INPUT®

INFORMATION SERVICES VENDOR FINANCIAL WATCH

QUARTER 4, 1987
PERFORMANCE

Published by
INPUT
1280 Villa Street
Mountain View, CA 94041-1194
U.S.A.

Vendor Financial Watch

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 report 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, supplemented by INPUT's estimates (denoted by a * following a value) where data was not yet available from the company.

This issue covers 130 information services vendors.

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 includes each vendor's revenue and net income, reported on a calendar quarterly basis, and comparisons on performance provided 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 of August, September, and October is reported as third quarter.
- Quarterly revenue reported as of November, December, and January is reported as fourth quarter.

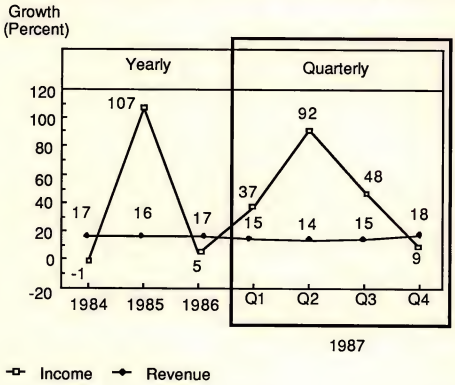
Fiscal year-end dates are provided in column 2 so that actual quarters for each company can be identified. Values that are followed by an asterisk (*) are INPUT estimates, pending release of the final results from the vendor. These are included so that the overall totals for each sector may be as complete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

INPUT®

PUBLIC PROCESSING/ NETWORK SERVICES VENDORS

3

PUBLIC PROCESSING/NETWORK SERVICES VENDORS



III Processing/Network Services Trends Analysis

Note that some of the companies previously appearing in the processing/network services group are no longer in this group. The majority of these companies appear in a new group—electronic information services vendors, described in Chapter IV. Comshare and Genesee were moved to the application software products group to reflect their current revenue distribution.

Anacomp was removed from our list of public processing/network services vendors due to its acquisition of DatagraphiX. Revenues from this acquisition, generated mostly from micrographics hardware, exceeded those of the parent. First Data Management was removed due to its acquisition by First Financial Management. In addition, FIserv and ISI Systems were added to the list of public processing/network services vendors.

Processing/network services include the following:

- Transaction services, which utilize vendor equipment and software at either the vendor's site or the customer's site and may be interactive or remote batch oriented.
- Utility services, which provide access to basic software tools enabling the users to develop their own problem solutions (e.g., language compilers, assemblers, DBMSs, sorts, and scientific library routines).
- Other processing services, including carry-in batch processing, computer output microfilm services (COM), data entry services, and disaster recovery/backup services.

Network services include the following:

- Value-Added Networks (VANs): network transmission facilities, augmented with computerized switching and features such as packet switching (store-and-forward message switching), electronic mail, terminal interface, and error detection and correction.
- Electronic Data Interchange (EDI): application to application electronic communication, based on established business document standards.

With the results of the electronic information services vendors reported separately, growth in revenue from processing/network services is below previously reported levels. Growth rates for this mature segment of the industry during 1985, 1986, and 1987 were 16%, 17%, and 15%, respectively.

Earnings for the group has been sporatic—107%, 5%, and 39% in 1985, 1986 and 1987. SEI's third quarter 1986 loss of $10.1 million contributed most to the drop in earnings growth in 1986. Although smaller in 1987, losses were incurred by more companies, including Comp-U-Check, Computer Language, National FSI, Pay-Fone, and Worlco Data.

Profitability for the processing/network services group in 1987 was approximately 9%.

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

		Q1	Q2	Q3	Q4	TOTAL
PROCESSING/NETWORK SERVICES VENDORS (33)	1983	12	-15	-25	-114	-34
	1984	-44	23	-135	998	-1
	1985	134	34	1016	21	107
	1986	-2	-30	3	55	5
	1987	37	92	48	9	39
ELECTRONIC INFORMATION SERVICES VENDORS (6)	1983	86	95	86	69	82
	1984	59	36	30	20	34
	1985	40	17	5	16	19
	1986	1	13	41	42	24
	1987	55	69	25	40	45
SYSTEMS SOFTWARE VENDORS (21)	1983	-9	23	24	469	148
	1984	63	31	79	62	61
	1985	64	59	2	38	37
	1986	56	43	55	41	48
	1987	40	86	59	78	66
APPLICATION SOFTWARE VENDORS (22)	1983	87	70	87	21	45
	1984	225	-25	-27	-72	-16
	1985	-102	48	-15	155	-7
	1986	11835	-53	85	50	53
	1987	-365	544	10	-12	-16
GOVERNMENT PROFESSIONAL SERVICES VENDORS (13)	1983	-11	-28	14	31	0
	1984	29	29	15	67	37
	1985	31	30	1	-29	2
	1986	24	47	33	49	38
	1987	-4	-75	67	39	4
COMMERCIAL PROFESSIONAL SERVICES VENDORS (12)	1983	50	187	87	22	66
	1984	-6	24	-37	14	-4
	1985	42	-40	23	-51	-10
	1986	-176	21	-23	165	-36
	1987	171	101	868	-80	303
TURNKEY SYSTEMS VENDORS (23)	1983	-22	1	93	80	36
	1984	121	91	20	26	51
	1985	-74	-88	-76	-136	-96
	1986	8	155	154	394	376
	1987	131	53	42	89	74
TOTAL INFORMATION SERVICES VENDORS (130)	1983	3	1	29	8	10
	1984	28	37	-14	51	25
	1985	2	-8	16	-22	-6
	1986	13	7	43	94	40
	1987	18	80	48	35	43

REVENUES OF PUBLIC PROCESSING NETWORK SERVICES COMPANIES

COMPANY NAME	FISCAL YEAR END	REVENUE ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/ 1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
ADP	06-30	324259	318571	321110	334162	1298102	373700	355274	361305	376697	1466976	13	12	13
CITIZENS FIN.	09-30	2773	2662	2731	2917	11083	2992	2841	2693	2768	11294	2	0	-3
COMDATA NTWK	12-31	22149	21668	21752	20984	86553	25180	25899	25534	23998	100611	16	17	16
COMNET	03-31	10469	9165	10170	10188	39992	11231	10188	11212	11331	43962	10	11	11
COMP-U-CHECK	11-30	1908	1683	1658	2048	7297	2060	1947	1974	1694	7675	5	4	-1
COMPUTER LAN.	12-31	33498	20700	18288	20919	93405	33352[1]	20900	19611	28274	102137	9	15	22
COMPUTER RES.	08-31	2559	2306	2345	2335	9545	2530	2454	2159	2341	9484	-1	0	-4
COMPUTER SVCS	02-28	3006	2813	3034	2926	11779	3279	3026	3185	3160	12650	7	7	6
CONCORD COMP.	09-30	2974	3336	3664	4417	14391	4373	4689	5308	5763	20133	40	38	37
CYCARE	12-31	12800	14695	14347	15344	57186	14928	16897	17160	18733	67718	18	19	21
DST SYSTEMS	12-31	22868	24716	25715	26901	100200	31889	35563	35594	34416	137462	37	37	33
DYATRON	12-31	7719	7710	8389	9285	33103	8291	8923	9721	9683	36618	11	12	10
FDP	11-30	3367	3866	3087	3149	13469	2983	4058	3958	3214	14213	6	11	15
FIRST FIN. MGT	12-31	14463	15158	15469	24604[2]	69694	26502	27377	29378	91854	175111[3]	151	169	203
FISERV	12-31	13722	17620	19099	19929	70370	20512	21370	21028	22621	85531	22	15	12
GTECH	02-25	26883	17900	26293	60374[4]	131450	26881	25011	34845	40606	127343	-3	-4	-13
HALE SYSTEMS	03-31	1375	1102	1127	786	4390	1079	1067	1188	1031	4365	-1	9	16
ISI SYSTEMS	06-30	6323	7118	7107	7570	28118	8213	8782	8451	9001	34447	23	20	19
* KEYDATA	07-31	950	1049	683	646	3328	533	479	411	400	1823	-45	-46	-39
M/A/R/C	03-31	12995	12183	13447	15800	54425	12679	14639	13561	15018	55897	3	4	-2
NATL DATA	05-31	39056	37790	37607	39263	153716	39963	41983	43400	42542	167888	9	12	12
NATL FSI	12-31	3630	4402	3639	3772	15443	4089	3807	3394	5986	17276	12	12	27
PAYCHEX	05-31	13131	13766	14958	15328	57183	16594	17011	18004	19248	70857	24	23	23
PAY-FONE	06-30	1581	1707	1746	1998	7032	1568	1406	1529	1494	5997	-15	-19	-19
SCICOM DATA	06-30	3268	3687	3356	3890	14201	3279	3958	3753	4571	15561	10	12	15
SCS/COMPUTE	04-30	11157	1283	1425	1930	15795	13380[5]	1496	1735	6261	22872[6]	45	105	138
SEI	12-31	28683	30353	27571	31933	118540	29947	30384	29853	32557	122741	4	3	5
SHARED MEDICAL	12-31	87281	92494	96418	98687	374880	96630	95945	99072	99083	390730	4	2	2
SYSTEMATICS	05-31	31627	31830	31348	34184	128989	37753	38292	40382	43867	160294	24	26	29
TELECREDIT	04-30	26567	27765	29945	35070	119347	32096	32144	30130	42060	136430	14	12	11
TOTAL SYS. SVC	12-31	8367	8964	9060	9962	36353	9729	10826	11957	13773	46285	27	31	35
TSR	05-31	4794	5299	6037	6351	22481	5852	6134	6258	6148	24392	9	5	0
WORLCO DATA	03-31	1788	2326	2658	2717	9489	3191	2695	2750	2839	11475	21	8	4
TOTALS		787990	767687	785283	870369	3211329	907258	877465	900493	1023032	3708248	15	16	16

