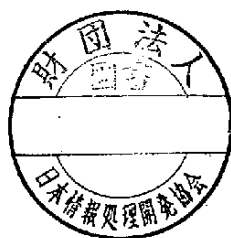


Present Situation of Information Processing in Japan



1984

JIPODEC

Japan Information Processing Development Center

DEC

2

12

請求 番号		JIPDEC 59-4		登録 番号	
著者名 Present situation of					
書名 information processing in Japan					
所属	帯出者氏名	貸出日	返却 予定日	返却日	

CONTENTS

I. Computer Installations	1
II. Peripherals & Terminals	7
III. Production, Exports & Imports	9
IV. Computer Manufacturers	11
V. Service Bureaus	13
VI. Data Communications	15
VII. User Spending	17
VIII. Major Organizations in Computer Field	19

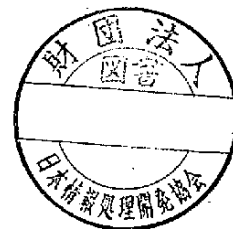
Japan Information Processing Development Center (JIPDEC) was established in 1967 with the support of the Government and related industrial circles. JIPDEC is a non-profit organization aimed at the promotion, research and development of information processing and information processing industries in Japan.

This report is prepared with the assistance of the Japan Keirin Association through its Machine Industry Promotion Funds. These funds are part of the profits obtained by the association from the sponsoring of bicycle races.

Copyright 1984 by Japan Information Processing Development Center: Kikai Shinko Kaikan Bldg., 5-8, Shibakoen 3 Chome, Minato-ku, Tokyo, 105, Japan. No part of this publication may be reproduced without written permission of the publisher.

Printed by Sankyo Printing Co., Ltd.
Printed in Japan, October 1984

I. COMPUTER INSTALLATIONS



Computer Installations – General-Purpose Computers

Upper row: no. of sets
Lower row: value in million yen

Scale		1979	1980	1981	1982	1983	1983*
Large	Set	2,691	2,953	3,222	3,500	3,847	4,047
	Value	1,929,347	2,163,454	2,441,430	2,678,120	2,928,915	3,063,421
Medium	Set	7,364	8,153	9,522	11,130	12,608	12,996
	Value	778,007	838,572	946,308	1,095,331	1,236,662	1,266,463
Small	Set	17,033	20,529	26,381	32,565	38,949	40,919
	Value	319,074	381,783	487,114	594,294	703,697	736,379
Very-Small	Set	31,856	40,473	49,098	59,149	73,006	80,236
	Value	191,845	240,086	289,868	348,675	421,641	454,491
Total	Set	58,994	72,108	88,223	106,345	128,410	138,198
	Value	3,218,272	3,623,896	4,164,728	4,716,420	5,290,916	5,520,754
Annual Increase (%)		14.1	12.6	14.9	13.2	12.2	—

Notes:

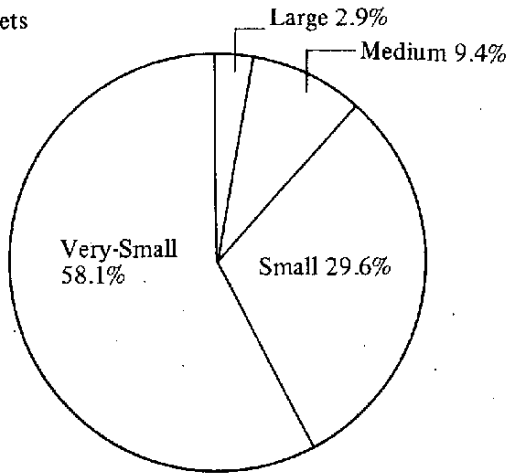
1. Data as of the end of March of each year.
2. * As of the end of September, 1983
3. The characteristics of computers covered by the current survey include:
 - (1) Digital type computers
 - (2) Stored program computers
 - (3) Main memory of 2,000 bits or more
 - (4) Computing structure based on electronic logical computation
4. Standards for computer classification by scale in terms of purchase price:

Classification	Purchase price
Large:	More than ¥250 million
Medium:	¥40 – ¥250 million
Small:	¥10 – ¥40 million
Very Small:	Less than ¥10 million

