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INFORMATION SERVICES VENDOR FINANCIAL WATCH

Quarter 2, 1988
Performance

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Vendor Financial Watch

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I

Introduction

I

Introduction

The Vendor Financial Watch (VFW) is a quarterly INPUT comparison of up-to-date financial reports of public information processing/network services, professional services, software products, and turnkey systems companies, both for comparative purposes (vendor to vendor) and to enable participants in a given sector of the information services market to monitor the overall growth of their sector.

Each sector of the information services market is analyzed separately, from both a revenue and a net income standpoint. The growth trends are analyzed in the last three columns of each data sheet in increasing calendar sequence.

Each information services market sector is also commented on separately, highlighting individual company successes and failures and the trend in the market sector as a whole. Footnotes emphasizing extraordinary quarterly results are explained at the end of each section.

The summary analysis at the back of the VFW report analyzes the comparative trends between sectors and comments on the trend of the total information services market. This section is particularly important since it identifies growth patterns very clearly.

This quarterly Vendor Financial Watch is intended as a planning tool for market planning executives and as an information newsletter for company executives. The data contained herein are extracted from published sources, annual reports, and 10-K reports.

This issue covers 120 information services vendors.

II

Data Reported

II

Data Reported

The VFW report is divided into two sections:

- Information services delivery mode analysis.
- Total information services industry financial performance.

Financial data provided include each vendor's revenue and net income (reported on a calendar quarterly basis) and comparisons on performance for:

- 1987 versus 1986 (year on year).
- Last nine months' results compared to the year-earlier period.
- Last six months' results compared to the year-earlier period.

Fiscal quarterly revenue is approximated to calendar quarterly revenue as follows:

- Quarterly revenue reported as of February, March, and April is reported as first quarter.

- Quarterly revenue reported as of May, June, and July is reported as second quarter.

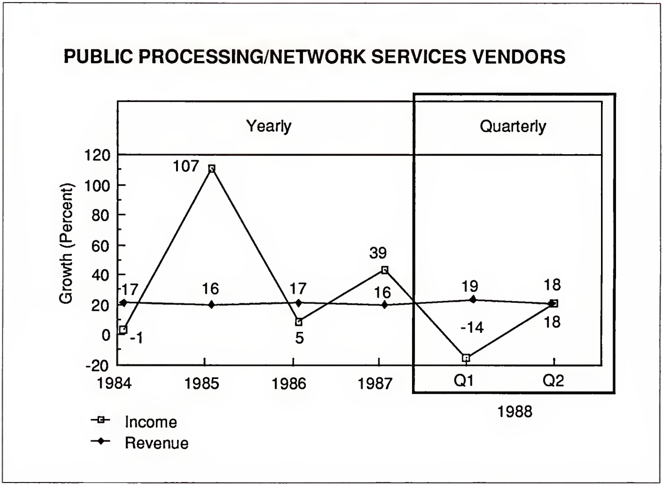
- Quarterly revenue reported as August, September, and October is reported as third quarter.

- Quarterly revenue reported as November, December, and January is reported as fourth quarter.

Fiscal year-end dates are provided in column 2 so that actual quarters for each company can be identified. Values that are followed by an asterisk (*) are INPUT estimates, pending release of the final results from the vendor. These estimates are included so that the overall totals for each sector may be as complete as possible.

III

Public Processing/Network Services Vendors


PUBLIC PROCESSING/NETWORK SERVICES VENDORS
Yearly
Quarterly
Growth (Percent)
120
100
80
60
40
20
0
-20
107
39
17
16
17
16
19
18
-1
5
-14
18
1984
1985
1986
1987
Q1
Q2
1988
Income
Revenue

III

Processing/Network Services Trends Analysis

Note that Citizens Financial, Computer Resources, and Keydata were removed from INPUT's list of public processing/network services vendors. Citizens Financial was merged into FIserv in May 1988. Computer Resources was acquired by Infomed. Keydata was removed since financial data has been unavailable on the company for the past few quarters.

Growth in revenues for the processing/network services group appears to be accelerating. After experiencing annual growth rates of 17% and 16% for the years 1986 and 1987, growth rates during first and second quarters of 1988 were 19% and 18%, respectively.

Computer Language and First Financial Management have contributed most to the increase in growth during 1988, although many other companies have also achieved significant growth. Some growth, such as in the case of First Financial Management, was achieved through acquisitions and represents a further consolidation of this mature segment of the information services industry.

Unfortunately, earnings growth has been more erratic than revenue growth, alternating from extreme highs to extreme lows each year. During first quarter 1988, earnings dropped 14% from the year-earlier period. During second quarter, earnings rose 18%.

The drop in earnings during first quarter was mostly due to the results of Telecredit. Telecredit decided in May of 1988 to restructure and take as a one-time write-off its Light Signatures subsidiary. The reported overall loss is despite outstanding results achieved by payment services.
During second quarter, most of these public processing/network services companies showed an improvement in earnings from the year-earlier period.

REVENUES OF PUBLIC PROCESSING/NETWORK SERVICES COMPANIES

		REVENUE ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
ADP	30-Jun	321.1	334.2	1298.1	373.7	355.3	361.3	376.7	1467.0	418.0	393.2	13	12	11
COMDATA	31-Dec	21.8	21.0	86.6	25.2	25.9	25.5	24.0	100.6	24.9	25.8	16	4	-1
COMNET	31-Mar	10.2	10.2	40.0	11.2	10.2	11.2	11.3	44.0	11.9	10.0	10	5	2
COMP-U-CHECK	30-Nov	1.7	2.0	7.3	2.1	1.9	2.0	1.7	7.7	2.3	2.5	5	7	20
COMPUTER LAN.	31-Dec	18.3	20.9	93.4	33.4	20.9	19.6	28.3	102.1	41.7[1]	24.1	9	25	21
COMPUTER SVCS	28-Feb	3.0	2.9	11.8	3.3	3.0	3.2	3.2	12.7	3.2	3.2	7	4	2
CONCORD COMP.	30-Sep	3.7	4.4	14.4	4.4	4.7	5.3	5.8	20.1	5.9	5.9	40	30	30
CYCARE	31-Dec	14.3	15.3	57.2	14.9	16.9	17.2	18.7	67.7	20.6	21.2	18	28	31
DST SYSTEMS	31-Dec	25.7	26.9	100.2	31.9	35.6	35.6	34.4	137.5	33.8	33.5	37	8	0
DYATRON	31-Dec	8.4	9.3	33.1	8.3	8.9	9.7	9.7	36.6	9.5	10.1	11	11	14
FDP	30-Nov	3.1	3.1	13.5	3.0	4.1	4.0	3.2	14.2	3.2	3.4	6	-4	-6
FIRST FIN. MGMT	31-Dec	15.5	24.6[2]	69.7	26.5	27.4	29.4	91.9[3]	175.1	85.1	94.8	151	246	234
FISERV	31-Dec	19.1	19.9	70.4	20.5	21.4	21.0	22.6	85.5	23.9	27.1	22	19	22
GTECH	25-Feb	26.3	60.4[4]	131.5	26.9	25.0	34.8	40.6	127.3	39.1	32.9	-3	0	39
HALE SYSTEMS	31-Mar	1.1	0.8	4.4	1.1	1.1	1.2	1.0	4.4	0.7	0.7	-1	-16	-34
ISI SYSTEMS	30-Jun	7.1	7.6	28.1	8.2	8.8	8.5	9.0	34.4	9.7	10.5	23	19	19
M/A/R/C	31-Mar	13.4	15.8	54.4	12.7	14.6	13.6	15.0	55.9	16.1	14.4	3	6	12
NATL DATA	31-May	37.6	39.3	153.7	40.0	42.0	43.4	42.5	167.9	44.2	47.0	9	10	11
NATL FSI	31-Dec	3.6	3.8	15.4	4.1	3.8	3.4	6.0	17.3	4.5	4.6	12	29	15
PAYCHEX	31-May	15.0	15.3	57.2	16.6	17.0	18.0	19.2	70.9	20.7	21.5	24	26	26
PAY-FONE	30-Jun	1.7	2.0	7.0	1.6	1.4	1.5	1.5	6.0	1.6	1.4	-15	-10	1
SCICOM DATA	30-Jun	3.4	3.9	14.2	3.3	4.0	3.8	4.6	15.6	3.9	4.8	10	19	20
SCS/COMPUTE	30-Apr	1.4	1.9	15.8	13.4	1.5	1.7	6.3	22.9[5]	15.0[6]	2.5	45	41	17
SEI	31-Dec	27.6	31.9	118.5	29.9	30.4	29.9	32.6	122.7	33.3	32.2	4	6	9
SHARED MEDICAL	31-Dec	96.4	98.7	374.9	96.6	95.9	99.1	99.1	390.7	95.4	92.8	4	-1	-2
SYSTEMATICS	31-May	31.3	34.2	129.0	37.8	38.3	40.4	43.9	160.3	46.1	49.1	24	26	25
TELECREDIT	30-Apr	29.9	35.1	119.3	32.1	32.1	30.1	42.1	136.4	35.4	35.3	14	14	10
TOTAL SYS. SVCS	31-Dec	9.1	10.0	36.4	9.7	10.8	12.0	13.8	46.3	13.2	13.8	27	34	31
TSR	31-May	6.0	6.4	22.5	5.9	6.1	6.3	6.1	24.4	5.9	5.8	9	-3	-2
WORLCO DATA	31-Mar	2.7	2.7	9.5	3.2	2.7	2.8	2.8	11.5	1.9	3.1	21	-9	-15
TOTALS		779.5	864.5	3187.4	901.2	871.7	895.2	1017.5	3685.7	1070.7	1027.2	16	18	18

