

User Ratings of Computer Systems

Datapro's 1982 Annual Computer System User Survey results are based on the returns received from 15,033 questionnaires mailed to a cross-section of *Computerworld* readers. The overall plan for the 1982 survey is to provide a high representation of users of computer systems in the general-purpose and minicomputer class—and report what these users think about their systems. The users were asked to supply selected hardware and software configuration information, identify the method of acquisition, and report on significant advantages and problems of their systems. The users were also asked to rate their systems in 14 subjective categories. In addition, the users were asked what they planned to implement in 1982, as well as whether their systems did what they expected them to do and if they would recommend their systems to other users.

Datapro has improved the sampling methodology and statistical validity of the 1982 Computer User Survey (see Survey Methodology). We think the 1982 survey represents our most successful survey of user opinions of computer systems. This report includes extensive charts and tables for easy comparison of the manufacturers' systems. We also have compared many of the 1982 results with the 1981 results to help you spot trends and improvements.

Datapro suggests that the reader use the information advisedly and reminds readers that individual profiles or ratings should not be the major consideration in making an acquisition decision. The reader can use the material in this report to help formulate questions about a computer system as the evaluation process proceeds. The information within this report will be very informative if used with discretion and with the understanding that there are many factors involved in selecting the right computer system(s) to meet your particular needs.

SURVEY METHODOLOGY

The survey has been based on results received from 15,033 questionnaires mailed to a very carefully controlled *n*th sampling from specific subsets of *Computerworld's* subscriber list. The specific subsets were identified and qualified by senior analysts from Datapro and *Computerworld*. In an effort to improve the response rate and thereby increase the statistical validity, the users were contacted twice; a first request was followed weeks later by a second request.

Each questionnaire allowed the user to rate one digital computer system. The recipient was encouraged to reproduce the form if he/she wished to rate more than one model. *Computerworld* labels were used as initial validation vehicles and for identification and elimination of duplicate returns.

Each recipient was asked to summarize experiences with computer systems of any size (minicomputer through

Datapro is proud to present the 1982 edition of the annual User Ratings of Computer Systems report. This year's survey summarizes the experience of 4,783 users with a total of 6,147 installed systems in the general-purpose and minicomputer class of computer systems. The users' ratings pinpoint strengths and weaknesses of each manufacturer's equipment, software, and support and provide information that should be of great value in planning for the acquisition of a computer system.

supercomputer) currently being used. Users were asked 86 questions about their systems.

When Datapro received the returns, senior-level analysts audited the returns. Duplicate responses were invalidated. Also eliminated were any or all forms which: did not identify manufacturer or model; did not withstand a "reasonableness" test; evaluated different makes and models on one form; were forgeries; lacked system ratings; rated systems which were not minicomputers or mainframe computer systems; or revealed a vested interest on the part of the respondents.

Of the 15,033 surveys mailed, 94 were returned as undeliverable. We received 5330 responses from 5029 respondents, a return of 35 percent from the *Computerworld* mailings. We judged 246 responses invalid, giving us 5094 valid responses from 4783 users with a total of 6147 installed systems.

Datapro batched the valid returns by manufacturer and model and sent the returns to Mathematica Policy Research, Inc. which tabulated the 1982 results. The summary information was prepared in the form of either averages, percentages, or weighted averages. Weighted averages were computed in a manner similar to most college grading systems: "Excellent" is weighted as 4, "Good" as 3, "Fair" as 2, and "Poor" as 1. The tallied numbers for each value are then multiplied by the corresponding weight, and the average is taken by dividing the sum of the products by the total number of responses for that category.

WHAT MADE UP THE 1982 QUESTIONNAIRE?

Our questionnaire was comprehensive and asked the users a total of 86 questions. Each user was asked to identify the manufacturer, model, month/year of acquisition, and method of acquisition. Each user was requested to identify the type of industry, principal applications, and the sources of the applications programs. We also asked the users for information about their hardware and software configurations, about acquisitions or implementations planned for 1982, and whether they expected to replace their computer systems in 1982. ▷

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➤ The next group of questions on the survey requested the users to check any significant advantages of the system and any significant problems they had encountered.

All users were asked to rate their systems in the following categories: ease of operation, reliability of mainframe, reliability of peripherals, maintenance service (responsiveness and effectiveness), technical support (troubleshooting, education, and documentation), manufacturer's software (operating system, compilers and assemblers, and application programs), ease of programming, ease of conversion, and overall satisfaction.

We also asked users whether the computer system did what it was expected to do, and whether they would recommend their computer system to another user.

SURVEY RESULTS

Datapro decided to concentrate this survey on two classes of computer systems: mainframes and plug-compatible mainframes (PCMs), and minicomputers and small business computers (SBCs). Table 1, "Mainframes and Plug-Compatible Mainframes," contains the results on 37 model groupings from 12 mainframe and plug-compatible mainframe vendors, representing 2341 user responses. Table 2, "Minicomputers and Small Business Computers," contains the results on 43 minicomputer and small business computer model groupings from 21 vendors, representing 2753 responses.

Datapro wanted to examine and compare the results by manufacturer in each of the two classes of computer systems. Table 4, "Mainframe and Plug-Compatible Mainframe Vendor Summaries" contains summaries, by vendor, of the information in Table 1. Table 5, "Minicomputer and Small Business Computer Vendor Summaries," contains vendor summaries of the information in Table 2.

FINANCIAL ACQUISITION ALTERNATIVES

The users have three options by which they can acquire their computer system: purchase, rent/lease from the manufacturer, or lease from a third party. Each method of acquisition offers its own benefits and each method should be examined carefully to see which of these methods would be most beneficial to your company. By using the purchase option, the user can enjoy benefits such as the investment tax credit and depreciation schedule allowances. Also, the purchase price is generally more attractive than rental/lease. With the rapid advances in technology, however, many users feel that rental/lease from the manufacturer is the best option for them—because it allows them to upgrade faster to new systems. Also, many vendors include maintenance in the rent/lease price. The advantages a user can receive from third-party leasing are faster delivery and more attractive lease prices.

One of the questions we asked, therefore, was how users acquired their systems: outright purchase, rental/lease from the manufacturer, or third-party lease.

Reference to Figure 1 shows that traditionally more minicomputer and small business computer users purchase their systems than do mainframe or plug-compatible mainframe users (63 percent compared to 38 percent). The 1982 percentages for minicomputers and SBCs are the same as the 1981 percentages, whereas the percentages for the more costly mainframes and PCMs have increased in rental/lease from the manufacturer from 41 percent to 33 percent and dropped in purchase and lease from third-party sources from 24 percent to 21 percent. We think this is due to the recession and tight money market.

Method of Acquisition	Mainframes/PCMs		Minis & SBCs	
	1982	1981	1982	1981
Purchase (%)	38	43	63	63
Rent/Lease From Mfr. (%)	41	33	25	25
Lease From 3rd Party (%)	21	24	12	12

Figure 1. Financial acquisition alternatives

TYPE OF INDUSTRY

One of the questions we requested the user to answer was "What type of industry describes your company?" Chart A, shows the market penetration in each industry by manufacturer in each class of computer systems.

Type of Industry	Mainframes and PCMs		Minicomputers and SBCs	
	1982 (2341)	1981 (1919)	1982 (2753)	1981 (2192)
Banking/Finance/Securities	26.14	13.53	30.88	5.45
Chemical/Petroleum	1.07	1.53	1.27	1.99
Construction	0.68	1.17	1.89	2.61
Education	11.32	9.34	12.93	5.83
Engineering/Scientific	2.86	1.07	2.32	2.75
Government	2.31	9.65	2.43	5.73
Health Care/Medical	3.20	4.70	1.89	5.21
Insurance	6.11	7.35	10.32	2.70
Legal	0.21	0.20	0.25	0.33
Manufacturing	26.14	22.26	30.88	24.12
Media	1.07	1.07	1.27	1.56
Public Accounting/Consulting	0.68	0.36	1.89	6.02
Retail/Wholesale	11.32	10.11	12.93	12.80
Service Bureau	2.86	4.80	2.32	6.68
Transportation	2.31	2.65	2.43	1.66
Utilities (Public)	3.20	2.86	1.89	1.28
Other	6.11	7.25	10.32	12.89

Figure 2. Market penetration by class of computer systems

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Chart A. Computer Usage by Manufacturer and Industry Type

Type of Industry Manufacturer	Banking/Finance/ Securities	Chemical/ Petroleum	Construction	Education	Engineering/ Scientific	Government	Health Care/ Medical	Insurance	Legal	Manufacturing	Media	Public Accounting/ Consulting	Retail/ Wholesale	Service Bureau	Transportation	Utilities (Public)	Other
MAINFRAMES & PLUG-COMPATIBLE MAINFRAMES																	
Amdahl (45)	11.11	2.22	0.00	13.33	4.44	11.11	6.66	11.11	0.00	17.78	2.22	0.00	4.44	6.67	2.22	0.00	6.67
Burroughs (151)	31.79	1.32	1.32	3.31	0.00	13.25	5.96	2.65	0.00	15.23	0.00	1.32	8.61	9.27	1.99	1.32	2.65
Control Data (6)	16.67	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Digital Equipment (33)	3.03	9.09	0.00	6.06	42.42	9.09	3.03	0.00	0.00	9.09	0.00	0.00	3.03	0.00	0.00	0.00	6.06
Honeywell (187)	4.28	2.14	3.21	7.49	0.53	8.02	3.74	6.42	0.00	32.62	0.53	1.07	17.11	2.67	1.60	1.60	6.95
IBM (1429)	13.37	3.08	0.49	5.67	1.12	5.81	5.39	9.59	0.21	28.48	1.33	0.35	10.50	2.38	2.52	4.13	5.25
IPL (8)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.50	0.00	0.00	0.00	0.00	0.00	37.50	0.00	0.00	50.00
Magnuson (29)	31.03	0.00	0.00	0.00	0.00	3.45	6.90	3.45	0.00	10.34	0.00	3.45	0.00	13.79	0.00	0.00	27.59
NAS (27)	7.41	0.00	0.00	14.81	0.00	14.81	0.00	11.11	0.00	18.52	0.00	0.00	3.70	3.70	0.00	0.00	25.93
NCR (207)	29.47	0.48	1.93	6.28	0.00	6.28	10.14	0.00	0.97	19.32	0.48	0.97	15.46	0.48	1.45	0.97	5.31
Singer (8)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	12.50	25.00	12.50	0.00	0.00	0.00
Univac (197)	3.55	2.03	2.54	8.12	0.51	15.74	1.52	5.58	0.00	26.40	1.52	1.02	15.23	0.00	3.55	4.06	8.12
Other (14)	0.00	0.00	0.00	14.29	7.14	14.29	0.00	0.00	0.00	21.43	0.00	7.14	14.29	7.14	7.14	7.14	0.00
All Mainframe Manufacturers (2341)	26.14	1.07	0.68	11.32	2.86	2.31	3.20	6.11	0.21	26.14	1.07	0.68	11.32	2.86	2.31	3.20	6.11
MINICOMPUTERS & SMALL BUSINESS COMPUTERS																	
Basic Four (44)	6.82	4.55	9.09	2.27	0.00	2.27	6.82	0.00	0.00	20.45	0.00	6.82	29.55	0.00	6.82	0.00	4.55
Burroughs (231)	9.52	3.03	3.46	8.23	0.43	13.42	5.19	2.60	0.00	24.68	0.87	0.00	13.42	4.33	3.03	3.46	3.90
Data General (131)	6.11	5.34	1.53	7.63	2.29	5.34	6.11	5.34	0.76	26.72	0.00	0.00	14.50	2.29	0.76	0.00	15.27
Datapoint (66)	9.09	3.03	3.03	1.52	3.03	3.03	3.03	4.55	0.00	22.73	6.06	4.55	13.64	4.55	6.06	0.00	10.61
Digital Equipment (332)	6.33	1.51	3.01	12.95	8.73	6.93	5.42	0.30	0.90	17.47	3.92	2.71	9.04	3.01	2.11	3.01	12.35
Four Phase (51)	5.88	1.96	0.00	0.00	0.00	5.88	37.25	3.92	0.00	29.41	0.00	0.00	5.88	3.92	1.96	0.00	3.92
General Automation (11)	0.00	0.00	9.09	0.00	9.09	0.00	0.00	0.00	0.00	54.55	0.00	0.00	0.00	18.18	0.00	0.00	9.09
Harris (16)	0.00	6.25	0.00	18.75	0.00	12.50	6.25	0.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	6.25
Hewlett-Packard (226)	3.54	4.87	3.10	11.95	3.10	6.64	4.87	2.21	0.00	33.63	2.21	1.33	8.41	1.33	1.33	0.44	11.06
Honeywell (37)	10.81	0.00	2.70	2.70	0.00	8.11	0.00	8.11	0.00	13.51	0.00	2.70	27.03	5.41	0.00	0.00	18.92
IBM (1172)	5.29	3.07	3.50	2.99	0.51	3.75	4.35	2.65	0.17	41.21	0.60	1.88	14.16	1.11	2.56	2.30	9.64
Microdata (43)	0.00	0.00	2.33	2.33	0.00	4.65	9.30	2.33	0.00	32.56	2.33	0.00	23.26	4.65	0.00	2.33	13.95
NCR (49)	8.16	6.12	2.04	6.12	0.00	12.24	10.20	4.08	0.00	16.33	0.00	0.00	12.24	0.00	2.04	2.04	18.37
Perkin-Elmer (24)	12.50	0.00	0.00	4.17	8.33	20.83	4.17	4.17	0.00	8.33	0.00	4.17	4.17	4.17	4.17	0.00	20.83
Point 4 (8)	12.50	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	25.00	0.00	12.50	12.50	0.00	0.00	12.50	0.00
Prime (84)	2.38	4.76	3.57	17.86	15.48	5.95	2.38	1.19	0.00	16.67	2.38	1.19	7.14	4.76	4.76	2.38	7.14
Qantel (6)	16.67	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00	33.33
Tandem (25)	28.00	4.00	0.00	0.00	0.00	8.00	8.00	0.00	0.00	4.00	0.00	0.00	8.00	8.00	8.00	4.00	20.00
Texas Instruments (32)	3.13	3.13	6.25	6.25	0.00	9.38	3.13	0.00	0.00	28.13	0.00	12.50	12.50	9.38	0.00	0.00	6.25
Univac (6)	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	16.67	0.00	0.00	0.00	33.33
Wang (87)	14.94	5.75	1.15	4.60	1.15	6.90	1.15	12.64	1.15	17.24	1.15	2.30	12.64	1.15	1.15	0.00	14.94
Other (72)	8.33	1.39	0.00	5.56	4.17	6.94	8.33	6.94	0.00	20.83	0.00	2.78	19.44	4.17	2.78	0.00	8.33
All Mini Manufacturers (2753)	30.88	1.27	1.89	12.93	2.32	2.43	1.89	10.32	.025	30.88	1.27	1.89	12.93	2.32	2.43	1.89	10.32

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▷ Figure 2, illustrates the market penetration by class of computer systems for 1982 compared to 1981 in each industry.

PRINCIPAL APPLICATIONS

In 1982, the top six principal applications for both classes of computer systems were: accounting/billing, payroll/personnel, order processing/inventory control, sales/distribution, purchasing, and manufacturing. (See Figure 3, "User Rankings of Principal Applications.") Banking ranked seventh for mainframes and PCMs and engineering/scientific ranked seventh for minicomputers and SBCs. Mathematics/statistics ranked eighth in both classes. Engineering/scientific ranked ninth and education ranked tenth for mainframes and PCMs. In the minicomputer and SBC category, education ranked ninth and health care/medical came in tenth.

Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
1. Accounting/Billing	1. Accounting/Billing
2. Payroll/Personnel	2. Payroll/Personnel
3. Order Processing/Inv. Control	3. Order Processing/Inv. Control
4. Sales/Distribution	4. Sales/Distribution
5. Purchasing	5. Purchasing
6. Manufacturing	6. Manufacturing
7. Banking	7. Engr./Scientific
8. Math./Statistics	8. Math./Statistics
9. Engr./Scientific	9. Education
10. Education	10. Health Care/Medical

Figure 3. User rankings of principal applications

SOURCES OF APPLICATIONS PROGRAMS

The computer application development life cycle is a highly labor-intensive cycle. As labor costs climb, so does the cost of software development. As computers increase in capability and speed and as users become accustomed to results, the clamor for additional applications for "the computer" increases. Since many systems already face a two-year backlog in bringing up desirable applications, it is becoming more and more common for users to seek multiple sources for applications programs. And as the proprietary software industry increases in maturity and sophistication, "packaged software" becomes a desirable adjunct to in-house development.

We asked the users how they acquired their software, specifically, their applications software. The user rankings of sources of applications programs appear in Figure 4. First on both lists is in-house personnel. The preparation of software by in-house personnel is often a highly desirable route because of the in-house management control plus the total tailorability of the software to the user's operational requirements (ideally).

Packaged programs from the manufacturers moved to second place this year from third place in 1981 for mainframes and PCMs, and from fourth place in 1981 to second place for minicomputers and SBCs. Contract programming and manufacturer's personnel placed fourth

Mainframes and PCMs	Minicomputers and SBCs
1. In-house Personnel	1. In-house Personnel
2. Packaged Programs from Mfg.	2. Packaged Programs from Mfg.
3. Proprietary Software Packages	3. Contract Programming
4. Contract Programming	4. Proprietary Software
5. Manufacturer's Personnel	5. Manufacturer's Personnel

Figure 4. User rankings of sources of applications programs

and fifth as they did last year in the mainframe and PCM class. In the minicomputer and SBC category, contract programming moved to third place from second place in 1981, and proprietary software packages placed fourth compared to third in 1981.

WORD PROCESSING

Considering the trend toward word processing applications, we asked the user, "Have you integrated word processing functions on this computer?" Eleven percent of the mainframe users said "yes," while 25 percent of the minicomputer users answered "yes." To our surprise, these percentages are the same as the percentages reported last year.

PRIMARY PROGRAMMING LANGUAGES

"Which programming language should I use?" is a question that often results in a long debate among programmers and computer scientists. Since most studies show that it takes about the same amount of time to code an instruction, whatever the language, the answer would appear to be: "Whichever language will result in the fastest possible documented implementation of the application specification."

Chart B illustrates which programming languages are used most by class of computer systems and by manufacturer within each class. As Chart B shows, for large system users, the most frequent language used is Cobol, followed distantly by Assembler and RPG. For minis and SBCs, RPG was the language used most frequently, followed by Cobol and Basic, as shown in Chart B.

After examining the figures for minis and SBCs, we decided to see what would happen if we removed IBM totals from the base, since RPG is the primary language used with the IBM minis. When we subtracted the IBM totals, the picture changed—for all minis and SBCs (except for IBM's systems), Cobol turned out to be the most frequently used language (41 percent) followed by Basic (24 percent.)