* INPUT ESTIMATE

NET INCOME OF PUBLIC PROCESSING NETWORK SERVICES COMPANIES

		NET AFTER TAX INCOME ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/ 1986	LAST 3 ROLLING	LAST 2 ROLLING
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	%(+/-)	QUARTRS	QUARTRS
ADP	06-30	31860	30960	22690	30010	115520	39300	40050	30370	40120	149840	30	32	34
CITIZENS FIN.	09-30	312	307	310	339	1268	421	306	307	340	1374	8	0	0
COMDATA NTWK	12-31	3819	2080	3040	3264	12203	3954	3309	-385	-5638	1240	-90	-132	-196
COMNET	03-31	517	136	251	303	1207	1942[7]	402	453	519	3316	175	99	75
COMP-U-CHECK	11-30	122	164	108	112	506	141	81	-62	-1243	-1083	-314	-419	-693
COMPUTER LAN.	12-31	5097	-1334	-513	-3035	215	4344	-2437[8]	-2929	-507	-1529	-811	-20	3
COMPUTER RES.	08-31	153	92	-15	82	312	218	88	-78	104	332	6	-28	-61
COMPUTER SVCS	02-28	335	190	276	281	1082	329	232	244	329	1134	5	8	3
CONCORD COMP.	09-30	2	4	22	177	205	178	335	380	635	1528	645	565	410
CYCARE	12-31	715	789	697	665	2866	1693	949	1019	101	3762	31	-4	-18
DST SYSTEMS	12-31	1840	2709	3148	5492[9]	13189	4298	5064	5306	5122	19790	50	37	21
DYATRON	12-31	191	26[10]	246	1456	1919	515	628	923	1483	3549	85	76	41
FOP	11-30	114	84	-22	133	309	-172	139	261	58	286	-7	135	187
FIRST FIN. MGT	12-31	1033	1428	1443	1619	5523	1919	2265	3021	4438	11643	111	117	144
FISERV	12-31	896	2356	1096	1132	5480	1674	1732	1808	1960	7174	31	20	69
GTECH	02-25	-554[11]	-839	174	7566[12]	6347	786	941	1448	2509	5684	-10	-29	-49
HALE SYSTEMS	03-31	-4504[13]	-205	-180	-498	-5387	270	-91	-53	-178	-52	99	64	66
ISI SYSTEMS	06-30	307	2586	573	657	4123	1121	1201	1213	1263	4798	16	-4	101
* KEYDATA	07-31	-85	49	-285	-183	-504	-204	-309	-48	-100	-661	-31	-9	68
M/A/R/C	03-31	610	427	325	597	1959	779	648	661	854	2942	50	60	64
NATL DATA	05-31	2971	-1388[14]	3113	3406	8102	3516	3530	3722	3911	14679	81	118	17
NATL FSI	12-31	-281	27	30	-166	-390	89	-179	-1349	198	-1241	-218	-1120	-746
PAYCHEX	05-31	875	1319	1472	959	4625	1109	1354	1797	2053	6313	36	39	58
PAY-FONE	06-30	80	104	198	328	710	-79	-504[15]	73	-49	-559	-179	-176	-95
SCICOM DATA	06-30	-270[16]	142	194	277	343	190	270	250	378	1088	217	46	33
SCS/COMPUTE	04-30	4344	-857	-874	-890	1723	4278	-1173[17]	-1156	-110	1839	7	7	28
SEI	12-31	1236	916	-10189[18]	940	-7097	1701	2206	2663	2855	9425	233	193	160
SHARED MEDICAL	12-31	11531	-7350[19]	13533	14254	31968	12847	10665	10858	10948	45318	42	59	-22
SYSTEMATICS	05-31	2981	3019	1765	2490	10255	3588	2319	2895	4199	13001	27	29	67
TELECREDIT	04-30	1413	1414	2067	3454	8348	2563	2826	3196	4939	13524	62	58	47
TOTAL SYS. SVC	12-31	1041	1173	1297	1727	5238	1356	1544	1855	2438	7193	37	39	42
TSR	05-31	107	37	186	206	536	161	106	168	180	615	15	6	-11
WORLCO DATA	03-31	357	57	103	152	669	18	-389[20]	-379[21]	-167	-917	-237	-400	-314
TOTALS		69165	40622	46279	77306	233372	94843	78108	68452	83942	325345	39	40	23

* INPUT ESTIMATE

33 COMPANIES

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 results included the acquisition of First Data Management.

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 generates most of its revenue and all of its profits during the fourth quarter of its fiscal year.

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

7. COMNET's net income included a tax benefit of $331,000, resulting from tax loss carryforwards.

8. See footnote 1.

9. DST Systems' income included a pretax gain of approximately $3.7 million from the sale of partnership interests.

10. Dyatron's net income results for the past two quarters were attributed to internal training costs for new IBM System/36 software.

11. GTECH's loss included a $1.2 million write-off of its investment in Videoway.

12. See footnote 4.

13. Hale Systems' losses for fiscal 1986 included a write-down of computer equipment and related software products, as well as a nonrecurring change associated with a litigation involving one of its subsidiaries.

14. National Data's net loss included a write-off of its discontinued Rapidata time-sharing operation.

15. 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.

16. Scicom Data's loss involved a write-off of its investment in a small software company. The write-off totaled approximately $500,000 for the fiscal year; $350,000 was taken in the third quarter of fiscal 1986.

17. See footnote 5.

18. 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.

19. Shared Medical Systems' loss was due to a write-off of its investments related to Shared Medical Systems International's (SMSI) Japanese subsidiary Ni Hon. SMSI has discontinued the Japanese operation.

20. Worlco Data's loss for the quarter was attributed to a major expansion of personnel and computer systems in conjunction with a move to new facilities. In addition, the company experienced a reduction of margins in the circulation fulfillment area due to cutbacks at some publications and discontinued operations at others.

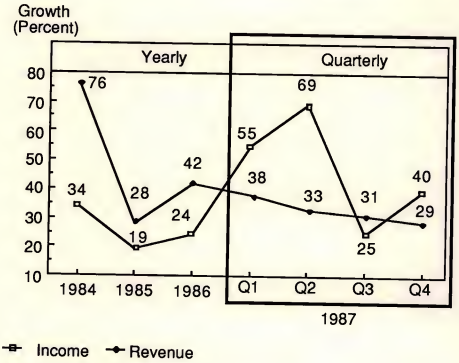
21. Worlco Data's third quarter loss was due to delays in the completion of a custom turnkey system, developed for a large floor-covering company. Worlco planned to sell the system, once completed, to other floor-covering companies.