NET INCOME OF PUBLIC PROCESSING/NETWORK SERVICES COMPANIES

		NET AFTER TAX INCOME ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
ADP	30-Jun	22.7	30.0	115.5	39.3	40.1	30.4	40.1	149.8	51.2[7]	48.6	30	28	26
COMDATA	31-Dec	3.0	3.3	12.2	4.0	3.3	-0.4	-5.6[8]	1.2	-1.9	-1.9	-90	-190	-153
COMNET	31-Mar	0.3	0.3	1.2	1.6	0.4	0.5	0.5	3.0	-2.7	0.7	146	-164	-200
COMP-U-CHECK	30-Nov	0.1	0.1	0.5	0.1	0.1	-0.1	-1.2	-1.1	0.1	0.3	-314	-352	80
COMPUTER LAN.	31-Dec	-0.5	-3.0	0.2	4.3	-2.4	-2.9	-0.5	-1.5	5.1[9]	-2.3	-811	303	47
COMPUTER SVCS	28-Feb	0.3	0.3	1.1	0.3	0.2	0.2	0.3	1.1	0.3	0.3	5	11	8
CONCORD COMP.	30-Sep	0.0	0.2	0.2	0.2	0.3	0.4	0.6	1.5	0.7	0.7	645	195	173
CYCARE	31-Dec	0.7	0.7	2.9	1.7	0.9	1.0	0.1	3.8	1.1	1.3	31	-24	-9
DST SYSTEMS	31-Dec	3.1	5.5	13.2	4.3	5.1	5.3	5.1	19.8	5.0	3.8	50	-6	-6
DYATRON	31-Dec	0.2	1.5	1.9	0.5	0.6	0.9	1.5	3.5	0.8	0.9	85	22	49
FDP	30-Nov	0.0	0.1	0.3	-0.2	0.1	0.3	0.1	0.3	0.4	0.1	-7	443	1568
FIRST FIN. MGMT	31-Dec	1.4	1.6	5.5	1.9	2.3	3.0	4.4	11.6	5.3	6.4	111	178	180
FISERV	31-Dec	1.1	1.1	5.5	1.7	1.7	1.8	2.0	7.2	2.1	2.2	31	38	26
GTECH	25-Feb	0.2	7.6[10]	6.3	0.8	0.9	1.4	2.5	5.7	-0.1	0.1	-10	-73	-100
HALE SYSTEMS	31-Mar	-0.2	-0.5	-5.4	0.3	-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	99	-69	-302
ISI SYSTEMS	30-Jun	0.6	0.7	4.1	1.1	1.2	1.2	1.3	4.8	1.5	1.7	16	50	38
M/A/R/C	31-Mar	0.3	0.6	2.0	0.8	0.6	0.7	0.9	2.9	0.9	0.7	50	21	12
NATL DATA	31-May	3.1	3.4	8.1	3.5	3.5	3.7	3.9	14.7	4.3	4.5	81	22	25
NATL FSI	31-Dec	0.0	-0.2	-0.4	0.1	-0.2	-1.3	0.2	-1.2	0.1	0.1	-219	259	329
PAYCHEX	31-May	1.5	1.0	4.6	1.1	1.4	1.8	2.1	6.3	1.5	1.6	36	51	26
PAY-FONE	30-Jun	0.2	0.3	0.7	-0.1	-0.5[11]	0.1	0.0	-0.6	0.0	0.0	-179	81	100
SCICOM DATA	30-Jun	0.2	0.3	0.3	0.2	0.3	0.3	0.4	1.1	0.2	0.4	217	33	30
SCS/COMPUTE	30-Apr	-0.9	-0.9	1.7	4.3	-1.2	-1.2	-0.1	1.8	4.8	-2.2	7	11	-17
SEI	31-Dec	-10.2[12]	0.9	-7.1	1.7	2.2	2.7	2.9	9.4	3.3	3.6	233	101	77
SHARED MEDICAL	31-Dec	13.5	14.3	32.0	12.8	10.7	10.9	10.9	45.3	10.5	8.5	42	-21	-19
SYSTEMATICS	31-May	1.8	2.5	10.3	3.6	2.3	2.9	4.2	13.0	4.3	4.1	27	50	42
TELECREDIT	30-Apr	2.1	3.5	8.3	2.6	2.8	3.2	4.9	13.5	-17.9[13]	5.7	62	-182	-326
TOTAL SYS. SVCS	31-Dec	1.3	1.7	5.2	1.4	1.5	1.9	2.4	7.2	1.9	2.2	37	41	41
TSR	31-May	0.2	0.2	0.5	0.2	0.1	0.2	0.2	0.6	0.2	0.1	15	1	12
WORLCO DATA	31-Mar	0.1	0.2	0.7	0.0	-0.4	-0.4	-0.2	-0.9[14]	-1.4	0.1	-237	-582	-237
TOTALS		46.3	77.1	232.3	94.1	78.0	68.3	83.6	324.0	81.4	92.1	39	3	1

Footnotes

1. Computer Language's seasonal results are skewed by income tax business.

2. First Financial Management's increase in revenue reflected acquisitions of American Information Services, American Data Technology, and Mid-Continent Computer Services.

3. First Financial Management's significant growth resulted primarily from the acquisitions of First Data Management (data processing), NaBANCO (third-party credit card authorization), and Endata (imaging).

4. GTECH's improvement in operating results was attributed to the sale of a major lottery network to the State of California.

5. SCS/Compute's results included the acquisition of Accountants Microsystems Inc. (AMI).

6. SCS/Compute generates most of its revenue and all of its profits during the fourth quarter of its fiscal year.

7. ADP revenues and earnings for the quarter were buoyed by continued strength throughout their Employer Services business. This strength was partially offset by reduced transaction levels and increased product investments in Brokerage Services.

8. Comdata Holdings Corp. recorded as an expense $4.8 million as the established reduction in the book value of certain assets that will result from its merger with Comdata Network.

9. Computer Language see footnote 1.

10. GTECH see footnote 4.

11. Pay-Fone's loss included the following nonrecurring expenses: litigation settlements paid to franchises, including related legal expenses; termination of an employment contract and related expenses paid to a former president; and special proxy contest costs.

12. SEI's loss included a one-time charge to operations consisting primarily of capitalized software costs and goodwill that were originally recorded as part of the 1982 acquisition of TMI Systems and the 1984 acquisition of the Financial Services Group of Index Systems.

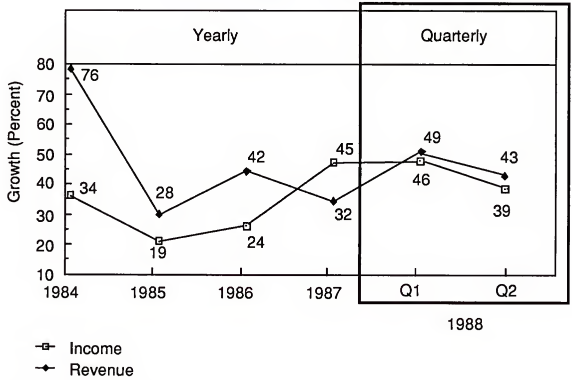
13. Telecredit decided in May 1988 to restructure and take as a one-time write-off its Light Signatures, Inc. subsidiary. The reported overall loss is despite outstanding results achieved by payment services.

14. Worlco Data Systems' losses have been attributed to delays in the completion of a custom turnkey system developed for a large floorcovering company and a major expansion of personnel and computer systems in conjunction with a move to new facilities. In addition, the company reported a reduction in margins due to cutbacks at some publications and discontinued operations at others.

IV

Public Electronic Information Services Vendors

PUBLIC ELECTRONIC INFORMATION SERVICES VENDORS



IV

Electronic Information Services Trends Analysis

Growth in revenues for this group of public electronic information services companies has been very high during the past few years. During 1986 and 1987, annual growth rates for the group were 42% and 32%, respectively. For the first and second quarters of 1988, growth rates have been 49% and 43%, respectively.

Growth for CCX Network, a primary contributor to the overall growth of the group, has included several acquisitions. Note that INPUT has conservatively estimated the company's second quarter results; therefore, growth may actually be higher for the group.

Growth in earnings for the group has also been excellent during the past few years. During 1986 and 1987, the group achieved growth rates of 24% and 45%, respectively. During the first and second quarters of 1988, earnings for the group grew 46% and 39%.

Telerate, CCX Network, and CUC International were the primary contributors to the earnings growth for the group during 1988.