LOCAL AND REMOTE WORKSTATIONS/TERMINALS

We asked the users, "How many local workstations/terminals do you have on site?" and "How many remote workstations/terminals do you have?" In the emerging trend to bring computers to the people who need them and can use them, workstations/terminals are the primary means of implementation. We have prepared Chart C on the usage of local and remote workstations/terminals by ▷

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Chart B. Primary Programming Language

Programming Language Used Most	Assembler (BAL)	APL	BASIC	COBOL	FORTRAN	Pascal	PL/1	RPG	Other
Manufacturer									
MAINFRAMES & PLUG-COMPATIBLE MAINFRAMES									
Amdahl (45)	2.22	0.00	0.00	75.56	0.00	0.00	15.56	0.00	6.67
Burroughs (151)	0.66	0.00	0.00	98.68	0.66	0.00	0.00	0.00	0.00
Control Data (6)	16.67	0.00	0.00	50.00	33.33	0.00	0.00	0.00	0.00
Digital Equipment (33)	6.06	0.00	12.12	63.64	15.15	0.00	0.00	0.00	3.03
Honeywell (187)	0.53	0.00	1.07	89.84	2.67	0.00	0.00	5.35	0.53
IBM (1426)	10.87	0.49	0.21	77.21	1.33	0.00	3.86	4.63	1.40
IPL (8)	0.00	0.00	0.00	75.00	0.00	0.00	0.00	0.00	25.00
Magnuson (29)	24.14	0.00	0.00	58.62	0.00	0.00	10.34	6.90	0.00
NAS (27)	3.70	0.00	0.00	88.89	7.41	0.00	0.00	0.00	0.00
NCR (206)	4.85	0.00	0.49	50.49	0.00	0.00	0.00	1.46	42.72
Singer (8)	50.00	0.00	12.50	0.00	0.00	0.00	0.00	0.00	37.50
Univac (197)	6.09	0.00	1.52	76.65	2.03	0.51	0.00	12.69	0.51
Other (14)	21.43	0.00	0.00	35.71	21.43	0.00	0.00	0.00	21.43
All Mainframes (2337)	8.47	0.30	0.60	76.29	1.75	0.04	2.78	4.54	5.22
MINICOMPUTERS & SMALL BUSINESS COMPUTERS									
Basic Four (44)	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Burroughs (231)	0.00	0.00	0.87	76.62	0.00	0.00	0.00	22.08	0.43
Data General (128)	6.25	0.00	30.47	39.84	14.84	0.00	0.00	1.56	7.03
Datapoint (65)	0.00	0.00	6.15	16.92	0.00	0.00	0.00	4.62	72.31
Digital Equipment (328)	3.66	0.30	42.38	7.32	17.07	1.83	0.61	0.61	26.22
Four Phase (51)	5.88	0.00	7.84	41.18	0.00	0.00	1.96	0.00	43.14
General Automation (11)	0.00	0.00	0.00	27.27	63.64	0.00	0.00	9.09	0.00
Harris (16)	0.00	0.00	0.00	56.25	18.75	0.00	0.00	0.00	25.00
Hewlett-Packard (225)	1.33	0.00	12.44	57.33	16.89	0.44	0.00	8.89	2.67
Honeywell (36)	2.78	0.00	19.44	66.67	2.78	0.00	0.00	2.78	5.56
IBM (1172)	0.68	0.00	1.02	8.79	0.94	0.00	0.09	85.84	2.65
Microdata (43)	0.00	0.00	86.05	2.33	0.00	0.00	0.00	0.00	11.63
NCR (49)	0.00	0.00	4.08	83.67	0.00	0.00	0.00	0.00	12.24
Perkin-Elmer (24)	16.67	0.00	8.33	45.83	12.50	8.33	0.00	4.17	4.17
Point 4 (8)	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Prime (83)	1.20	0.00	14.46	34.94	38.55	0.00	1.20	2.41	7.23
Qantel (6)	16.67	0.00	66.67	0.00	0.00	0.00	0.00	0.00	16.67
Tandem (25)	8.00	0.00	0.00	68.00	4.00	0.00	0.00	0.00	20.00
Texas Instruments (32)	0.00	0.00	6.25	81.25	3.13	0.00	0.00	6.25	3.13
Univac (6)	0.00	0.00	0.00	16.67	0.00	0.00	0.00	83.33	0.00
Wang (87)	1.15	0.00	21.84	65.52	0.00	0.00	0.00	10.34	1.15
Other	7.04	2.82	35.21	18.31	11.27	1.41	0.00	7.04	16.90
All Minis (72)	1.79	0.11	14.23	27.29	6.57	0.36	0.18	40.50	8.97

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Chart C. Usage of Local and Remote Workstations/Terminals

No. of Workstations/ Terminals per System	Local						Remote					
	None	1-5	6-15	16-30	31-60	Over 60	None	1-5	6-15	16-30	31-60	Over 60
Manufacturer & Model												
MAINFRAMES & PLUG-COMPATIBLE MAINFRAMES												
Amdahl 470 Series	0	3	6	5	9	22	2	5	2	0	2	34
Burroughs B2700, B3700 & B4700	1	4	1	5	4	3	2	4	4	3	2	2
B2800, B 3800 & B4800	2	11	29	17	6	6	12	7	16	7	7	22
B2900	0	5	3	7	3	2	2	5	4	0	3	6
B6700 & B7700	0	0	3	1	2	4	0	2	3	1	0	4
B6800 & B7800	0	2	1	5	9	8	1	5	1	4	4	9
B5900 & B6900	0	1	1	2	0	3	0	4	2	1	0	0
Control Data All	0	0	1	2	2	1	0	0	2	1	0	3
Digital Equipment												
DECsystem 10	0	1	1	2	2	4	1	0	1	2	3	3
DECSYSTEM 20	0	2	8	2	4	7	3	1	7	4	3	4
Honeywell 2000 Series	10	1	1	2	0	0	11	2	0	0	0	0
Level 62	10	31	32	9	2	0	54	17	6	4	0	0
Level 64	1	6	17	7	3	0	14	9	8	1	1	1
66/DPS	1	5	9	10	10	3	2	9	2	4	6	15
DPS 8	0	0	4	5	4	4	0	1	2	5	1	8
IBM System/360	9	0	1	0	1	0	8	3	0	0	0	0
System/370	16	23	60	87	62	62	101	48	43	21	26	66
8100 Series	0	7	10	5	0	0	9	6	4	0	0	0
4331 Series	5	57	152	85	34	8	145	85	57	31	7	11
4341 Series	5	18	78	114	125	99	91	71	73	60	48	93
3031 & 3032 Series	0	2	3	12	23	68	6	17	10	16	18	41
3033 Series	1	2	7	7	18	127	7	7	10	13	16	109
3081 Series	0	0	1	1	3	22	0	1	1	1	0	24
IPL 4400 Series	0	2	2	4	0	0	1	4	2	0	1	0
Magnuson M80 Series	2	1	7	7	8	4	6	7	5	1	3	7
NAS AS3, AS4, AS5 & AS6	0	2	3	5	2	5	3	1	3	1	4	4
AS5000, 7000 & 9000	0	0	2	4	2	3	1	2	0	1	1	6
NCR Century Series	12	13	3	2	0	0	23	5	1	0	1	1
8400 Series	5	23	43	14	2	0	46	19	11	4	3	1
8500 Series	5	20	28	18	12	5	22	21	15	4	6	19
Singer System 10	0	3	3	2	0	0	6	2	0	0	0	0
Univac 90/30 & 90/40	6	32	44	18	6	3	41	37	17	4	6	4
90/60, 90/70 & 90/80	0	1	2	1	3	4	1	3	0	2	2	3
System 80	0	7	9	2	0	0	11	6	1	0	0	0
1100 Series	0	1	5	7	5	14	1	4	4	1	8	12
1100/62 Series	1	0	5	6	8	7	2	7	7	5	0	5
Other Mainframes All	3	1	4	4	0	2	4	5	1	1	0	3

User Ratings of Computer Systems

Chart C. Usage of Local and Remote Workstations/Terminals (Continued)

No. of Workstations/ Terminals per System	Local						Remote					
	None	1-5	6-15	16-30	31-60	Over 60	None	1-5	6-15	16-30	31-60	Over 60
Manufacturer & Model												
MINICOMPUTERS & SMALL BUSINESS COMPUTERS												
Basic Four All	0	16	22	5	1	0	18	18	6	1	0	0
Burroughs (B700 & B1700)	6	7	5	1	0	1	14	3	3	0	0	0
B80	3	4	0	0	0	0	7	0	0	0	0	0
B800 & B1800	2	32	54	23	3	0	44	34	19	9	5	0
B90	0	6	1	0	0	0	7	0	0	0	0	0
B900	0	1	5	0	0	0	4	1	0	0	0	0
B1900	0	21	39	10	7	0	35	23	15	3	0	0
Data General Nova 3	0	11	4	4	1	0	12	4	3	1	0	0
Nova 4	0	8	4	0	1	0	4	7	1	0	0	0
Eclipse	0	13	44	23	12	5	38	33	15	7	2	2
Datapoint ARC	2	23	34	4	0	2	29	21	6	5	2	1
Digital Equipment PDP-8	1	4	1	0	2	0	5	1	0	0	0	2
PDP-11	0	6	6	3	0	0	4	4	3	3	0	1
1103 & 1123	0	15	4	1	0	0	12	6	0	0	0	0
1134 & 1144	0	33	44	23	5	0	43	43	13	4	3	1
1170	0	9	30	42	32	13	21	45	23	17	11	7
VAX	0	5	12	15	15	6	11	12	15	4	8	4
Four Phase All	0	12	14	13	7	4	32	8	1	2	1	2
General Automation All	3	6	2	0	0	0	7	2	1	1	0	0
Harris All	0	8	3	5	0	0	6	8	2	0	0	0
Hewlett-Packard 250	0	5	0	0	0	0	3	1	0	0	0	0
1000	0	4	4	3	2	1	6	7	2	0	0	0
3000	0	20	84	52	39	10	54	73	35	19	12	8
Honeywell Level 6 DPS	1	10	12	10	2	1	12	12	5	1	1	2
IBM 1130	4	1	0	0	0	0	5	0	0	0	0	0
Series 1	1	19	19	5	1	0	31	9	1	2	0	0
System/3	46	62	58	39	3	2	123	39	26	10	8	2
System/32	7	4	0	2	0	0	12	0	1	0	0	0
System/34	0	231	389	43	3	0	363	225	48	6	2	0
System/38	7	34	98	73	18	1	115	60	43	10	1	1
Microdata All	0	5	20	14	3	1	15	15	8	3	0	1
NCR I 8000 & I 9000	1	30	15	2	0	1	25	19	0	2	0	2
Perkin-Elmer All	0	4	8	3	5	4	6	14	1	2	1	0
Point 4 All	0	3	2	2	1	0	4	3	1	0	0	0
Prime 300 & 40	0	3	4	5	1	1	4	3	2	4	1	0
50 Series	0	3	20	20	11	3	11	16	13	8	5	4
I 1000	0	1	3	6	1	1	3	3	1	5	0	0
Qantel All	0	1	2	3	0	0	6	0	0	0	0	0
Tandem All	0	2	7	6	7	3	5	7	6	4	2	1
Texas Instrument TI 990	0	14	12	6	0	0	18	11	1	1	0	0
Univac BC-7	0	6	0	0	0	6	0	0	0	0	0	0
Wang VS	0	19	36	26	4	2	51	24	8	1	2	0
Other Minis All	9	37	15	5	2	2	39	16	6	2	3	3

User Ratings of Computer Systems

▷ class of computer systems and by manufacturer within each class. Chart C shows that a high proportion of the current mainframes have between 6 and 15 local workstations/terminals, and that of those mainframes using remote terminals, 23 percent are using over 60 workstations/terminals. Over 40 percent of the current minis have between 6 and 15 local terminals, and most of the minis using remote terminals have from 1 to 5 terminals, as shown in Chart C.

PLANNED ACQUISITIONS FOR 1982

We wanted to know how users were planning on spending their enhancement/acquisition dollars in 1982. Figure 5 shows the user rankings of planned acquisitions for 1982. The top priority in 1982 with users in the mainframe class is to expand their communications capabilities, while the users in the mini class plan to expand their present hardware configurations.

Mainframes and PCMs	Minicomputers and SBCs
1. Expansions to Data Communications (53%)	1. Expansions to Present Hardware (44%)
2. Additional Proprietary Software (52%)	2. Additional Proprietary Software (32%)
3. Expansions to Present Hardware (50%)	3. Expansions to Data Communications (31%)
4. Additional Software from Mfg. (42%)	4. Additional Software from Mfg. (22%)
5. Implement Business Graphics Applications (12%)	5. Additional System same model (8%)

Figure 5. User rankings of planned acquisitions in 1982

EXPECTED SYSTEM REPLACEMENTS

Another indicator of the economy is whether or not users are expecting to replace their systems in 1982. Our study shows that 21 percent of the mainframe and PCM users plan to replace their systems in 1982, compared to 25 percent last year, with 15 percent of this group staying with the current manufacturer. Three percent of the mainframe and PCM users plan to go to a different vendor and 3 percent plan a change with the vendor unknown at this time.

Eighty-three percent of the minicomputer and SBC users plan to make no change in 1982. Of the 17 percent planning on replacing their systems in 1982 (compared to 20 percent in 1981), 11 percent are planning on remaining with their current vendors. Three percent of the mini and SBC users plan to go to a different vendor, while another 3 percent plan to replace their systems in 1982 but the vendor is unknown at this time.

SIGNIFICANT ADVANTAGES/PROBLEMS

Determining the experiences users are having with their systems is a critical part in any computer system acquisition decision. The significant advantages/problems by manufacturer and model can be found in Table 1 for the mainframes and PCMs or Table 2 for minicomputers and

SBCs. The major issues are generally the same for all size systems. These advantages and problems should be examined very carefully. For instance, with the dramatic rise in electrical power cost, one should make sure the system is power and energy efficient. Also, if you see (in Table 1 or Table 2) that the "vendor did not provide all the promised software or support," don't hesitate to make the vendor spell out in writing exactly what and how much software and/or support they will provide and make sure to include this in the contract you sign.

Figure 6 shows the User Rankings of the Most Significant Advantages and the Most Significant Problems by Computer Class.

The most significant advantage sighted by the users of mainframes and plug-compatible mainframes was "Programs/data carried over from other systems are compatible, as vendor promised," while the users of minicomputers and small business systems cited "System is easy to expand/reconfigure." Other advantages most frequently mentioned by mainframe and PCM users were "Users are happy with response time," "System is easy to expand/reconfigure," "Terminal/peripherals carried over from other systems are compatible, as vendor promised," "System is power/energy efficient," and "Productivity aids help us keep programming cost down." Other advantages ranked by minicomputer and SBC users were "Users are happy with response time," "Productivity aids help us keep programming cost down," "Programs/data carried over from other systems are compatible, as vendor promised," "Database language is efficient and effective," and "System is power/energy efficient."

The mainframe and PCM users considered their most significant problems to be "Vendor enhancements/changes to hardware/software are hard to keep up with," "Vendor did not provide all the promised software or support," "System costs (for hardware, vendor-supplied software, support) exceeded expected total," "Power and/or cooling requirements are excessive," "Installation of equipment was late," and "Delivery of required software was late." The most significant problems cited by the minicomputer and SBC users were "Vendor did not provide all the promised software or support," "Installation of equipment was late," "Computer proposed by vendor was too small," "Delivery of required software was late," "Vendor enhancements/changes to hardware/software are hard to keep up with," and "System costs (for hardware, vendor-supplied software, support) exceeded expected costs."

USER SATISFACTION RATINGS

Consistent with our belief that what users think is extremely important, we asked users to rate their computer systems and the associated software and vendor support by assigning a rating of Excellent, Good, Fair, or Poor to each of 14 factors: ease of operation, reliability of mainframe, reliability of peripherals, maintenance service (responsiveness and effectiveness), technical support ▷

User Ratings of Computer Systems

Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
<p>Most Significant Advantages</p> <ol style="list-style-type: none"> 1. Programs/data carried over from other systems are compatible, as vendor promised 2. Users are happy with response time 3. System is easy to expand/reconfigure 4. Terminals/peripherals carried over from other systems are compatible, as vendor promised 5. System is power/energy efficient 6. Productivity aids help us keep programming cost down <p>Most Significant Problems</p> <ol style="list-style-type: none"> 1. Vendor enhancements/changes to hardware/software are hard to keep up with 2. Vendor did not provide all the promised software or support 3. System costs (for hardware, vendor-supplied software, support) exceeded expected total 4. Power and/or cooling requirements are excessive 5. Installation of equipment was late 6. Delivery of required software was late 	<p>Most Significant Advantages</p> <ol style="list-style-type: none"> 1. System is easy to expand/reconfigure 2. Users are happy with response time 3. Productivity aids help us keep programming cost down 4. Programs/data carried over from other systems are compatible, as vendor promised 5. Database language is efficient and effective 6. System is power/energy efficient <p>Most Significant Problems</p> <ol style="list-style-type: none"> 1. Vendor did not provide all the promised software or support 2. Installation of equipment was late 3. Computer proposed by vendor was too small 4. Delivery of required software was late 5. Vendor enhancements/changes to hardware/software are hard to keep up with 6. System costs (for hardware, vendor-supplied software, support) exceeded expected costs

Figure 6. User ranking of most significant advantages and most significant problems

➤ (trouble-shooting, education, and documentation), manufacturer's software (operating system, compilers & assemblers, and applications programs), ease of programming, ease of conversion, and overall satisfaction. All ratings are expressed in terms of Weighted Averages, which were calculated by assigning a weight of 4 to each user rating of Excellent, 3 to Good, 2 to Fair, and 1 to Poor, and then dividing the sum by the number of users who rated each factor.

The individual responses by vendor model appear in the following tables. However, we thought it would be interesting to determine the overall weighted averages of both classes of systems and compare them to the weighted averages from the past two years. The results appear in Figure 7. The overall user satisfaction ratings in mainframes and PCMs shows virtually no change in three years, while there has been a slight improvement in minis and SBCs. Figure 7 also illustrates the users' dissatisfaction with technical support and application programs.

	Mainframes & PCMs			Minicomputers & SBCs		
	1982	1981	1980	1982	1981	1980
Ease of operation	3.2	3.3	3.4	3.5	3.5	3.4
Reliability of mainframe	3.5	3.5	3.3	3.6	3.6	3.3
Reliability of peripherals	3.1	3.1	2.8	3.3	3.3	3.1
Maintenance service:						
Responsiveness	3.2	3.2	3.1	3.3	3.2	2.9
Effectiveness	3.1	3.1	2.9	3.2	3.1	2.9
Technical support:						
Trouble-shooting	2.7	2.7	2.7	2.9	2.8	2.6
Education	2.7	2.7	2.6	2.8	2.7	2.5
Documentation	2.6	2.6	2.1	2.7	2.7	2.5
Manufacturer's software						
Operating system	3.1	3.1	3.2	3.4	3.3	3.3
Compilers & assemblers	3.2	3.2	3.0	3.3	3.2	2.9
Applications programs	2.7	2.7	2.7	2.8	2.8	2.8
Ease of programming	3.0	3.1	3.2	3.3	3.3	2.8
Ease of conversion	3.0	3.0	3.0	2.9	3.0	2.7
Overall satisfaction	3.1	3.1	3.1	3.3	3.2	3.1

Figure 7. User satisfaction ratings by class

SYSTEM EXPECTATIONS

We asked the computer system users "Did the system do what you expected it to do?" Ninety-one percent answered "Yes," 4 percent said "No," and 5 percent said "Haven't decided" in the mainframe and plug-compatible mainframe class. In the minicomputer and small business computer class, 90 percent and "Yes," 4 percent said "No," and 6 percent answered "Haven't decided."

SYSTEM RECOMMENDATIONS

The final question we asked users was whether they would recommend the computer system to another user in their situation. Most said they would: 80 percent of mainframe and PCM users said "Yes," as did 86 percent of the mini and SBC users. Looking at last year's answers, which were 80 percent for mainframes and 83 percent for minis, we can infer that the mini users are very pleased with their systems this year. Eleven percent of mainframe users answered "No," and 8 percent said they "Haven't decided" on recommending their system to another user, while 7 percent of the mini users said "No," and 7 percent answered "Haven't decided."