INPUT®

PUBLIC ELECTRONIC INFORMATION SERVICES VENDORS

13

PUBLIC ELECTRONIC INFORMATION SERVICES VENDORS



IV Electronic Information Services Trends Analysis

Electronic information services include the following:

- Data bases that provide specific information via terminal-based inquiry, such as stock prices, legal precedents, economic indicators, and airline schedules.
- News services that offer current information either in general or in specific categories, such as financial or political.
- Videotex services, which provide interactive access to data bases and offer the inquirer the capability to send as well as receive information for such purposes as home shopping, home banking, and travel reservations.

Note that Comp-U-Card has changed its name to CUC International.

Growth in revenues from electronic information services vendors was very high during 1983 and 1984—72% and 76% respectively. This period represented the high-growth introductory phase of the electronic information services market. Although growth in revenues from these services remains strong, it has slowed during the last few years. Annual growth rates in 1986 and 1987 were 42% and 32%.

CCX Network and Telerate are currently the fastest-growing companies in the electronic information services group. CCX Network provides services used in direct marketing; Telerate provides financial information worldwide.

Growth in net income earned by electronic information services vendors has increased during the last few years. Annual growth rates for 1985, 1986, and 1987 were 19%, 24%, and 45% respectively, as these vendors developed expertise in the industry.

Telerate, the largest and most profitable of these companies, achieved a 22% profit margin in 1987. Profitability for the group was approximately 12%.

REVENUES OF PUBLIC ELECTRONIC INFORMATION SERVICES COMPANIES

		REVENUE ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/ 1986	LAST 3 ROLLING	LAST 2 ROLLING
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	%(+/-)	QUARTRS	QUARTRS
CCX NETWORK	12-31	4530	5047	5068	9221[1]	23866	8398	8918	14837	15928	48081	101	105	115
CUC INTL	01-31	26842	35208	37801	41908	141759	45153	48867	51082	53400	198502	40	33	31
EPSILON	05-31	13686	14896	11805	13121	53508	11680	10604	9391	13530	45205	-16	-16	-8
INFO RESOURCES	12-31	21319	21773	23824	26718	93634	26030	28205	26077	25139	105451	13	10	1
LCS INDUSTRIES	09-30	9201	7981	10529	8883	36594	9193	8557	8941	9303	35994	-2	-2	-6
TELERATE	09-30	50068	54300	61001	66908	232277	72767	79834	85985	97167	335753	45	44	43
TOTALS		125646	139205	150028	166759	581638	173221	184985	196313	214467	768986	32	31	30

* INPUT ESTIMATE

NET INCOME OF PUBLIC ELECTRONIC INFORMATION SERVICES COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/ 1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
CCX NETWORK	12-31	333	463	543	512	1851	401	685	806	1310	3202	73	85	101
CUC INTL	01-31	1342	1988	2451	2723	8504	3309	4202	4670	5219	17400	105	97	91
EPSILON	05-31	37	-1108[2]	87	320	-664	-86	-132	-101	575	256	139	149	16
INFO RESOURCES	12-31	2200	2500	2637	2665	10002	1420	1172[3]	-2367	-3263[4]	-3038	-130	-157	-206
LCS INDUSTRIES	09-30	382	-100	593	310	1185	372	28	-506	29	-77	-106	-156	-153
TELERATE	09-30	9181	10053	11073	12915	43222	15492	17304	19161	23260	75217	74	75	77
TOTALS		13475	13796	17384	19445	64100	20908	23259	21663	27130	92960	45	42	32

* INPUT ESTIMATE

6 COMPANIES

Footnotes

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

2. Epsilon's net loss reflected the recognition of costs associated with the termination of the company's role as servicing agent for Pan American's World Pass Program.

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

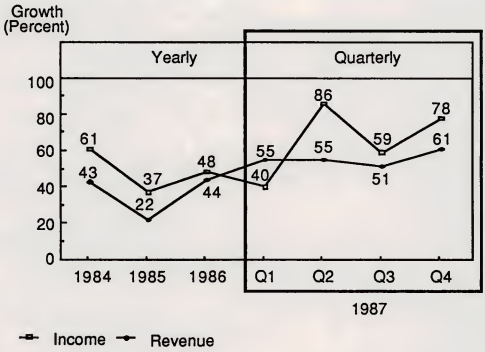
4. Information Resources' third- and fourth-quarter losses were attributed to costs associated with the defunct merger with Dun & Bradstreet, the write-off of a lease obligation, and INFOSCAN expenses.

INPUT®

PUBLIC SYSTEMS SOFTWARE PRODUCTS VENDORS

19

PUBLIC SYSTEMS SOFTWARE PRODUCTS VENDORS



V Systems Software Products Trends Analysis

Systems software products include the following:

- Systems control software, which includes operating systems, communications monitors, network control, library control, windowing, access control, and security.
- Data center management software, which includes software for capacity management, scheduling, job accounting, performance monitors, tape management, utilities, and downtime repair monitoring management.
- Application development tools, such as application generators, assemblers, compilers, 4GLs, automated documentation, languages, translators, data base management systems, and data dictionaries.

Note that Sterling Software has been moved to the government professional services group to reflect the change in its revenue distribution.

Revenue growth for the systems software group continues to be very strong. Annual growth rates for 1985, 1986, and 1987 were 22%, 44%, and 56% respectively. Vendors in this group continue to operate in the growth phase of the systems software product life cycle.

The many contributors to the growth included Adobe Systems, Ashton-Tate, Computer Associates, Cullinet, Duquesne Systems, Informix, Microsoft, Oracle, and Pansophic. Acquisitions, which have characterized the information services industry during recent years, have been responsible for much of the growth by this group.

Although many companies experienced losses at some point during 1987, earnings growth has accelerated for the group over the past few years. Earnings growth rates were 37%, 48%, and 66% in 1985, 1986, and 1987.

The group's profitability for 1987 was approximately 12%. The most profitable companies of the group were Adobe Systems (23%), Duquesne Systems (22%), and Microsoft (20%).

REVENUES OF PUBLIC SYSTEMS SOFTWARE PRODUCTS COMPANIES

		REVENUE ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/ 1986	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	%(+/-)		
ADOBE SYSTEMS	11-30	2392	3498	4932	5200	16022	6901	8682	9872	12308	37763	136	126	119
ASHTON TATE	01-31	41171	48989	57741	62900	210801	60211	63575	68034	75508	267328	27	22	19
AUTOMATED LAN.	12-31	1041	923	882	1511	4357	1131	851	762	782	3526	-19	-28	-35
* BGS SYSTEMS	01-31	3325	3465	2907	2885	12582	3111	3656	3380	3500	13647	8	14	19
BOOLE & BABBAGE	09-30	8612	8705	9365	9259	35941	9964	10345	12140	12307	44756	25	27	31
COGNOS	02-28	12998	15478	17629	16583	62688	18743	19500	18400	18022	74665	19	13	6
COMPUTER ASSOC.	03-31	57680	82775	96087	93618[1]	330160	102047	139307	168286	195075	604715[2]	83	84	92
CULLINET	04-30	54221	31289	34236	43018	162764	61056[3]	49022	49104	54218	213400	31	40	34
DUQUESNE SYS.	09-30	5390	7374	7432	8635	28831	9766	9076	10178	12007	41027	42	33	38
INFODATA SYS.	12-31	2623	2233	2759	3616	11231	3155	2540	2837	2982	11514	3	-3	-9
INFORMIX S/W	12-31	4152	4617	5693	6646	21108	7149	9123[4]	11389	13956	41617	97	103	105
INTELLICORP	06-30	5412	5445	4084	4932	19873	5546	5790	5059	4950	21345	7	9	11
MICROSOFT	06-30	50505	61959	66780	80985	260229	98400	99762	102636	155896	456694	75	71	75
MORINO ASSOC.	06-30	6628	5910	6900	9286	28724	9081	7962	9238	12526	38807	35	35	34
ON-LINE S/W	05-31	8769	11250	9661	12704	42384	19819[5]	21432	18535	16890	76676	81	69	58
ORACLE	05-31	16031	20835	17611	28352	82829	34911	50397[6]	41274	60306	186888	126	128	121
PANSOPHIC	04-30	22500	20117	24312	34607[7]	101536	34900	33647	37408	48608	154563	52	51	46
SAGE SOFTWARE	04-30	3651	2964	3402	3825	13842	4312	2807	3358	4101	14578	5	1	3
SOFTWARE AG	05-31	14642	18727	15397	17087	65853	15274	19486	17190	18678	70628	7	8	10
SYNERCOM TECH.	10-31	5140	3694	3881	1441	14156	2463	2905	3469	4128	12965	-8	16	43
VM SOFTWARE	12-31	4313	6249	6038	10426[8]	27026	6296	6787	6038	11499	30620	13	7	7
TOTALS		331196	366496	397729	457516	1552937	514236	566652	598587	738247	2417722	56	56	56