REVENUES OF PUBLIC ELECTRONIC INFORMATION SERVICES COMPANIES

		REVENUE ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
CCX NETWORK *	31-Dec	5.1	9.2[1]	23.9	8.4	8.9	14.8	15.9	48.1	40.6[2]	40.0	101	264	365
CUC INTL	31-Jan	37.8	41.9	141.8	45.2	48.9	51.1	53.4	198.5	58.2	64.5	40	30	31
EPSILON	31-May	11.8	13.1	53.5	11.7	10.6	9.4	13.5	45.2	13.3	13.5	-16	14	20
INFO. RESOURCES	31-Dec	23.8	26.7	93.6	26.0	28.2	26.1	25.1	105.5	27.1	30.8	13	3	7
LCS INDUSTRIES	30-Sep	10.5	8.9	36.6	9.2	8.6	8.9	9.3	36.0	9.6	6.6	-2	-4	-9
TELERATE	30-Sep	61.0	66.9	232.3	72.8	79.8	86.0	97.2	335.8	109.4	109.4	45	44	43
TOTALS		150.0	166.8	581.6	173.2	185.0	196.3	214.5	769.0	258.2	264.8	32	40	46

* INPUT Estimate

NET INCOME OF PUBLIC ELECTRONIC INFORMATION SERVICES COMPANIES

		NET AFTER TAX INCOME ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
CCX NETWORK	31-Dec	0.5	0.5	1.9	0.4	0.7	0.8	1.3	3.2	2.2	2.5	73	276	333
CUC INTL	31-Jan	2.5	2.7	8.5	3.3	4.2	4.7	5.2	17.4	6.0	6.5	105	73	66
EPSILON	31-May	0.1	0.3	-0.7	-0.1	-0.1	-0.1	0.6	0.3	0.2	0.3	139	954	329
INFO. RESOURCES	31-Dec	2.6	2.7	10.0	1.4	1.2[3]	-2.4	-3.3[4]	-3.0	-1.3	-0.1	-130	-189	-154
LCS INDUSTRIES	30-Sep	0.6	0.3	1.2	0.4	0.0	-0.5	0.0	-0.1	0.1	-0.2	-106	-110	-125
TELERATE	30-Sep	11.1	12.9	43.2	15.5	17.3	19.2	23.3	75.2	23.3	23.3	74	53	42
TOTALS		17.4	19.4	64.1	20.9	23.3	21.7	27.1	93.0	30.5	32.3	45	41	42

* INPUT Estimate

Footnotes

1. CCX Network's revenue includes the acquisitions of BSA (NJ) and Southwark Computer Services (London, England).

2. CCX Network's increased revenues included several acquisitions from which Axiom was formed.

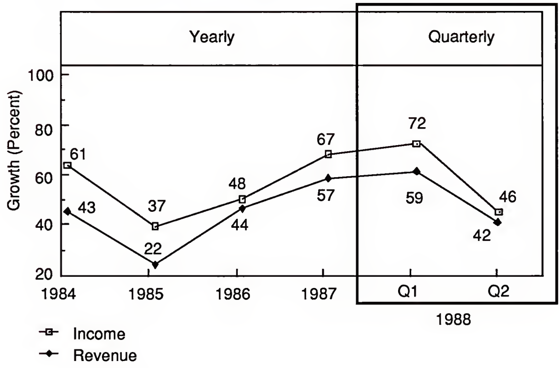
3. Information Resources' drop in earnings the first two quarters of 1987 was attributed to expenses related to the introduction of INFOSCAN.

4. Information Resources' third- and fourth-quarter losses were attributed to costs associated with the defunct merger with Dun & Bradstreet, the write-off of a lease obligation, and INFOSCAN expenses.

V

Public Systems Software Products Vendors

PUBLIC SYSTEMS SOFTWARE PRODUCTS VENDORS



V

Systems Software Products Trends Analysis

Note that Automated Language Processing is now called ALPNET. Software AG has been acquired by its affiliate Software AG of West Germany and will no longer provide financial information separately.

Revenue growth for the public systems software companies listed continues to be very high. In 1986 and 1987, growth rates were 44% and 57%, respectively. During the first and second quarters of 1988, growth reached 59% and 42% over the year-earlier periods.

Growth has stemmed primarily from acquisitions made by companies including ALPNET, Computer Associates, Cullinet, and Informix. Growth has also come from increased product installations and changes in pricing strategies, such as unbundling the pricing of products and services.

Growth in net income has also been very high for this group of information services providers. During 1986 and 1987, the group achieved annual growth rates of 48% and 67%. During the first two quarters of 1988, growth rates were 72% and 46% for the group. This growth was achieved despite the $20.5 million loss taken by Cullinet during first quarter 1988.

Adobe Systems, Computer Associates, Microsoft, and Oracle are the most significant contributors to the overall improved earnings for the group.

REVENUES OF PUBLIC SYSTEMS SOFTWARE PRODUCTS COMPANIES

		REVENUE ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
ADOBE SYSTEMS	30-Nov	4.9	5.2	16.0	6.9	8.7	9.9	12.3	37.8	14.2	18.8	136	118	112
ASHTON TATE	31-Jan	57.7	62.9	210.8	60.2	63.6	68.0	75.5	267.3	72.4	71.9	27	18	17
ALPNET *	31-Dec	0.9	1.5	4.4	1.1	0.9	0.8	0.8	3.5	6.2[1]	6.0	-19	272	516
BGS SYSTEMS	31-Jan	2.9	2.9	12.6	3.1	3.7	3.4	3.5	13.6	3.9	4.2	8	20	20
BOOLE & BABBAGE	30-Sep	9.4	9.3	35.9	10.0	10.3	12.1	12.3	44.8	14.0	14.0	25	36	38
COGNOS	28-Feb	17.6	16.6	62.7	18.7	19.5	18.4	18.0	74.7	27.0	22.2	19	23	29
COMPUTER ASSOC.	31-Mar	96.1	93.6[2]	330.2	102.0	139.3	168.3	195.1	604.7[3]	206.4	185.7	83	75	62
CULLINET	30-Apr	34.2	43.0	162.8	61.1[4]	49.0	49.1	54.2	213.4	64.3	43.9	31	6	-2
DUQUESNE SYS.	30-Sep	7.4	8.6	28.8	9.8	9.1	10.2	12.0	41.0	12.4	12.0	42	32	29
INFODATA SYS.	31-Dec	2.8	3.6	11.2	3.2	2.5	2.8	3.0	11.5	2.8	2.9	3	-6	1
INFORMIX S/W	31-Dec	5.7	6.6	21.1	7.1	9.1	11.4	14.0	41.6	25.8[5]	26.1	97	187	219
INTELLICORP	30-Jun	4.1	4.9	19.9	5.5	5.8	5.1	5.0	21.3	5.0	5.4	7	-6	-8
MICROSOFT	30-Jun	66.8	81.0	260.2	98.4	99.8	102.6	155.9	456.7	161.8	170.5	75	75	68
MORINO ASSOC.	30-Jun	6.9	9.3	28.7	9.1	8.0	9.2	12.5	38.8	12.2	10.8	35	35	35
ON-LINE S/W	31-May	9.7	12.7	42.4	19.8[6]	21.4	18.5	16.9	76.7	23.6	18.8	81	10	3
ORACLE	31-May	17.6	28.4	82.8	34.9	50.4[7]	41.3	60.3	186.9	76.3	104.2	126	112	112
PANSOPHIC	30-Apr	24.3	34.6[8]	101.5	34.9	33.6	37.4	43.6	149.6	50.6	40.9	47	31	33
SAGE SOFTWARE	30-Apr	3.4	3.8	13.8	4.3	2.8	3.4	4.1	14.6	4.3	3.6	5	10	11
SYNERCOM TECH.	31-Oct	3.9	1.4	14.2	2.5	2.9	3.5	4.1	13.0	2.9	3.3	-8	52	15
VM SOFTWARE	31-Dec	6.0	10.4	27.0	6.3	6.8	6.0	11.5	30.6	8.0	10.6	13	28	42
TOTALS		382.3	440.4	1487.1	499.0	547.2	581.4	714.6	2342.1	794.1	775.8	57	54	50

* INPUT Estimate

NET INCOME OF PUBLIC SYSTEMS SOFTWARE PRODUCTS COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Millions) 1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	GROWTH (Percent) 1987/1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
ADOBE SYSTEMS	30-Nov	1.2	1.0	3.6	1.6	2.0	2.3	2.7	8.6	3.6	4.5	140	138	127
ASHTON TATE	31-Jan	7.9	10.6	30.1	9.1	10.1	11.1	12.8	43.1	11.1	11.5	43	19	18
ALPNET *	31-Dec	-0.1	0.4	0.5	0.2	-1.1	-1.4	-4.7	-7.1[9]	-0.5	-1.0	-1551	-956	-63
BGS SYSTEMS	31-Jan	0.0	-0.2	0.4	0.0	0.2	0.2	0.2	0.5	0.5	0.5	24	1171	663
BOOLE & BABBAGE	30-Sep	0.3	0.4	1.3	0.5	0.5	0.6	3.9	5.6	0.9	0.8	340	294	66
COGNOS	28-Feb	1.9	1.4	6.0	1.8	1.5	1.2	-1.8	2.7	2.2	0.5	-55	-80	-18
COMPUTER ASSOC.	31-Mar	6.1	16.4	32.2	11.2	4.1	16.0	42.8	74.1[10]	33.8	16.9	130	195	231
CULLINET	30-Apr	-5.9	-4.9	-17.8[11]	-4.1	8.0	-5.8	-12.7	-14.6[12]	-20.5[13]	-5.3	18	-3506	-765
DUQUESNE SYS.	30-Sep	1.5	1.9	6.0	2.2	1.8	2.2	2.7	8.9	2.7	2.5	49	33	29
INFODATA SYS.	31-Dec	0.3	0.4	0.4	0.3	0.1	0.2	0.6	1.1	0.2	0.1	190	19	-21
INFORMIX S/W	31-Dec	0.7	0.9	2.5	0.8	1.2	1.9	2.0	5.9	2.5	1.5	141	108	102
INTELLICORP	30-Jun	-0.9	-0.5	2.8	0.1	-2.7	-0.6	-1.0	-4.3[14]	-0.3	0.4	-251	72	104
MICROSOFT	30-Jun	15.8	19.7	57.7	19.1	17.3	21.3	35.3	92.9	37.3	30.0	61	83	85
MORINO	30-Jun	1.1	2.0	5.1	2.3	0.8	1.6	3.0	7.7	2.5	1.5	49	36	28
ON-LINE S/W	31-May	0.7	1.0	3.4	1.5	1.7	1.0	1.7	5.9	1.9	-4.0	75	-109	-166
ORACLE	31-May	0.1	3.0	7.8	4.8	7.6	3.2	7.7	23.3	13.0	19.1	198	157	158
PANSOPHIC	30-Apr	3.6	6.2	16.0	4.6	2.6	4.2	7.7	19.1	5.7	0.9	20	6	-9
SAGE SOFTWARE	30-Apr	0.4	0.6	1.6	0.7	0.2	0.3	0.6	1.8	0.4	0.1	15	-31	-48
SYNERCOM TECH.	31-Oct	-0.1	-1.9	0.5	-1.0	-0.5	-2.2	0.1	-3.6[15]	-0.8	-0.5	-785	65	15
VM SOFTWARE	31-Dec	0.8	2.5	4.9	0.8	0.1	0.2	2.3	3.4	0.6	1.3	-31	25	111
TOTALS		35.6	60.7	164.8	56.4	55.6	57.1	105.9	275.0	96.8	81.3	67	64	59

