)	
TOTAL			100%

19. What annual revenue growth rates do you expect for your firm over the next two years for mainframe/mini-related services? For microcomputer-related services?

Mainframe/Mini _____% (231) Microcomputer _____% (232)

20. What percent of your firm's information service revenue do you expect to come from microcomputer-related services in two years?

_____% of Revenue (233)

21. What percent of your U.S. (mainframe/mini/micro) software product sales were generated by the following distribution channels?

	Mainframe/Mini	Microcomputer
Direct Sales Force	_____% (234)	_____% (235)
Mail/Telephone Sales	_____% (236)	_____% (237)
Directly from Retail Stores	_____% (238)	_____% (239)
Distributor's Sales Force (Hardware OEM)	_____% (240)	_____% (241)
Other *(please specify)* _____ (242)	_____% (243)	_____ (244) _____% (245)
	100%	100%

22. What areas (products, services, key markets, or technologies) do you see as the greatest opportunities for success in the next two years? Why?

_____ (246)

_____ (247)

_____ (248)

_____

23. What areas (products, services, key markets, or technologies) do you see as the greatest threats to success in the next two years? Why?

(249)

(250)

(251)

PROFESSIONAL SERVICES

24. What are the major revenue-producing Professional Service applications? What industries or cross-industry applications does each serve?

Major Application	Cross-Industry	Industry-Specific
(252)		(253)
(255)		(256)
(258)		(259)

Professional Services Table

MODE	INDUSTRY	PERCENT OF REVENUE
(25) Software Development		_____% (261)
	(26a) Government	_____(262)
	(26a) Commercial	_____(263)
(25) Consulting		_____%(264)
	(26b) Government	_____(265)
	(26b) Commercial	_____(266)
(25) Facilities Management		_____%(267)
	(26c) Government	_____(268)
	(26c) Commercial	_____(269)
(25) Education and Training		_____%(270)
	(26d) Government	_____(271)
	(26d) Commercial	_____(272)

27. Of your FY 1982 and FY 1983 Professional Services revenue, what percent was related to personal computer use?

FY 1982 _____% (273) FY 1983 _____% (274)

28. What annual revenue growth rates do you expect for your firm over the next two years for mainframe/mini-related services? For microcomputer-related services?

Mainframe/Mini _____% (275) Microcomputer _____% (276)

29. What percent of your firm's information service revenue do you expect to be related to microcomputer-related services in two years?

_____% of Revenue (277)

30. What percent of your U.S. Professional Services sales were generated by the following distribution channels?

_____% Direct Sales Force (278)

_____% Mail/Telephone Sales (279)

_____% Distributor's Sales Force (280)

_____% Other *(Please specify)* _____ (281) (282)

100%

31. What areas (products, services, key markets, or technologies) do you see as the greatest opportunities for success in the next two years? Why?

_____ (283)

_____ (284)

_____ (285)

_____

32. What areas (products, services, key markets, or technologies) do you see as the greatest threats to success in the next two years? Why?

_____ (286)

_____ (287)

_____ (288)

TURNKEY SYSTEMS

33. What are the major revenue-producing Turnkey Systems applications? What industries or cross-industry applications does each serve?

Major Application	Cross-Industry	Industry-Specific
(289)		(290)
(292)		(293)
(295)		(296)

Turnkey Systems Table

MODE	SUB-MODE	INDUSTRY	PERCENT OF REVENUE
(34) CAD/CAM			_____% (298)
	(35a) Mainframe/Mini		_____ (299)
	(35a) Microcomputer		_____ (300)
(34) Other			_____% (301)
	(36a) Mainframe/Mini		_____ (302)
		(36b) Cross-Industry	_____ (303)
		(36b) Industry-Specific	_____ (304)
		_____ (305)	
		_____ (306)	
	(36a) Microcomputer		_____ (307)
		(36c) Cross-Industry	_____ (308)
		(36c) Industry-Specific	_____ (309)
		_____ (310)	
		_____ (311)	

37. What annual revenue growth rates do you expect for your firm over the next two years for mainframe/mini-related services? For microcomputer-related services?

Mainframe/Mini _____% (312) Microcomputer _____% (313)

38. What percent of your firm's information service revenue do you expect to be related to microcomputer-related services in two years?

_____% of Revenue (314)

39. What areas (products, services, key markets, or technologies) do you see as having the greatest opportunities for success in the next two years? Why?

_____ (315)

_____ (316)

_____ (317)

_____

40. What areas (products, services, key markets, or technologies) do you see as posing the greatest threats to success in the next two years? Why?

_____ (318)

_____ (319)

_____ (320)

_____

THANK YOU