Source: MITI

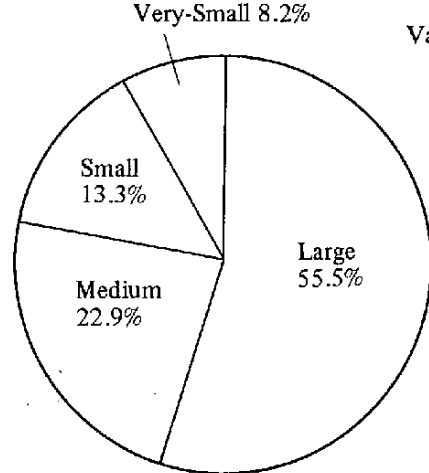
Market Structure by Size of Computers

Sets



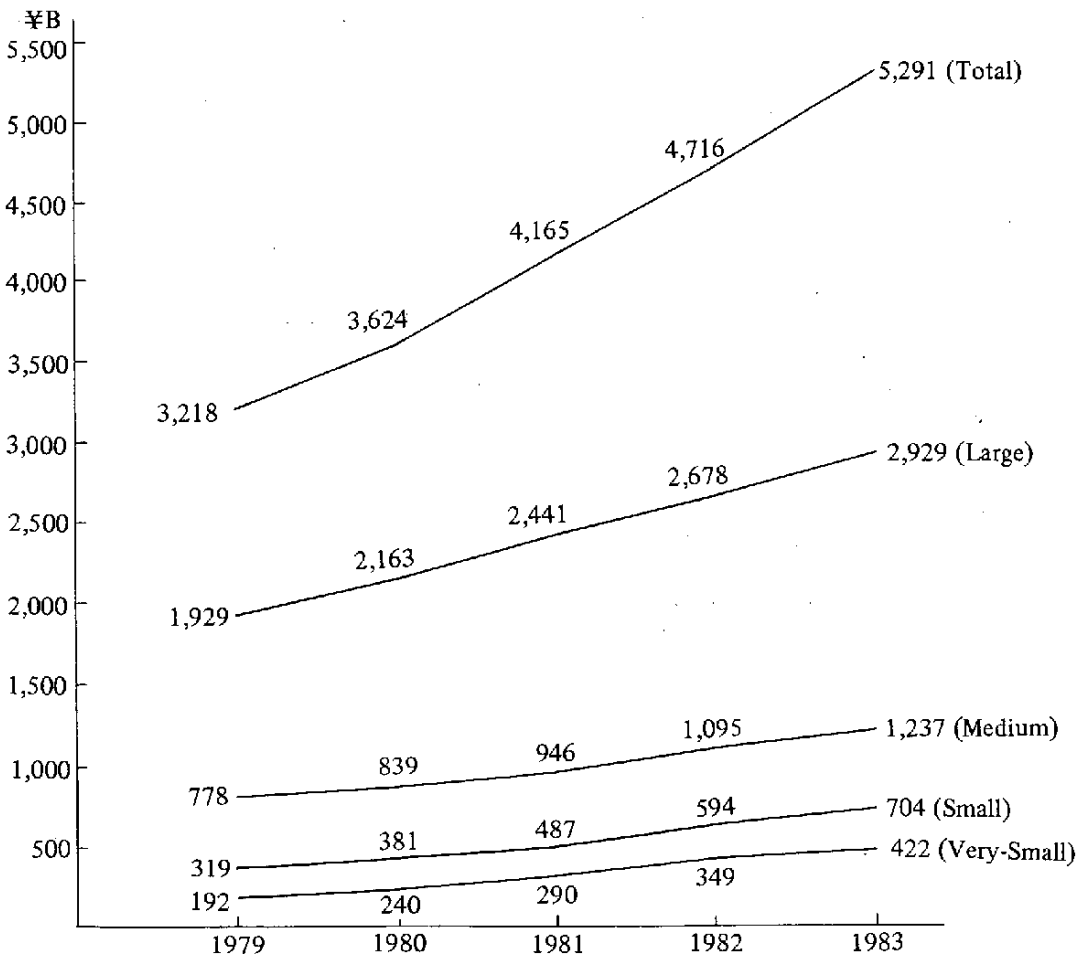
Total: 138,198 sets

Value



Total: ¥5,521 billion
(Data as of the end of September, 1983)

Annual Computer Installations



(Data as of the end of March each year)

Computer Use Classified by Industrial Sector

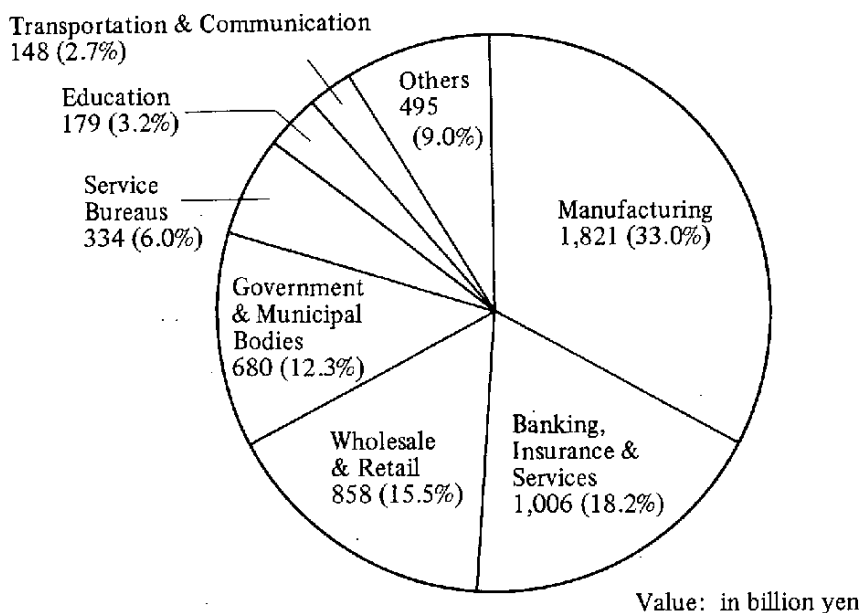
(Value: in million yen)

Industrial Category	Sets	Value	Value per Set
Agriculture	129	3,579	27.7
Forestry and hunting	64	630	9.8
Fisheries, fishing and pisciculture	214	3,895	18.2
Mining	178	4,924	27.7
Construction	3,315	77,702	23.4
Foodstuffs	4,210	94,434	22.4
Textiles and textile products	2,585	59,562	23.0
Pulp, paper and paper products	1,051	20,132	19.2
Publishing and printing	1,266	48,769	38.5
Chemicals and petroleum refining	4,516	200,275	44.3
Ceramics	1,072	33,031	30.8
Iron and steel	1,247	157,729	126.5
Fabricated metal products	2,253	73,221	32.5
Machinery	2,728	98,831	36.2
Electric machinery	5,649	670,149	118.6
Transport equipment	2,175	217,811	100.1
Precision machinery	1,125	54,835	48.7
Other manufacturing	4,648	92,680	19.9
Wholesale and retail, trade firms	62,160	857,719	13.8
Finance	6,848	760,704	111.1
Security	321	84,140	262.1
Insurance	794	161,164	203.0
Real estate	405	6,338	15.7
Transportation and telecommunications	4,435	148,160	33.4
Electricity, gas and water	620	77,566	125.1
Service	11,865	469,640	39.6
(General Service)	6,043	135,817	22.5
(DP Service)	5,822	333,823	57.3
Hospital	1,250	34,446	27.6
Universities	1,252	154,152	123.1
Senior high schools	572	12,057	21.1
Other schools	444	12,967	29.2
Municipal bodies	1,836	121,250	66.0
Government departments and agencies	878	157,358	179.2
Governmental organizations	1,295	401,161	309.8
Cooperative associations and organizations	4,621	143,284	31.0
Religious organizations	66	1,597	24.2
Not elsewhere classified	111	4,861	43.8
Total	138,198	5,520,754	39.9

Note: Data as of the end of September, 1983

Source: MITI

Market Structure by Industrial Sector



General-Purpose Computer Shipments

(Upper row: no. of sets; Lower row: value in million yen)

Scale \ Fiscal Year	1978	1979	1980	1981	1982
Large	572 374,828	541 364,248	539 396,497	499 341,590	637 452,481
Medium	1,526 151,508	1,563 150,091	2,193 210,442	2,399 233,796	2,044 202,165
Small	3,600 69,282	4,281 81,437	6,737 126,043	7,149 130,110	7,301 131,158
Very-Small	7,345 41,421	8,909 50,131	8,904 51,730	10,392 61,109	14,247 75,308
Increase of equipment	— 161,248	— 188,438	— 185,634	— 243,191	— 292,358
Total	13,043 798,287	15,294 834,346	18,373 970,346	20,439 1,009,796	24,229 1,153,470
Rate of increase over the previous year by value (%)	1.0	4.5	16.3	4.1	14.2

Note: Data are for fiscal years.

Source: MITI

Office Computer Shipments

(Value: in million yen)

Fiscal year Scale		1979	1980	1981	1982	1983	Installed Base March, 1984 (Sets)
Large	Set	5,901	9,832	13,329	16,227	16,924	72,130
	Value	71,844	123,258	165,262	185,302	197,836	
Medium	Set	13,142	18,537	21,912	24,844	25,944	95,488
	Value	66,503	85,710	98,557	100,975	98,637	
Small	Set	1,785	4,462	14,832	24,250	30,412	59,745
	Value	4,050	10,310	23,294	46,148	59,775	
Increase of Equipment	Value	3,870	10,312	19,541	22,559	26,573	-
Total	Set	20,828	32,831	50,073	65,321	73,280	227,363
	Value	146,267	229,590	306,654	354,984	382,822	

Note: Classification by system purchase price

Large: ¥7.5 ~ ¥40 million

Medium: ¥3 ~ ¥7.5 million

Small: Less than ¥3 million

Source: JEIDA

Editor's Note: Some office computers are also counted as very-small or small scale general-purpose computers in the MITI survey presented on pp. 1 ~ 4 of this report.