* INPUT Estimate

Footnotes

1. ALPNET's revenue includes the results of several acquisitions.

2. Computer Associates' revenue included results of the ISSCO and Software International acquisitions made during the fourth quarter.

3. Computer Associates' revenue included results of the UCCEL acquisition.

4. Cullinet's revenue reflects the 1987 business combination with Distribution Management Systems.

5. Informix Software's revenue growth reflects the acquisition of Innovative Software.

6. On-Line Software's revenue reflected the products acquired from Martin Marietta in October, 1986.

7. Oracle's improved revenue in the past two quarters reflects an increased number of installations as Oracle increased the number of computers and operating systems on which ORACLE operates. Some of the increase in revenue was due to unbundling of products.

8. Pansophic's increased revenue reflects the Professional Computer Resources and Remote Data Systems acquisitions, as well as an improvement in domestic operations, especially product and license revenue contributions by Telon, Easytrieve Plus, and Easytrieve Plus PC.

9. ALPNET's losses reflected a decrease in computer systems sales, which reportedly resulted from management's decision to shift the focus in the translation market from that of a software provider to that of a full translation services provider. In addition, the loss included increased costs associated with advertising, the company's acquisition strategy, and relocation of headquarters.

10. Computer Associates see footnote 3.

11. Cullinet Software's first fiscal quarter loss included a $7 million write-off of assets acquired from Computer Pictures. The company attributes its remaining losses to decreased revenues due to a sluggish mainframe market and increased competition.

12. Cullinet's loss during its third quarter of fiscal 1988 included a $13.7 million pretax charge for the write-down of outdated mainframe software purchased a year or more ago, as well as the adjustment of accounts receivable and some notes reflecting restructured arrangements with overseas sales representatives.

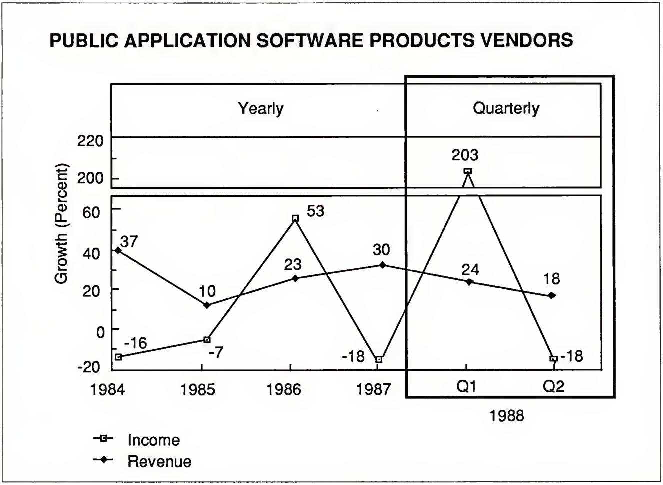
13. Cullinet had a loss before taxes of $24.0 million, which included a one-time charge of $14.8 million for a restructuring of the company. The realignment of functions within the organization included a divestiture of the remaining assets of Computer Pictures Corp., and a reduction in force of approximately 400 employees.

14. Intellicorp's loss during its fourth fiscal quarter included write-offs of obsolete hardware inventory and costs associated with a reduction in staff.

15. Synercom Technology's loss resulted from costs associated with the company's movement out of selling workstations, in addition to a major reorganization of management.

VI

Public Application Software Products Vendors


PUBLIC APPLICATION SOFTWARE PRODUCTS VENDORS
Yearly
Quarterly
Growth (Percent)
220
200
60
40
20
0
-20
37
10
23
30
24
18
-16
-7
53
-18
203
-18
1984
1985
1986
1987
Q1
Q2
1988
Income
Revenue

VI

Application Software Products Trends Analysis

Note that Cadence Design is the new name for the company formed as a result of the ECAD and SDA merger. Innovative Software was removed from the list of public application software products companies due to its acquisition by Informix Software.

Growth for the public application software products companies has been high during the past few years. However, it seems to have slowed during the past few quarters. Revenue growth during 1986 and 1987 was 23% and 30%, respectively. Growth during second quarter 1988 was 18%.

As in other segments of the information services industry, some growth in the application software products segment has resulted from acquisitions, as well as from increased product installations and changes in pricing strategies. Cadence Design, Lotus Development, Policy Management, and Software Publishing have been the major contributors to revenue growth in this segment.

Growth in net income was extremely high (over 200%) during first quarter 1988. This growth rate stems primarily from the fact that MSA took a $73 million loss during first quarter of 1987, which resulted in an overall decrease in earnings that quarter.

The decrease in net income for the group (-18%) during second quarter of 1988 was also due to MSA's 1987 financial results. The company reported earnings during second quarter 1987 of $19 million, while earnings reported for second quarter 1988 were $6 million.

REVENUES OF PUBLIC APPLICATION SOFTWARE PRODUCTS COMPANIES

COMPANY NAME	FISCAL YEAR END	REVENUE ($ Millions) 1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	GROWTH (Percent) 1987/1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
AMERICAN S/W	30-Apr	10.8	13.1	44.2	12.8	11.2	13.5	15.2	52.7	14.3	15.3	19	21	23
AUTODESK	31-Jan	13.7	15.5	52.4	17.3	18.8	20.2	23.0	79.3	25.8	27.3	51	47	47
COMSHARE	30-Jun	16.8	17.4	68.0	17.4	18.6	17.3	21.7	75.0	19.5	20.4	10	15	11
CYBERTEK	31-Mar	6.4	6.5	26.9	6.4	5.2	5.9	5.4	22.8	5.8	5.2	-15	-9	-5
CADENCE DESIGN	31-Dec	4.2	4.2	16.6	4.9	5.7	6.1	7.1	23.9	7.3	15.2	44	99	111
GENESSEE *	31-May	0.3	0.4	1.2	0.2	0.2	0.2	0.3	1.0	0.3	0.3	-15	8	25
HEALTH INFO. *	30-Jun	0.7	0.8	2.5	0.7	0.6	0.6	0.7	2.5	0.5	0.5	3	-17	-21
HOGAN SYSTEMS	31-Mar	10.8	10.9	41.0	13.4	11.4	10.4	12.1	47.2	12.8	10.8	15	0	-5
INFO. SCIENCE	30-Apr	4.2	3.8	16.2	3.7	3.2	2.8	2.8	12.4	2.8	2.9	-23	-21	-18
LOTUS DEVELOP.	31-Dec	65.6	81.8	282.9	84.8	94.0	101.2	115.6	395.6	117.3	122.1	40	36	34
MACNEAL-SCHW.	31-Jan	7.0	7.4	27.1	7.8	8.5	8.6	9.7	34.5	9.7	10.1	28	25	22
MSA	31-Dec	38.8	77.7[1]	193.4	53.4	82.6	56.8	65.7	258.5	62.9	68.9	34	-8	-3
MICROPRO INTL	31-Aug	10.5	8.4	36.3	9.2	11.4	12.3	10.3	43.2	10.1	10.0	19	5	-3
POLICY MGMT	31-Dec	39.7	43.6	150.6	41.5	43.6	46.2	48.8	180.1[2]	50.0	54.1	20	19	22
SCIENTIFIC S/W	31-Dec	5.8	8.5	28.3	6.5	6.7	5.8	8.5	27.6	4.7	5.5	-2	-14	-23
SILVAR-LISCO	31 Mar	6.3	6.1	24.5	7.7	5.9	6.1	6.2	25.9	5.9	5.9	5	-8	-13
SOFTWARE PUB.	30-Sep	6.4	8.7	25.4	10.9	8.3	10.7	14.0	43.9	15.2	20.0	73	76	84
S/W SVC AMER.	31-May	0.5	0.8	2.3	1.2	1.8	2.9	1.3	7.2	2.1	1.5	209	31	21
STOCKHLDR SYS.	31-Mar	3.4	3.3	12.5	4.8	4.1	5.0	5.2	19.0	5.8	4.3	52	25	14
SYSTEM SOFT.	31-Oct	5.3	5.0	17.7	6.4	8.6	11.0	11.5	37.5[3]	14.0	14.8	112	102	93
TIMBERLINE S/W	31-Dec	1.3	2.1	7.2	1.9	1.9	1.8	2.1	7.7	2.2	2.1	6	7	12
TOTALS		258.3	325.9	1077.0	313.0	352.1	345.3	387.1	1397.5	388.9	417.2	30	20	21