The vendors that received the highest overall percentages of user recommendations were:

	Mainframes and PCMs		Minicomputers and SBCs
IPL	100%	Point 4	100%
Magnuson	93%	Hewlett-Packard	95%
Amdahl	90%	Prime	94%

THANK YOU

Datapro extends a sincere thanks to all for responding so enthusiastically to our 1982 survey of user experiences with computer systems. Without your participation it could not have been the terrific success it is, and we hope that this compendium of the opinions of user colleagues will be of significant value to you. We look forward to hearing from you again next year.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Survey Item	Manufacturer and Model							
	Amdahl 470 Series	Burroughs B 2700, B 3700 & B 4700	Burroughs B 2800, B 3800 & B 4800	Burroughs B 2900	Burroughs B 6700 & B 7700	Burroughs B 6800 & B 7800	Burroughs B 5900 & B 6900	Control Data All Models
No. of User Responses	45	18	71	20	10	25	7	6
No. of Systems Represented	56	21	94	25	15	40	10	9
Avg. Life of System (Mos.)	20.5	68.8	29.9	8.1	72.6	28.3	7.5	33.7
Acquisition Method (%)								
Purchase	66.67	83.33	52.11	45.00	80.00	60.00	42.86	50.00
Rental or Lease from Mfr.	11.11	11.11	45.07	50.00	20.00	32.00	57.14	33.33
Lease from 3rd Party	22.22	5.56	2.82	5.00	0.00	8.00	0.00	16.67
Principal Applications (%)								
Accounting/Billing	75.56	33.33	54.93	70.00	60.00	92.00	71.43	33.33
Banking—check processing/loans/savings	13.33	77.78	45.07	20.00	20.00	16.00	28.57	16.67
Construction/Architecture	6.67	0.00	0.00	5.00	0.00	0.00	28.57	16.67
Education—scheduling/administration	20.00	0.00	5.63	0.00	20.00	12.00	14.29	33.33
Engineering/Scientific	33.33	0.00	1.41	10.00	10.00	16.00	0.00	66.67
Health care/Medical	15.56	11.11	11.27	15.00	20.00	8.00	0.00	0.00
Insurance	20.00	0.00	7.04	15.00	0.00	8.00	0.00	0.00
Manufacturing	15.56	0.00	15.49	20.00	10.00	20.00	0.00	33.33
Mathematics/Statistics	26.67	0.00	2.82	10.00	30.00	24.00	14.29	33.33
Order Processing/Inventory Control	46.67	11.11	39.44	45.00	20.00	48.00	14.29	16.67
Payroll/Personnel	60.00	22.22	54.93	65.00	60.00	76.00	85.71	33.33
Petroleum/Fuel analysis	4.44	0.00	2.82	0.00	0.00	0.00	14.29	0.00
Process control	4.44	0.00	0.00	0.00	10.00	4.00	0.00	0.00
Purchasing	33.33	5.56	22.54	30.00	10.00	48.00	14.29	33.33
Sales Distribution	24.44	0.00	21.13	20.00	10.00	28.00	14.29	16.67
Other	24.44	11.11	15.49	30.00	20.00	36.00	0.00	0.00
Source of Applications Programs (%)								
In-house personnel	100.00	94.44	92.96	85.00	100.00	100.00	100.00	100.00
"Packaged" programs from manufacturer	53.33	66.67	47.89	55.00	40.00	56.00	57.14	66.67
Contract Programming	40.00	38.89	23.94	25.00	40.00	36.00	0.00	33.33
Manufacturer's Personnel	4.44	0.00	1.41	0.00	10.00	4.00	0.00	16.67
Proprietary Software Packages	60.00	38.89	38.03	50.00	40.00	36.00	14.29	100.00
Location of Computer (%)								
Distributed Processing Site	0.00	5.56	1.41	5.00	0.00	0.00	0.00	0.00
Central Processing Installation	100.00	94.44	98.59	95.00	100.00	100.00	100.00	100.00
Using Local Workstations/Terminals (%)	100.00	94.44	97.18	100.00	100.00	100.00	100.00	100.00
Using Remote Workstations/Terminals (%)	95.56	88.24	83.10	90.00	100.00	95.83	100.00	100.00
Using Data Base Management System (%)								
None	75.56	16.67	36.62	40.00	90.00	92.00	85.71	66.67
Manufacturer's Package	24.44	83.33	63.38	60.00	10.00	8.00	14.29	33.33
Outside Vendor's Package	23.53	100.00	64.00	87.50	88.89	95.65	83.33	25.00
Home-Grown System	70.59	0.00	16.00	12.50	0.00	0.00	0.00	75.00
Home-Grown System	5.88	0.00	20.00	0.00	11.11	4.35	16.67	0.00
Using Communications Monitor (%)								
None	95.56	55.56	31.13	85.00	60.00	72.00	57.14	83.33
Manufacturer's Package	4.44	44.44	15.89	15.00	40.00	28.00	42.86	16.67
Outside Vendor's Package	41.86	70.00	86.96	88.24	66.67	72.22	50.00	60.00
Home-Grown System	55.81	30.00	4.35	11.76	0.00	11.11	0.00	20.00
Home-Grown System	2.33	0.00	8.70	0.00	33.33	16.67	50.00	20.00
Using Integrated Word Processing Functions (%)	37.78	0.00	5.63	15.00	0.00	24.00	28.57	16.67
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	51.11	22.22	16.90	35.00	20.00	44.00	28.57	0.00
Proprietary Software from other suppliers	84.44	22.22	33.80	35.00	20.00	40.00	28.57	33.33
Expansions to Data Communications facilities	80.00	33.33	52.11	40.00	60.00	48.00	42.86	83.33
Distributed Processing capabilities	48.89	0.00	12.68	25.00	10.00	40.00	42.86	16.67
Expansions to present hardware	73.33	44.44	38.03	20.00	40.00	60.00	42.86	83.33
Another Computer System, same model	13.33	11.11	8.45	5.00	10.00	4.00	0.00	0.00
Business graphics	35.56	0.00	7.04	15.00	0.00	8.00	28.57	33.33
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	11.11	50.00	12.68	5.00	20.00	12.00	0.00	16.67
Yes, vendor unknown	0.00	0.00	2.82	0.00	10.00	0.00	0.00	0.00
Yes, different vendor	6.67	11.11	8.45	0.00	0.00	4.00	0.00	0.00
No	82.22	38.89	76.06	95.00	70.00	84.00	100.00	83.33

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Amdahl 470 Series	Burroughs B 2700, B 3700 & B 4700	Burroughs B 2800, B 3800 & B 4800	Burroughs B 2900	Burroughs B 6700 & B 7700	Burroughs B 6800 & B 7800	Burroughs B 5900 & B 6900	Control Data All Models	Manufacturer and Model Survey Item
57.78	27.78	50.70	55.00	30.00	48.00	85.71	66.67	Significant Advantages (%)
44.44	50.00	57.75	85.00	40.00	68.00	100.00	50.00	Users are happy with response time
28.89	11.11	15.49	35.00	0.00	8.00	28.57	16.67	System is easy to expand/reconfigure
80.00	44.44	73.24	85.00	10.00	40.00	85.71	33.33	System costs were less than expected
82.22	22.22	53.52	70.00	20.00	40.00	71.43	33.33	Programs/data carried over from other systems are compatible, as vendor promised
46.67	5.56	16.90	75.00	0.00	20.00	71.43	33.33	Terminals/peripherals carried over from other systems are compatible, as vendor promised
13.33	22.22	23.94	30.00	30.00	44.00	42.86	0.00	System is power/energy efficient
15.56	11.11	15.49	25.00	70.00	68.00	71.43	0.00	Productivity aids help us keep programming costs down
42.22	5.56	9.86	15.00	0.00	8.00	28.57	0.00	Data base language is efficient and effective
11.11	0.00	4.23	10.00	0.00	12.00	0.00	0.00	Delivery and/or installation of equipment was ahead of schedule
2.22	5.56	1.41	5.00	10.00	16.00	0.00	0.00	Delivery of required software was ahead of schedule
0.00	16.67	38.03	50.00	10.00	36.00	0.00	0.00	Significant Problems (%)
4.44	0.00	7.04	5.00	20.00	8.00	14.29	0.00	Computer proposed by vendor was too small
2.22	11.11	7.04	10.00	10.00	16.00	0.00	0.00	Installation of equipment was late
8.89	5.56	12.68	25.00	40.00	24.00	0.00	16.67	Delivery of required software was late
0.00	0.00	4.23	5.00	0.00	8.00	0.00	0.00	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
2.22	0.00	2.82	5.00	10.00	8.00	0.00	0.00	Vendor did not provide all the promised software or support
2.22	11.11	16.90	10.00	30.00	16.00	14.29	16.67	Program/data compatibility not what vendor promised
2.22	16.67	4.23	0.00	0.00	4.00	0.00	0.00	Terminals/peripherals compatibility not what vendor promised
2.22	27.78	18.31	0.00	50.00	12.00	0.00	16.67	Vendor enhancements/changes to hardware/ software hard to keep up with
3.49	3.59	3.74	3.75	3.70	3.64	4.00	3.33	Equipment is excessively noisy
3.62	3.50	3.41	3.65	3.20	3.12	3.86	3.67	Power and/or cooling requirements are excessive
3.13	2.56	2.59	2.95	2.30	2.40	3.14	3.33	System Ratings (4.0-1.0)
3.47	2.94	2.79	3.10	3.10	2.92	3.43	3.33	Ease of operation
3.33	2.61	2.59	2.65	2.90	2.60	3.14	3.00	Reliability of Mainframe
								Reliability of Peripherals
								Maintenance service:
								Responsiveness
								Effectiveness
								Technical support:
								Trouble-shooting
								Education
								Documentation
								Manufacturer's software:
								Operating system
								Compilers & Assemblers
								Applications Programs
								Ease of Programming
								Ease of conversion
								Overall satisfaction
95.56	88.89	90.14	90.00	60.00	84.00	100.00	100.00	Did the system do what you expected it to do? (%)
0.00	0.00	7.04	0.00	30.00	8.00	0.00	0.00	Yes
4.44	11.11	2.82	10.00	10.00	8.00	0.00	0.00	No
								Haven't decided
90.91	66.67	78.87	89.47	50.00	72.00	100.00	83.33	Would you recommend system to another user? (%)
2.27	16.67	11.27	0.00	50.00	8.00	0.00	0.00	Yes
6.82	16.67	9.86	10.53	0.00	20.00	0.00	16.67	No
								Haven't decided

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model Survey Item	Digital Equipment DECsystem-10	Digital Equipment DECsystem-20	Honeywell 2000 Series	Honeywell Level 62	Honeywell Level 64	Honeywell Level 66/DPS	Honeywell DPS 8	IBM System/360
	No. of User Responses	10	23	14	84	34	38	17
No. of Systems Represented	13	27	14	87	34	48	19	11
Avg. Life of System (Mos.)	55.7	39.6	96.8	48.8	40.4	40.5	16.5	49.7
Acquisition Method (%)								
Purchase	90.00	73.91	71.43	29.76	61.76	65.79	41.18	72.73
Rental or Lease from Mfr.	10.00	8.70	0.00	69.05	35.29	15.79	47.06	0.00
Lease from 3rd Party	0.00	17.39	28.57	1.19	2.94	18.42	11.76	27.27
Principal Applications (%)								
Accounting/Billing	30.00	52.17	92.86	94.05	94.12	76.32	82.35	100.00
Banking—check processing/loans/savings	0.00	8.70	7.14	2.38	8.82	10.53	17.65	9.09
Construction/Architecture	0.00	4.35	0.00	5.95	0.00	2.63	0.00	0.00
Education—scheduling/administration	80.00	26.09	14.29	2.38	11.76	18.42	11.76	0.00
Engineering/Scientific	40.00	26.09	7.14	5.95	0.00	23.68	5.88	9.09
Health care/Medical	0.00	0.00	7.14	5.95	5.88	5.26	11.76	0.00
Insurance	10.00	8.70	21.43	0.00	23.53	5.26	23.53	9.09
Manufacturing	0.00	4.35	28.57	35.71	35.29	21.05	5.88	27.27
Mathematics/Statistics	50.00	34.78	28.57	1.19	5.88	18.42	17.65	18.18
Order Processing/Inventory Control	10.00	13.04	42.86	75.00	67.65	57.89	52.94	72.73
Payroll/Personnel	40.00	34.78	85.71	67.86	76.47	65.79	41.18	54.55
Petroleum/Fuel analysis	0.00	0.00	0.00	0.00	0.00	0.00	11.76	0.00
Process control	10.00	0.00	7.14	3.57	2.94	0.00	5.88	36.36
Purchasing	20.00	17.39	35.71	36.90	29.41	36.84	35.29	54.55
Sales Distribution	0.00	13.04	21.43	50.00	47.06	34.21	29.41	45.45
Other	50.00	26.09	21.43	13.10	17.65	28.95	29.41	27.27
Source of Applications Programs (%)								
In-house personnel	100.00	91.30	100.00	91.67	97.06	97.37	100.00	100.00
"Packaged" programs from manufacturer	30.00	30.43	35.71	42.86	23.53	47.37	35.29	18.18
Contract Programming	40.00	26.09	7.14	30.95	14.71	42.11	52.94	9.09
Manufacturer's Personnel	0.00	17.39	14.29	16.67	5.88	18.42	29.41	0.00
Proprietary Software Packages	50.00	47.83	7.14	16.67	14.71	34.21	41.18	27.27
Location of Computer (%)								
Distributed Processing Site	0.00	8.70	0.00	0.00	0.00	0.00	0.00	0.00
Central Processing Installation	100.00	91.30	100.00	100.00	100.00	100.00	100.00	100.00
Using Local Workstations/Terminals (%)	90.00	91.30	28.57	88.10	97.06	97.37	100.00	18.18
Using Remote Workstations/Terminals (%)	90.00	86.36	15.38	33.33	58.82	94.74	100.00	27.27
Using Data Base Management System (%)								
None	50.00	52.17	14.29	7.14	14.71	78.95	88.24	27.27
Manufacturer's Package	50.00	47.83	85.71	92.86	85.29	21.05	11.76	72.73
Outside Vendor's Package	80.00	16.67	0.00	20.00	80.00	86.67	86.67	66.67
Home-Grown System	20.00	75.00	100.00	40.00	0.00	6.67	0.00	33.33
None	0.00	8.33	0.00	40.00	20.00	6.67	13.33	0.00
Using Communications Monitor (%)								
None	40.00	56.52	23.08	61.90	67.65	84.21	94.12	27.27
Manufacturer's Package	60.00	43.48	76.92	38.10	32.35	15.79	5.88	72.73
Outside Vendor's Package	100.00	69.23	66.67	76.92	100.00	84.38	93.75	33.33
Home-Grown System	0.00	23.08	0.00	21.15	0.00	9.38	0.00	67.67
None	0.00	7.69	33.33	1.92	0.00	6.25	6.25	0.00
Using Integrated Word Processing Functions (%)	50.00	47.83	0.00	2.41	11.76	18.42	17.65	0.00
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	30.00	26.09	7.14	15.48	35.29	42.11	41.18	9.09
Proprietary Software from other suppliers	40.00	43.48	7.14	26.19	11.76	39.47	47.06	9.09
Expansions to Data Communications facilities	40.00	47.83	7.14	35.71	64.71	55.26	64.71	0.00
Distributed Processing capabilities	20.00	21.74	7.14	11.90	23.53	26.32	41.18	0.00
Expansions to present hardware	50.00	69.57	7.14	34.52	50.00	57.89	41.18	9.09
Another Computer System, same model	10.00	21.74	0.00	3.57	2.94	0.00	0.00	0.00
Business graphics	10.00	26.09	0.00	0.00	0.00	10.53	17.65	0.00
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	20.00	8.70	14.29	4.76	11.76	2.63	5.88	36.36
Yes, vendor unknown	10.00	4.35	21.43	10.71	2.94	0.00	0.00	18.18
Yes, different vendor	0.00	4.35	21.43	19.05	2.94	5.26	0.00	0.00
No	70.00	82.61	42.86	64.29	82.35	92.11	94.12	45.45

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Digital Equipment DECsystem-10	Digital Equipment DECsystem-20	Honeywell 2000 Series	Honeywell Level 62	Honeywell Level 64	Honeywell Level 66/DPS	Honeywell DPS 8	IBM System/360	Manufacturer and Model
								Survey Item
90.00	52.17	28.57	28.57	64.71	68.42	58.82	18.18	Significant Advantages (%)
70.00	56.52	7.14	41.67	76.47	71.05	82.35	9.09	Users are happy with response time
0.00	17.39	7.14	7.14	14.71	10.53	5.88	9.09	System is easy to expand/reconfigure
30.00	30.43	28.57	33.33	58.82	21.05	58.82	45.45	System costs were less than expected
60.00	39.13	0.00	4.76	23.53	18.42	47.06	9.09	Programs/data carried over from other systems are compatible, as vendor promised
0.00	13.04	14.29	8.33	29.41	13.16	41.18	0.00	Terminals/peripherals carried over from other systems are compatible, as vendor promised
50.00	47.83	0.00	14.29	38.24	31.58	41.18	0.00	System is power/energy efficient
30.00	17.39	7.14	1.19	5.88	52.63	58.82	0.00	Productivity aids help us keep programming costs down
20.00	30.43	14.29	8.33	26.47	5.26	23.53	0.00	Data base language is efficient and effective
10.00	8.70	14.29	4.76	8.82	2.63	5.88	0.00	Delivery and/or installation of equipment was ahead of schedule
0.00	13.04	7.14	30.95	8.82	13.16	5.88	0.00	Delivery of required software was ahead of schedule
0.00	0.00	0.00	16.67	11.76	18.42	17.65	0.00	Significant Problems (%)
0.00	4.35	14.29	13.10	17.65	18.42	17.65	0.00	Computer proposed by vendor was too small
0.00	4.35	21.43	19.05	11.76	23.68	23.53	0.00	Installation of equipment was late
0.00	17.39	21.43	39.29	11.76	23.68	11.76	0.00	Delivery of required software was late
0.00	0.00	0.00	11.90	2.94	13.16	0.00	0.00	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
0.00	4.35	0.00	9.52	8.82	0.00	11.76	0.00	Vendor did not provide all the promised software or support
20.00	8.70	7.14	16.67	5.88	44.74	23.53	0.00	Program/data compatibility not what vendor promised
10.00	17.39	21.43	13.10	8.82	7.89	0.00	9.09	Terminals/peripherals compatibility not what vendor promised
30.00	13.04	28.57	16.67	0.00	13.16	0.00	27.27	Vendor enhancements/changes to hardware/ software hard to keep up with
3.60	3.57	3.23	2.95	3.34	3.45	3.31	2.82	Equipment is excessively noisy
2.90	3.39	2.93	3.18	3.53	3.50	3.47	2.55	Power and/or cooling requirements are excessive
2.90	3.09	2.71	2.89	3.32	3.05	3.12	2.64	System Ratings (4.0-1.0)
3.10	3.39	3.14	3.01	3.47	3.16	3.41	2.64	Ease of operation
2.90	3.09	2.64	2.78	3.41	2.71	3.18	2.70	Reliability of Mainframe
2.40	2.78	2.29	2.45	3.06	2.55	2.88	2.27	Reliability of Peripherals
2.60	2.64	2.00	2.18	2.76	2.45	2.81	2.27	Maintenance service:
2.30	2.45	2.36	2.02	2.62	2.31	2.73	2.18	Responsiveness
3.40	3.35	2.77	2.90	3.53	3.46	3.50	2.50	Effectiveness
3.10	3.04	2.85	2.88	3.50	3.11	3.13	2.64	Technical support:
2.43	2.71	2.50	2.15	2.40	2.48	2.38	2.67	Trouble-shooting
3.60	3.55	2.77	2.63	3.41	3.06	2.88	2.55	Education
3.25	3.15	2.67	2.36	3.19	2.51	2.79	2.73	Documentation
3.20	3.22	2.62	2.60	3.35	2.97	3.18	2.64	Manufacturer's software:
100.00	82.61	78.57	75.90	91.18	84.21	88.24	90.91	Operating system
0.00	13.04	14.29	16.87	2.94	10.53	0.00	9.09	Compilers & Assemblers
0.00	4.35	7.14	7.23	5.88	5.26	11.76	0.00	Applications Programs
80.00	81.82	14.29	32.14	88.24	78.95	76.47	36.36	Ease of Programming
10.00	9.09	85.71	52.38	2.94	13.16	5.88	54.55	Ease of conversion
10.00	9.09	0.00	15.48	8.82	7.89	17.65	9.09	Overall satisfaction
								Did the system do what you expected it to do? (%)
								Yes
								No
								Haven't decided
								Would you recommend system to another user? (%)
								Yes
								No
								Haven't decided