* INPUT ESTIMATE

NET INCOME OF PUBLIC SYSTEMS SOFTWARE PRODUCTS COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
ADOBE SYSTEMS	11-30	550	868	1168	980	3566	1584	1988	2289	2715	8576	140	132	133
ASHTON TATE	01-31	5124	6471	7935	10600	30130	9098	10136	11087	12755	43076	43	36	29
AUTOMATED LAN.	12-31	170	51	-84	351	488	181	-1123[9]	-1436	-4703	-7081	-1551	-2384	-2399
* BGS SYSTEMS	01-31	402	221	28	-243	408	-43	174	174	200	505	24	9033	274
BOOLE & BABBAGE	09-30	297	236	328	410	1271	490	532	626	3942	5590	340	424	519
COGNOS	02-28	809	1886	1882	1413	5990	2449	1500	1150	1785	6884	15	-14	-11
COMPUTER ASSOC.	03-31	5326	4393	6103	16351[10]	32173	11236	4104	15971	42783	74094	130	134	162
CULLINET	04-30	3632	-10612	-5914	-4949	-17843[11]	-4116	7997	-5810	-12717[12]	-14646	18	51	-71
DUQUESNE SYS.	09-30	1122	1460	1487	1920	5989	2202	1822	2176	2707	8907	49	38	43
INFODATA SYS.	12-31	94	-356	268	376	382	268	50	214	577	1109	190	192	23
INFORMIX S/W	12-31	349	455	728	931	2463	804	1172	1918	2047	5941	141	143	139
INTELLICORP	06-30	609	3563	-850	-501	2821	69	-2705[13]	-669	-972	-4257	-251	-296	-20
MICROSOFT	06-30	10629	11507	15824	19697	57657	19100	17257	21259	35329	92945	61	57	59
MORINO ASSOC.	06-30	1454	587	1100	1988	5129	2264	844	1585	2971	7664	49	47	48
ON-LINE S/W	05-31	686	938	735	1018	3377	1487	1692	1020	1717	5916	75	65	56
ORACLE	05-31	2052	2586	127	3045	7810	4834	7617[14]	3161	7653	23265	198	220	241
PANSOPHIC	04-30	3764	2356	3644	6197	15961	4627	2644	4158	7702	19131	20	19	21
SAGE SOFTWARE	04-30	532	43	420	581	1576	724	242	264	575	1805	15	4	-16
SOFTWARE AG	05-31	1598	1933	1103	986	5620	194	2048	1296	608	4146	-26	-2	-9
SYNERCOM TECH.	10-31	1106	1448	-127	-1895	532	-1016	-506	-2209[15]	87	-3644	-785	-358	-5
VM SOFTWARE	12-31	642	966	845	2475[16]	4928	786	116	181	2327	3410	-31	-39	-24
TOTALS		40947	31000	36750	61731	170428	57222	57601	58425	110088	283336	66	75	71

21 COMPANIES

* INPUT ESTIMATE

Footnotes

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

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

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

4. Informix Software's revenue growth reflects marketing agreements made with Foxboro Company, a leading Informix VAR; and Hewlett-Packard, a large Informix end user; as well as several DBMS and add-on product introductions, including Informix Turbo, Informix Datasheet Add-In and Report DB2.

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

6. 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.

7. 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.

8. VM Software's increased revenues resulted from an increase in unit product licenses, the introduction of new products, new releases of existing products, general price increases, and revenues recorded under the marketing agreement with IBM.

9. Automated Language'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 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. See footnote 1.

11. Cullinet Software's first fiscal quarter loss included a $7 million write-off of the remaining 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 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. Intellicorp's loss during its fourth fiscal quarter included write-offs of obsolete hardware inventory and costs assocated with a reduction in staff.

14. Oracle's increased earnings during the previous quarters reflected significant gains in revenue, which the company attributes to the acceptance of SQL as an industry standard.

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.

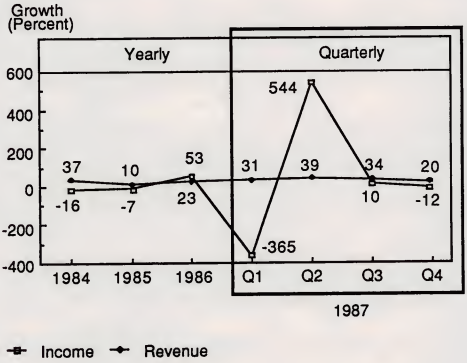
16. See footnote 8.

INPUT®

PUBLIC APPLICATION SOFTWARE PRODUCTS VENDORS

27

PUBLIC APPLICATION SOFTWARE PRODUCTS VENDORS



VI Application Software Products Trends Analysis

Application software products include the following:

- Industry-specific applications software, unique to a specific vertical market and sold to that market only (e.g., demand deposit accounting, MRPII, hospital patient tracking).
- Cross-industry applications software, used by clients in many or all vertical markets (e.g., payroll, word processing, spreadsheets, and accounts receivable).

Note that Continuum has been moved to the commercial professional services group to reflect the change in its revenue distribution.

Growth in revenue for this segment has been strong, although less than growth for the systems software products segment. Revenue for the applications software group grew 10%, 23%, and 30% respectively during 1985, 1986, and 1987.

Like the systems software segment, the application software segment is in the growth phase of its life cycle. However, the application software segment is at an earlier stage of the cycle and has not come as close to reaching its growth potential.

Growth in earnings has been sporadic during the past few years. Earnings dropped 7% in 1985, jumped 53% in 1986, and fell 16% in 1987. Although many companies took losses at some point during 1987, the drop in earnings is primarily due to MSA's first quarter results. MSA took a $70.6 million loss during first quarter 1987, attributing the loss to a change in accounting methods.

Other application software companies that sustained losses for the year 1987 included Health Information Systems (note fourth quarter INPUT estimate), Information Science, and Silvar-Lisco.

The 1987 profit margin for the group was 5%. Excluding MSA's results, the application software products group attained a 13% profit margin.

REVENUES OF PUBLIC APPLICATION SOFTWARE PRODUCTS COMPANIES

		REVENUE ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/ 1986	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	%(+/-)		
AMERICAN S/W	04-30	10336	10005	10819	13087	44247	12817	11214	13481	15150	52662	19	17	20
AUTODESK	01-31	11027	12172	13651	15531	52381	17292	18779	20208	22978	79257	51	50	48
COMSHARE	06-30	16920	16894	16808	17389	68011	17402	18584	17330	21681	74997	10	13	14
CYBERTEK	03-31	7387	6544	6407	6517	26855	6407	5151	5868	5406	22832	-15	-16	-13
ECAD	12-31	3763	4257	4006	4565	16591	4944	5744	6107	7105	23900	44	48	54
GENESEE	05-31	262	284	253	354	1153	249	240	195	300	984	-15	-18	-18
* HEALTH INFO.	06-30	666	333	679	776	2454	676	566	577	700	2519	3	3	-12
HOGAN SYSTEMS	03-31	7177	12132	10761	10919	40989	13380	11386	10366	12097	47229	15	0	4
INFO. SCIENCE	04-30	4666	3562	4167	3779	16174	3701	3159	2834	2750	12444	-23	-24	-30
INNOVATIVE	06-30	3622	4419	3442	3593	15076	5871[1]	5963	6293	8727	26854	78	83	114
LOTUS DEVEL.	12-31	69270	66195	65560	81839	282864	84788	93973[2]	101199	115635	395595	40	46	47
MACNEAL-SCHWEND.	01-31	6216	6517	6980	7365	27078	7833	8461	8579	9657	34530	28	28	27
MSA	12-31	29421	47572	38764	77692[3]	193449	53412	82628	56754	65749	258543	34	25	5
MICROPRO INTL	08-31	10500	6898	10484	8372	36254	9241	11400	12326	10278	43245	19	32	20
POLICY MGMT	12-31	32033	35225	39739	43558	150555	41503	43600	46207	48772	180082[4]	20	17	14
SCIENTIFIC S/W	12-31	7565	6413	5774	8505	28257	6502	6731	5799	8540	27572	-2	2	0
SILVAR-LISCO	04-30	6240	5923	6300	6082	24545	7680	5206	6095	6186	25167	3	-4	-1
SOFTWARE PUB.	09-30	5684	4606	6429	8710	25429	10854[5]	8320	10700	14000	43874	73	67	63
S/W SVC AMER.	05-31	646	424	475	781	2326	1214	1755	2916	1312	7197	209	256	237
STOCKHLDR SYS.	03-31	3375	2403	3411	3349	12538	4814	4061	4955	5211	19041	52	55	50
SYSTEM SOFT.	10-31	3903	3470	5275	5010	17658	6364	8550	11016	11533	37463[6]	112	126	119
TIMBERLINE S/W	12-31	2142	1606	1348	2104	7200	1936	1874	1761	2082	7653	6	13	11
TOTALS		242821	257854	261532	329877	1092084	318880	357345	351566	395849	1423640	30	30	26