* INPUT Estimate

NET INCOME OF PUBLIC APPLICATION SOFTWARE PRODUCTS COMPANIES

		NET AFTER TAX INCOME ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
AMERICAN S/W	30-Apr	2.1	2.9	8.6	2.1	1.3	2.5	3.9	9.7	2.7	3.2	14	57	76
AUTODESK	31-Jan	3.0	3.5	11.6	3.9	4.8	5.4	6.4	20.5	7.2	7.6	77	74	70
COMSHARE	30-Jun	0.5	0.7	1.1	0.4	0.6	-0.9[4]	1.4	1.5	0.8	0.7	45	72	43
CYBERTEK	31-Mar	0.4	0.5	2.4	0.3	-0.3	0.2	0.3	0.5	0.1	-0.2	-79	-62	-423
CADENCE DESIGN	31-Dec	0.3	0.4	1.5	0.3	0.8	0.9	1.1	3.2	1.1	1.5	111	141	130
GENESSEE *	31-May	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-23	18	33
HEALTH INFO. *	30-Jun	-0.4	-0.4	-7.3	-0.5	-1.3	-0.5	-0.5	-2.8	-0.7	-0.5	61	23	35
HOGAN SYSTEMS	31-Mar	2.0	2.9	1.8	3.4[5]	1.9	-2.8	1.9	4.3	1.1	-5.9[6]	143	-135	-190
INFO. SCIENCE	30-Apr	-3.2	-0.3	-8.8[7]	-0.5	-0.9	-2.7	-0.6	-4.7	-0.6	-0.3	47	11	36
LOTUS DEVELOP.	31-Dec	9.5	15.6	48.3	13.7	16.3	19.1	22.9	72.0	18.3	17.3	49	28	19
MACNEAL-SCHW.	31-Jan	1.8	1.9	7.0	2.0	2.2	2.4	2.5	9.1[8]	2.2	2.2	29	13	5
MSA	31-Dec	0.3	13.0	18.7	-72.6[9]	18.7	-8.4	-8.7	-71.0	2.4	5.8	-479	99	115
MICROPRO INTL	31-Aug	-0.3	0.0	-1.8	0.5	1.6	0.8	0.0	2.9	-2.2[10]	-1.8	258	-288	-291
POLICY MGMT	31-Dec	3.6	3.9	13.8	3.9	4.0	4.4	4.7	17.1	4.8	4.8	24	21	21
SCIENTIFIC S/W	31-Dec	0.1	-0.7	-13.9[11]	0.1	0.2	0.0	0.3	0.5	-1.6	-1.5	104	-446	-1503
SILVAR-LISCO	31 Mar	0.0	-0.2	0.1	0.4	-4.8	-0.8	0.1	-5.1[12]	0.0	0.0	-4540	104	101
SOFTWARE PUB.	30-Sep	0.5	1.2	1.3	1.6	0.9	1.5	2.5	6.5	2.8	3.9	390	149	172
S/W SVC AMER.	31-May	0.1	0.3	-0.2	0.2	0.0	0.1	0.2	0.5	0.0	-0.1	315	-80	-154
STOCKHLDR SYS.	31-Mar	0.7	0.6	2.2	0.8	0.5	1.0	0.9	3.2	1.0	0.4	41	22	8
SYSTEM SOFT.	31-Oct	0.7	0.5	1.9	0.7	1.0	1.1	1.1	3.9	1.0	1.6	103	65	52
TIMBERLINE S/W	31-Dec	-0.2	0.3	-0.2	0.1	0.0	0.1	0.2	0.4	0.1	0.1	372	13	93
TOTALS		21.4	46.5	88.2	-39.3	47.6	23.3	40.7	72.3	40.6	38.8	-18	119	849

* INPUT Estimate

Footnotes

1. MSA's revenues reflect its acquisition of Comserv.

2. Policy Management Systems results include several acquisitions, including Allied Research, Oregon and Consolidated Insurance Services, Aavant Health Management Group, Jensen and More, and Nationwide Computer Services.

3. System Software Associates results include the acquisitions of ASE Services and Outlook Inc.

4. Comshare's loss was attributed to lower than expected sales by the company's European subsidiary, Comshare Ltd.

5. Hogan Systems' results were attributed to increases in all revenue categories, coupled with cost control measures implemented during the year. In addition, Hogan acquired Systems 4, Inc.

6. Hogan Systems' loss included a non-running write-off of $3.6 million associated with the suspension of development efforts on a micro-to-mainframe communications software product.

7. Information Science's loss in 1986 resulted from decreased revenue from integrated payroll/personnel/benefits software due to the tax reform announcement and due to increased operating reserves and revalued capitalized software. The loss for the quarter ended October 1986 included a $1.1 million provision for restructuring costs.

8. MacNeal-Schwendler acquired A.O. Smith's subsidiary, CAD COMP.

9. MSA's 1987 results were due to a change in accounting methods used, including a change in revenue recognition.

10. Micropro's loss was attributed primarily to higher product costs, significant investments in customer service, restructuring costs, and the establishment of reserves for inventory obsolescence and potential tax liabilities.

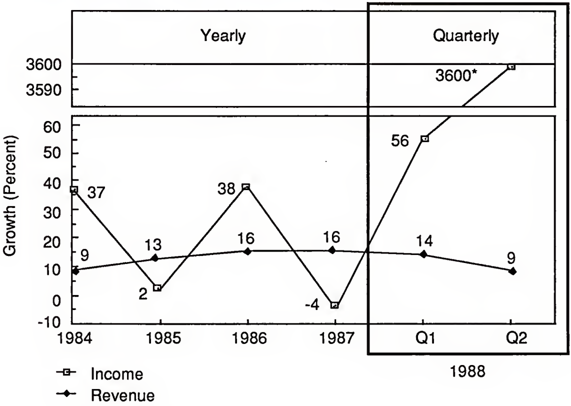
11. Scientific Software's loss included net charges of $13 million for the write-down of assets and a provision for losses on accounts receivable.

12. Silvar-Lisco's results were restated to reflect a change in revenue recognition methods and include the cumulative effect on prior years.

VII

Public Government Professional Services Vendors

PUBLIC GOVERNMENT PROFESSIONAL SERVICES VENDORS



* Due to $18.3 million loss taken by BBN during second quarter calendar year 1987.

VII

Government Professional Services Trends Analysis

Note that BDM International was removed from INPUT's list of public companies providing professional services to the government. The company was acquired by Ford Aerospace in July 1988.

Companies in this group have experienced revenue growth rates that are relatively low compared to other groups in the information services industry. During both 1986 and 1987, the growth rate was 16%. Overall growth during first and second quarters 1988 were 14% and 9%, respectively.

American Management Systems, Computer Sciences, and Telos have contributed most significantly to the overall growth of this group.

Earnings growth for the government professional services group has been sporadic, varying widely from one year to the next. Annual growth in 1986 was 38% for the group. Overall earnings fell 4% during 1987.

During first quarter 1988, earnings grew 56% over the prior-year period. During second quarter, earnings grew an astronomical 3600%. This growth rate represents an improvement over second quarter 1987, when Bolt Beranek & Newman took an $18 million loss, which resulted in almost no earnings for the group as a whole.

REVENUES OF PUBLIC GOVERNMENT PROFESSIONAL SERVICES COMPANIES

		REVENUE ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
AMER. MGMT SYS.	31-Dec	35.9	37.1	135.5	38.1	41.0	44.7	50.5	174.3	50.1	50.8	29	30	28
BBN	30-Jun	48.6	53.7	196.6	59.1	72.4[1]	70.2	78.1	279.8	79.5	77.4	42	27	19
C.A.C.I.	30-Jun	26.1	29.2	106.8	29.7	33.8	34.1	33.7	131.3	33.7	36.7	23	12	11
COMPUTER DATA	30-Jun	11.8	13.0	51.8	13.3	14.8	16.2	16.8	61.1	16.4	16.6	18	21	17
CSC	01-Apr	249.4	257.5	977.7	290.5[2]	274.6	281.3	287.3	1133.7	309.1	299.3	16	9	8
DYNAMICS RES.	25-Dec	17.8	22.4	75.2	18.4	21.5	21.0	30.6	91.5	20.4	22.0	22	17	6
INTERMETRICS	28-Feb	12.7	11.6	46.5	11.4	11.3	12.2	12.0	47.0	11.8	12.8	1	7	8
LOGICON	31-Mar	51.6	49.1	204.5	53.8	47.9	53.1	56.7	211.5	61.3	56.8	3	16	16
SOFTECH	31-May	10.7	10.5	45.8	9.9	12.4	10.9	12.3	45.5	12.4	12.2	-1	12	10
STERLING S/W	30-Oct	48.9	45.3	209.6	46.0	46.8	52.1	52.1	197.0	50.2	42.6	-6	5	0
TELOS	31-Mar	19.5	20.3	76.9	20.5	22.0	24.1	25.8	92.4	27.4	27.3	20	28	29
TOTALS		533.2	549.7	2127.0	590.6	598.6	619.8	656.0	2465.0	672.3	654.5	16	14	12