Minicomputer Shipments by Utilization

(Value: in million yen)

Utilization		Fiscal year		1979	1980	1981	1982	1983
		Set	Value					
OEM	Set	4,347	4,832	4,693	4,077	3,890		
	Value	19,361	24,018	25,092	28,476	27,270		
Industrial Control	Set	1,333	1,703	2,048	1,768	1,796		
	Value	51,523	68,731	79,275	70,003	72,981		
Communication Control	Set	1,112	975	907	1,165	1,196		
	Value	14,213	11,216	17,293	19,110	19,019		
Scientific & Technological Calculations	Set	796	914	892	853	1,408		
	Value	12,902	21,874	22,551	21,794	28,947		
Others	Set	1,212	1,507	1,811	1,382	1,580		
	Value	26,679	29,452	33,702	28,682	25,589		
Total	Set	8,800	9,931	10,351	9,245	9,870		
	Value	124,678	155,291	177,913	168,065	173,806		

Source: JEIDA

Minicomputer Shipments by Size Category

(Value: in million yen)

Scale \ Fiscal year		1979	1980	1981	1982	1983
Very Large	Set	99	188	363	609	1,113
	Value	8,672	16,490	23,943	31,326	52,615
Large	Set	2,069	2,365	2,807	2,408	1,957
	Value	61,361	79,687	96,989	93,347	67,503
Medium	Set	4,091	3,721	3,555	3,763	4,436
	Value	47,918	49,651	47,805	38,157	47,943
Small	Set	2,541	3,657	3,626	2,465	2,364
	Value	6,727	9,463	9,176	5,235	5,745
Total	Set	8,800	9,931	10,351	9,245	9,870
	Value	124,678	155,291	177,913	168,065	173,806

Classification

- Very Large: 32-bit machines and other high-priced minicomputers
- Large: CPU + 128 KB memory with purchase price of more than ¥5 million
- Medium: CPU + 64 KB memory with purchase price of ¥2 ~ ¥5 million
- Small: CPU + 32 KB memory with purchase price of less than ¥2 million

Source: JEIDA

Personal Computer Shipments

(Value: in million yen)

Shipments \ Fiscal year		1978	1979	1980	1981	1982	1983
Set		9,976	46,402	110,610	282,759	762,166	1,141,079
Value		5,979	15,949	33,697	107,019	231,352	341,602

Note: Does not include hand-held computers & game computers.

Source: JEIDA

II. PERIPHERALS & TERMINALS

Shipments of Peripheral Equipment

(Value: in million yen)

Fiscal year		1978	1979	1980	1981	1982	1983
Storage Devices	No	142,117	216,265	310,090	489,794	1,159,551	7,373,776
	Value (% Δ)	197,904 (20.7)	231,566 (17.0)	281,943 (21.8)	307,310 (9.0)	439,765 (43.1)	725,398 (64.9)
Printers	No	66,857	126,497	420,928	760,831	1,242,488	5,217,480
	Value (% Δ)	93,818 (24.1)	128,681 (37.2)	193,807 (50.6)	254,395 (31.3)	352,551 (38.6)	688,374 (95.3)
Plotters	No	640	2,895	2,696	3,355	12,394	65,243
	Value (% Δ)	961 (72.2)	4,682 (387.2)	7,589 (62.1)	10,735 (41.5)	14,080 (31.2)	20,233 (43.7)
Readers/Punchers	No	27,154	40,101	91,423	35,694	28,801	350,910
	Value (% Δ)	16,647 (8.8)	17,050 (2.4)	15,305 (-10.2)	12,296 (-19.7)	11,276 (-8.3)	14,677 (30.2)
Recognition Equipment	No	2,471	4,077	3,148	4,654	4,411	4,916
	Value (% Δ)	12,108 (-7.2)	17,910 (47.3)	15,073 (-15.8)	14,958 (-0.8)	14,503 (-3.0)	12,561 (-13.4)
Displays	No	20,655	109,416	312,824	559,835	865,424	1,859,146
	Value (% Δ)	24,296 (17.2)	36,693 (51.0)	54,796 (49.3)	75,327 (37.5)	115,558 (53.4)	214,217 (85.4)
Other I/O Equipment	No	888	1,961	2,519	3,065	8,954	31,231
	Value (% Δ)	5,183 (20.9)	5,146 (-0.7)	7,281 (41.5)	4,109 (-43.6)	9,686 (135.7)	11,457 (18.3)
Total	No	260,782	501,212	1,143,628	1,857,228	3,322,023	14,902,702
	Value (% Δ)	350,917 (19.6)	441,728 (25.9)	575,794 (30.4)	679,129 (17.9)	957,419 (41.0)	1,686,917 (76.2)

Note: Figures in parenthesis indicate % of growth over previous year.

Source: JEIDA

Shipments of Terminals, Off-line Equipments & Data Transmission Equipments

(Value: in million yen)

Equipments		Fiscal year		1978	1979	1980	1981	1982	1983
		No.	Value						
Terminal Equipments	General-Purpose-Terminals	No. Value (% Δ)	18,751 53,327 (14.3)	30,947 83,430 (56.4)	60,906 114,055 (36.7)	65,881 101,348 (-11.1)	154,514 137,218 (26.1)	156,890 165,287 (20.5)	
	Special-Purpose-Terminals	No. Value (% Δ)	37,188 116,362 (7.6)	49,930 157,801 (35.6)	56,175 168,562 (6.8)	69,892 162,389 (-3.7)	103,826 172,652 (6.3)	171,484 212,533 (23.1)	
	Other-Terminal-Equipments	No. Value (% Δ)	12,579 6,557 (971.4)	110 150 (-97.7)	1,628 1,657 (1,004.7)	9,772 1,891 (14.1)	5,445 980 (-48.2)	— — —	
	Sub Total	No. Value (% Δ)	68,518 176,246 (13.4)	80,987 241,381 (37.0)	118,709 284,274 (17.8)	135,773 263,737 (-7.2)	258,340 309,870 (17.5)	328,374 377,820 (21.9)	
Off-line Equipments	Data Preparation Equipments	No. Value (% Δ)	12,124 16,911 (1.8)	12,789 17,073 (1.0)	14,253 21,372 (25.2)	9,790 15,079 (-29.4)	4,645 8,668 (-42.5)	(No.) 13,543	
	Media Conversion Equipments	No. Value (% Δ)	1,623 1,882 (-1.1)	40 809 (-57.0)	297 769 (-4.9)	104 415 (-46.0)	87 30 (-92.8)	(Value) 7,774	
	Sub Total	No. Value (% Δ)	13,747 18,793 (1.5)	12,829 17,882 (-4.8)	14,550 22,141 (23.8)	9,894 15,494 (-30.0)	4,732 8,698 (-78.1)	13,543 7,774 (-10.6)	
Data Transmission Equipments		No. Value (% Δ)	41,763 14,780 (-38.2)	61,740 25,115 (69.9)	77,331 26,825 (6.8)	96,008 29,625 (10.4)	154,316 36,353 (22.7)	197,543 45,048 (23.9)	
Total		No. Value (% Δ)	384,810 560,736 (14.1)	656,768 726,106 (29.5)	1,354,218 909,034 (25.2)	2,098,903 987,985 (8.7)	3,739,411 1,312,340 (32.8)	15,442,162 2,117,559 (61.4)	