* INPUT ESTIMATE

NET INCOME OF PUBLIC APPLICATION SOFTWARE PRODUCTS COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
AMERICAN S/W	04-30	1830	1690	2146	2903	8569	2065	1292	2471	3900	9728	14	14	26
AUTODESK	01-31	2428	2714	3018	3461	11621	3880	4816	5436	6410	20542	77	81	83
COMSHARE	06-30	-229	130	503	656	1060	444	605	-946[7]	1431	1534	45	-15	-58
CYBERTEK	03-31	905	609	416	456	2386	315	-284	181	283	495	-79	-88	-47
ECAD	12-31	269	541	269	417	1496	343	788	903	1130	3164	111	130	196
GENESEE	05-31	25	29	16	27	97	8	37	5	25	75	-23	-7	-30
* HEALTH INFO.	06-30	-2907	-3614	-442	-367	-7330	-485	-1323	-515	-500	-2823	61	47	-25
HOGAN SYSTEMS	03-31	-4233[8]	1117	1960	2939	1783	3682[9]	1918	-2807	1864	4657	161	-84	-119
INFO. SCIENCE	04-30	-2827	-2569	-3169	-268	-8833[10]	-522	-857	-2747	-586	-4712	47	30	3
INNOVATIVE	06-30	719	803	439	192	2153	1345	693	813	517	3368	56	41	111
LOTUS DEVEL.	12-31	11371	11820	9528	15581	48300	13707	16281	19130	22925	72043	49	58	67
MACNEAL-SCHWEND.	01-31	1667	1627	1823	1888	7005	1955	2235	2390	2489[11]	9069	29	33	31
MSA	12-31	-410	5937	260	12954[12]	18741	-72557[13]	18713	-8382	-8733	-70959	-479	-92	-230
MICROPRO INTL	08-31	900	-2409[14]	-342	26	-1825	548	1551	781	9	2889	258	186	350
POLICY MGMT	12-31	3063	3190	3580	3927	13760	3902	4016	4435	4745	17098	24	23	22
SCIENTIFIC S/W	12-31	23	-13272[15]	133	-739[16]	-13855	67	154	34	274	529	104	103	151
SILVAR-LISCO	04-30	255	64	12	-217	114	385	-4758[17]	-814[18]	125	-5062	-4540	-3763	-236
SOFTWARE PUB.	09-30	365	-737[19]	454	1236	1318	1584[20]	881	1492	2500	6457	390	411	136
S/W SVC AMER.	05-31	-67	-603	109	326	-235	163	42	85	215	505	315	304	-31
STOCKHLOR SYS.	03-31	729	234	708	576	2247	822	469	1003	870	3164	41	54	46
SYSTEM SOFT.	10-31	393	325	680	507	1905	693	1020	1081	1071	3865	103	110	81
TIMBERLINE S/W	12-31	-66	-124	-218	256	-152	65	36	103	209	413	372	505	721
TOTALS		14203	7502	21883	46737	90325	-37591	48325	24132	41173	76039	-16	49	-5

* INPUT ESTIMATE

22 COMPANIES

Footnotes

1. Innovative Software's revenue gain was attributed to the release of the network-ready version of Smart. During this quarter, NCR placed a major order for SmartWare products.

2. Lotus' improved revenue in recent quarters has been due to success with new products such as Lotus HAL, Lotus Manuscript, Freelance Plus, and One Source, in addition to strong sales of core spreadsheet products.

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

4. 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.

5. Software Publishing's improved revenue reflects market acceptance of the company's new product.

6. System Software Associates' results include the acquisitions of Syncrocom Inc., ASE Services Inc., Outlook Inc., and Admin EDP PTY Ltd. (Australia).

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

8. Hogan Systems' loss resulted from lower-than-expected revenues combined with $2.3 million in costs associated with the disposition of the New York office due to the closing last year of the International Systems Division.

9. 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.

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

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

12. MSA generates approximately 40% of revenue and essentially all of its income during the fourth quarter.

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

14. Micropro's loss was due to increased uncollectible receivables resulting from First Software's Chapter 11 filing.

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

16. Scientific Software's loss included an $848,000 charge representing the termination of a lease obligation.

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

18. Silvar-Lisco's loss included a charge of $850,000 for the disposal of certain computer equipment and capitalized purchased software.

19. Software Publishing attributed $500,000 of the loss to First Software, a major customer that filed for bankruptcy during the quarter. The remaining losses were due to investments in new product development and to a severe sales decline.

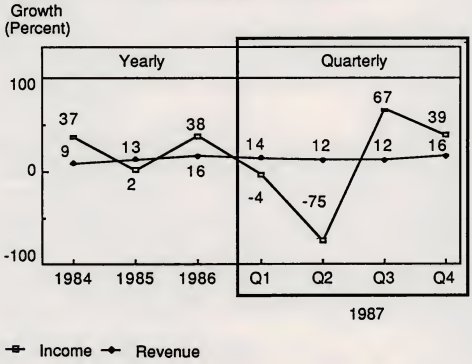
20. Software Publishing's increased net income during the past two quarters was due to improved sales of all products, especially the new products Pfs:First Publisher and Pfs:First Choice, and the revised version of Harvard Graphics.

INPUT®

PUBLIC GOVERNMENT PROFESSIONAL SERVICES VENDORS

35

PUBLIC GOVERNMENT PROFESSIONAL SERVICES VENDORS



VII Government Professional Services Trends Analysis

Government professional services include management consulting activities related to EDP systems consulting, production of custom software, and education and training for government, as well as systems operations (facilities management) of government-owned computers where the vendor provides human resources to operate and manage the government facility.

Note that Rand Information Systems was removed from the list of professional services vendors, since the company has filed for bankruptcy.

Although revenue growth for this segment has been below all other information services segments, the growth has been relatively stable for the last few years. During 1984, growth slowed to 9%; however, in 1985, 1986 and 1987, growth was 13%, 16%, and 13% respectively. Bolt Beranek & Newman had the highest growth rate (42%) of all government professional services vendors during 1987.

Like the other segments of the information services industry, the government professional services segment has experienced more fluctuation in earnings growth than in revenue growth. Growth in earnings was 0%, 37%, 2%, 38%, and 4% during the past five consecutive years. The 4% growth rate in 1987 was primarily the result of Bolt Beranek and Newman's $18.3 million loss taken during the second quarter.

Profit margin for the government professional services segment was 3% for the year 1987. Bolt Beranek and Newman's results contributed most to the low profit margin.