NET INCOME OF PUBLIC GOVERNMENT PROFESSIONAL SERVICES COMPANIES

		NET AFTER TAX INCOME ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
AMER. MGMT SYS.	31-Dec	1.5	1.7	5.2	1.1	1.3	1.9	3.3	7.6	0.9	1.7	45	45	9
BBN	30-Jun	3.2	3.4	12.9	3.7	-18.3[3]	4.1	4.3	-6.1	4.5	5.1	-147	225	166
C.A.C.I.	30-Jun	0.5	0.7	1.7	0.6	0.9	1.0	1.0	3.6	1.0	1.0	104	34	29
COMPUTER DATA	30-Jun	0.4	0.4	1.8	0.4	0.6	0.8	0.9	2.7	0.7	0.7	49	61	39
CSC	01-Apr	7.2	7.6	30.3	10.8[4]	9.5	9.9	10.3	40.5	13.9	11.7	34	29	26
DYNAMICS RES.	25-Dec	0.6	0.8	2.5	0.7	0.8	0.9	1.4	3.7	0.7	0.6	52	20	-11
INTERMETRICS	28-Feb	0.0	0.2	0.8	0.0	0.4	0.5	0.6	1.5	0.7	0.5	84	193	162
LOGICON	31-Mar	2.2	2.2	9.3	-0.7[5]	2.3	2.5	2.5	6.5	1.8	2.6	-30	81	182
SOFTECH	31-May	0.5	0.5	2.2	-1.6[6]	0.3	0.4	0.3	-0.7	0.1	0.2	-132	170	122
STERLING S/W	30-Oct	-2.5[7]	1.9	3.5	1.2	1.7	1.3	2.4	6.6	1.4	-5.5	88	-136	-244
TELOS	31-Mar	0.7	0.7	2.2	0.5	1.1	1.0	1.1	3.8	0.4	0.5	69	-13	-45
TOTALS		14.2	20.0	72.5	16.7	0.5	24.2	28.2	69.7	26.1	19.1	-4	97	162

Footnotes

1. Bolt Beranek and Newman's revenue growth reflects the fiscal 1987 acquisitions of Delta Graphics, Inc. and Network Switching Systems, Inc.

2. Computer Sciences' principal growth area has been in federal systems and services, although revenue from all of its business sectors has grown.

3. Bolt Beranek and Newman's loss included a $22.4 million charge for development costs related to the acquisition of Network Switching Systems, Inc. and the issuance of stock warrants in conjunction with the formation of two research-and-development limited partnerships.

4. Computer Sciences' fiscal 1987 earnings increase reflected improved operating margins and a decrease in corporate charges as a percent of sales.

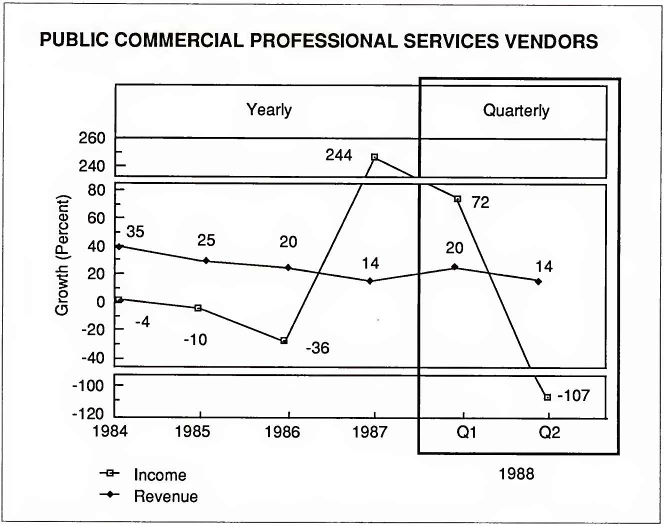
5. Logicon's loss was due to its decision to provide an additional $5 million reserve for contract loss against fiscal 1987 earnings.

6. SofTech's loss included a $2.9 million write-off of a lease commitment related to previously divested SofTech Microsystems.

7. Sterling Software's loss included a one-time charge-against-earnings of $84.5 million for prepayment on debt.

VIII

Public Commercial Professional Services Vendors


PUBLIC COMMERCIAL PROFESSIONAL SERVICES VENDORS
Yearly
Quarterly
Growth (Percent)
260
240
80
60
40
20
0
-20
-40
-100
-120
244
72
35
25
20
14
20
14
-4
-10
-36
-107
1984
1985
1986
1987
Q1
Q2
1988
Income
Revenue

VIII

Commercial Professional Services Trends Analysis

Note that AGS Computers was purchased by Nynex Corporation and removed from our list of public commercial professional services companies. Data Architects was also removed from the list due to its acquisition by Logica (U.K.) effective June 1988.

With the exception of first quarter 1988, growth for the commercial professional services group has been low during the past year. During first quarter 1988, the group experienced a 20% increase in revenues from the prior-year period. This growth resulted from a large increase made by Computer Task Group and many smaller increases from other companies.

During second quarter 1988, the commercial professional services group experienced a loss for the group as a whole, although a less substantial one than that experienced during fourth quarter 1987. The loss was due mostly to the results of 202 Data Systems and Systems and Computer Technology. 202 Data Systems has reported that the company is currently going through a process of liquidation.

REVENUES OF PUBLIC COMMERCIAL PROFESSIONAL SERVICES COMPANIES

		REVENUE ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
202 DATA SYS.	31-Oct	2.3	0.1	3.3	0.5	0.6	0.7	0.1	1.9	1.0	0.3[1]	-44	22	22
ACT	31-Dec	4.4	3.4	15.2	3.2	3.7	2.1[2]	2.0	11.0	1.7	2.3	-28	-41	-42
ANALYSTS INTL	30-Jun	12.0	13.9	49.6	15.3	15.5	16.1	17.1	64.0	18.3	18.6	29	21	20
COMP. HORIZONS	28-Feb	14.4	14.6	56.0	15.3	16.4	17.5	19.5	68.7	19.0	19.8	23	26	22
COMP. TASK GROUP	31-Dec	36.5	38.7	143.4	39.3	41.1	43.2	46.4	170.1	50.4	54.2	19	27	30
CONTINUUM	31-Mar	14.1	14.5	54.9	15.6	14.5	18.4	15.4	63.9	17.8	16.8	16	12	15
KEANE	31-Dec	10.4	10.5	40.4	10.1	10.1	10.9	12.4	43.5	13.7	14.6	8	32	40
SYS.& COMP. TECH	30-Sep	10.2	10.1	40.9	9.1	13.9	9.0	9.7	41.6	10.0	8.5	2	-15	-19
TECHNALYSIS	31-Dec	3.5	3.7	13.5	3.6	3.5	3.8	3.7	14.6	4.2	4.4	8	15	22
TEKNOWLEDGE	30-Jun	5.4	5.5	19.2	4.6	5.0	4.4	3.8	17.8	3.5	2.6	-7	-34	-36
TOTALS		113.2	115.0	436.5	116.6	124.3	126.0	130.1	497.0	139.6	142.1	14	16	17

NET INCOME OF PUBLIC COMMERCIAL PROFESSIONAL SERVICES COMPANIES

		NET AFTER TAX INCOME ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/ 1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
202 DATA SYS.	31-Oct	0.3	0.1	0.6	0.1	0.2	0.3	0.0	0.6	0.7	-2.9[3]	-9	-692	-909
ACT	31-Dec	0.2	0.1	0.7	0.1	0.0	0.0	-0.3	-0.1	-0.3[4]	-0.1	-109	-399	-338
ANALYSTS INTL	30-Jun	-0.9	0.7[5]	-1.1	0.7	0.9	0.7	0.7	3.1	0.8	0.8	380	0	-1
COMP. HORIZONS	28-Feb	0.5	0.6	2.2	0.5	0.5	0.6	0.7	2.3	0.7	0.7	6	29	39
COMP. TASK GROUP	31-Dec	1.2	1.3	5.1	1.4	1.1	1.3	1.2	5.1	1.7	1.7	1	20	32
CONTINUUM	31-Mar	0.6	0.9	0.9	1.0	0.5	1.7	1.2	4.5	-1.0[6]	0.6	426	-68	-126
KEANE	31-Dec	0.0	0.2	0.3	0.3	0.2	0.1	0.3	0.9	0.6	0.7	212	119	169
SYS.& COMP. TECH	30-Sep	-4.3	-0.5	-15.1[7]	-2.2	3.2	0.4	-0.6	0.7	0.2	-1.6	105	-536	-252
TECHNALYSIS	31-Dec	0.3	0.3	1.1	0.3	0.3	0.3	0.4	1.3	0.4	0.4	26	32	35
TEKNOWLEDGE	30-Jun	0.3	0.5	0.9	-0.7	-2.9	-1.3	-6.7	-11.7[8]	-1.1	-0.6	-1458	-169	53
TOTALS		-1.8	4.3	-4.6	1.5	4.0	4.2	-3.1	6.7	2.7	-0.3	244	-108	-58

Footnotes

1. 202 Data Systems is currently in the process of liquidation.

2. ACT's decreased revenue represents a transfer of its software division to InterACT, a joint venture with LSI Logic.

3. 202 Data Systems see footnote 1.