III. PRODUCTION, EXPORTS & IMPORTS

Computer Production

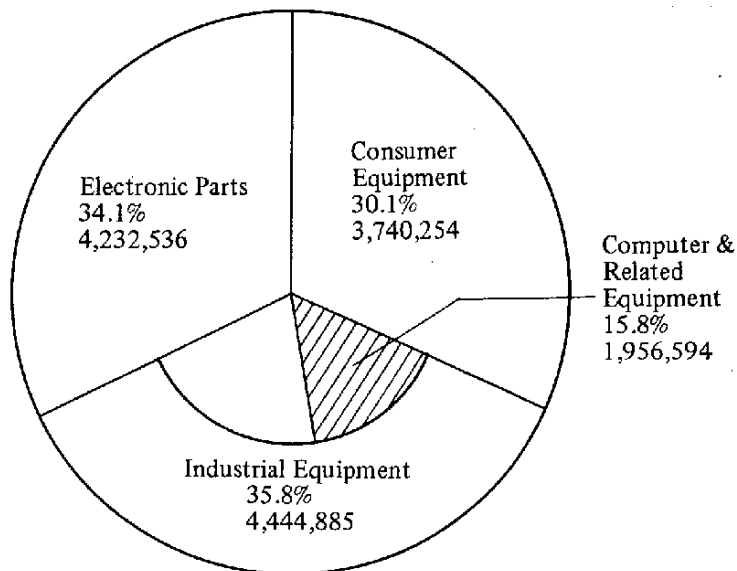
(Value: in million yen)

	Mainframes			Ancillary Equipment			Communi- cation control	Data terminal	Support equip- ment	Total
	General use	Control use	Sub- total	External memory	I/O devices	Sub- total				
1979	447,139	11,447	458,586	195,800	100,763	296,563	13,943	235,338	45,236	1,049,666
1980	461,548	27,536	489,084	230,881	120,121	351,002	18,105	279,209	40,357	1,177,757
1981	538,527	28,145	566,672	270,310	155,408	425,718	22,411	300,498	36,426	1,351,725
1982	644,476	25,417	670,353	330,237	203,338	533,575	27,384	349,698	43,167	1,624,177
1983	699,993	21,776	721,769	432,972	289,605	722,577	40,900	416,618	54,730	1,956,594

Note: Data are for calendar years.

Source: MITI

Computer Production in Electronics Industry



(Value in million yen)

1983 Production in the Electronics Industry: 12,417,675 million yen

Exports of Computers

(Value: in million yen)

	Digital Mainframes	Peripherals	Parts	Related Equipments	Total	Growth (%)
1974	10,233	7,797	5,719	794	24,543	53
1975	11,089	9,629	10,909	834	32,461	32
1976	7,073	31,619	21,014	587	60,293	86
1977	11,993	28,008	25,600	999	66,600	10
1978	21,834	47,251	35,010	600	104,695	57
1979	20,260	59,319	48,171	1,306	129,056	23
1980	39,619	81,680	46,279	397	167,975	30
1981	57,840	135,470	71,833	317	265,460	58
1982	76,453	263,010	118,661	641	458,765	73
1983	147,167	528,333	176,753	1,225	853,478	86

Notes: Tabulated from Ministry of Finance custom statistics.
Data are for calendar years.

Imports of Computers

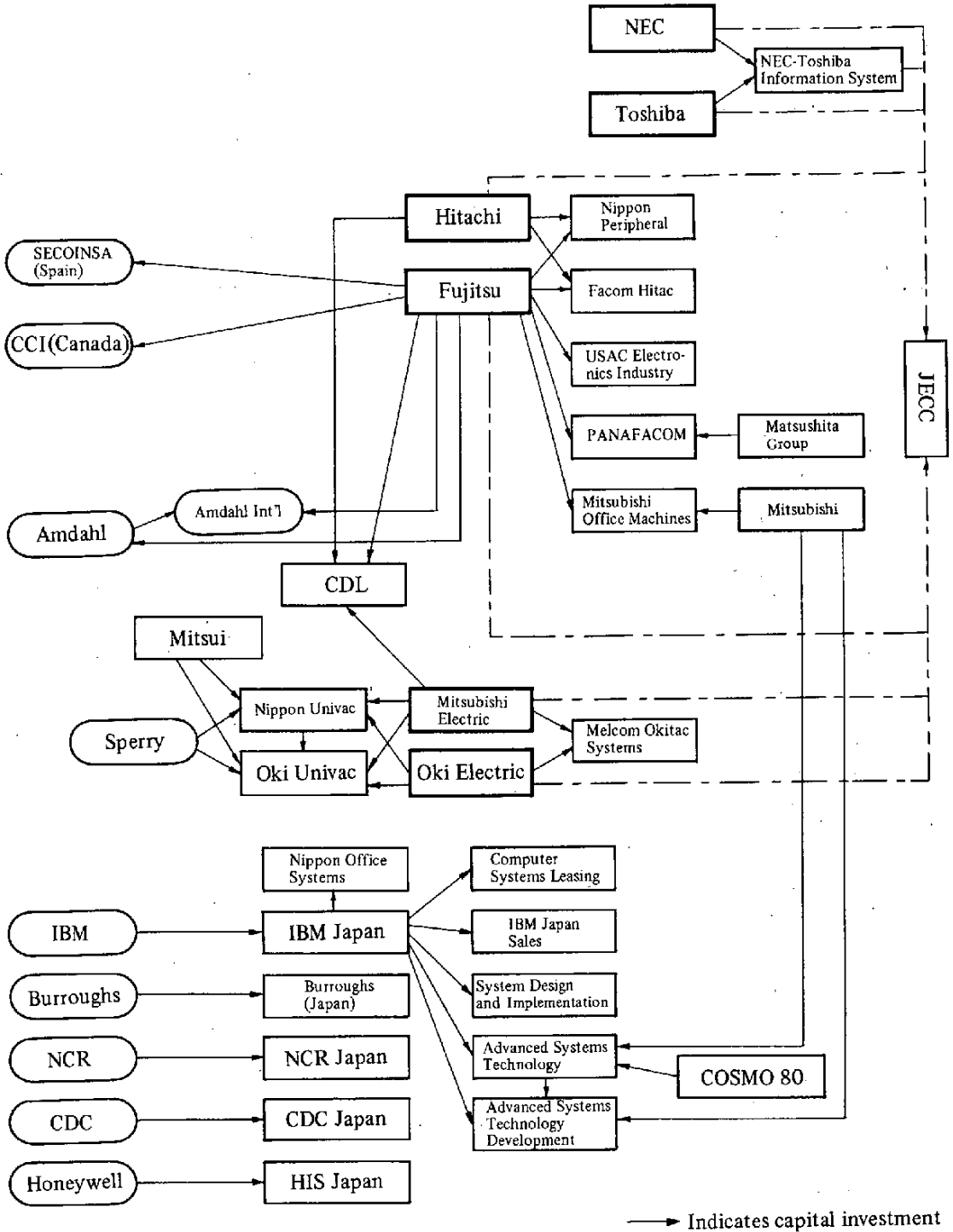
(Value: in million yen)

	Mainframes	Peripherals	Parts	Total	Growth
1974	48,609	65,436	30,787	144,832	35
1975	45,504	51,870	33,285	130,659	△10
1976	49,493	46,174	36,954	132,621	2
1977	54,491	54,755	37,225	146,471	10
1978	36,346	45,199	29,455	111,000	△24
1979	48,593	66,521	39,165	154,279	39
1980	77,601	83,713	53,072	214,386	39
1981	69,225	75,967	60,242	205,434	△4
1982	72,046	85,205	72,926	230,177	12
1983	76,212	83,848	68,545	228,605	△1

Notes: Tabulated from Ministry of Finance custom statistics.
Data are for calendar years.