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Survey Item	Manufacturer and Model							
	IBM System/370	IBM 8100	IBM 4331 Series	IBM 4341 Series	IBM 3031 & 3032 Series	IBM 3033 Series	IBM 3081	IPL 4400 Series
No. of User Responses	313	22	344	441	108	163	27	8
No. of Systems Represented	357	33	359	538	133	261	39	8
Avg. Life of System (Mos.)	41.3	14.4	16.9	11.1	28.4	19.3	8.7	6.9
Acquisition Method (%)								
Purchase	45.81	22.73	20.93	27.75	37.96	40.74	37.04	25.00
Rental or Lease from Mfr.	5.81	72.73	72.97	56.88	12.04	13.58	29.63	75.00
Lease from 3rd Party	48.39	4.55	6.10	15.37	50.00	45.68	33.33	0.00
Principal Applications (%)								
Accounting/Billing	78.91	50.00	81.40	77.32	81.48	73.62	85.19	62.50
Banking—check processing/loans/savings	16.29	0.00	7.85	15.87	12.96	25.77	25.93	0.00
Construction/Architecture	0.96	0.00	2.33	2.27	4.63	4.91	7.41	0.00
Education—scheduling/administration	9.58	18.18	7.85	8.39	6.48	7.36	18.52	0.00
Engineering/Scientific	10.86	22.73	8.14	11.11	20.37	22.70	48.15	0.00
Health care/Medical	8.95	0.00	6.69	11.11	10.19	15.34	7.41	12.50
Insurance	13.10	4.55	10.17	10.88	15.74	20.86	14.81	37.50
Manufacturing	25.24	27.27	34.01	31.07	29.63	19.63	33.33	0.00
Mathematics/Statistics	12.14	9.09	8.14	11.11	18.52	25.15	48.15	37.50
Order Processing/Inventory Control	53.67	40.91	53.20	49.89	55.56	42.33	59.26	37.50
Payroll/Personnel	71.25	36.36	62.50	65.08	72.22	65.64	70.37	25.00
Petroleum/Fuel analysis	3.83	4.55	1.74	2.04	2.78	5.52	14.81	0.00
Process control	2.88	13.64	1.74	4.31	6.48	6.13	11.11	0.00
Purchasing	36.42	31.82	36.05	35.37	37.04	30.67	70.37	12.50
Sales Distribution	37.70	18.18	39.83	37.87	38.89	28.22	48.15	37.50
Other	18.53	22.73	21.22	16.33	20.37	14.72	33.33	62.50
Source of Applications Programs (%)								
In-house personnel	96.81	95.45	92.15	94.33	97.22	96.32	100.00	100.00
"Packaged" programs from manufacturer	46.01	18.18	36.63	56.24	60.19	66.26	59.26	37.50
Contract Programming	32.91	22.73	26.74	35.60	48.15	50.92	48.15	37.50
Manufacturer's Personnel	3.83	4.55	2.03	4.31	10.19	7.98	11.11	0.00
Proprietary Software Packages	52.40	9.09	38.08	57.14	68.52	64.42	70.37	37.50
Location of Computer (%)								
Distributed Processing Site	1.60	90.91	5.52	1.36	2.78	0.00	3.70	0.00
Central Processing Installation	98.40	9.09	94.48	98.64	97.22	100.00	96.30	100.00
Using Local Workstations/Terminals (%)	94.84	100.00	98.53	98.86	100.00	99.38	100.00	100.00
Using Remote Workstations/Terminals (%)	66.89	52.63	56.85	79.13	94.44	95.68	100.00	87.50
Using Data Base Management System (%)	48.24	54.55	34.99	57.37	67.59	80.98	96.30	12.50
None	51.76	45.45	65.01	42.63	32.41	19.02	3.70	87.50
Manufacturer's Package	58.00	91.67	74.38	57.37	63.01	67.69	80.77	0.00
Outside Vendor's Package	34.67	8.33	20.66	39.04	34.25	30.00	11.54	0.00
Home-Grown System	7.33	0.00	4.96	3.59	2.74	2.31	7.69	100.00
Using Communications Monitor (%)	81.09	71.43	75.00	88.66	94.44	92.64	88.89	75.00
None	18.91	28.57	25.00	11.34	5.56	7.36	11.11	25.00
Manufacturer's Package	74.10	86.67	91.02	84.11	92.86	81.51	62.50	33.33
Outside Vendor's Package	22.31	13.33	7.81	14.32	7.14	15.75	20.83	50.00
Home-Grown System	3.59	0.00	1.17	1.56	0.00	2.74	16.67	16.67
Using Integrated Word Processing Functions (%)	8.39	0.00	4.69	12.81	16.04	20.25	25.93	100.00
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	41.53	22.73	41.28	55.78	63.89	65.03	77.78	0.00
Proprietary Software from other suppliers	53.04	13.64	49.71	68.71	70.39	75.46	92.59	25.00
Expansions to Data Communications facilities	45.05	18.18	49.42	61.00	67.59	73.62	81.48	62.50
Distributed Processing capabilities	19.81	9.09	14.83	20.41	30.56	44.17	40.74	25.00
Expansions to present hardware	41.21	45.45	48.26	53.51	64.81	73.01	77.78	75.00
Another Computer System, same model	5.43	9.09	4.36	11.79	10.19	13.50	62.96	0.00
Business graphics	8.95	18.18	6.98	16.33	21.30	29.45	51.85	25.00
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	40.89	13.64	13.08	3.40	32.41	15.34	3.70	12.50
Yes, vendor unknown	3.51	0.00	0.87	0.68	0.93	1.23	0.00	0.00
Yes, different vendor	2.56	4.55	1.74	0.23	0.00	0.61	0.00	0.00
No	52.08	81.82	84.01	95.69	64.81	80.98	96.30	87.50

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

IBM System/370	IBM 8100	IBM 4331 Series	IBM 4341 Series	IBM 3031 & 3032 Series	IBM 3033 Series	IBM 3081	IPL 4400 Series	Manufacturer and Model	Survey Item
43.13	31.82	54.65	71.20	56.48	55.21	59.26	87.50	Significant Advantages (%) Users are happy with response time System is easy to expand/reconfigure System costs were less than expected Programs/data carried over from other systems are compatible, as vendor promised Terminals/peripherals carried over from other systems are compatible, as vendor promised System is power/energy efficient Productivity aids help us keep programming costs down Data base language is efficient and effective Delivery and/or installation of equipment was ahead of schedule Delivery of required software was ahead of schedule	
28.75	40.91	56.40	56.24	50.00	50.92	40.74	75.00		
12.78	4.55	14.24	16.10	7.41	8.59	14.81	25.00		
54.95	13.64	54.65	72.56	68.50	66.26	74.07	75.00		
44.73	27.27	35.17	65.31	66.67	61.96	74.07	50.00		
5.75	31.82	63.66	68.71	15.74	21.47	37.04	87.50		
20.77	50.00	44.77	33.11	36.11	30.06	33.33	25.00		
10.22	22.73	7.56	16.55	22.22	15.95	22.22	0.00		
8.95	18.18	15.70	19.95	22.22	25.77	40.74	50.00		
5.43	4.55	9.88	9.52	12.04	14.11	22.22	0.00		
0.64	22.73	10.17	1.36	3.70	3.07	3.70	12.50	Significant Problems (%) Computer proposed by vendor was too small Installation of equipment was late Delivery of required software was late System costs (for hardware, vendor-supplied software, support) exceeded the expected total Vendor did not provide all the promised software or support Program/data compatibility not what vendor promised Terminals/peripherals compatibility not what vendor promised Vendor enhancements/changes to hardware/software hard to keep up with Equipment is excessively noisy Power and/or cooling requirements are excessive	
4.79	9.09	3.78	7.26	4.63	2.45	0.00	0.00		
1.28	18.18	8.14	9.07	0.93	2.45	0.00	12.50		
7.99	13.64	18.02	8.84	10.19	8.59	0.00	0.00		
3.19	22.73	19.77	12.47	11.11	4.91	0.00	12.50		
0.32	9.09	4.07	2.49	2.78	0.61	0.00	0.00		
1.60	4.55	1.74	2.27	0.93	0.00	0.00	12.50		
15.65	22.73	28.49	16.10	19.44	12.27	11.11	0.00		
3.51	4.55	0.00	0.00	1.85	1.23	0.00	0.00		
25.88	4.55	0.29	0.68	12.96	14.72	3.70	0.00		
3.03	3.00	3.12	3.35	3.16	3.25	3.22	3.88	System Ratings (4.0-1.0) Ease of operation Reliability of Mainframe Reliability of Peripherals Maintenance service: Responsiveness Effectiveness	
3.12	3.38	3.77	3.78	3.64	3.56	3.67	4.00		
3.13	3.32	3.30	3.28	3.34	3.23	3.30	2.57		
3.15	3.32	3.34	3.31	3.43	3.45	3.46	3.88		
3.05	3.18	3.21	3.22	3.36	3.32	3.46	3.75		
2.77	2.77	2.77	2.85	2.94	3.04	3.31	3.63		
2.76	2.62	2.68	2.77	2.91	2.99	2.96	2.86		
2.66	2.91	2.60	2.71	2.74	2.97	3.12	2.88		
3.05	2.82	2.94	3.03	3.19	3.26	3.19	3.00		
3.17	3.00	3.18	3.15	3.29	3.23	3.11	3.25		
2.76	2.63	2.84	2.82	2.76	2.82	2.63	3.00		
2.89	2.90	2.94	2.99	2.97	2.95	2.96	3.50	Ease of Programming Ease of conversion Overall satisfaction	
2.94	2.72	2.84	3.04	2.96	3.06	3.22	3.71		
3.05	2.77	3.11	3.19	3.19	3.18	3.33	3.75		
95.51	63.64	88.05	94.55	98.15	95.71	88.89	100.00	Did the system do what you expected it to do? (%) Yes No Haven't decided	
2.56	13.64	3.50	0.45	0.93	1.84	7.41	0.00		
1.92	22.73	8.45	5.00	0.93	2.45	3.70	0.00		
74.44	63.64	88.95	95.91	90.74	92.02	92.59	100.00	Would you recommend system to another user? (%) Yes No Haven't decided	
17.57	18.18	2.62	0.23	6.48	4.29	3.70	0.00		
7.99	18.18	8.43	3.86	2.78	3.68	3.70	0.00		

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Survey Item	Manufacturer and Model							
	Magnuson M80 Series	NAS AS 3, AS 4, AS 5 & AS6	NAS AS/5000, 7000 & 9000	NCR Century Series	NCR 8400 Series	NCR 8500 Series	Singer System 10	Sperry Univac 90/30 & 90/40
No. of User Responses	29	16	11	31	88	88	8	109
No. of Systems Represented	34	22	12	33	93	102	14	114
Avg. Life of System (Mos.)	12.3	38.6	18.3	73.5	24.1	27.6	72.7	47.6
Acquisition Method (%)								
Purchase	34.48	43.75	72.73	60.00	40.91	34.09	75.00	34.86
Rental or Lease from Mfr.	58.62	18.75	9.09	16.67	36.36	40.91	0.00	61.47
Lease from 3rd Party	6.90	37.50	18.18	23.33	22.73	25.00	25.00	3.67
Principal Applications (%)								
Accounting/Billing	62.07	68.75	54.55	74.19	68.18	64.77	62.50	88.07
Banking—check processing/loans/savings	24.14	6.25	0.00	22.58	28.41	34.09	0.00	5.50
Construction/Architecture	0.00	6.25	0.00	0.00	2.27	0.00	0.00	1.83
Education—scheduling/administration	3.45	12.50	0.00	12.90	4.55	7.95	0.00	5.50
Engineering/Scientific	3.45	6.25	18.18	0.00	1.14	3.41	0.00	0.92
Health care/Medical	6.90	0.00	0.00	12.90	11.36	11.36	0.00	5.50
Insurance	6.90	12.50	9.09	0.00	0.00	1.14	0.00	11.93
Manufacturing	13.79	31.25	18.18	6.45	17.05	17.05	50.00	27.52
Mathematics/Statistics	3.45	12.50	36.36	3.23	3.41	2.27	12.50	10.09
Order Processing/Inventory Control	20.69	50.00	45.45	45.16	45.45	38.64	75.00	63.30
Payroll/Personnel	41.38	68.75	45.45	70.97	69.32	59.09	62.50	66.97
Petroleum/Fuel analysis	0.00	0.00	0.00	0.00	2.27	1.14	0.00	1.83
Process control	0.00	0.00	0.00	0.00	2.27	4.55	0.00	3.67
Purchasing	20.69	25.00	27.27	22.58	18.18	23.86	25.00	40.37
Sales Distribution	17.24	50.00	18.18	32.26	20.45	29.55	75.00	55.05
Other	62.07	25.00	9.09	9.68	12.50	14.77	12.50	22.94
Source of Applications Programs (%)								
In-house personnel	93.10	93.75	90.91	90.32	77.27	86.36	62.50	98.17
"Packaged" programs from manufacturer	24.14	62.50	45.45	70.97	71.59	69.32	37.50	47.71
Contract Programming	20.69	56.25	27.27	19.35	28.41	23.86	75.00	33.94
Manufacturer's Personnel	0.00	0.00	0.00	9.68	6.82	9.09	12.50	20.18
Proprietary Software Packages	58.62	68.75	63.64	9.68	14.77	30.68	0.00	38.53
Location of Computer (%)								
Distributed Processing Site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92
Central Processing Installation	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.08
Using Local Workstations/Terminals (%)	93.10	100.00	100.00	94.25	94.32	60.00	100.00	94.50
Using Remote Workstations/Terminals (%)	79.31	81.25	90.91	45.24	74.71	25.81	75.00	62.39
Using Data Base Management System (%)								
None	31.03	75.00	81.82	12.50	39.77	9.68	12.50	20.18
Manufacturer's Package	68.97	25.00	18.18	87.50	60.23	90.32	87.50	79.82
Outside Vendor's Package	33.33	16.67	11.11	54.55	25.71	33.33	100.00	72.73
Home-Grown System	55.56	83.33	77.78	45.45	65.71	33.33	0.00	13.64
Home-Grown System	11.11	0.00	11.11	0.00	8.57	33.33	0.00	13.64
Using Communications Monitor (%)								
None	86.21	81.25	90.91	30.68	63.64	19.35	0.00	63.30
Manufacturer's Package	13.79	18.75	9.09	69.32	36.36	80.65	100.00	36.70
Outside Vendor's Package	25.00	23.08	30.00	62.96	48.15	66.67	0.00	88.24
Home-Grown System	70.83	69.23	70.00	37.04	42.59	33.33	0.00	10.29
Home-Grown System	4.17	7.69	0.00	0.00	9.26	0.00	0.00	1.47
Using Integrated Word Processing Functions (%)	13.79	25.00	27.27	4.71	5.88	3.23	0.00	2.83
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	3.45	18.75	18.18	34.09	35.23	19.35	12.50	22.94
Proprietary Software from other suppliers	68.97	68.75	81.82	34.09	60.23	35.48	0.00	27.52
Expansions to Data Communications facilities	68.97	56.25	72.73	35.23	53.41	35.48	25.00	40.37
Distributed Processing capabilities	13.79	25.00	27.27	11.36	13.64	12.90	0.00	20.18
Expansions to present hardware	58.62	31.25	72.73	47.73	43.18	29.03	25.00	41.28
Another Computer System, same model	0.00	25.00	0.00	3.41	9.09	6.45	0.00	4.59
Business graphics	6.90	12.50	18.18	1.14	3.41	0.00	0.00	1.83
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	17.24	12.50	0.00	10.23	7.95	22.58	0.00	10.09
Yes, vendor unknown	3.45	12.50	9.09	0.00	2.27	16.13	25.00	5.50
Yes, different vendor	6.90	12.50	0.00	1.14	1.14	19.35	25.00	7.34
No	72.41	62.50	90.91	87.50	88.64	41.94	50.00	76.15

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Magnuson M80 Series	NAS AS 3, AS 4, AS 5 & AS 6	NAS AS/5000, 7000 & 9000	NCR Century Series	NCR 8400 Series	NCR 8500 Series	Singer System 10	Sperry Univac 90/30 & 90/40	Manufacturer and Model
								Survey Item
68.97	43.75	45.45	19.35	59.09	57.95	87.50	41.28	Significant Advantages (%)
89.66	31.25	36.36	35.48	69.32	77.27	75.00	47.71	Users are happy with response time
44.83	0.00	9.09	16.13	13.64	20.45	50.00	12.84	System is easy to expand/reconfigure
89.66	56.25	72.73	54.84	60.23	71.59	0.00	38.53	System costs were less than expected
								Programs/data carried over from other systems are compatible, as vendor promised
86.21	56.25	63.64	22.58	37.50	54.55	12.50	11.93	Terminals/peripherals carried over from other systems are compatible, as vendor promised
93.10	31.25	45.45	6.45	21.59	28.41	0.00	7.34	System is power/energy efficient
17.24	0.00	9.09	6.45	12.50	32.95	12.50	33.94	Productivity aids help us keep programming costs down
10.34	12.50	9.09	0.00	1.14	17.05	0.00	5.50	Data base language is efficient and effective
62.07	25.00	45.45	19.35	18.18	19.32	0.00	18.35	Delivery and/or installation of equipment was ahead of schedule
13.79	6.25	9.09	9.68	11.36	6.82	0.00	4.59	Delivery of required software was ahead of schedule
								Significant Problems (%)
3.45	12.50	0.00	0.00	7.95	4.55	0.00	20.18	Computer proposed by vendor was too small
3.45	0.00	9.09	6.45	20.45	15.91	0.00	5.50	Installation of equipment was late
10.34	6.25	0.00	3.23	10.23	17.05	0.00	10.09	Delivery of required software was late
0.00	0.00	0.00	9.68	13.64	1.14	0.00	16.51	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
10.34	12.50	18.18	12.90	25.00	19.32	12.50	20.18	Vendor did not provide all the promised software or support
0.00	0.00	0.00	0.00	6.82	2.27	0.00	5.50	Program/data compatibility not what vendor promised
0.00	0.00	0.00	0.00	6.82	3.41	0.00	4.59	Terminals/peripherals compatibility not what vendor promised
0.00	6.25	0.00	22.58	15.91	11.36	12.50	20.18	Vendor enhancements/changes to hardware/ software hard to keep up with
0.00	6.25	9.09	12.90	4.55	0.00	12.50	10.09	Equipment is excessively noisy
0.00	6.25	9.09	16.13	4.55	1.14	12.50	6.42	Power and/or cooling requirements are excessive
								System Ratings (4.0-1.0)
3.83	3.13	3.64	3.18	3.43	3.19	3.38	3.16	Ease of operation
3.34	2.44	3.64	3.51	3.47	3.42	3.75	3.38	Reliability of Mainframe
3.15	2.33	2.91	3.11	3.23	3.10	2.88	2.98	Reliability of Peripherals
								Maintenance service:
3.45	2.81	3.45	3.31	3.19	3.06	3.13	3.21	Responsiveness
3.21	2.56	3.18	3.02	3.06	3.03	3.00	3.00	Effectiveness
								Technical support:
3.11	2.56	2.82	2.47	2.64	2.48	2.43	2.41	Trouble-shooting
3.08	2.06	2.78	2.48	2.73	2.65	2.43	2.35	Education
3.04	2.20	2.89	2.44	2.59	2.48	2.71	2.30	Documentation
								Manufacturer's software:
3.21	3.08	2.83	3.02	3.13	3.10	3.43	3.12	Operating system
3.15	3.33	2.80	2.92	3.06	3.10	3.38	3.12	Compilers & Assemblers
3.00	3.22	2.71	2.56	2.66	2.63	3.00	2.46	Applications Programs
								Ease of Programming
3.33	3.09	3.00	2.95	3.03	2.77	2.63	3.02	Ease of conversion
3.59	2.91	3.00	3.00	3.18	2.75	2.00	2.84	Overall satisfaction
3.37	2.77	3.45	2.99	3.10	3.00	3.63	2.94	
								Did the system do what you expected it to do? (%)
93.10	81.25	90.91	82.56	92.05	100.00	100.00	83.33	Yes
0.00	18.75	0.00	8.14	2.27	0.00	0.00	10.19	No
6.90	0.00	9.09	9.30	5.68	0.00	0.00	6.48	Haven't decided
								Would you recommend system to another user? (%)
93.10	56.25	90.91	78.16	85.23	51.61	85.71	64.22	Yes
0.00	43.75	9.09	9.20	5.68	38.71	14.29	23.85	No
6.90	0.00	0.00	12.64	9.09	9.68	0.00	11.93	Haven't decided