4. ACT's loss results from the recognition of a loss on the company's interest in its joint venture with LSI Logic, in addition to a provision covering possible future losses that may result from a debtor being placed into receivership and from a client's default on an agreement with ACT's wholly-owned subsidiary, Creative Socio-Medics.

5. Analysts International attributed the improvement in net income to cost-cutting efforts and an infusion of new business. In addition, because of income tax credit carry-forwards and a loss for the first part of the year, a tax credit was applied to pretax income during the fourth quarter.

6. Continuum's loss was due primarily to costs associated with litigation initiated by the company and costs associated with the company's move to new facilities.

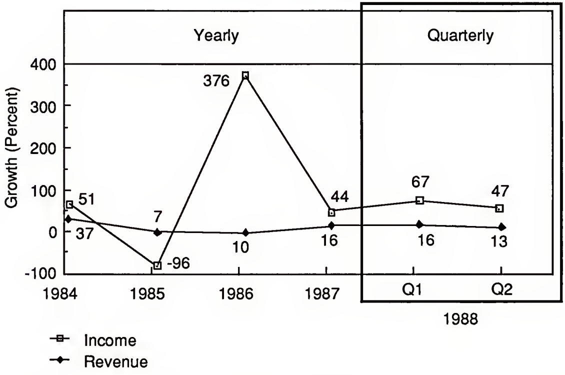
7. Systems and Computer Technology's first-quarter loss included a $14.9 million charge to operations for a class action litigation settlement, legal fees, and related expenses. This result largely accounted for the decrease in net income of the whole sector in first quarter 1986. The company's remaining losses were attributed to lower than expected revenues, particularly from new sales, due to the litigation and a changing marketplace.

8. Teknowledge's fiscal 1987 losses were due to lower than expected software product revenue, increased marketing and sales expenses, a $1.1 million write-off of computer hardware and capitalized software costs, and approximately $200,000 of nonrecurring expenses.

IX

Public Turnkey Systems Vendors

PUBLIC TURNKEY SYSTEMS VENDORS



IX

Turnkey Systems

Computervision has been removed from our list of public turnkey systems companies, because it was acquired by Prime Computers in February 1988. Its removal will change growth rates which have previously been reported for the group.

Growth in revenues for turnkey systems companies has fluctuated somewhat during the past year. During third and fourth quarters 1987, the growth rates were 11% and 18%, respectively. During first and second quarters 1988, the growth rates were 16% and 13%.

The most significant contributors to the growth of this segment of the information services industry during second quarter 1988 were ASK Computer Systems, Computer Consoles, Gerber Scientific, Intergraph, Interleaf, and Reynolds and Reynolds. These companies' high growth rates were offset by decreases in revenues from several other turnkey systems companies in the group.

Growth in net income has improved for the turnkey systems group during the past two years and growth rates have been relatively consistent, ranging from 43% to 86% during the past year. Prior to this time, growth rates fluctuated from -136% to 394% within a one year period.

Earnings growth was primarily due to the results of two companies. First, Daisy Systems took a $10.5 million loss during second quarter 1987. During second quarter 1988, the company earned $1.7 million. Second, Intergraph increased net income from $16.8 million to $23.4 million during the same period.

REVENUES OF PUBLIC TURNKEY SYSTEMS COMPANIES

		REVENUE ($ Millions)										GROWTH (Percent)		
COMPANY NAME	FISCAL YEAR END	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	1988 Q1	1988 Q2	1987/1986 %(+/-)	Last 3 Rolling Quartrs	Last 2 Rolling Quartrs
ASK COMP. SYS.	30-Jun	20.3	21.2	85.7	25.4	31.4	26.6	32.3	115.8	37.0	46.5	35	49	47
AUTO-TROL TECH.	31-Dec	15.4	16.5	62.3	18.0	18.0	17.8	22.2	76.0	19.2	19.0	22	15	6
AVANT-GARDE	30-Apr	4.6	5.0	18.1	3.3	5.6	4.7	3.8	17.4	2.6	3.8	-4	-26	-27
BARRISTER INFO.	31-Mar	8.2	8.6	33.2	11.0	8.3	9.3	9.3	37.8	10.9	8.4	14	3	0
C3	31-Mar	21.4	25.3	73.1	24.9	24.5	24.3	35.3	108.9	17.9[1]	14.6	49	-9	-34
CERNER	31-Dec	5.4	7.2	17.4	5.6	7.3	8.5	12.3	33.6	11.4	10.0	94	68	67
COMPTEK RES.	31-Mar	8.0	9.2	32.1	10.1	10.1	10.5	12.8	43.6	14.7	12.0	36	34	32
COMPTR CONSOLES	31-Dec	34.0	41.3[2]	129.6	35.6	35.8	37.8	39.2	148.4	39.2	42.7	15	7	15
COMP. DESIGNED	31-Aug	0.9	0.7	3.4	0.7	1.0	1.0	0.5	3.3	0.7	0.9	-4	-12	-8
COMPUTRAC	31-Jan	2.7	2.0	9.8	2.0	2.2	1.6	1.6	7.4	1.4	3.0	-24	-2	6
DAISY SYSTEMS	30-Sep	25.0	25.4	96.0	23.8	24.1	27.6	28.0	103.5	28.6	29.9	8	18	22
GERBER SCIENTIF.	30-Apr	56.3	53.4	213.0	59.8	61.8	64.4	68.8	254.8	68.9	69.5	20	18	14
HBO	31-Dec	36.0	40.1	154.8	37.4	43.7	45.0	49.1	175.2	40.7	47.5	13	13	9
INTERGRAPH	31-Dec	151.0	157.4	605.7	128.5[3]	160.2	157.1	195.3	641.1	174.7	203.5	6	29	31
INTERLEAF	31-Mar	8.6	10.4	32.2	11.8	10.5	12.7	17.0	52.1	18.1	17.1	62	60	58
ISC SYSTEMS	30-Jun	40.2	34.8[4]	162.4	43.6	49.9	44.1	41.8	179.4	42.4	42.4	11	-1	-9
LIBRA SYSTEMS	31-Oct	1.3	1.1	4.9	1.0	0.8	1.0	0.6	3.3	0.6	0.2[5]	-31	-52	-56
PENTA SYSTEMS *	31-Dec	5.5	5.1	21.6	4.4	5.2	6.5	5.9	22.0	4.4	5.0	2	5	-1
REYNOLDS & REYN.	30-Sep	133.6	129.0	452.5	141.6	140.4	151.7	138.4	572.1	151.5	151.7	26	7	8
SYS. INTEGRATORS	30-Sep	19.2	16.1	69.4	13.6	13.5	15.7	15.2	57.9	16.9	17.3	-17	15	26
TENERA	31-Dec	9.6	9.9	35.3	9.8	9.5	8.5	8.3	36.1	8.5	8.0	2	-15	-15
TRIAD SYSTEMS	30-Sep	32.0	27.2	111.2	26.4	28.4	35.2	26.6	116.6	30.3	30.7	5	7	11
TOTALS		639.2	646.6	2423.5	638.2	692.0	711.6	764.6	2806.4	740.7	783.7	16	16	15

* INPUT Estimate

NET INCOME OF PUBLIC TURNKEY SYSTEMS COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Millions) 1986 Q3	1986 Q4	1986 TOTAL	1987 O1	1987 O2	1987 Q3	1987 Q4	1987 TOTAL	1988 O1	1988 Q2	GROWTH (Percent) 1987/ 1986 %(+/-)	Last 3 Rolling Ouartrs	Last 2 Rolling Ouartrs
ASK COMP. SYS.	30-Jun	1.8	2.0	7.1	1.7	2.6	1.9	2.3	8.4	2.6	4.0	17	42	56
AUTO-TROL TECH.	31-Dec	-0.7	-3.0	-7.0	0.5	0.3	0.4	0.9	2.0	0.6	0.4	129	185	27
AVANT-GARDE	30-Apr	-0.9	-0.5	-4.5	-4.2	0.1	0.1	-0.4	-4.4	-2.3	-1.7	3	7	4
BARRISTER INFO.	31-Mar	0.0	0.3	1.0	1.2	0.1	0.4	-0.1	1.6	-0.2	-0.9[6]	55	-175	-186
C3	31-Mar	0.0[7]	1.7	1.9	2.0	2.3	2.5	7.9[8]	14.7	2.0	0.2	682	70	-48
CERNER	31-Dec	0.9	1.4	2.3	0.7	0.7	1.1	1.6	4.0	1.0	1.1	76	32	54
COMPTEK RES.	31-Mar	0.2	0.3	0.7	0.4	0.3	0.4	0.4	1.4	0.1	0.3	105	-17	-39
COMPTR CONSOLES	31-Dec	1.6	1.9	-3.0	0.8	0.9	0.6	9.0[9]	11.3	1.9	3.1	479	287	191
COMP. DESIGNED	31-Aug	-0.1	0.0	0.1	0.0	0.3	0.0	-0.1	0.3	0.0	0.0	133	-130	-100
COMPUTRAC	31-Jan	0.6	0.5	2.0	0.2	0.5	-1.0[10]	0.0	-0.4	0.3	0.7	-121	-7	64
DAISY SYSTEMS	30-Sep	-0.9	1.3	-6.1	-4.9[11]	-10.5[12]	0.5	1.0	-14.0	1.3	1.7	-129	128	119
GERBER SCIENTIF.	30-Apr	4.8	5.2	19.7	6.4	6.5	7.5	7.7	28.0	7.9	7.6	42	29	21
HBO	31-Dec	0.9	1.0	-3.6	0.8	2.4	3.4	6.7[13]	13.3	1.0	2.7	469	148	15
INTERGRAPH	31-Dec	15.5	19.5	70.4	10.0	16.8	18.4	24.7	69.9	17.1	23.4	-1	41	51
INTERLEAF	31-Mar	-0.3	0.4	-0.8	0.6	0.5	1.0	3.0	5.2	2.4	0.1	749	260	113
ISC SYSTEMS	30-Jun	2.8	0.0	10.8	1.1	2.6	2.2	2.2	8.1	2.1	1.7	-25	60	3
LIBRA SYSTEMS	31-Oct	-0.3	0.0	-0.1	-0.2	-0.1	0.2	-0.4	-0.5	-0.4	-0.1	-423	-226	-80
PENTA SYSTEMS *	31-Dec	0.4	-0.3	0.6	-0.3	-1.7[14]	0.4	0.1	-1.4	-0.5	-1.0	-330	39	23
REYNOLDS & REYN.	30-Sep	7.0	4.5	23.4	5.0	5.8	5.9	2.7	19.5	1.1	1.4	-17	-66	-77
SYS. INTEGRATORS	30-Sep	3.0	1.9	10.0	0.6	0.7	0.8	1.6	3.8	1.3	1.8	-62	43	128
TENERA	31-Dec	-1.4[15]	1.1	0.9	2.2	2.4	2.2	2.1	8.9	2.1	1.8	927	5	-15
TRIAD SYSTEMS	30-Sep	1.5	0.8	3.6	0.9	1.2	3.6	1.3	6.9	1.3	2.4	92	75	81
TOTALS		36.6	40.0	129.3	25.6	34.4	52.3	74.2	186.5	42.7	50.7	44	68	56