IV. COMPUTER MANUFACTURERS

Major Joint Ventures and Tie-Ups of Computer Manufacturers



Top 25 Computer Manufacturers and Dealers – FY 83 Results –

(Value: in 100 million yen)

	Company	EDP Related Revenues	Growth Ratio to Year Prior	Total Revenues	Net Earnings	Settlement Term
1	Fujitsu, Ltd.	6,813	25.6%	9,917	449	84/3
2	IBM Japan, Ltd.	6,122	26.2%	6,122	447	83/12
3	Nippon Electric Co., Ltd.	5,203	22.5%	14,597	346	84/3
4	Hitachi, Ltd.	4,430	22.3%	26,482	834	84/3
5	Toshiba Corp.	1,830	30.2%	20,257	502	84/3
6	Oki Electric Industry Co., Ltd.	1,548	18.7%	3,035	54	84/3
7	Mitsubishi Electric Corp.	1,360	23.6%	15,877	284	84/3
8	Nippon UNIVAC Kaisha, Ltd.	1,076	3.7%	1,076	18	84/3
9	Commodore Japan Ltd.	1,000	46.1%	1,000	–	84/6
10	EPSON Corp.	974	149.7%	1,484	–	84/3
11	Burroughs Corp.	668	9.9%	668	12	83/11
12	Alps Electric Co., Ltd.	619	57.5%	2,515	84	84/3
13	Tokyo Electric Co.	617	39.3%	1,424	43	84/3
14	NCR Japan, Ltd.	612	4.6%	804	50	83/11
15	Sharp Corp.	610	15.1%	7,566	291	84/3
16	C. Itoh Electronics, Japan	506	60.1%	533	–	84/3
17	Ricoh Co., Ltd.	419	18.4%	3,887	121	84/3
18	Matsushita Communication Industrial Co., Ltd.	400	25.0%	2,507	123	83/11
19	Panafacom Limited	325	79.6%	325	*21	84/3
20	Nihon Digital Equipment Corp.	300	18.1%	300	–	84/6
21	Yokogawa Hewlett-Packard Co.	288	10.8%	721	*40	83/10
22	Matsushita Electric Industrial Co., Ltd.	280	115.4%	27,188	975	83/11
23	Seikosha Co., Ltd.	250	47.1%	900	–	84/3
24	YE Data Inc.	236	31.1%	240	10	84/3
25	Sanyo Electric Co., Ltd.	230	76.9%	8,198	229	83/11

- Notes:
1. Does not include computer services companies.
 2. EDP related revenues include those derived from all types of computers, peripheral equipment and software, plus various services, parts and supplies. For this reason, the figures shown here may differ from the sales figures published by the various companies themselves.
 3. "FY83 figures" reflect the actual performance of each company during its most recent accounting period.
 4. Subsidiary and affiliated firms of computer manufacturers, whose accounts are calculated together with their parent companies', are not covered separately in this survey.
 5. Figures for companies which do not publish reports disclosing their performance and financial condition were obtained independently by Computerworld Japan.
 6. * Recurring income.

Source: Computerworld Japan, Inc.

V. SERVICE BUREAUS

No. of Enterprises & Offices of Information Service Bureaus

No. of Offices by Type of Service												
No. of Companies	No. of Offices	Aggregate Total	Business Calculations	Other Calculations	Software Development	Card Punching	Machine Time	Systems Management*	Database**	Various Research	Others	
1977	1,309	1,640	4,041	689	213	671	686	206	595	278	327	376
1978	1,336	1,672	4,113	692	218	719	712	187	607	302	313	363
1979	1,390	1,761	4,548	744	224	779	732	195	852	293	330	399
1980	1,343	1,731	4,551	727	205	801	716	167	902	285	308	440
1981	1,365	1,801	4,418	757	220	1,088	727	157	387	289	299	494
1982	1,391	1,864	4,449	808	234	1,011	734	156	427	281	302	496

Notes: * Figures for "Systems Management" up until 1980 were based on the numbers of personnel dispatched to customers' locations to provide services including software development. However, figures for 1981 concerning the dispatch of personnel for software development purposes are included in the item titled "Software Development".

** Including non-computer-readable information.

Source: MITI

Distribution of Annual Revenues

(Value: in million yen)

Distribution of Revenues												
No. of Companies	Total No. of Personnel	Total Revenues	Business Calculations	Other Calculations	Software Development	Card Punching	Machine Time	System Management*	Database**	Various Research	Others	
1977	1,309	72,000	412,580	123,927	14,650	77,307	55,410	17,348	52,564	23,811	31,148	16,415
1978	1,336	77,000	460,241	135,529	19,148	88,973	60,987	12,007	66,521	27,069	31,540	18,466
1979	1,390	91,000	596,613	168,676	22,172	128,945	69,986	14,911	90,616	31,604	39,319	30,384
1980	1,343	93,000	669,844	181,634	22,709	153,985	74,205	15,345	104,103	44,059	38,676	35,128
1981	1,365	105,898	805,692	220,792	37,919	227,549	83,393	14,173	71,806	60,737	48,288	41,096
1982	1,391	113,414	911,907	252,617	23,795	300,098	83,944	11,252	88,495	52,342	52,187	47,177

Notes: * Figures for "Systems Management" up until 1980 were based on the numbers of personnel dispatched to customers' locations to provide services including software development. However, figures for 1981 concerning the dispatch of personnel for software development purposes are included in the item titled "Software Development".