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Survey Item	Manufacturer and Model							
	Sperry Univac 90/60, 90/70 & 90/80	Sperry Univac System 80	Sperry Univac 1100 Series	Sperry Univac 1100/62 Series	Mainframes (Other Models)			
No. of User Responses	11	18	32	27	14			
No. of Systems Represented	14	18	42	30	18			
Avg. Life of System (Mos.)	41.4	11.7	33.1	13.1	75.8			
Acquisition Method (%)								
Purchase	36.36	33.33	34.38	33.33	78.57			
Rental or Lease from Mfr.	54.55	44.44	59.38	55.56	21.43			
Lease from 3rd Party	9.09	22.22	6.25	11.11	0.00			
Principal Applications (%)								
Accounting/Billing	81.82	88.89	65.63	85.19	100.00			
Banking—check processing/loans/savings	9.09	5.56	6.25	7.41	0.00			
Construction/Architecture	18.18	0.00	9.38	7.41	0.00			
Education—scheduling/administration	36.36	16.67	18.75	11.11	14.29			
Engineering/Scientific	18.18	5.56	31.25	37.04	21.43			
Health care/Medical	9.09	16.67	6.25	3.70	0.00			
Insurance	9.09	11.11	6.25	7.41	0.00			
Manufacturing	18.18	22.22	28.13	29.63	28.57			
Mathematics/Statistics	36.36	16.67	31.15	22.22	14.29			
Order Processing/Inventory Control	54.55	61.11	53.13	55.56	57.14			
Payroll/Personnel	72.73	83.33	68.75	62.96	57.14			
Petroleum/Fuel analysis	0.00	11.11	9.38	0.00	0.00			
Process control	0.00	0.00	9.38	3.70	0.00			
Purchasing	45.45	33.33	31.25	40.74	42.86			
Sales Distribution	27.27	50.00	46.88	40.74	50.00			
Other	9.09	33.33	46.88	37.04	42.86			
Source of Applications Programs (%)								
In-house personnel	100.00	100.00	100.00	100.00	85.71			
"Packaged" programs from manufacturer	45.45	44.44	50.00	51.85	28.57			
Contract Programming	27.27	22.22	37.50	29.63	35.71			
Manufacturer's Personnel	9.09	11.11	34.38	29.63	14.29			
Proprietary Software Packages	54.55	11.11	43.75	59.26	21.43			
Location of Computer (%)								
Distributed Processing Site	0.00	0.00	3.13	0.00	0.00			
Central Processing Installation	100.00	100.00	96.88	100.00	100.00			
Using Local Workstations/Terminals (%)	100.00	100.00	100.00	96.30	78.57			
Using Remote Workstations/Terminals (%)	90.91	38.89	96.67	92.31	71.43			
Using Data Base Management System (%)	54.55	44.44	84.38	74.07	21.43			
None	45.45	55.56	15.63	25.93	78.57			
Manufacturer's Package	83.33	100.00	96.30	100.00	66.67			
Outside Vendor's Package	16.67	0.00	3.70	0.00	33.33			
Home-Grown System	0.00	0.00	0.00	0.00	0.00			
Using Communications Monitor (%)	90.91	44.44	87.50	81.48	30.77			
None	9.09	55.56	12.50	18.52	69.23			
Manufacturer's Package	77.78	100.00	78.57	95.45	50.00			
Outside Vendor's Package	11.11	0.00	14.29	4.55	25.00			
Home-Grown System	11.11	0.00	7.14	0.00	25.00			
Using Integrated Word Processing Functions (%)	9.09	0.00	12.50	11.11	7.14			
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	18.18	50.00	53.13	62.96	7.14			
Proprietary Software from other suppliers	36.36	22.22	37.50	66.67	21.43			
Expansions to Data Communications facilities	81.82	33.33	78.13	55.56	42.86			
Distributed Processing capabilities	45.45	22.22	34.38	33.33	14.29			
Expansions to present hardware	63.64	66.67	53.13	59.26	35.71			
Another Computer System, same model	0.00	5.56	15.63	7.41	0.00			
Business graphics	9.09	0.00	15.63	14.81	7.14			
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	9.09	0.00	9.38	0.00	21.43			
Yes, vendor unknown	0.00	0.00	6.25	0.00	14.29			
Yes, different vendor	0.00	5.56	0.00	0.00	7.14			
No	90.91	94.44	84.38	100.00	57.14			

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

			Sperry Univac 90/60, 90/70 & 90/80	Sperry Univac System 80	Sperry Univac 1100 Series	Sperry Univac 1100/62 Series	Mainframes (Other Models)	Manufacturer and Model
								Survey Item
			45.45	55.56	62.50	66.67	28.57	Significant Advantages (%)
			45.45	66.67	62.50	62.96	42.86	Users are happy with response time
			36.36	33.33	9.38	14.81	14.29	System is easy to expand/reconfigure
			36.36	27.78	40.63	33.33	14.29	System costs were less than expected
			36.36	0.00	46.88	22.22	14.29	Programs/data carried over from other systems are compatible, as vendor promised
			9.09	44.44	12.50	37.04	7.14	Terminals/peripherals carried over from other systems are compatible, as vendor promised
			45.45	61.11	34.38	55.56	14.29	System is power/energy efficient
			27.27	11.11	56.25	40.74	7.14	Productivity aids help us keep programming costs down
			27.27	27.78	25.00	25.93	0.00	Data base language is efficient and effective
			0.00	22.22	9.38	11.11	0.00	Delivery and/or installation of equipment was ahead of schedule
			9.09	22.22	18.75	11.11	14.29	Delivery of required software was ahead of schedule
			9.09	38.89	9.38	14.81	14.29	Significant Problems (%)
			9.09	16.67	21.88	14.81	14.29	Computer proposed by vendor was too small
			0.00	11.11	0.00	14.81	7.14	Installation of equipment was late
			27.27	11.11	25.00	22.22	21.43	Delivery of required software was late
			9.09	27.78	0.00	11.11	0.00	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
			9.09	0.00	3.13	11.11	7.14	Vendor did not provide all the promised software or support
			27.27	22.22	25.00	22.22	0.00	Program/data compatibility not what vendor promised
			9.09	0.00	3.13	3.70	7.14	Terminals/peripherals compatibility not what vendor promised
			18.18	0.00	12.50	3.70	21.43	Vendor enhancements/changes to hardware/ software hard to keep up with
			3.36	3.50	3.38	3.07	3.46	Equipment is excessively noisy
			3.36	3.22	3.50	3.30	3.57	Power and/or cooling requirements are excessive
			3.09	3.11	2.94	2.71	2.71	System Ratings (4.0-1.0)
			3.36	3.33	3.45	3.48	2.93	Ease of operation
			2.91	3.06	3.10	2.96	2.83	Reliability of Mainframe
			2.73	2.94	2.69	2.89	2.58	Reliability of Peripherals
			2.73	2.61	2.44	2.56	1.83	Maintenance service:
			2.82	2.39	2.44	2.26	1.92	Responsiveness
			3.55	3.22	3.63	3.22	3.31	Effectiveness
			3.20	3.39	3.34	3.22	2.83	Technical support:
			2.50	2.86	2.67	2.73	2.33	Trouble-shooting
			3.45	3.29	3.31	3.00	3.00	Education
			2.90	2.69	2.90	2.62	2.22	Documentation
			3.09	3.22	3.13	3.08	3.00	Manufacturer's software:
			100.00	61.11	93.75	88.89	92.86	Operating system
			0.00	5.56	0.00	3.70	7.14	Compilers & Assemblers
			0.00	33.33	6.25	7.41	0.00	Applications Programs
			63.64	72.22	75.00	77.78	50.00	Ease of Programming
			18.18	5.56	12.50	11.11	41.67	Ease of conversion
			18.18	22.22	12.50	11.11	8.33	Overall satisfaction
								Did the system do what you expected it to do? (%)
								Yes
								No
								Haven't decided
								Would you recommend system to another user? (%)
								Yes
								No
								Haven't decided

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Survey Item	Manufacturer and Model								
	Basic Four All models	Burroughs B 700 & B 1700	Burroughs B 80	Burroughs B 800 & B 1800	Burroughs B 90	Burroughs B 900	Burroughs B 1900	Data General NOVA 3	Data General NOVA 4
No. of User Responses	44	20	7	118	7	6	77	20	13
No. of Systems Represented	47	21	15	125	15	6	80	37	17
Avg. Life of System (Mos.)	36.5	57.3	42.8	31.5	19.1	11.7	11.6	47.5	20.3
Acquisition Method (%)									
Purchase	81.82	75.00	83.33	57.89	71.43	50.00	51.95	85.00	84.62
Rental or Lease from Mfr.	0.00	10.00	16.67	36.84	14.29	50.00	46.75	0.00	7.69
Lease from 3rd Party	18.18	15.00	0.00	5.26	14.29	0.00	1.30	15.00	7.69
Principal Applications (%)									
Accounting/Billing	88.64	65.00	71.43	82.46	71.43	100.00	79.22	75.00	69.23
Banking—check processing/loans/savings	2.27	15.00	14.29	10.53	14.29	0.00	10.39	0.00	7.69
Construction/Architecture	9.09	0.00	0.00	5.26	0.00	0.00	2.60	5.00	0.00
Education—scheduling/administration	6.82	5.00	0.00	9.65	0.00	0.00	10.39	0.00	15.38
Engineering/Scientific	0.00	10.00	0.00	6.14	0.00	0.00	1.30	15.00	0.00
Health care/Medical	9.09	0.00	14.29	6.14	0.00	0.00	5.19	5.00	0.00
Insurance	6.82	0.00	0.00	4.39	0.00	0.00	5.19	0.00	0.00
Manufacturing	22.73	15.00	0.00	20.18	0.00	66.67	23.38	20.00	15.38
Mathematics/Statistics	2.27	5.00	0.00	4.39	0.00	0.00	3.90	20.00	15.38
Order Processing/Inventory Control	65.91	45.00	42.86	55.26	42.86	83.33	55.84	65.00	30.77
Payroll/Personnel	63.64	45.00	28.57	68.42	28.57	100.00	66.23	30.00	23.08
Petroleum/Fuel analysis	2.27	10.00	0.00	4.39	0.00	0.00	0.00	0.00	0.00
Process control	6.82	10.00	0.00	0.88	0.00	0.00	1.30	10.00	0.00
Purchasing	43.18	35.00	0.00	27.19	0.00	50.00	27.27	35.00	0.00
Sales Distribution	63.64	35.00	14.29	30.70	14.29	66.67	35.06	45.00	23.08
Other	31.82	20.00	28.57	12.28	28.57	16.67	20.78	20.00	23.08
Source of Applications Programs (%)									
In-house personnel	75.00	75.00	42.86	90.35	71.43	83.33	81.82	60.00	38.46
"Packaged" programs from manufacturer	36.36	50.00	57.14	34.21	57.14	66.67	40.26	10.00	7.69
Contract Programming	47.73	35.00	48.86	32.46	14.29	16.67	23.38	50.00	30.77
Manufacturer's Personnel	0.00	5.00	0.00	0.88	0.00	16.67	1.30	0.00	0.00
Proprietary Software Packages	43.18	10.00	14.29	29.82	0.00	0.00	24.68	40.00	46.15
Location of Computer (%)									
Distributed Processing Site	11.36	5.00	16.67	5.31	0.00	0.00	9.09	0.00	23.08
Central Processing Installation	88.64	95.00	83.33	94.69	100.00	100.00	90.91	100.00	76.92
Using Local Workstations/Terminals (%)	100.00	70.00	57.14	98.25	100.00	100.00	100.00	45.00	38.46
Using Remote Workstations/Terminals (%)	58.14	30.00	0.00	60.36	0.00	20.00	53.95	40.00	66.67
Using Data Base Management System (%)									
None	15.91	40.00	28.57	52.63	71.43	16.67	64.94	20.00	23.08
Manufacturer's Package	84.09	60.00	71.43	47.37	28.57	83.33	35.06	80.00	76.92
Outside Vendor's Package	14.29	62.50	0.00	86.67	60.00	0.00	91.84	0.00	0.00
Home-Grown System	71.43	12.50	50.00	6.67	0.00	0.00	4.08	50.00	100.00
Home-Grown System	14.29	25.00	50.00	6.67	40.00	0.00	4.00	50.00	0.00
Using Communications Monitor (%)									
None	13.64	20.00	28.57	66.67	85.71	33.33	61.04	15.00	30.77
Manufacturer's Package	86.36	80.00	71.43	33.33	14.29	66.67	38.96	85.00	69.23
Outside Vendor's Package	60.00	100.00	50.00	93.06	100.00	100.00	91.30	66.67	0.00
Home-Grown System	20.00	0.00	50.00	4.17	0.00	0.00	2.17	0.00	50.00
Home-Grown System	20.00	0.00	0.00	2.78	0.00	0.00	6.52	33.33	50.00
Using Integrated Word Processing Functions (%)	22.73	0.00	14.29	5.41	0.00	0.00	10.53	15.00	15.38
Planned Acquisitions/Implementations for 1982 (%)									
Additional Software from the Manufacturer	2.27	15.00	14.29	15.79	28.57	33.33	19.48	5.00	15.38
Proprietary Software from other suppliers	15.91	15.00	14.29	23.68	42.86	16.67	28.57	30.00	30.77
Expansions to Data Communications facilities	40.91	10.00	0.00	43.86	28.57	33.33	37.66	10.00	7.69
Distributed Processing capabilities	15.91	0.00	0.00	11.40	28.57	33.33	16.88	5.00	0.00
Expansions to present hardware	54.55	20.00	0.00	41.23	14.29	50.00	35.06	35.00	30.77
Another Computer System, same model	6.82	5.00	14.29	3.51	0.00	16.67	5.19	5.00	7.69
Business graphics	6.82	0.00	0.00	1.75	0.00	0.00	2.60	0.00	7.69
Plans for system replacement in 1982 (%)									
Yes, same manufacturer	6.82	35.00	0.00	21.05	14.29	0.00	3.90	15.00	0.00
Yes, vendor unknown	2.27	10.00	0.00	2.63	0.00	0.00	0.00	10.00	7.69
Yes, different vendor	9.09	15.00	14.29	2.63	0.00	16.67	2.60	5.00	7.69
No	81.82	35.00	71.43	73.68	85.71	83.33	93.51	70.00	84.62

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Basic Four All models	Burroughs B 700 & B 1700	Burroughs B 80	Burroughs B 800 & B 1800	Burroughs B 90	Burroughs B 900	Burroughs B 1900	Data General NOVA 3	Data General NOVA 4	Manufacturer and Model
									Survey Item
56.82	40.00	14.29	62.28	42.86	66.67	55.84	45.00	46.15	Significant Advantages (%)
61.36	55.00	14.29	71.93	71.43	83.33	74.03	40.00	46.15	Users are happy with response time
9.09	10.00	14.29	15.79	28.57	16.67	22.08	5.00	15.38	System is easy to expand/reconfigure
29.55	35.00	14.29	50.00	57.14	100.00	58.44	15.00	23.08	System costs were less than expected
22.73	20.00	0.00	28.95	28.57	83.33	38.96	5.00	23.08	Programs/data carried over from other systems are compatible, as vendor promised
22.73	20.00	14.29	15.79	42.86	33.33	27.27	5.00	7.69	Terminals/peripherals carried over from other systems are compatible, as vendor promised
29.55	15.00	0.00	35.09	14.29	66.67	49.35	5.00	15.38	System is power/energy efficient
18.18	20.00	14.29	40.35	28.57	16.67	42.86	10.00	7.69	Productivity aids help us keep programming costs down
13.64	5.00	0.00	13.16	0.00	33.33	20.78	15.00	15.38	Data base language is efficient and effective
2.27	5.00	0.00	11.40	0.00	16.67	16.88	5.00	15.38	Delivery and/or installation of equipment was ahead of schedule
11.36	10.00	42.86	8.77	0.00	0.00	5.19	25.00	15.38	Delivery of required software was ahead of schedule
13.64	0.00	42.86	28.95	28.57	33.33	31.17	15.00	7.69	Significant Problems (%)
13.64	5.00	28.57	14.91	28.57	33.33	15.58	35.00	15.38	Computer proposed by vendor was too small
27.27	0.00	28.57	1.75	0.00	0.00	9.09	30.00	0.00	Installation of equipment was late
25.00	20.00	42.86	15.79	28.57	0.00	20.78	30.00	15.38	Delivery of required software was late
4.55	10.00	14.29	3.51	0.00	0.00	6.49	5.00	0.00	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
4.55	5.00	14.29	3.51	0.00	0.00	2.60	5.00	0.00	Vendor did not provide all the promised software or support
15.91	10.00	28.57	15.79	28.57	0.00	5.19	5.00	0.00	Program/data compatibility not what vendor promised
11.36	0.00	14.29	4.39	0.00	0.00	3.90	5.00	0.00	Terminals/peripherals compatibility not what vendor promised
2.27	5.00	28.57	7.02	14.29	0.00	3.90	0.00	7.69	Vendor enhancements/changes to hardware/ software hard to keep up with
3.73	3.60	2.57	3.62	3.14	4.00	3.73	3.16	3.31	Equipment is excessively noisy
3.40	3.35	2.86	3.52	3.86	3.83	3.37	3.40	3.31	Power and/or cooling requirements are excessive
3.23	2.90	2.67	2.90	3.33	3.17	2.93	3.05	3.00	System Ratings (4.0-1.0)
3.27	2.75	2.71	2.85	3.43	3.17	3.09	3.11	3.00	Ease of operation
3.05	2.50	2.50	2.65	3.17	3.50	2.84	3.11	3.08	Reliability of Mainframe
2.65	2.42	2.29	2.48	2.43	2.50	2.52	2.63	2.92	Reliability of Peripherals
2.26	2.50	2.00	2.56	2.29	2.67	2.45	2.35	2.50	Maintenance service:
1.95	2.50	2.00	2.14	2.17	2.67	1.97	2.35	2.46	Responsiveness
3.14	3.84	2.86	3.72	3.57	4.00	3.61	2.76	3.17	Effectiveness
3.09	3.63	2.71	3.40	3.14	3.83	3.39	2.86	3.00	Technical support:
2.68	2.69	2.20	2.56	2.40	2.80	2.55	2.80	3.00	Trouble-shooting
3.55	3.22	2.71	3.34	3.43	3.83	3.43	2.76	3.08	Education
2.91	3.18	2.60	3.23	3.40	3.83	3.33	2.27	2.78	Documentation
3.07	3.00	2.43	3.20	3.14	3.67	3.23	2.95	2.92	Manufacturer's software:
93.18	95.00	42.86	92.98	85.71	100.00	83.12	90.00	76.92	Operating system
0.00	5.00	57.14	7.02	14.29	0.00	3.90	10.00	7.69	Compilers & Assemblers
6.82	0.00	0.00	0.00	0.00	0.00	12.99	0.00	15.38	Applications Programs
72.73	57.89	57.14	84.07	71.43	100.00	81.82	88.89	69.23	Ease of Programming
20.45	42.11	14.29	7.96	14.29	0.00	2.60	11.11	15.38	Ease of conversion
6.82	0.00	28.57	7.96	14.29	0.00	15.58	0.00	15.38	Overall satisfaction
									Did the system do what you expected it to do? (%)
									Yes
									No
									Haven't decided
									Would you recommend system to another user? (%)
									Yes
									No
									Haven't decided