REVENUES OF PUBLIC GOVERNMENT PROFESSIONAL SERVICES COMPANIES

		REVENUE ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/	LAST 3	LAST 2
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	1986 %(+/-)	ROLLING QUARTRS	ROLLING QUARTRS
AM. MGMT. SYS.	12-31	29663	32798	35943	37117	135521	38089	41022	44652	50545	174308	29	29	30
BDM INTL	12-31	70663	79815	89535	82185	322198	80043	80278	75138	78580	314039	-3	-7	-10
BBN	06-30	45003	49324	48631	53653	196611	59100	72446[1]	70200	78089	279835	42	46	45
C.A.C.I.	06-30	24912	26635	26097	29199	106843	29738	33797	34071	33655	131261	23	24	22
COMPUTER DATA	06-30	13684	13245	11839	12995	51763	13258	14846	16201	16802	61107	18	26	33
CSC	04-01	236787	233998	249428	257489	977702	290500[2]	274620	281254	287343	1133717	16	14	12
DYNAMICS RES.	12-25	17160	17819	17803	22410	75192	18363	21541	20982	30615	91501	22	26	28
INTERMETRICS	02-28	10184	11991	12714	11622	46511	11420	11280	12249	12009	46958	1	-2	0
LOGICON	03-31	53587	50242	51598	49120	204547	53813	47900	53067	56703	211483	3	4	9
SOFTECH	05-31	11327	13205	10691	10537	45760	9920	12374	10890	12299	45483	-1	3	9
STERLING S/W	09-30	58883[3]	56512	48900	45308	209603	45953	46763	52143	52094	196953	-6	0	11
TELOS	03-31	17920	19186	19509	20293	76908	20476	22042	24091	25821	92430	20	22	25
TOTALS		589773	604770	622688	631928	2449159	670673	678909	694938	734555	2779075	13	13	14

NET INCOME OF PUBLIC GOVERNMENT PROFESSIONAL SERVICES COMPANIES

		NET AFTER TAX INCOME ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/ 1986	LAST 3 ROLLING	LAST 2 ROLLING
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	%(+/-)	QUARTRS	QUARTRS
AM. MGMT. SYS.	12-31	902	1122	1488	1719	5231	1068	1313	1852	3349	7582	45	50	62
BDM INTL	12-31	2861	3490	3050	4184	13585	4564	5139	4512	5525	19740	45	42	39
BBN	06-30	2973	3418	3177	3364	12932	3735	-18305[4]	4127	4332	-6111	-147	-199	29
C.A.C.I.	06-30	105	477	455	706	1743	649	896	990	1028	3563	104	78	74
COMPUTER DATA	06-30	545	514	356	401	1816	387	617	836	861	2701	49	82	124
CSC	04-01	8863[5]	6652	7168	7580	30263	10835[6]	9457	9897	10311	40500	34	39	37
DYNAMICS RES.	12-25	514	546	590	806	2456	673	781	873	1401	3728	52	57	63
INTERMETRICS	02-28	383	247	43	157	830	30	420	472	602	1524	84	234	437
LOGICON	03-31	2541	2382	2162	2248	9333	-721[7]	2281	2455	2508	6523	-30	7	13
SOFTECH	05-31	579	635	475	490	2179	-1627[8]	255	351	316	-705	-132	-42	-31
STERLING S/W	09-30	1924	2154	-2457[9]	1907	3528	1196	1672	1329	2436	6633	88	239	785
TELOS	03-31	87	776	698	660	2221	501	1125	1035	1089	3750	69	52	56
TOTALS		22277	22413	17205	24222	86117	21290	5651	28729	33758	89428	4	7	51

13 COMPANIES

Footnotes

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

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

3. Subsequent to Sterling Software's acquisition of Informatics, the company began divesting four of its divisions that no longer fit with its long-term objectives.

4. 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.

5. Computer Sciences' fiscal 1986 earnings dropped 14% from the previous fiscal year, due to a nonrecurring after-tax gain of $8.7 million resulting from the sale of Paid Prescriptions during fiscal 1985.

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

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

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

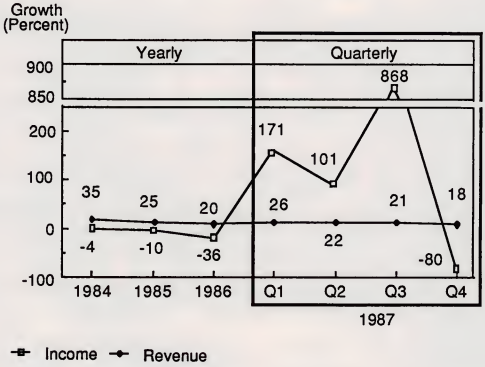
9. Sterling Software's loss included a one-time charge against earnings of $84.5 million for prepayment on debt.

INPUT®

PUBLIC COMMERCIAL PROFESSIONAL SERVICES VENDORS

41

PUBLIC COMMERCIAL PROFESSIONAL SERVICES VENDORS



VIII Commercial Professional Services Trends Analysis

Commercial professional services include management consulting activities related to EDP systems consulting, production of custom software, and education and training for commercial business, as well as systems operations (facilities management) of client-owned computers where the vendor provides human resources to operate and manage the client facility.

Note that Advanced Systems was removed from the list of professional services vendors due to its merger with Applied Learning. Scientific Systems Services was removed due to its acquisition by Computer Task Group.

The commercial professional services segment has grown considerably faster than the government professional services segment during the past five years, although growth has slowed somewhat. Growth rates for the years 1985, 1986, and 1987 were 25%, 20%, and 22%.

Earnings for the commercial professional services segment increased 303% for the year 1987, although the segment experienced an 80% drop in earnings during the fourth quarter.

AGS Computers, Analysts International, Continuum, and Data Architects performed well in terms of both revenue and net income in 1987. 202 Data Systems, Advanced Computer Techniques (ACT), and Teknowledge each experienced a drop in revenue and net income for the year.

Profitability for the commercial professional services segment was 2% for the year 1987. Teknowledge's $11.7 million loss adversely affected the already low margins secured by the group. Profitability is expected to increase for both the commercial and the government professional services segments as they mature.

REVENUES OF PUBLIC COMMERCIAL PROFESSIONAL SERVICES COMPANIES

		REVENUE ($ Thousands)										GROWTH (Percent)		
		1986					1987					1987/ 1986	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
COMPANY NAME	FISCAL YEAR END	Q1	Q2	Q3	Q4	TOTAL	Q1	Q2	Q3	Q4	TOTAL	%(+/-)		
202 DATA SYS	10-31	503	446	2287	109	3345	453	586	699	139	1877	-44	-50	-65
ACT	12-31	3452	3979	4392	3356	15179	3238	3655	2061[1]	2037	10991	-28	-34	-47
AGS COMPUTERS	12-31	82571	89290	95398	114445[2]	381704	114895	114958	125535	141341	496729	30	28	27
ANALYSTS INTL	06-30	11586	12126	12048	13862	49622	15296	15495	16123	17052	63966	29	28	28
COMP. HORIZONS	02-28	12879	14151	14350	14633	56013	15342	16399	17503	19474	68718	23	24	28
COMP. TASK GRP	12-31	32711	35463	36518	38738	143430	39328	41139	43187	46398	170052	19	18	19
CONTINUUM	03-31	12247	14063	14077	14465	54852	15596	14482	18359	15422	63859	16	13	18
DATA ARCHITECT	11-30	5883	6650	6740	7812	27085	7492	8791	8945	9517	34745	28	29	27
KEANE	12-31	9821	9593	10438	10500	40352	10137	10139	10868	12361	43505	8	9	11
SYS. & COMP.	09-30	10469	10137	10224	10110	40940	9082	13876	8969	9663	41590	2	7	-8
TECHNALYSIS	12-31	3077	3213	3517	3719	13526	3564	3481	3781	3739	14565	8	5	4
TEKNOWLEDGE	06-30	4019	4302	5357	5520	19198	4569	5023	4438	3809	17839	-7	-13	-24
TOTALS		189218	203413	215346	237269	845246	238992	248024	260468	280952	1028436	22	20	20

NET INCOME OF PUBLIC COMMERCIAL PROFESSIONAL SERVICES COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
202 DATA SYS	10-31	141	56	315	101	613	94	184	270	7	555	-9	-2	-33
ACT	12-31	136	289	215	60	700	124	44	49	-282[3]	-65	-109	-134	-185
AGS COMPUTERS	12-31	1580	2133	2310	2729	8752	2741	3560	3988	3869	14158	62	59	56
ANALYSTS INTL	06-30	-569	-345	-890	713[4]	-1091	724	893	703	735	3055	380	547	912
COMP. HORIZONS	02-28	508	513	526	616	2163	531	475	592	697	2295	6	7	13
COMP. TASK GRP	12-31	1331	1331	1160	1260	5082	1443	1142	1315	1210	5110	1	-2	4
CONTINUUM	03-31	-1354[5]	630	636	938	850	1023	517	1746	1187	4473	426	57	86
DATA ARCHITECT	11-30	344	401	353	537	1635	487	502	590	751	2330	43	43	51
KEANE	12-31	231	-181	4	229	283	271	212	144	256	883	212	1077	72
SYS. & COMP.	09-30	-9610	-749	-4323	-467	-15149[6]	-2228	3151	356	-586	693	105	153	95
TECHNALYSIS	12-31	207	244	294	311	1056	279	315	343	396	1333	26	24	22
TEKNOWLEDGE	06-30	358	-310	308	503	859	-721	-2912[7]	-1311	-6717	-11661[8]	-1458	-2284	-1090
TOTALS		-6697	4012	908	7530	5753	4768	8083	8785	1523	23159	303	48	22

12 COMPANIES

Footnotes

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

2. AGS Computer attributed its revenue improvement to its banking software products group and its microcomputer distribution subsidiary, Microamerica. During the fourth quarter, the company completed the following acquisitions: Advanced Programming, Systemtech, and Vista Concepts.