** Including non-computer-readable information.

Source: MITI

The Top 40 Information Processing Service Firms in Japan

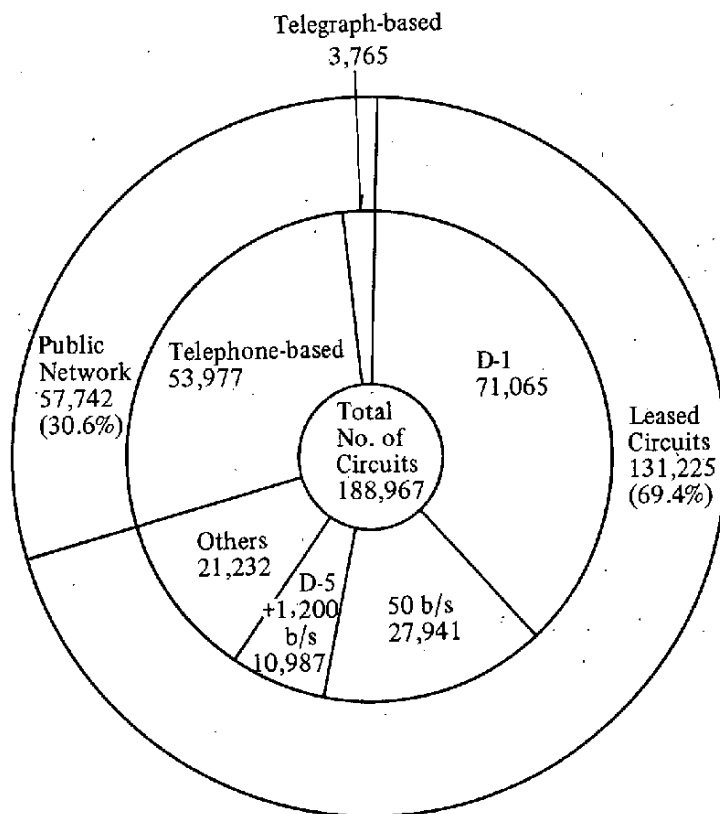
Rank	Company	Fiscal 1982			Fiscal 1981 Sales (¥ million)	Fiscal 1980 Sales (¥ million)
		Sales (¥ million)	Sales per employee (¥10,000)	Increase over previ- ous year (%)		
1	NEC Software	26,129	2,216	10.9	17,857	13,309
2	Nippon Business Consultant	22,987	1,371	14.5	17,613	15,075
3	Computer Service Co., Ltd.	17,712	565	23.5	12,722	9,087
4	Hitachi Software Engineering	14,829	706	27.5	10,803	9,569
5	Nomura Computer System	14,677	2,754	15.4	9,824	8,093
6	Japan Information Processing Service	14,648	1,355	18.1	8,944	8,400
7	Japan Information Service	13,935	1,452	34.1	8,389	8,682
8	Facom Information Processing Co., Ltd.	13,575	1,209	43.0	8,260	7,283
9	Toyo Information Systems	13,023	1,470	35.0	7,571	6,139
10	Intec	12,361	1,039	17.5	7,525	6,232
11	Quotation Information Center K.K.	12,813	6,101	NA	7,275	6,559
12	NEC Information Service	10,752	1,955	12.8	7,006	6,613
13	Century Research Center	10,255	1,163	16.0	6,761	6,550
14	Japan Business Automation	9,346	1,923	11.6	6,478	5,865
15	Kyoei Information Processing Service Center	8,851	1,125	8.3	6,206	5,146
16	Central Systems	7,974	1,199	13.9	5,220	5,220
17	T.K.C.	7,128	3,198	9.3	4,394	3,410
18	Daiko Electronics & Communication Co., Ltd.	7,040	1,709	12.4	4,224	4,224
19	Mitsui Knowledge Industry Co., Ltd.	6,710	2,275	10.7	4,144	3,652
20	Nippon Electric Development Co., Ltd.	6,572	1,027	NA	4,029	3,391
21	Marketing Intelligence Corporation	6,433	969	17.3	3,866	3,151
22	Diamond Computer Service Co., Ltd.	6,168	2,345	23.8	3,837	4,226
23	The Nikko Computer Systems Co., Ltd.	5,737	2,732	NA	3,795	-
24	C.E.C.	5,725	910	NA	3,671	1,499
25	Nippon Time Share Co., Ltd.	5,719	974	34.3	3,450	2,975
26	Nippon System Development Co., Ltd.	5,164	951	13.7	3,300	-
27	Fujigin Computer Service, Ltd.	5,047	971	13.3	3,146	3,204
28	Nippon Computer Service Center Co., Ltd.	4,212	366	NA	3,091	-
29	Software Research Associates Co., Ltd.	4,200	1,050	23.6	3,027	2,785
30	Nippon Information Industry	4,200	522	16.7	2,900	2,400
31	Seibu Joho Center	4,177	1,114	16.2	2,887	2,266
32	Kansai Electronic Computing Center	4,136	1,538	46.7	2,837	2,612
33	M.S.K. Systems	4,126	4,168	13.3	2,722	2,722
34	Nippon Computer System Co., Ltd.	3,891	748	7.7	2,720	4,856
35	Computer Applications Co., Ltd.	3,860	1,170	20.9	2,705	2,006
36	Data Process Consultant	3,856	387	NA	2,580	2,579
37	Tokyo Securities Computing Center Co., Ltd.	3,487	2,165	0.5	2,518	2,276
38	Fuyo Data Processing & System Development Ltd.	3,371	812	10.3	2,498	2,371
39	Asahi Business Consultant Co., Ltd.	3,345	597	25.5	2,438	1,971
40	Chuo Computer Co., Ltd.	3,132	360	22.6	2,362	2,362

Notes: Sales figures reflect computer service revenues.
Tabulated from MITI survey.

Source: COMPUTOPIA, Computer Age Co., Ltd.

VI. DATA COMMUNICATIONS

Utilization of Domestic Data Communication Circuits



Note: Data as of the end of March, 1983
Source: MPT

Installation of Domestic On-line Systems

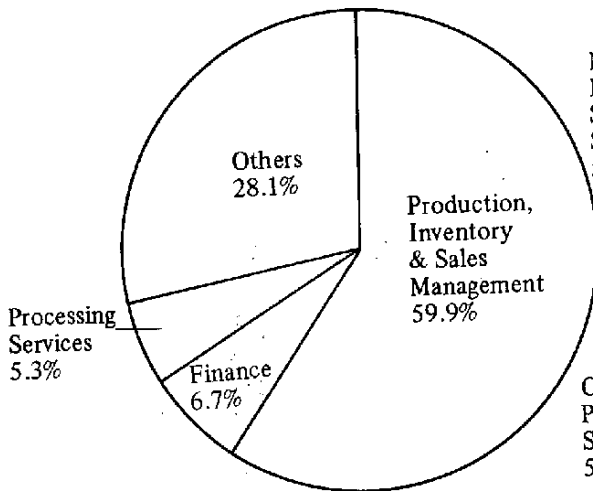
Fiscal year System	74	75	76	77	78	79	80	81	82	83
Privately-owned Systems	706	1,126	1,429	1,999	2,689	3,403	4,598	5,807	7,095	7,951
NTT Systems	38	42	50	58	60	65	70	72	76	83
Total	744	1,168	1,479	2,057	2,749	3,468	4,668	5,879	7,171	8,034

Notes: Data as of the end of March each year.