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model									
Survey Item	Data General Eclipse	Datapoint ARC	Digital Equipment PDP-8	Digital Equipment PDP-11	Digital Equipment 1103 & 1123	Digital Equipment 1134 & 1144	Digital Equipment 1170	Digital Equipment VAX	Four Phase All models
No. of User Responses	98	66	8	15	20	109	126	54	51
No. of Systems Represented	138	129	17	22	28	129	190	80	75
Avg. Life of System (Mos.)	29.5	31.8	58.4	57.1	22.8	32.2	34.3	17.2	27.0
Acquisition Method (%)									
Purchase	79.59	57.58	62.50	86.67	80.00	83.49	79.84	77.78	9.80
Rental or Lease from Mfr.	2.04	36.36	0.00	0.00	0.00	5.50	4.03	3.70	72.55
Lease from 3rd Party	18.37	6.06	37.50	13.33	20.00	11.01	16.13	18.52	17.65
Principal Applications (%)									
Accounting/Billing	69.39	87.88	75.00	60.00	40.00	65.14	65.08	40.74	56.86
Banking—check processing/loans/savings	9.18	6.06	0.00	6.67	10.00	3.67	8.73	3.70	1.96
Construction/Architecture	3.06	1.52	12.50	20.00	0.00	2.75	2.38	7.41	0.00
Education—scheduling/administration	10.20	6.06	12.50	33.33	15.00	16.51	18.25	7.41	3.92
Engineering/Scientific	12.24	4.55	37.50	26.67	30.00	12.84	15.08	51.85	1.96
Health care/Medical	7.14	1.52	0.00	0.00	0.00	9.17	5.56	3.70	33.33
Insurance	8.16	4.55	0.00	0.00	0.00	1.83	2.38	0.00	7.84
Manufacturing	18.37	15.15	12.50	6.67	15.00	10.09	15.08	14.81	23.53
Mathematics/Statistics	12.24	4.55	12.50	6.67	10.00	12.84	14.29	37.04	3.92
Order Processing/Inventory Control	46.94	54.55	25.00	26.67	30.00	38.53	39.68	22.22	50.98
Payroll/Personnel	42.86	39.39	62.50	46.67	30.00	44.95	46.83	27.78	47.06
Petroleum/Fuel analysis	6.12	1.52	12.50	0.00	0.00	2.75	3.17	0.00	1.96
Process control	3.06	1.52	12.50	0.00	10.00	3.67	0.79	11.11	1.96
Purchasing	21.43	19.70	25.00	13.33	20.00	15.60	19.84	11.11	23.53
Sales Distribution	30.61	33.33	25.00	13.33	30.00	19.27	22.22	20.37	23.53
Other	23.47	34.85	37.50	33.33	30.00	29.36	29.37	25.93	25.49
Source of Applications Programs (%)									
In-house personnel	85.71	81.82	87.50	66.67	65.00	78.90	78.57	79.63	66.67
"Packaged" programs from manufacturer	18.37	27.27	37.50	33.33	20.00	29.36	23.81	44.44	33.33
Contract Programming	34.69	34.85	50.00	33.33	20.00	36.70	25.40	20.37	23.53
Manufacturer's Personnel	1.02	3.03	12.50	0.00	0.00	4.59	3.17	9.26	5.88
Proprietary Software Packages	45.92	24.24	37.50	40.00	50.00	37.61	49.21	44.44	29.41
Location of Computer (%)									
Distributed Processing Site	12.24	21.21	0.00	20.00	30.00	13.76	8.73	33.33	37.25
Central Processing Installation	87.76	78.79	100.00	80.00	70.00	86.24	91.27	66.67	62.75
Using Local Workstations/Terminals (%)	100.00	96.92	87.50	100.00	100.00	100.00	100.00	100.00	100.00
Using Remote Workstations/Terminals (%)	60.82	54.69	37.50	73.33	33.33	59.81	83.06	79.63	30.43
Using Data Base Management System (%)									
None	32.65	10.61	12.50	33.33	40.00	35.78	38.89	44.44	19.61
Manufacturer's Package	67.35	89.39	87.50	66.67	60.00	64.22	61.11	55.56	80.39
Outside Vendor's Package	84.38	28.57	0.00	0.00	12.50	33.33	16.33	37.50	40.00
Home-Grown System	3.13	28.57	100.00	60.00	50.00	48.72	61.22	33.33	50.00
Home-Grown System	12.50	42.86	0.00	40.00	37.50	17.95	22.45	29.17	10.00
Using Communications Monitor (%)									
None	24.49	45.31	25.00	26.67	20.00	22.02	26.19	25.93	47.06
Manufacturer's Package	75.51	54.69	75.00	73.33	80.00	77.98	73.81	74.07	52.94
Outside Vendor's Package	65.22	92.86	0.00	0.00	0.00	75.00	56.67	71.43	73.91
Home-Grown System	21.74	3.57	0.00	75.00	75.00	16.67	26.67	14.29	21.74
Home-Grown System	13.04	3.57	100.00	25.00	25.00	8.33	16.67	14.29	4.35
Using Integrated Word Processing Functions (%)	23.47	47.69	37.50	33.33	50.00	29.63	37.30	45.28	52.94
Planned Acquisitions/Implementations for 1982 (%)									
Additional Software from the Manufacturer	25.51	34.85	12.50	20.00	15.00	20.18	15.08	40.74	35.29
Proprietary Software from other suppliers	29.59	33.33	37.50	20.00	55.00	30.28	52.38	51.85	11.76
Expansions to Data Communications facilities	39.80	27.27	25.00	6.67	15.00	24.77	30.95	40.74	13.73
Distributed Processing capabilities	15.31	13.64	25.00	6.67	10.00	13.76	13.49	9.26	15.69
Expansions to present hardware	51.02	51.52	25.00	33.33	60.00	46.79	41.27	55.56	45.10
Another Computer System, same model	12.24	9.09	12.50	0.00	15.00	7.34	10.32	22.22	9.80
Business graphics	10.20	4.55	12.50	0.00	0.00	11.01	10.32	20.37	9.80
Plans for system replacement in 1982 (%)									
Yes, same manufacturer	4.08	6.06	12.50	26.67	10.00	12.84	7.94	1.85	17.65
Yes, vendor unknown	4.08	1.52	0.00	0.00	0.00	1.83	2.38	0.00	3.92
Yes, different vendor	7.14	6.06	0.00	13.33	0.00	1.83	0.79	0.00	9.80
No	83.67	86.36	87.50	53.33	90.00	81.65	88.89	98.15	68.63

User Ratings of Computer Systems
Table 2. Minicomputers & Small Business Computers

										Manufacturer and Model
Data General Eclipse	Datapoint ARC	Digital Equipment PDP-8	Digital Equipment PDP-11	Digital Equipment 1103 & 1123	Digital Equipment 1134 & 1144	Digital Equipment 1170	Digital Equipment VAX	Four Phase All models		Survey Item
46.94	40.91	62.50	33.33	40.00	58.72	69.05	79.63	50.98		Significant Advantages (%)
58.16	81.82	62.50	40.00	65.00	60.55	73.02	81.48	47.06		Users are happy with response time
10.20	18.18	25.00	0.00	10.00	10.09	16.67	18.52	11.76		System is easy to expand/reconfigure
18.37	45.45	0.00	6.67	35.00	22.02	26.19	40.74	11.76		System costs were less than expected
15.31	34.85	0.00	6.67	45.00	25.69	27.78	42.59	9.80		Programs/data carried over from other systems are compatible, as vendor promised
11.22	25.76	12.50	0.00	20.00	13.76	15.08	12.96	17.65		Terminals/peripherals carried over from other systems are compatible, as vendor promised
24.49	18.18	12.50	0.00	10.00	19.27	34.13	46.30	23.53		System is power/energy efficient
13.27	9.09	12.50	26.67	10.00	17.43	19.05	14.81	11.76		Productivity aids help us keep programming costs down
12.24	13.64	12.50	0.00	5.00	10.09	11.90	20.37	11.76		Data base language is efficient and effective
9.18	7.58	12.50	6.67	0.00	5.50	7.94	9.26	5.88		Delivery and/or installation of equipment was ahead of schedule
										Delivery of required software was ahead of schedule
11.22	13.64	12.50	6.67	0.00	11.93	4.76	3.70	13.73		Significant Problems (%)
15.31	10.61	0.00	20.00	20.00	12.84	8.73	18.52	29.41		Computer proposed by vendor was too small
13.27	13.64	12.50	20.00	20.00	10.09	7.94	9.26	15.69		Installation of equipment was late
13.27	3.03	0.00	13.33	0.00	10.09	6.35	1.85	7.84		Delivery of required software was late
17.35	12.12	0.00	26.67	5.00	18.35	7.94	3.70	31.37		System costs (for hardware, vendor-supplied software, support) exceeded the expected total
10.20	3.03	12.50	0.00	0.00	1.83	2.38	0.00	11.76		Vendor did not provide all the promised software or support
2.04	3.03	0.00	0.00	0.00	0.92	0.00	3.70	3.92		Program/data compatibility not what vendor promised
14.29	18.18	0.00	20.00	10.00	11.01	7.14	0.00	17.65		Terminals/peripherals compatibility not what vendor promised
4.08	1.52	25.00	0.00	20.00	8.26	7.94	12.96	5.88		Vendor enhancements/changes to hardware/software hard to keep up with
4.08	0.00	25.00	0.00	5.00	6.42	4.76	1.85	3.92		Equipment is excessively noisy
										Power and/or cooling requirements are excessive
3.41	3.38	3.38	3.29	3.63	3.51	3.40	3.70	3.27		System Ratings (4.0-1.0)
3.41	3.35	3.63	3.47	3.74	3.68	3.65	3.65	3.22		Ease of operation
2.95	3.03	3.25	3.07	3.25	3.31	3.26	3.15	2.88		Reliability of Mainframe
										Reliability of Peripherals
3.05	3.14	3.14	2.93	2.83	3.35	3.26	3.09	3.06		Maintenance service:
2.88	2.94	3.29	2.87	2.83	3.19	3.11	3.04	2.96		Responsiveness
										Effectiveness
2.45	2.69	2.88	2.79	2.63	2.82	2.86	2.76	2.66		Technical support:
2.56	2.75	2.50	2.43	2.61	2.77	2.72	2.77	2.48		Trouble-shooting
2.47	2.57	2.63	2.67	2.58	2.72	2.75	3.06	2.34		Education
										Documentation
3.05	3.28	3.14	3.40	3.11	3.46	3.54	3.53	2.87		Manufacturer's software:
2.93	3.15	3.14	3.00	3.17	3.16	3.27	3.44	2.58		Operating system
2.61	2.77	2.20	3.00	3.00	2.95	2.80	3.05	2.83		Compilers & Assemblers
										Applications Programs
3.10	3.15	3.14	3.00	2.83	3.25	3.39	3.48	2.82		Ease of Programming
2.76	2.98	2.20	2.90	2.88	2.93	3.00	3.33	2.58		Ease of conversion
2.99	3.11	3.50	3.20	3.20	3.32	3.29	3.39	2.84		Overall satisfaction
78.57	87.69	100.00	93.33	85.00	88.99	94.44	90.74	74.00		Did the system do what you expected it to do? (%)
10.20	7.69	0.00	6.67	0.00	3.67	1.59	0.00	14.00		Yes
11.22	4.62	0.00	0.00	15.00	7.34	3.97	9.26	12.00		No
										Haven't decided
75.00	86.15	87.50	73.33	85.00	89.91	90.40	92.59	68.00		Would you recommend system to another user? (%)
10.42	9.23	12.50	26.67	5.00	4.59	6.40	1.85	12.00		Yes
14.58	4.62	0.00	0.00	10.00	5.50	3.20	5.56	20.00		No
										Haven't decided



User Ratings of Computer Systems
Table 2. Minicomputers & Small Business Computers

Survey Item	Manufacturer and Model								
	General Automation All models	Harris	Honeywell Level 6 DPS	Hewlett-Packard 250	Hewlett-Packard 1000	Hewlett-Packard 3000	IBM 1130	IBM Series 1	IBM System/3
No. of User Responses	11	16	37	5	15	206	5	45	211
No. of Systems Represented	12	16	43	6	25	251	5	57	219
Avg. Life of System (Mos.)	58.4	22.9	19.7	13.0	44.5	26.7	138.8	22.9	59.1
Acquisition Method (%)									
Purchase	45.45	12.50	83.78	75.00	80.00	72.82	100.00	84.44	71.90
Rental or Lease from Mfr.	9.09	62.50	10.81	0.00	13.33	10.68	0.00	4.44	15.71
Lease from 3rd Party	45.45	25.00	5.41	25.00	6.67	16.50	0.00	11.11	12.38
Principal Applications (%)									
Accounting/Billing	45.45	75.00	78.38	20.00	40.00	81.07	60.00	46.67	90.05
Banking—check processing/loans/savings	0.00	0.00	5.41	20.00	0.00	1.94	0.00	2.22	9.00
Construction/Architecture	9.09	0.00	2.70	0.00	0.00	2.91	20.00	4.44	4.27
Education—scheduling/administration	0.00	18.75	8.11	0.00	13.33	11.65	60.00	2.22	1.90
Engineering/Scientific	72.73	25.00	2.70	0.00	53.33	12.14	40.00	2.22	4.74
Health care/Medical	0.00	6.25	5.41	0.00	0.00	6.80	0.00	11.11	7.11
Insurance	0.00	0.00	13.51	0.00	0.00	4.85	0.00	13.33	7.58
Manufacturing	36.36	50.00	8.11	20.00	6.67	31.55	0.00	15.56	42.65
Mathematics/Statistics	27.27	18.75	8.11	0.00	40.00	13.11	20.00	6.67	5.21
Order Processing/Inventory Control	36.36	62.50	54.05	40.00	13.33	55.34	0.00	40.00	65.40
Payroll/Personnel	36.36	56.25	40.54	20.00	6.67	54.85	80.00	37.78	75.83
Petroleum/Fuel analysis	0.00	0.00	0.00	0.00	0.00	1.46	0.00	0.00	2.84
Process control	0.00	6.25	5.41	0.00	6.67	2.91	0.00	4.44	2.84
Purchasing	18.18	37.50	32.43	0.00	0.00	35.92	20.00	31.11	37.91
Sales Distribution	36.36	31.25	24.32	20.00	13.33	34.95	0.00	28.89	54.03
Other	18.18	31.25	24.32	40.00	46.67	23.30	40.00	48.89	17.06
Source of Applications Programs (%)									
In-house personnel	72.73	93.75	75.68	80.00	93.33	82.04	100.00	73.33	97.16
"Packaged" programs from manufacturer	18.18	31.25	37.84	20.00	13.33	36.89	60.00	24.44	41.23
Contract Programming	36.36	18.75	27.03	40.00	26.67	37.38	20.00	35.56	27.01
Manufacturer's Personnel	0.00	0.00	5.41	0.00	6.67	2.43	0.00	0.00	3.32
Proprietary Software Packages	45.45	25.00	37.84	0.00	33.33	53.40	40.00	35.56	10.90
Location of Computer (%)									
Distributed Processing Site	18.18	62.50	10.81	40.00	6.67	10.24	0.00	33.33	3.79
Central Processing Installation	81.82	37.50	89.19	60.00	93.33	89.76	100.00	66.67	96.21
Using Local Workstations/Terminals (%)	72.73	50.00	97.22	100.00	100.00	100.00	20.00	97.78	78.10
Using Remote Workstations/Terminals (%)	36.36	62.50	63.64	25.00	60.00	73.13	0.00	27.91	40.87
Using Data Base Management System (%)									
None	27.27	43.75	32.43	80.00	53.33	93.69	0.00	28.89	11.37
Manufacturer's Package	72.73	56.25	67.57	20.00	46.67	6.31	100.00	71.11	88.63
Outside Vendor's Package	33.33	28.57	58.33	100.00	100.00	96.89	0.00	0.00	36.36
Home-Grown System	67.67	71.43	41.67	0.00	0.00	2.59	0.00	83.33	31.82
Home-Grown System	0.00	0.00	0.00	0.00	0.00	0.52	0.00	16.67	31.82
Using Communications Monitor (%)									
None	18.18	31.25	54.05	20.00	6.67	28.64	0.00	31.11	31.28
Manufacturer's Package	81.82	68.75	45.95	80.00	93.33	71.36	100.00	68.89	68.72
Outside Vendor's Package	100.00	80.00	75.00	100.00	100.00	89.47	0.00	71.43	93.85
Home-Grown System	0.00	20.00	15.00	0.00	0.00	7.02	0.00	7.14	4.62
Home-Grown System	0.00	0.00	10.00	0.00	0.00	3.51	0.00	21.43	1.54
Using Integrated Word Processing Functions (%)	27.27	18.75	32.43	20.00	20.00	30.69	0.00	25.00	4.74
Planned Acquisitions/Implementations for 1982 (%)									
Additional Software from the Manufacturer	0.00	12.50	24.32	20.00	20.00	41.26	0.00	28.89	9.95
Proprietary Software from other suppliers	9.09	12.50	24.32	40.00	13.33	54.37	0.00	28.89	13.74
Expansions to Data Communications facilities	9.09	18.75	21.62	40.00	13.33	33.50	0.00	46.67	23.22
Distributed Processing capabilities	0.00	31.25	24.32	0.00	6.67	15.05	0.00	20.00	10.90
Expansions to present hardware	27.27	25.00	62.16	60.00	33.33	64.08	0.00	60.00	22.27
Another Computer System, same model	9.09	12.50	2.70	0.00	6.67	10.19	0.00	17.78	9.00
Business graphics	0.00	0.00	8.11	0.00	6.67	20.87	0.00	2.22	2.84
Plans for system replacement in 1982 (%)									
Yes, same manufacturer	18.18	0.00	2.70	0.00	6.67	10.68	20.00	0.00	30.81
Yes, vendor unknown	9.09	6.25	2.70	0.00	0.00	0.49	0.00	0.00	9.95
Yes, different vendor	9.09	25.00	2.70	0.00	6.67	0.49	0.00	0.00	4.27
No	63.64	68.75	91.89	100.00	86.67	86.89	80.00	100.00	54.03