* INPUT Estimate

Footnotes

1. C3 revenues and net income for the recent quarter were affected by reduced order volume on older contracts and by delays in awarding expected new contracts. The delays resulted from U.S. Government efforts to temporarily reduce spending to reach deficit goals. The company anticipates that it may continue to be affected by this cutback.

2. Computer Consoles reported that sales to its customers in the communications systems industry contributed to improved fourth-quarter revenues; sales included the shipment of $13 million in add-on directory assistance equipment for British Telecom.

3. Intergraph's shipments were down during the quarter, resulting in lower revenue and earnings due to a temporary shortage in the microprocessor used in the company's new workstation products.

4. ISC Systems reported that the reduced level of revenue for the quarter was the result of the rescheduling of installation dates for several major projects into the next quarter and reduced rates of add-on business to existing customers and distributors.

5. Libra Systems' decreased revenue was due to contract terminations.

6. Barrister Information Systems' losses were attributed primarily to continuing investment in product development.

7. C3's earnings situation reflected a charge of $7.6 million resulting from a contract settlement and a $3.7 million pretax gain on the sale of land.

8. C3's net income included again on investments of $5.6 million after taxes resulting from the initial public offering of common stock in the company's subsidiary, TEMPEST Technologies.

9. Computer Consoles' earnings improvement reflected its increased revenue level, as well as certain unusual and non-recurring items. Those included a gain from the sale of part of the company's lease portfolio and an extraordinary gain of $1.7 million from repurchases of its convertible subordinated debentures.

10. CompuTrac's results included a $1.1 million capital loss attributable to the disposal of the company's equity investments.

11. Daisy Systems' losses have been attributed to a weak capital spending environment, combined with delayed shipments, product transition, and severance payments resulting from layoffs.

12. Daisy Systems' loss included pretax charges of $5.1 million to cover fixed-asset and inventory write-downs associated with the introduction of the company's new product line and provisions for severance and other employee benefits related to staffing changes.

13. HBO's management attributes its excellent operating results in 1987 to a successful repositioning of itself during 1986, which included unbundling the pricing of its products, discontinuing the practice of discounting service agreements, selling its consulting business, reducing staff, and streamlining operations.

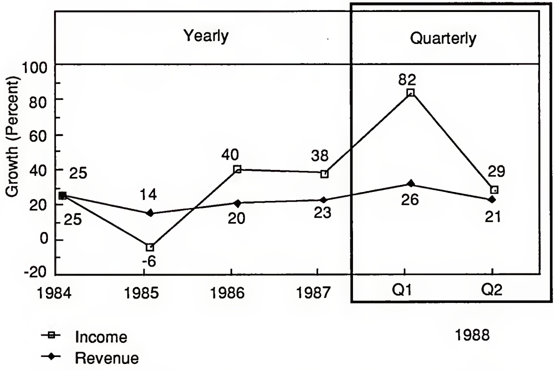
14. Penta Systems' loss included a $600,000 bad-debt charge related to a Harper & Row sale, $400,000 in reserve set up for previous recourse sales agreements, and $200,000 in inventory write-downs.

15. Tenera's results included a $2.3 million loss from discontinued wind energy operations.

X

Public Information Services Vendors

PUBLIC INFORMATION SERVICES VENDORS



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Public Information Systems Trends Analysis

Revenue growth for these public information services companies as a whole has been consistently high during the past two years, with growth rates of over 20% each quarter since third quarter 1986. Growth during first quarter 1988 was 26% over the prior-year period, while growth during second quarter was 21%.

The fastest growing groups of public information services companies are electronic information services and systems software products groups, followed by the application software products and processing/network services groups. Much growth in the industry is the result of acquisition and merger activity.

With the exception of first quarter 1987, growth in net income for the group has also been high each quarter during the past two years. The low growth experienced during first quarter 1987 was primarily due to the $73 million loss taken by MSA.

The systems software products and electronic information services companies have also achieved the highest growth in net income of all the groups. The extraordinarily high growth rate experienced by the government professional services group during second quarter 1988 stemmed from the $18 million loss taken by Bolt Beranek and Newman during second quarter of calendar year 1987.

PUBLIC INFORMATION SERVICES VENDORS' REVENUE GROWTH RATES (PERCENT)

		Q1	Q2	Q3	Q4	TOTAL
Processing/Network Services Companies	1984	19	20	14	16	17
	1985	15	16	16	16	16
	1986	16	16	17	18	17
	1987	15	14	15	18	16
	1988	19	18			
Electronic Information Services Companies	1984	91	79	102	46	76
	1985	29	30	22	30	28
	1986	34	49	40	43	42
	1987	38	33	31	29	32
	1988	49	43			
Systems Software Products Companies	1984	68	68	75	57	66
	1985	32	20	12	24	22
	1986	34	51	53	39	44
	1987	58	57	52	62	57
	1988	59	42			
Application Software Products Companies	1984	81	41	30	14	37
	1985	-2	22	6	12	10
	1986	29	17	24	24	23
	1987	31	39	34	19	30
	1988	24	18			
Government Professional Services Companies	1984	9	10	7	9	9
	1985	10	13	12	18	13
	1986	18	17	19	10	16
	1987	14	14	16	19	16
	1988	14	9			
Commercial Professional Services Companies	1984	51	37	30	26	35
	1985	31	26	25	18	25
	1986	11	19	22	28	20
	1987	16	16	11	13	14
	1988	20	14			
Turnkey Systems Companies	1984	39	47	33	29	37
	1985	14	10	4	1	7
	1986	3	6	17	14	10
	1987	17	16	11	18	16
	1988	16	13			
Total Information Services Companies	1984	29	29	23	20	25
	1985	15	16	12	14	14
	1986	16	19	23	20	20
	1987	23	24	22	25	23
	1988	26	21			

PUBLIC INFORMATION SERVICES VENDORS' NET INCOME GROWTH RATES (PERCENT)

		Q1	Q2	Q3	Q4	TOTAL
Processing/Network Services Companies	1984	-44	23	-135	998	-1
	1985	134	34	1016	21	107
	1986	-2	-30	3	55	5
	1987	37	94	48	8	39
	1988	-14	18			
Electronic Information Services Companies	1984	59	36	30	20	34
	1985	40	17	5	16	19
	1986	1	13	41	42	2
	1987	55	69	25	40	45
	1988	46	39			
Systems Software Products Companies	1984	63	31	79	62	61
	1985	64	59	2	38	37
	1986	56	43	55	41	48
	1987	43	91	60	74	67
	1988	72	46			
Application Software Products Companies	1984	225	-25	-27	-72	-16
	1985	-102	48	-15	155	-7
	1986	11835	-53	85	50	53
	1987	-391	611	9	-13	-18
	1988	203	-18			
Government Professional Services Companies	1984	29	29	15	67	37
	1985	31	30	1	-29	2
	1986	24	47	33	49	38
	1987	-14	-97	71	41	-4
	1988	56	3630			
Commercial Professional Services Companies	1984	-6	24	-37	14	-4
	1985	42	-40	23	-51	-10
	1986	-176	21	-23	165	-36
	1987	118	172	340	-173	244
	1988	72	-107			
Turnkey Systems Companies	1984	121	91	20	26	51
	1985	-74	-88	-76	-136	-96
	1986	8	155	154	394	376
	1987	6	21	43	86	44
	1988	67	47			
Total Information Services Companies	1984	28	37	-14	51	25
	1985	2	-8	16	-22	-6
	1986	13	7	43	94	40
	1987	3	76	48	33	38
	1988	82	29			