NTT Systems: Computer(s) & terminals are supplied by NTT (Nippon Telegraph and Telephone Public Corporation)

Source: MPT

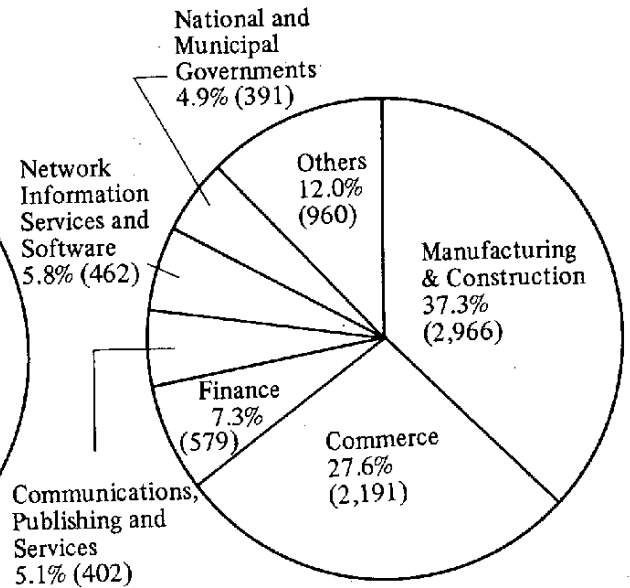
On-line Systems by Application



Notes: Data as of the end of March, 1983.
Privately-owned domestic systems only.

Source: MPT

On-line Systems by Industry



Total: 7,951 Systems

Notes: Data as of the end of March, 1983.
Privately-owned domestic systems only.

Source: MPT

Installation of International On-line Systems

System \ Fiscal year	79	80	81	82	83
Privately-owned Systems	80	116	150	189	223
KDD Systems	4	5	6	6	6
Total	84	121	156	195	229

Note: Data as of the end of March each year.

Source: MPT

VII. USER SPENDING

Monthly EDP Budget

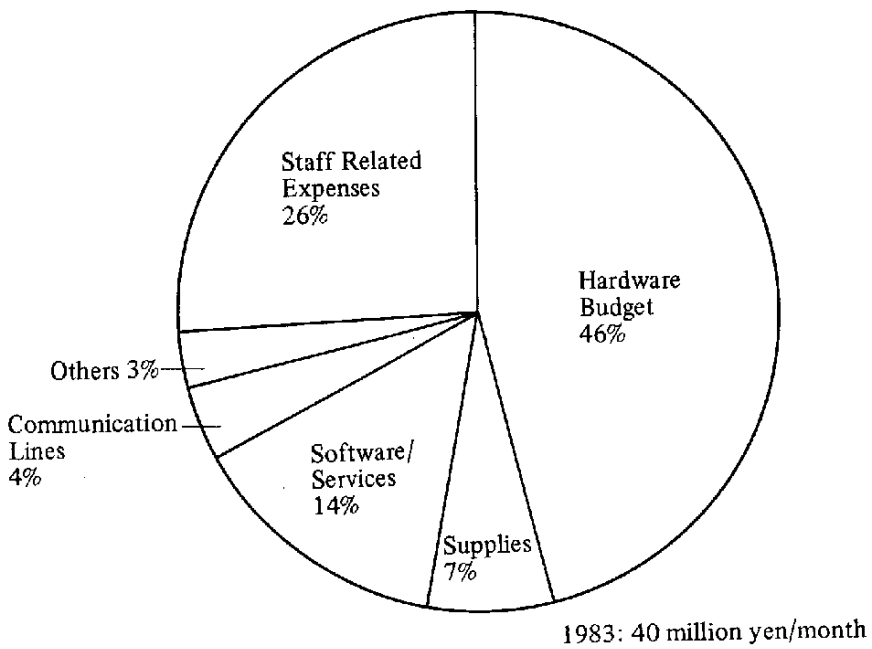
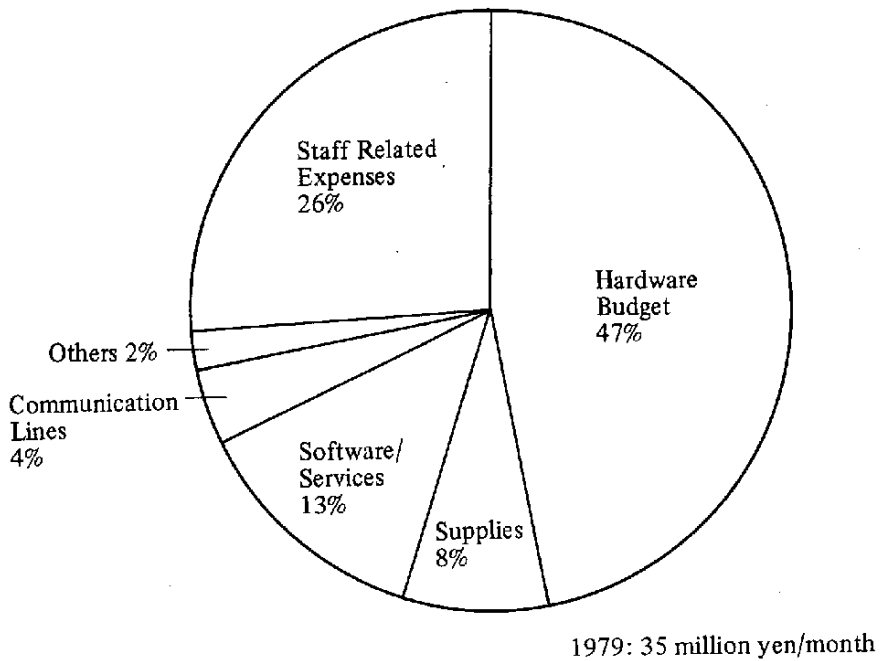
(Value: in 1,000 yen)

Year	1979	1980	1981	1982	1983
Staff Related Expenses	9,631.5	10,093.8	9,877.9	10,618.7	9,944.7
Hardware Budget	17,899.7	16,375.1	17,151.5	18,766.3	17,693.0
Rental or Lease Payments	10,480.9	9,744.7	10,411.0	10,396.4	11,251.3
CPU	4,334.4	3,198.9	3,606.4	3,556.9	3,447.3
I/O Peripherals	1,775.4	1,603.6	1,660.5	1,502.7	2,352.2
Storage Peripherals	1,782.2	1,464.9	1,704.6	1,472.2	1,306.3
Online Terminals	2,521.1	3,420.5	3,389.6	3,784.1	4,086.3
Depreciation Charges	4,529.7	3,652.2	2,964.8	2,390.2	2,689.8
CPU	1,480.3	1,097.6	700.0	614.3	516.9
I/O Peripherals	448.6	313.9	228.3	204.6	253.6
Storage Peripherals	192.2	299.9	317.9	168.7	141.4
Online Terminals	2,405.2	1,925.2	1,706.6	1,383.0	1,765.9
Maintenance Charges and Insurance Premiums	2,885.1	2,976.8	3,768.8	5,956.7	3,744.0
Supplies	2,884.1	3,430.9	3,291.1	3,287.7	2,844.6
Card and Paper Tape	135.7	153.7	88.6	90.5	91.2
Magnetic Media	307.9	203.9	162.6	170.5	404.2
Business Forms	1,385.9	1,478.3	1,482.8	1,451.7	1,231.5
Power & Air Conditioning	1,053.6	1,592.6	1,554.6	1,572.4	1,112.8
Software/Services	4,790.2	4,882.7	5,240.0	5,229.2	5,634.9
Processing Service	1,056.2	772.1	1,133.9	897.8	843.8
Punch and Verify	1,384.1	1,428.9	1,132.8	1,212.3	1,074.1
Custom Software	776.8	681.2	1,132.6	1,106.8	1,625.1
Software Packages	68.0	56.9	82.2	214.0	237.4
Others	1,505.1	1,943.5	1,757.1	1,795.0	1,851.6
Others	2,295.0	1,860.2	2,108.0	2,425.3	2,606.4
Communication Lines	1,585.2	1,518.0	1,501.7	1,589.1	1,556.4
Others	709.8	341.3	606.2	831.9	1,050.0
Total	37,800.5	36,642.6	37,668.5	40,327.2	38,776.2
No. of Responding Companies	1,150	1,135	1,007	1,066	1,163

Note: Total figures do not always coincide with the sum of the sub-categories because of statistical manipulations.