User Ratings of Computer Systems
Table 2. Minicomputers & Small Business Computers

General Automation All models	Harris	Honeywell Level 6 DPS	Hewlett-Packard 250	Hewlett-Packard 1000	Hewlett-Packard 3000	IBM 1130	IBM Series 1	IBM System/3	Manufacturer and Model
									Survey Item
36.36	43.75	48.65	80.00	26.67	61.65	20.00	53.33	43.13	Significant Advantages (%)
9.09	31.25	70.27	80.00	46.67	83.98	0.00	64.44	29.86	Users are happy with response time
18.18	12.50	10.81	60.00	0.00	11.17	0.00	24.44	11.37	System is easy to expand/reconfigure
45.45	6.25	21.62	0.00	6.67	35.92	0.00	0.00	29.38	System costs were less than expected
18.18	6.25	8.11	0.00	6.67	16.99	0.00	6.67	11.85	Programs/data carried over from other systems are compatible, as vendor promised
9.09	6.25	16.22	60.00	20.00	35.44	0.00	35.56	8.06	Terminals/peripherals carried over from other systems are compatible, as vendor promised
0.00	18.75	32.43	80.00	6.67	41.75	0.00	15.56	20.85	System is power/energy efficient
0.00	0.00	21.62	60.00	33.33	72.82	0.00	11.11	4.74	Productivity aids help us keep programming costs down
0.00	6.25	21.62	20.00	0.00	27.67	0.00	13.33	4.27	Data base language is efficient and effective
0.00	0.00	0.00	20.00	0.00	16.50	0.00	15.56	2.37	Delivery and/or installation of equipment was ahead of schedule
0.00	0.00	0.00	20.00	0.00	16.50	0.00	15.56	2.37	Delivery of required software was ahead of schedule
9.09	12.50	27.03	0.00	13.33	7.77	0.00	11.11	7.11	Significant Problems (%)
9.09	6.25	18.92	20.00	0.00	7.77	0.00	11.11	2.84	Computer proposed by vendor was too small
45.45	18.75	29.73	0.00	26.67	6.31	0.00	24.44	0.95	Installation of equipment was late
0.00	6.25	16.22	0.00	13.33	8.25	20.00	15.56	12.32	Delivery of required software was late
54.55	31.25	32.43	0.00	26.67	9.22	0.00	15.56	7.11	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
0.00	12.50	13.51	0.00	0.00	0.49	0.00	4.44	3.32	Vendor did not provide all the promised software or support
0.00	0.00	10.81	0.00	20.00	0.49	0.00	4.44	1.90	Program/data compatibility not what vendor promised
27.27	18.75	16.22	0.00	26.67	4.85	0.00	11.11	4.27	Terminals/peripherals compatibility not what vendor promised
18.18	0.00	0.00	0.00	20.00	1.46	0.00	0.00	15.64	Vendor enhancements/changes to hardware/ software hard to keep up with
18.18	0.00	2.70	0.00	0.00	1.46	0.00	0.00	10.90	Equipment is excessively noisy
2.91	3.00	3.32	4.00	3.07	3.65	3.80	3.33	3.12	Power and/or cooling requirements are excessive
3.00	3.44	3.30	4.00	3.53	3.83	4.00	3.80	3.59	System Ratings (4.0-1.0)
2.82	2.75	3.14	3.80	3.27	3.53	3.40	3.53	3.31	Ease of operation
2.82	2.81	3.08	3.60	3.07	3.41	3.00	3.40	3.31	Reliability of Mainframe
2.82	2.56	2.89	3.40	3.33	3.44	3.00	3.38	3.25	Reliability of Peripherals
2.10	2.53	2.58	3.25	2.62	3.05	2.75	2.73	2.97	Maintenance service:
1.70	2.14	2.50	3.50	2.54	2.98	2.50	2.32	2.90	Responsiveness
1.70	2.07	2.33	3.75	2.40	2.92	2.67	2.48	2.84	Effectiveness
2.50	3.06	3.03	4.00	3.07	3.58	3.40	2.89	3.20	Technical support:
2.70	2.69	3.11	4.00	3.14	3.36	3.40	2.95	3.26	Trouble-shooting
2.44	2.70	2.92	3.50	2.57	3.10	3.25	2.79	2.79	Education
2.82	2.15	3.11	4.00	2.87	3.38	3.20	2.64	2.94	Documentation
2.64	2.58	2.84	4.00	2.00	3.20	1.67	2.39	2.66	Manufacturer's software:
2.45	2.63	3.14	4.00	2.93	3.53	3.60	2.98	3.11	Operating system
54.55	73.33	72.22	100.00	93.33	94.66	100.00	86.67	93.30	Compilers & Assemblers
9.09	13.33	5.56	0.00	6.67	1.46	0.00	4.44	3.35	Applications Programs
36.36	13.33	22.22	0.00	0.00	3.88	0.00	8.89	3.35	Ease of Programming
27.27	53.33	72.97	100.00	92.86	95.12	20.00	84.44	65.22	Ease of conversion
45.45	40.00	5.41	0.00	7.14	0.98	20.00	4.44	25.60	Overall satisfaction
27.27	6.67	21.62	0.00	0.00	3.90	60.00	11.11	9.18	Did the system do what you expected it to do? (%)
									Yes
									No
									Haven't decided
									Would you recommend system to another user? (%)
									Yes
									No
									Haven't decided

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model									
Survey Item	IBM System/32	IBM System/34	IBM System/38	Microdata All models	NCR I 8000 & I 9000	Perkin-Elmer All models	Point 4 All models	Prime 300 & 400	Prime 50 Series
No. of User Responses	13	667	231	43	49	24	8	14	58
No. of Systems Represented	17	706	238	61	51	37	9	17	75
Avg. Life of System (Mos.)	49.2	26.8	15.5	38.3	23.4	26.7	15.9	43.8	18.5
Acquisition Method (%)									
Purchase	76.92	46.47	45.45	86.05	55.10	87.50	75.00	64.29	68.42
Rental or Lease from Mfr.	0.00	46.92	38.53	2.33	32.65	8.33	12.50	21.43	21.05
Lease from 3rd Party	23.08	6.62	16.02	11.63	12.24	4.17	12.50	14.29	10.53
Principal Applications (%)									
Accounting/Billing	69.23	87.41	84.85	90.70	81.63	54.17	75.00	57.14	60.34
Banking—check processing/loans/savings	7.69	5.55	3.90	4.65	10.20	0.00	0.00	0.00	1.72
Construction/Architecture	0.00	3.00	3.46	2.33	6.12	0.00	0.00	7.14	6.90
Education—scheduling/administration	7.69	4.20	3.03	4.65	4.08	4.17	0.00	14.29	20.69
Engineering/Scientific	7.69	4.65	3.90	4.65	0.00	8.33	0.00	21.43	32.76
Health care/Medical	15.38	3.60	6.49	9.30	8.16	4.17	25.00	14.29	1.72
Insurance	0.00	3.60	6.06	6.98	4.08	8.33	12.50	0.00	1.72
Manufacturing	15.38	36.13	42.42	27.91	16.33	0.00	0.00	7.14	13.79
Mathematics/Statistics	7.69	5.25	4.33	4.65	0.00	4.17	0.00	28.57	25.86
Order Processing/Inventory Control	38.46	63.42	64.07	74.42	42.86	45.83	50.00	50.00	22.41
Payroll/Personnel	61.54	67.17	67.53	46.51	69.39	41.67	62.50	35.71	41.38
Petroleum/Fuel analysis	0.00	2.25	2.60	0.00	0.00	0.00	0.00	0.00	0.00
Process control	0.00	5.55	4.76	4.65	0.00	0.00	0.00	0.00	3.45
Purchasing	15.38	31.48	39.83	46.51	18.37	29.17	37.50	14.29	17.24
Sales Distribution	15.38	46.18	49.78	53.49	26.53	12.50	37.50	21.43	15.52
Other	0.00	17.24	20.78	16.28	22.45	37.50	62.50	14.29	31.03
Source of Applications Programs (%)									
In-house personnel	100.00	86.96	96.54	79.07	73.47	83.33	75.00	92.86	91.38
"Packaged" programs from manufacturer	30.77	49.33	39.83	30.23	57.14	25.00	62.50	28.57	29.31
Contract Programming	23.08	36.13	32.03	44.19	40.82	54.17	50.00	14.29	34.48
Manufacturer's Personnel	0.00	2.10	1.30	2.33	8.16	0.00	0.00	0.00	0.00
Proprietary Software Packages	15.38	26.39	19.05	39.53	20.41	37.50	12.50	42.86	53.45
Location of Computer (%)									
Distributed Processing Site	0.00	7.38	2.60	9.30	8.16	20.83	12.50	7.14	3.45
Central Processing Installation	100.00	92.62	97.40	90.70	91.84	79.17	87.50	92.86	96.55
Using Local Workstations/Terminals (%)	46.15	100.00	96.97	88.37	97.96	83.33	62.50	100.00	100.00
Using Remote Workstations/Terminals (%)	7.69	43.63	50.00	64.29	47.92	75.00	50.00	71.43	80.70
Using Data Base Management System (%)									
None	0.00	8.10	82.68	93.02	12.24	62.50	25.00	50.00	50.00
Manufacturer's Package	100.00	91.90	17.32	6.98	87.76	37.50	75.00	50.00	50.00
Outside Vendor's Package	0.00	57.69	95.72	90.00	16.67	53.33	0.00	66.67	55.17
Home-Grown System	0.00	11.54	1.60	5.00	0.00	33.33	100.00	33.33	34.48
Using Communications Monitor (%)									
None	0.00	19.76	23.38	9.30	2.13	50.00	12.50	14.29	33.33
Manufacturer's Package	100.00	80.24	71.62	90.70	97.87	50.00	87.50	85.71	66.67
Outside Vendor's Package	0.00	87.40	96.92	25.00	100.00	58.33	100.00	50.00	76.47
Home-Grown System	0.00	7.09	1.54	50.00	0.00	41.67	0.00	50.00	17.65
Using Integrated Word Processing Functions (%)									
None	0.00	5.51	1.54	25.00	0.00	0.00	0.00	0.00	5.88
Planned Acquisitions/Implementations for 1982 (%)									
Additional Software from the Manufacturer	7.69	24.43	7.83	37.21	16.67	20.83	12.50	42.86	46.55
Proprietary Software from other suppliers	15.38	20.54	22.08	9.30	26.53	29.17	37.50	21.43	27.59
Expansions to Data Communications facilities	0.00	32.38	26.84	34.88	30.61	37.50	0.00	35.71	53.45
Distributed Processing capabilities	0.00	27.44	38.53	16.28	22.45	62.50	37.50	50.00	46.55
Expansions to present hardware	0.00	10.34	16.45	9.30	4.08	29.17	0.00	7.14	8.62
Another Computer System, same model	0.00	40.03	46.75	48.84	36.73	70.83	87.50	50.00	67.24
Business graphics	7.69	3.30	3.90	18.60	12.24	8.33	12.50	7.14	15.52
Plans for system replacement in 1982 (%)									
Yes, same manufacturer	0.00	4.20	5.19	11.63	2.04	4.17	0.00	21.43	24.14
Yes, vendor unknown	7.69	11.54	3.46	18.60	10.20	0.00	12.50	7.14	5.17
Yes, different vendor	0.00	1.20	0.43	4.65	2.04	0.00	0.00	0.00	0.00
No	0.00	1.20	1.30	4.65	10.20	16.67	0.00	0.00	0.00
	84.62	85.46	94.81	72.09	77.55	83.33	87.50	92.86	94.83

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

IBM System/32	IBM System/34	IBM System/38	Microdata All models	NCR 18000 & 19000	Perkin-Elmer All models	Point 4 All models	Prime 300 & 400	Prime 50 Series	Manufacturer and Model
									Survey Item
53.85	64.62	54.55	48.84	73.47	62.50	87.50	78.57	65.52	Significant Advantages (%)
38.46	77.96	73.59	69.77	65.31	37.50	87.50	78.57	87.93	Users are happy with response time
30.77	12.89	14.72	16.28	18.37	12.50	12.50	7.14	15.52	System is easy to expand/reconfigure
15.38	36.58	43.72	20.93	42.86	20.83	25.00	28.57	25.86	System costs were less than expected
7.69	6.30	22.51	20.93	24.49	20.83	37.50	35.71	32.76	Programs/data carried over from other systems are compatible, as vendor promised
23.08	23.69	26.41	16.28	12.24	20.83	37.50	28.57	22.41	Terminals/peripherals carried over from other systems are compatible, as vendor promised
23.08	53.82	83.55	58.14	26.53	29.17	0.00	7.14	37.93	System is power/energy efficient
0.00	3.45	68.40	90.70	6.12	16.67	25.00	14.29	13.79	Productivity aids help us keep programming costs down
7.69	17.39	25.97	6.98	20.41	4.17	25.00	14.29	31.03	Data base language is efficient and effective
15.38	9.15	13.85	6.98	8.16	0.00	25.00	7.14	1.72	Delivery and/or installation of equipment was ahead of schedule
7.69	7.95	6.06	20.93	14.29	20.83	0.00	7.14	12.07	Delivery of required software was ahead of schedule
0.00	3.30	9.09	11.63	18.37	20.83	0.00	7.14	3.45	Significant Problems (%)
0.00	4.05	2.60	13.95	14.29	8.33	0.00	7.14	8.62	Computer proposed by vendor was too small
7.69	7.65	6.49	16.28	12.24	4.17	0.00	7.14	6.90	Installation of equipment was late
7.69	6.45	7.36	18.60	20.41	25.00	12.50	7.14	29.31	Delivery of required software was late
0.00	1.95	7.36	4.65	6.12	8.33	25.00	7.14	5.17	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
0.00	1.65	0.87	2.33	2.04	4.17	0.00	0.00	1.72	Vendor did not provide all the promised software or support
7.69	5.85	7.79	13.95	10.20	58.33	0.00	7.14	13.79	Program/data compatibility not what vendor promised
0.00	1.50	2.16	9.30	6.12	4.17	0.00	7.14	8.62	Terminals/peripherals compatibility not what vendor promised
7.69	0.90	2.16	4.65	4.08	4.17	0.00	0.00	0.00	Vendor enhancements/changes to hardware/software hard to keep up with
3.31	3.61	3.34	3.79	3.40	2.63	3.75	3.71	3.55	Equipment is excessively noisy
3.77	3.80	3.76	3.37	3.37	3.29	3.75	3.64	3.50	Power and/or cooling requirements are excessive
3.11	3.69	3.54	2.95	3.20	2.67	3.25	3.00	3.00	System Ratings (4.0-1.0)
3.23	3.48	3.55	3.21	3.16	2.67	3.63	2.93	2.97	Ease of operation
3.38	3.49	3.50	2.98	3.13	2.50	3.63	2.79	2.73	Reliability of Mainframe
3.00	3.01	3.01	2.70	2.69	2.27	3.00	2.36	2.57	Reliability of Peripherals
2.92	3.04	2.92	2.62	2.69	2.18	2.71	2.79	2.52	Maintenance service:
2.83	3.00	3.00	2.37	2.45	2.27	2.38	2.50	2.50	Responsiveness
3.17	3.41	3.40	3.63	3.02	2.37	3.38	3.50	3.41	Effectiveness
3.46	3.42	3.40	3.43	2.96	2.65	3.14	3.14	3.07	Technical support:
3.11	2.89	2.95	2.94	2.64	2.11	3.00	3.00	2.70	Trouble-shooting
3.38	3.36	3.61	3.72	3.06	2.52	3.25	3.36	3.28	Education
3.09	3.05	2.66	3.24	2.87	2.27	2.63	3.29	3.02	Documentation
3.54	3.42	3.36	3.37	3.16	2.61	3.63	3.50	3.31	Manufacturer's software:
100.00	95.05	85.22	88.37	87.76	91.30	100.00	100.00	91.38	Operating system
0.00	1.95	2.17	6.98	6.12	8.70	0.00	0.00	3.45	Compilers & Assemblers
0.00	3.00	12.61	4.65	6.12	0.00	0.00	0.00	5.17	Applications Programs
84.62	96.08	88.65	83.72	83.67	70.83	100.00	100.00	91.38	Ease of Programming
7.69	1.20	3.49	11.63	10.20	20.83	0.00	0.00	1.72	Ease of conversion
7.69	2.71	7.86	4.65	6.12	8.33	0.00	0.00	6.90	Overall satisfaction
									Did the system do what you expected it to do? (%)
									Yes
									No
									Haven't decided
									Would you recommend system to another user? (%)
									Yes
									No
									Haven't decided

User Ratings of Computer Systems
Table 2. Minicomputers & Small Business Computers