3. 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 which 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.

4. 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 carryforwards and a loss for the first part of the year, a tax credit was applied to pretax income during the fourth quarter.

5. Continuum's third and fourth quarter fiscal 1986 losses resulted from the underestimation of cost and time to complete the Client/Contract Administration System.

6. 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.

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

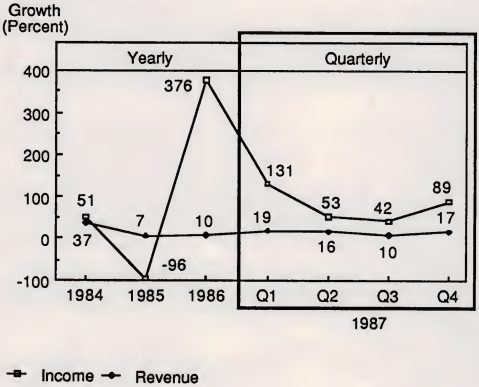
8. Teknowledge's loss was attributed to continued weakness in software products licensing revenues.

INPUT®

PUBLIC TURNKEY SYSTEMS VENDORS

47

PUBLIC TURNKEY SYSTEMS VENDORS



IX Turnkey Systems

Turnkey systems are the integration of systems software, packaged or customized application software, CPU, equipment, and peripherals. These systems are developed to meet a specific set of user requirements (e.g., physician's office management systems and CAD/CAM systems).

Note that National Data Communications has changed its name to Libra Systems, Inc.

INPUT has tracked certain turnkey systems vendors for a number of years. The results of these companies have been varied.

Many companies, such as ASK Computer Systems, C3, Computer Consoles, Computervision, Gerber Scientific, Intergraph, and Reynolds & Reynolds, have grown significantly in terms of revenue. These companies provide management information systems and CAD/CAM/CAE systems for manufacturing, government, telecommunications, architecture, engineering, construction, and service-oriented organizations such as hospitals and accounting firms.

Not all of these companies, however, have performed consistently in terms of earnings. For example, Computer Consoles and Computervision each sustained significant losses for 1985 and moderate losses for 1986. In addition, many other turnkey systems companies have experienced both slow growth and erratic earnings.

For the turnkey systems group overall, revenue grew 7%, 10%, and 15% respectively in 1985, 1986, and 1987. Earnings for the group fell 96% in 1985, jumped 376% in 1986, and grew 74% in 1987.

Profitability for the turnkey systems group in 1987 was 6%.

REVENUES OF PUBLIC TURNKEY SYSTEMS COMPANIES

COMPANY NAME	FISCAL YEAR END	REVENUE ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
ASK COMPTR SYS	06-30	17601	26587	20344	21159	85691	25400	31400	26609	32346	115755	35	33	42
AUTO-TROL TECH	12-31	15595	14860	15400	16494	62349	17961	17963	17840	22209	75973	22	24	26
AVANT-GARDE	04-30	4005	4449	4629	4986	18069	3295	5568	4690	3840	17393	-4	0	-11
BARRISTER INFO	03-31	10877	5563	8152	8583	33175	10971	8262	9284	9250	37767	14	20	11
C3	03-31	11700	14700	21420	25297	73117	24900	24463	24310	35257	108930	49	37	28
CERNER	12-31	794	3994	5390	7178	17356	5566	7259	8467	12303	33595	94	69	65
COMPTEK RESEARCH	03-31	7825	7151	7952	9219	32147	10131	10055	10542	12839	43567	36	37	36
COMPTR CONSOLES	12-31	21184	33085	34009	41279[1]	129557	35572	35810	37810	39202	148394	15	4	2
COMPTR DESIGN	08-31	940	846	894	694	3374	746	998	974	536	3254	-4	3	-5
COMPUTERVISION	12-31	112918	119339	125920	136495	494672	139818	136541	132295	155374	564028	14	11	10
COMPUTRAC	01-31	2335	2723	2747	1980	9785	1950	2207	1611	1631	7399	-24	-27	-31
DAISY SYSTEMS	09-30	22488	23089	24999	25380	95956	23829	24066	27585	28048	103528	8	8	10
GERBER SCI.	04-30	48936	54405	56314	53351	213006	59784	61786	64428	68834	254832	20	19	22
HBO	12-31	41198	37567	35962	40095	154822	37406	43733	44957	49134	175230	13	21	24
INTERGRAPH	12-31	147016	150371	150967	157383	605737	128478[2]	160196	157087	195322	641083	6	12	14
INTERLEAF	03-31	6840	6405	8578	10405	32228	11785	10533	12732	17006	52056	62	59	57
ISC SYSTEMS	06-30	41000	46360	40223	34797[3]	162380	43617	49895	44122	41799	179433	11	12	15
LIBRA SYSTEMS	10-31	1259	1246	1281	1071	4857	1017	788	954	582	3341	-31	-35	-35
PENTA SYSTEMS	12-31	5849	5191	5475	5059	21574	4355	5174	6526	5948	22003	2	12	18
REYNOLDS & R.	09-30	87662	102140	133649	128999	452450	141637	140400	151694	138402	572133	26	18	10
SYSTEMS INTEGRA.	09-30	16092	18029	19225	16070	69416	13601	13472	15659	15212	57944	-17	-17	-13
TENERA	12-31	6536	9247	9590	9900	35273	9800	9500	8536	8300	36136	2	-8	-14
TRIAD SYSTEMS	09-30	25600	26321	32045	27200	111166	26384	28446	35207	26569	116606	5	5	4
TOTALS		656250	713668	765165	783074	2918157	778003	828515	843919	919943	3370380	15	15	14