Source: JIPDEC

Intra-budgetary Relationships



Source: JIPDEC

VIII. MAJOR ORGANIZATIONS IN COMPUTER FIELD

Name	Address	Activities
Japan Information Processing Development Center	Kikai Shinko Kaikan 3-5-8 Shibakoen Minato-ku, Tokyo Phone: 438-0546	<ol style="list-style-type: none"> 1. Surveys on Information Processing Systems and Present Trends in the Information Processing Industry 2. Research and Development of Software 3. Consultation and Data Processing Services 4. Education and Training of Senior-level Engineers, Managers and EDP-Instructors (Lecture Meetings and Symposiums) 5. Grants for Outstanding Research Activities 6. Publications and Public Information Activities 7. Administrative Responsibility for Data Processing Examination 8. International Exchange with Overseas Information Processing Organizations
Center for the International Cooperation for Computerization	43rd Mori Bldg. 3-13-16, Mita Minato-ku, Tokyo Phone: 457-0941	<ol style="list-style-type: none"> 1. Information Processing Related Training Programs for Individuals from Developing Countries 2. Information Processing Related Education and Guidance Activities Aimed at Developing Countries (Films, Publications, Seminars, etc.) 3. Conduct of Studies and Surveys into the State of Information Processing in Developing Countries.
Federation of EDP Users Association	c/o Burroughs Users Association, Burroughs Co., Ltd. 1-6 Kojimachi, Chiyoda-ku, Tokyo Phone: 263-2189 (As of September 1984)	<ol style="list-style-type: none"> 1. Submission of Requests 2. Assistance in Drafting of JIS 3. Various Polls
Information Processing Society of Japan	Kikai Shinko Kaikan 3-5-8 Shibakoen Minato-ku, Tokyo Phone: 431-2808	<ol style="list-style-type: none"> 1. Studies & Surveys Design Automation, Data Base, Man-Machine System, Processing of Medical Data, Computer Architecture, System Evaluation, Computer Networks, Video Information Processing, Symbolic Processing 2. International Activities Participation in IFIP, ISO and other International Conferences 3. Publications Data Processing (Japanese Monthly and English Annual) Electronic Computer User's Annual
Information-technology Promotion Agency, Japan	Shuwa Shibakoen 3-chome Bldg. 3-1-38 Shibakoen Minato-ku, Tokyo Phone: 437-2301	<ol style="list-style-type: none"> 1. Development on Consignment of Advanced General Purpose Programs 2. Sale and Rental of Advanced General Purpose Programs 3. Guarantee of Loans for Program Development, etc. 4. Surveys on Data Processing 5. Survey for Compilation of Program Register
Institute for New Generation Computer Technology	Mita Kokusai Bldg. 1-4-28 Mita Minato-ku, Tokyo Phone: 456-2511	<ol style="list-style-type: none"> 1. Research & Development Work Related to Fifth Generation Computer Systems 2. International Activities
The Institute of Administrative Information Systems	32nd Mori Bldg. 3-4-30 Shibakoen Minato-ku, Tokyo Phone: 438-1678	<ol style="list-style-type: none"> 1. Studies & Surveys 2. Dispatch of Overseas Study Groups such as the Overseas ADP Study Group (Annually) 3. Seminars 4. Publication Gyosei to ADP (Monthly)

Name	Address	Activities
Japan Data Communications Association	25th Mori Bldg. 1-4-30 Roppongi Minato-ku, Tokyo	<ol style="list-style-type: none"> 1. Research, Development and Surveys Relating to Data Communications 2. Recommendations of Data Communication Policies 3. Education and Training Correspondence Courses for Prospective Foremen Qualification Test for Foremen; Seminars, Lectures, etc. 4. Consultation on Data Communication Circuit Usage 5. Approval of Self-Operated Terminal Devices 6. Collection and Supply of Materials and Information
Japan Electronic Computer Co.	Shinkokusai Bldg. 3-4-1 Marunouchi Chiyoda-ku, Tokyo Phone: 216-3681	<ol style="list-style-type: none"> 1. Electronic Computer Rentals 2. Surveys & Publications Japan Electronic Computer News (Monthly) Seasonal Surveys, Computer Notes
Japan Electronic Industry Development Association	Kikai Shinko Kaikan 3-5-8 Shibakoen Minato-ku, Tokyo Phone: 434-8211 (EX) 354	<ol style="list-style-type: none"> 1. Surveys (Survey on Trends in Electronic Computer Technology) 2. Dispatch of Overseas Survey Groups 3. Holding of Lectures 4. Publications The Electronic Industry (Monthly) Various Other Survey Reports
Japan Information Service Industry Association	Kikai Shinko Kaikan 3-5-8 Shibakoen Minato-ku, Tokyo Phone: 436-3938	<ol style="list-style-type: none"> 1. Study and Research on Measures to Cope with Problems of Information Service Industry 2. Submission of Recommendations 3. Surveys on Demand Structure, Future Vision, etc. 4. Lecture Meetings and Symposiums 5. Publications 6. International Exchange with Overseas Information Service Organizations
Japan Society for the Promotion of Machine Industry	Kikai Shinko Kaikan 3-5-8 Shibakoen Minato-ku, Tokyo Phone: 434-8211 (EX) 161	<ol style="list-style-type: none"> 1. Research on Structure of Machine Industry, Analysis of Company Management, Survey on Trends in Domestic and Overseas Machine Industries 2. Library on Machine Industry Management and Economics 3. Surveys and Research on Machine Industry Technology 4. Testing on Consignment 5. Projects for Promoting Wider Use of New Machines and Developing Systems 6. Surveys and Research on Production Administration Technology 7. Other Projects Promoting the Machine Industry
Kansai Institute of Information Systems	Osaka International Trade Center Bldg. 5-3-51, Nakanoshima Kita-ku, Osaka Phone: 448-6631	<ol style="list-style-type: none"> 1. Development & Distribution of Various Kinds of Software 2. Training of Computer Personnel 3. Surveys, Research & Development 4. Submission of Recommendations
Local Authorities System Development Center	25 Ichiban-cho Chiyoda-ku, Tokyo Phone: 264-0691	<ol style="list-style-type: none"> 1. Promotion of EDP Systems in Local Government through R&D, Technical Assistance, Education and Training 2. Publication Local Government Computer (Monthly)

Abbreviations of Data Sources

JIPDEC: Japan Information Processing Development Center
MITI: Ministry of International Trade and Industry
MPT: Ministry of Posts and Telecommunications
JEIDA: Japan Electronic Industry Development Association