* INPUT ESTIMATE

NET INCOME OF PUBLIC TURNKEY SYSTEMS COMPANIES

COMPANY NAME	FISCAL YEAR END	NET AFTER TAX INCOME ($ Thousands) 1986 Q1	1986 Q2	1986 Q3	1986 Q4	1986 TOTAL	1987 Q1	1987 Q2	1987 Q3	1987 Q4	1987 TOTAL	GROWTH (Percent) 1987/1986 %(+/-)	LAST 3 ROLLING QUARTRS	LAST 2 ROLLING QUARTRS
ASK COMPTR SYS	06-30	1371	1985	1775	1995	7126	1681	2550	1882	2252	8365	17	16	10
AUTO-TROL TECH	12-31	-1603	-1778	-691	-2966	-7038	515	272	375	854	2016	129	128	134
AVANT-GARDE	04-30	-2313	-774	-895	-541	-4523	4217	87	149	-408	4045	189	92	82
BARRISTER INFO	03-31	1264	-574	16	302	1008	1220[4]	55	366	-75	1566	55	235	-8
C3	03-31	-327	518	4[5]	1681	1876	2000	2262	2519	7891	14672	682	475	518
CERNER	12-31	-805	728	926	1442	2291	654	708	1070	1594	4026	76	9	13
COMPTEK RESEARCH	03-31	82	124	201	283	690	373	285	373	382	1413	105	71	56
COMPTR CONSOLES	12-31	-5624	-886	1633	1894	-2983	833	885	612	8990	11320	479	297	172
COMPTR DESIGN	08-31	56	112	-80	20	108	10	345	8	-111	252	133	365	-72
COMPUTERVISION	12-31	-7006	-3404	1165	3471	-5774	5804	4128	1508	8040	19480	437	1010	106
COMPUTRAC	01-31	379	514	633	455	1981	154	455	-1020[6]	-9	-420	-121	-136	-195
DAISY SYSTEMS	09-30	-4705	-1828	-860	1293	-6100	-4904[7]	-10537[8]	458	1013	-13970	-129	-550	240
GERBER SCI.	04-30	4996	4689	4789	5226	19700	6353	6464	7471	7749	28037	42	47	52
HBO	12-31	746	-6256[9]	924	974	-3612	835	2386	3417	6683	13321	469	387	432
INTERGRAPH	12-31	18003	17343	15496	19520	70362	10011	16754	18381	24730	69876	-1	14	23
INTERLEAF	03-31	258	-1154	-251	353	-794	642	534	968	3009	5153	749	529	3799
ISC SYSTEMS	06-30	3700	4217	2809	29	10755	1114	2572	2223	2155	8064	-25	-1	54
LIBRA SYSTEMS	10-31	-406	634[10]	-331	7	-96	-155	-123	160	-384	-502	-423	-212	31
PENTA SYSTEMS	12-31	302	273	381	-344[11]	612	-291	-1662[12]	440	106	-1407	-330	-460	1376
REYNOLDS & R.	09-30	5419	6512	7024	4494	23449	5042	5811	5874	2739	19466	-17	-20	-25
SYSTEMS INTEGRA.	09-30	2337	2782	3000	1917	10036	628	733	838	1598	3797	-62	-59	-50
TENERA	12-31	519	663	-1414[13]	1100	868	2200	2400	2216	2100	8916	927	1824	1475
TRIAD SYSTEMS	09-30	551	689	1538	833	3611	853	1190	3551	1346	6940	92	99	107
TOTALS		17194	25129	37792	43438	123553	39789	38554	53839	82244	214426	74	64	68

23 COMPANIES

Footnotes

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

2. 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.

3. 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.

4. Barrister Information Systems recognizes higher revenue and most of its profits during the last quarter of its fiscal year.

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

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

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

8. 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.

9. HBO's loss in second quarter 1986 reflected $9.4 million in write-offs due to (1) internal reorganization, (2) dissolution of its holding company, (3) a write-off of capitalized software, and (4) write-downs of computer hardware to market value.

10. Libra Systems (formerly National Data Communications) formed a new company through a joint venture agreement. The extraordinary gain resulted from the difference between the market and book values of the preferred stock exchanged in the agreement.

11. Penta Systems' loss was primarily due to a write-off for obsolete inventory.

12. 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.

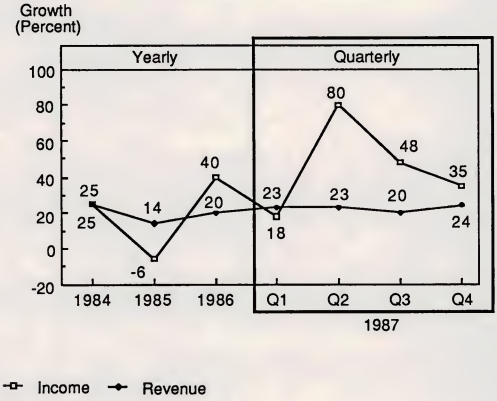
13. Tenera's results included a $2.3 million loss from discontinued wind energy operations.

INPUT®

PUBLIC INFORMATION SERVICES VENDORS

55

PUBLIC INFORMATION SERVICES VENDORS



X Public Information Services Trends Analysis

The comparison of quarterly results (e.g., 1987 revenues in fourth quarter compared to 1986 revenues in fourth quarter for a given service sector) allows the growth or decline to be clearly observed without the effects of seasonality.

At 18%, revenue growth improved slightly for the processing/network services sector during fourth quarter 1987. Growth in earnings slowed considerably to 9% for the quarter. The slowdown resulted from losses incurred by Comdata Network and Computer Language, as well as a drop in earnings by Shared Medical Systems during fourth quarter. Shared Medical Systems compensated by increasing income 42% for the year 1987.

Although growth remains high for the electronic information services sector, it continued to slow during fourth quarter 1987. Revenue grew 29% over fourth quarter 1986. Earnings growth remained high at 40% during fourth quarter, although Information Resources experienced a loss for the third consecutive quarter.

The system software sector continued to demonstrate excellent growth in revenue and earnings. During fourth quarter 1987, revenue grew 61% over fourth quarter 1986; earnings grew 78% over the year earlier period. These results are due mostly to Computer Associates and Microsoft, although many of the vendors in this sector performed well. Automated Language, Cullinet, and Intellicorp, however, experienced significant losses during the quarter.

Growth in revenues from application software vendors dipped below the level maintained during the previous five quarters. Growth during fourth quarter 1987 was 20%, while average growth during the past five quarters was 30%. Earnings growth for this group has been volatile, with growth rates ranging to extremes. Earnings dropped 12% during fourth quarter. These results are attributable mostly to MSA, which changed its method of revenue recognition during 1987 and took a loss of $8.7 million for the quarter.

The government professional services group demonstrated healthy growth in both revenue and net income during fourth quarter. Revenue grew 16% during the quarter; net income grew 39%. These results

reflected the individual company performances, with the exception of BDM International, whose revenue decreased slightly from fourth quarter 1986.

Growth for the commercial professional services group continued the deceleration process that has evolved over the past year. Growth was 18% for the group during fourth quarter. Earnings, which have grown at extremely high rates during the past year, fell 80% from fourth quarter 1986. ACT, Systems and Computer Technology, and Teknowledge each experienced a drop in revenue and net income between fourth quarter 1986 and fourth quarter 1987. Teknowlege took a $6.7 million loss during fourth quarter 1987.

The turnkey systems group performed excellently during fourth quarter 1987. Revenue grew 17%; net income grew 89%. Growth companies for the quarter included ASK Computer Systems, C3, Cerner, Comptek Research, and Interleaf. Other companies, such as Computer Design, CompuTrac, Libra Systems, and Systems Integrators, exhibited problems in terms of both revenue and earnings.

Revenue from public information services vendors as a whole grew 24% during fourth quarter 1987. Earnings for the group grew 35% during the quarter. These results demonstrate the continuing strong recovery for the industry that has occurred during the past eighteen months.

PUBLIC INFORMATION SERVICES VENDORS' REVENUE GROWTH RATES (PERCENT)

		Q1	Q2	Q3	Q4	TOTAL
PROCESSING/NETWORK SERVICES VENDORS (33)	1983	19	15	17	17	17
	1984	19	20	14	16	17
	1985	15	16	16	16	16
	1986	16	16	17	18	17
	1987	15	14	15	18	15
ELECTRONIC INFORMATION SERVICES VENDORS (6)	1983	63	67	65	89	72
	1984	91	79	102	46	76
	1985	29	30	22	30	28
	1986	34	49	40	43	42
	1987	38	33	31	29	32
SYSTEMS SOFTWARE VENDORS (21)	1983	27	25	27	41	31
	1984	42	45	53	33	43
	1985	32	20	12	24	22
	1986	34	51	53	39	44
	1987	55	55	51	61	56
APPLICATION SOFTWARE VENDORS (22)	1983	21	27	42	36	32
	1984	81	41	30	14	37
	1985	-2	22	6	12	10
	1986	29	17	24	24	23
	1987	31	39	34	20	30
GOVERNMENT PROFESSIONAL SERVICES VENDORS (13)	1983	13	13	14	8	12
	1984	9	10	7	9	9
	1985	10	13	12	18	13
	1986	18	17	19	10	16
	1987	14	12	12	16	13
COMMERCIAL PROFESSIONAL SERVICES VENDORS (12)	1983	22	48	68	68	52
	1984	51	37	30	26	35
	1985	31	26	25	18	25
	1986	11	19	22	28	20
	1987	26	22	21	18	22
TURNKEY SYSTEMS VENDORS (23)	1983	16	24	37	36	29
	1984	39	47	33	29	37
	1985	14	10	4	1	7
	1986	3	6	17	14	10
	1987	19	16	10	17	15
TOTAL INFORMATION SERVICES VENDORS (130)	1983	18	20	26	26	23
	1984	29	29	23	20	25
	1985	15	16	12	14	14
	1986	16	19	23	20	20
	1987	23	23	20	24	22