Survey Item	Manufacturer and Model						
	Prime I 1000	Qantel All models	Tandem All models	Texas Instruments 990	Univac BC 7	Wang VS	Minis Other models
No. of User Responses	12	6	25	32	6	87	72
No. of Systems Represented	13	8	57	39	6	107	104
Avg. Life of System (Mos.)	17.9	38.8	17.3	20.7	26.8	21.0	36.3
Acquisition Method (%)							
Purchase	75.00	83.33	92.00	81.25	50.00	72.94	73.61
Rental or Lease from Mfr.	0.00	0.00	0.00	6.25	16.67	15.29	12.50
Lease from 3rd Party	25.00	16.67	8.00	12.50	33.33	11.76	13.89
Principal Applications (%)							
Accounting/Billing	91.67	83.33	40.00	84.38	83.33	72.41	68.06
Banking—check processing/loans/savings	0.00	0.00	20.00	3.13	0.00	8.05	5.56
Construction/Architecture	0.00	0.00	0.00	9.38	33.33	2.30	2.78
Education—scheduling/administration	8.33	0.00	0.00	9.38	0.00	6.90	6.94
Engineering/Scientific	0.00	0.00	4.00	3.13	16.67	5.75	15.28
Health care/Medical	8.33	16.67	8.00	3.13	0.00	6.90	6.94
Insurance	8.33	16.67	0.00	3.13	0.00	13.79	5.56
Manufacturing	25.00	16.67	8.00	21.88	33.33	14.94	8.33
Mathematics/Statistics	0.00	16.67	8.00	6.25	16.67	5.75	11.11
Order Processing/Inventory Control	66.67	66.67	28.00	40.63	33.33	35.63	50.00
Payroll/Personnel	41.67	50.00	12.00	68.75	50.00	41.38	50.00
Petroleum/Fuel analysis	0.00	0.00	0.00	9.38	0.00	3.45	4.17
Process control	0.00	0.00	16.00	0.00	0.00	2.30	4.17
Purchasing	50.00	50.00	8.00	15.63	0.00	19.54	20.83
Sales Distribution	91.67	16.67	12.00	25.00	16.67	31.03	33.33
Other	25.00	16.67	52.00	25.00	33.33	33.33	25.00
Source of Applications Programs (%)							
In-house personnel	50.00	50.00	88.00	78.13	50.00	77.01	63.89
"Packaged" programs from manufacturer	33.33	50.00	20.00	9.38	83.33	35.63	31.94
Contract Programming	58.33	83.33	24.00	21.88	50.00	41.38	30.56
Manufacturer's Personnel	8.33	0.00	4.00	0.00	0.00	2.30	5.56
Proprietary Software Packages	41.67	33.33	28.00	50.00	33.33	32.18	31.94
Location of Computer (%)							
Distributed Processing Site	8.33	50.00	8.33	21.88	0.00	15.12	15.28
Central Processing Installation	91.67	50.00	91.67	78.13	100.00	84.88	84.72
Using Local Workstations/Terminals (%)	100.00	100.00	100.00	100.00	100.00	100.00	87.14
Using Remote Workstations/Terminals (%)	75.00	100.00	80.00	41.94	0.00	40.70	43.48
Using Data Base Management System (%)	100.00	50.00	60.00	25.81	16.67	13.79	31.94
None	0.00	50.00	40.00	74.19	83.33	86.21	68.06
Manufacturer's Package	75.00	100.00	86.67	75.00	100.00	50.00	34.78
Outside Vendor's Package	16.67	0.00	6.67	0.00	0.00	25.00	43.48
Home-Grown System	8.33	0.00	6.67	25.00	0.00	25.00	21.74
Using Communications Monitor (%)	16.67	16.67	68.00	18.75	0.00	22.99	25.00
None	83.33	83.33	32.00	81.25	100.00	77.01	75.00
Manufacturer's Package	100.00	0.00	82.35	83.33	0.00	89.47	38.89
Outside Vendor's Package	0.00	0.00	11.76	16.67	0.00	5.26	50.00
Home-Grown System	0.00	100.00	5.80	0.00	0.00	5.26	11.11
Using Integrated Word Processing Functions (%)	41.67	66.67	24.00	32.26	0.00	65.52	23.61
Planned Acquisitions/Implementations for 1982 (%)							
Additional Software from the Manufacturer	33.33	50.00	36.00	18.75	33.33	25.29	20.83
Proprietary Software from other suppliers	33.33	16.67	36.00	37.50	16.67	40.23	26.39
Expansions to Data Communications facilities	58.33	33.33	52.00	31.25	16.67	43.68	12.50
Distributed Processing capabilities	0.00	16.67	12.00	21.88	33.33	18.39	9.72
Expansions to present hardware	58.33	83.33	72.00	65.63	66.67	62.07	29.17
Another Computer System, same model	8.33	16.67	28.00	0.00	16.67	8.05	9.72
Business graphics	16.67	0.00	12.00	3.13	16.67	13.79	6.94
Plans for system replacement in 1982 (%)							
Yes, same manufacturer	25.00	0.00	8.00	0.00	16.67	13.79	6.94
Yes, vendor unknown	0.00	0.00	0.00	3.13	16.67	4.60	2.78
Yes, different vendor	0.00	0.00	4.00	0.00	16.67	1.15	6.94
No	75.00	100.00	88.00	96.88	50.00	79.31	81.94

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

									Manufacturer and Model
									Survey Item
		Prime I 1000	Qantel All models	Tandem All models	Texas Instruments 990	Univac BC 7	Wang VS	Minis Other models	
		66.67	66.67	48.00	56.25	33.33	70.11	52.78	Significant Advantages (%)
		91.67	50.00	84.00	84.38	66.67	78.16	44.44	Users are happy with response time
		16.67	16.67	4.00	34.38	0.00	14.94	16.67	System is easy to expand/reconfigure
		25.00	33.33	8.00	25.00	0.00	36.78	27.78	System costs were less than expected
		25.00	16.67	24.00	9.38	0.00	10.34	25.00	Programs/data carried over from other systems are compatible, as vendor promised
		25.00	0.00	20.00	18.75	0.00	21.84	20.83	Terminals/peripherals carried over from other systems are compatible, as vendor promised
		66.67	16.67	56.00	34.38	33.33	74.71	20.83	System is power/energy efficient
		91.67	50.00	48.00	6.25	16.67	8.05	13.89	Productivity aids help us keep programming costs down
		50.00	16.67	52.00	18.75	0.00	17.24	16.67	Data base language is efficient and effective
		25.00	16.67	32.00	9.38	0.00	3.45	12.50	Delivery and/or installation of equipment was ahead of schedule
		16.67	0.00	16.00	15.63	16.67	11.49	11.11	Delivery of required software was ahead of schedule
		0.00	0.00	0.00	6.25	0.00	12.64	11.11	Significant Problems (%)
		25.00	16.67	4.00	9.38	33.33	11.49	12.50	Computer proposed by vendor was too small
		8.33	16.67	8.00	12.50	0.00	6.90	6.94	Installation of equipment was late
		16.67	0.00	8.00	18.75	33.33	20.69	20.83	Delivery of required software was late
		0.00	0.00	0.00	0.00	0.00	3.45	4.17	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
		0.00	16.67	4.00	0.00	0.00	3.45	0.00	Vendor did not provide all the promised software or support
		8.33	0.00	0.00	12.50	0.00	4.60	4.17	Program/data compatibility not what vendor promised
		0.00	0.00	0.00	9.38	0.00	6.90	13.89	Terminals/peripherals compatibility not what vendor promised
		0.00	0.00	0.00	9.38	16.67	5.75	11.11	Vendor enhancements/changes to hardware/ software hard to keep up with
		3.67	3.50	3.32	3.59	3.83	3.76	3.24	Equipment is excessively noisy
		3.83	3.83	3.80	3.73	4.00	3.60	3.32	Power and/or cooling requirements are excessive
		3.27	3.17	3.08	3.38	3.00	3.05	3.18	System Ratings (4.0-1.0)
		3.50	3.33	3.25	3.00	3.17	3.00	3.20	Ease of operation
		3.00	3.17	3.26	3.13	3.00	2.89	3.04	Reliability of Mainframe
		2.27	3.17	3.00	2.84	2.50	2.66	2.76	Reliability of Peripherals
		2.67	2.50	3.13	2.53	1.83	2.36	2.43	Maintenance service:
		2.55	2.50	3.04	2.55	2.00	2.25	2.54	Responsiveness
		3.36	3.60	3.50	3.42	3.67	3.39	3.04	Effectiveness
		3.60	3.33	3.21	3.32	3.60	3.44	2.83	Technical support:
		2.83	3.33	2.50	3.11	2.67	3.13	2.63	Trouble-shooting
		3.80	3.17	3.32	3.39	3.50	3.67	3.03	Education
		3.20	3.00	3.08	2.96	3.00	3.31	2.76	Documentation
		3.45	3.17	3.42	3.29	2.67	3.36	2.97	Manufacturer's software:
		75.00	100.00	84.00	84.38	100.00	90.80	87.14	Operating system
		16.67	0.00	4.00	6.25	0.00	1.15	7.14	Compilers & Assemblers
		8.33	0.00	12.00	9.38	0.00	8.05	5.71	Applications Programs
		100.00	83.33	86.96	84.38	66.67	86.21	69.44	Ease of Programming
		0.00	16.67	0.00	6.25	16.67	2.30	19.44	Ease of conversion
		0.00	0.00	13.04	9.38	16.67	11.49	11.11	Overall satisfaction
									Did the system do what you expected it to do? (%)
									Yes
									No
									Haven't decided
									Would you recommend system to another user? (%)
									Yes
									No
									Haven't decided

User Ratings of Computer Systems

Table 3. Mainframe and Plug Compatible Mainframe Vendor Summaries

Survey Item	Manufacturer and Model						
	Amdahl	Burroughs	Control Data	Digital Equipment	Honeywell	IBM	IPL
No. of User Responses	45	151	6	33	187	1429	8
No. of Systems Represented	56	205	9	40	202	1731	8
Avg. Life of System (Mos.)	20.5	32.6	33.7	44.5	46.2	21.5	6.9
Acquisition Method (%)							
Purchase	66.67	57.62	50.00	78.79	47.06	32.75	25.00
Rental or Lease from Mfr.	11.11	38.41	33.33	9.09	44.92	40.56	75.00
Lease from 3rd Party	22.22	3.97	16.67	12.12	8.02	26.69	0.00
Principal Applications (%)							
Accounting/Billing	75.56	61.59	33.33	45.45	89.30	78.45	62.50
Banking—check processing/loans/savings	13.33	38.41	16.67	6.06	6.95	14.84	0.00
Construction/Architecture	6.67	1.99	16.67	3.03	3.21	2.52	0.00
Education—scheduling/administration	20.00	6.62	33.33	42.42	9.09	8.54	0.00
Engineering/Scientific	33.33	5.30	66.67	30.30	8.56	13.23	0.00
Health care/Medical	15.56	11.26	0.00	0.00	6.42	9.66	12.50
Insurance	20.00	6.62	0.00	9.09	9.09	12.67	37.50
Manufacturing	15.56	13.91	33.33	3.03	29.41	29.04	0.00
Mathematics/Statistics	26.67	9.27	33.33	39.39	9.09	13.51	37.50
Order Processing/Inventory Control	46.67	35.76	16.67	12.12	65.78	51.29	37.50
Payroll/Personnel	60.00	57.62	33.33	36.36	67.91	65.99	25.00
Petroleum/Fuel analysis	4.44	1.99	0.00	0.00	1.07	3.08	0.00
Process control	4.44	1.32	0.00	3.03	3.21	4.27	0.00
Purchasing	33.33	24.50	33.33	18.18	35.29	36.11	12.50
Sales Distribution	24.44	18.54	16.67	9.09	42.25	37.23	37.50
Other	24.44	19.87	0.00	33.33	19.25	18.61	62.50
Source of Applications Programs (%)							
In-house personnel	100.00	94.04	100.00	93.94	95.19	94.96	100.00
"Packaged" programs from manufacturer	53.33	52.32	66.67	30.30	39.04	49.90	37.50
Contract Programming	40.00	27.81	33.33	30.30	30.48	35.41	37.50
Manufacturer's Personnel	4.44	1.99	16.67	12.12	16.04	4.62	0.00
Proprietary Software Packages	60.00	38.41	100.00	48.48	21.39	52.48	37.50
Location-of Computer (%)							
Distributed Processing Site	0.00	1.99	0.00	6.06	0.00	3.78	0.00
Central Processing Installation	100.00	98.01	100.00	93.94	100.00	96.22	100.00
Using Local Workstations/Terminals (%)	100.00	98.01	100.00	100.00	88.24	97.46	100.00
Using Remote Workstations/Terminals (%)	100.00	88.59	100.00	87.50	55.74	73.86	87.50
Using Data Base Management System (%)							
None	75.56	49.67	66.67	51.52	31.02	53.92	12.50
Manufacturer's Package	24.44	50.33	33.33	48.48	68.98	46.08	87.50
Outside Vendor's Package	23.53	82.43	25.00	35.29	77.19	63.84	0.00
Home-Grown System	70.59	6.76	75.00	58.82	10.53	31.85	0.00
Home-Grown System	5.88	10.81	0.00	5.88	12.28	4.31	100.00
Using Communications Monitor (%)							
None	95.56	67.55	83.33	51.52	67.74	83.88	75.00
Manufacturer's Package	4.44	32.45	16.67	48.48	32.26	16.12	25.00
Outside Vendor's Package	41.86	80.20	60.00	76.47	84.92	83.35	33.33
Home-Grown System	55.81	8.91	20.00	17.65	11.11	14.44	50.00
Home-Grown System	2.33	10.89	20.00	5.88	3.97	2.21	16.67
Using Integrated Word Processing Functions (%)	37.78	10.07	16.67	48.48	8.65	10.91	100.00
Planned Acquisitions/Implementations for 1982 (%)							
Additional Software from the Manufacturer	51.11	25.17	0.00	27.27	26.20	50.38	0.00
Proprietary Software from other suppliers	84.44	32.45	33.33	42.42	26.74	60.74	25.00
Expansions to Data Communications facilities	80.00	47.68	83.33	45.45	45.45	55.91	62.50
Distributed Processing capabilities	48.89	18.54	16.67	21.21	19.25	22.46	25.00
Expansions to present hardware	73.33	40.40	83.33	63.64	40.64	52.62	75.00
Another Computer System, same model	13.33	7.28	0.00	18.18	2.14	9.52	0.00
Business graphics	35.56	7.95	33.33	21.21	3.74	14.91	25.00
Plans for system replacement in 1982 (%)							
Yes, same manufacturer	11.11	15.89	16.67	12.12	6.42	17.91	12.50
Yes, vendor unknown	0.00	1.99	0.00	6.06	6.95	1.54	0.00
Yes, different vendor	6.67	5.96	0.00	3.03	11.76	1.19	0.00
No	82.22	76.16	83.33	78.79	74.33	78.73	87.50

User Ratings of Computer Systems

Table 3. Mainframe and Plug Compatible Mainframe Vendor Summaries

Amdahl	Burroughs	Control Data	Digital Equipment	Honeywell	IBM	IPL	Manufacturer and Model
							Survey Item
57.78	48.34	66.67	63.64	45.99	56.89	87.50	Significant Advantages (%)
44.44	62.91	50.00	60.61	55.08	48.29	75.00	Users are happy with response time
28.89	15.89	16.67	12.12	9.09	13.16	25.00	System is easy to expand/reconfigure
80.00	62.25	33.33	30.30	37.43	62.28	75.00	System costs were less than expected
82.22	48.34	33.33	45.45	14.44	52.41	50.00	Programs/data carried over from other systems are compatible, as vendor promised
46.67	25.17	33.33	9.09	16.58	42.62	87.50	Terminals/peripherals carried over from other systems are compatible, as vendor promised
13.33	29.14	0.00	48.48	23.53	33.10	25.00	System is power/energy efficient
15.56	31.13	0.00	21.21	18.18	13.44	0.00	Productivity aids help us keep programming costs down
42.22	9.93	0.00	27.27	12.83	17.56	50.00	Data base language is efficient and effective
11.11	5.30	0.00	9.09	5.88	9.52	0.00	Delivery and/or installation of equipment was ahead of schedule
							Delivery of required software was ahead of schedule
2.22	5.30	0.00	9.09	19.25	4.06	12.50	Significant Problems (%)
0.00	33.11	0.00	0.00	14.97	4.97	0.00	Computer proposed by vendor was too small
4.44	7.28	0.00	3.03	15.51	5.67	12.50	Installation of equipment was late
2.22	9.27	0.00	3.03	19.25	10.78	0.00	Delivery of required software was late
8.89	16.56	16.67	12.12	27.27	11.06	12.50	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
0.00	3.97	0.00	0.00	8.56	2.24	0.00	Vendor did not provide all the promised software or support
2.22	3.97	0.00	3.03	6.95	1.61	12.50	Program/data compatibility not what vendor promised
2.22	15.89	16.67	12.12	20.32	18.68	0.00	Terminals/peripherals compatibility not what vendor promised
2.22	4.64	0.00	15.15	10.70	1.19	0.00	Vendor enhancements/changes to hardware/software hard to keep up with
2.22	17.22	16.67	18.18	12.30	8.96	0.00	Equipment is excessively noisy
							Power and/or cooling requirements are excessive
3.49	3.72	3.33	3.58	3.19	3.21	3.88	System Ratings (4.0-1.0)
3.62	3.41	3.67	3.24	3.32	3.65	4.00	Ease of operation
3.13	2.61	3.33	3.03	3.01	3.25	2.57	Reliability of Mainframe
							Reliability of Peripherals
3.47	2.92	3.33	3.30	3.17	3.30	3.88	Maintenance service:
3.33	2.65	3.00	3.03	2.91	3.20	3.75	Responsiveness
							Effectiveness
3.18	2.24	2.50	2.67	2.61	2.84	3.63	Technical support:
2.98	2.24	2.00	2.63	2.38	2.78	2.86	Trouble-shooting
2.83	2.13	2.00	2.41	2.28	2.71	2.88	Education
							Documentation
3.30	3.74	2.83	3.36	3.17	3.04	3.00	Manufacturer's software:
3.18	3.41	3.00	3.06	3.06	3.17	3.25	Operating system
2.88	2.54	2.67	2.64	2.31	2.80	3.00	Compilers & Assemblers
							Applications Programs
3.00	3.40	3.00	3.56	2.89	2.95	3.50	Ease of Programming
3.24	3.25	3.00	3.18	2.61	2.96	3.71	Ease of conversion
3.37	3.07	3.00	3.21	2.87	3.13	3.75	Overall satisfaction
95.56	87.33	100.00	87.88	81.72	92.99	100.00	Did the system do what you expected it to do? (%)
0.00	6.67	0.00	9.09	11.29	2.44	0.00	Yes
4.44	6.00	0.00	3.03	6.99	4.77	0.00	No
							Haven't decided
90.91	76.51	83.33	81.25	54.55	87.68	100.00	Would you recommend system to another user? (%)
2.27	12.08	0.00	9.38	33.69	6.30	0.00	Yes
6.82	11.41	16.67	9.38	11.76	6.02	0.00	No
							Haven't decided

User Ratings of Computer Systems

Table 3. Mainframe and Plug Compatible Mainframe Vendor Summaries

Manufacturer and Model						
Survey Item	Magnuson	NAS	NCR	Singer	Sperry Univac	Other Mainframes
No. of User Responses	29	27	207	8	197	14
No. of Systems Represented	34	34	228	14	218	18
Avg. Life of System (Mos.)	12.3	29.4	33.1	72.7	27.3	75.8
Acquisition Method (%)						
Purchase	34.48	55.56	40.78	75.00	34.52	78.57
Rental or Lease from Mfr.	58.62	14.81	35.44	0.00	58.38	21.43
Lease from 3rd Party	6.90	29.63	7.72	25.00	7.11	0.00
Principal Applications (%)						
Accounting/Billing	62.07	62.96	67.63	62.50	83.76	100.00
Banking—check processing/loans/savings	24.14	3.70	29.95	0.00	6.09	0.00
Construction/Architecture	0.00	3.70	0.97	0.00	4.57	0.00
Education—scheduling/administration	3.45	7.41	7.25	0.00	11.17	14.29
Engineering/Scientific	3.45	11.11	1.93	0.00	12.18	21.43
Health care/Medical	6.90	0.00	11.59	0.00	6.60	0.00
Insurance	6.90	11.11	0.48	0.00	10.15	0.00
Manufacturing	13.79	25.93	15.46	50.00	26.90	28.57
Mathematics/Statistics	3.45	22.22	2.90	12.50	17.26	14.29
Order Processing/Inventory Control	20.69	48.15	42.51	75.00	59.90	57.14
Payroll/Personnel	41.38	59.26	65.22	62.50	68.53	57.14
Petroleum/Fuel analysis	0.00	0.00	1.45	0.00	3.55	0.00
Process control	0.00	0.00	2.90	0.00	4.06	0.00
Purchasing	20.69	25.93	21.26	25.00	35.58	42.86
Sales Distribution	17.24	37.04	26.09	75.00	49.75	50.00
Other	62.07	18.52	13.04	12.50	28.93	42.86
Source of Applications Programs (%)						
In-house personnel	93.10	92.59	83.09	62.50	98.98	85.71
"Packaged" programs from manufacturer	24.14	55.56	70.53	37.50	48.22	28.57
Contract Programming	20.69	44.44	25.12	75.00	32.49	35.71
Manufacturer's Personnel	0.00	0.00	8.21	12.50	22.34	14.29
Proprietary Software Packages	58.62	66.67	20.77	0.00	40.61	21.43
Location of Computer (%)						
Distributed Processing Site	0.00	0.00	0.00	0.00	1.02	0.00
Central Processing Installation	100.00	100.00	100.00	100.00	98.98	100.00
Using Local Workstations/Terminals (%)	93.10	96.30	89.27	62.50	96.45	78.57
Using Remote Workstations/Terminals (%)	79.31	85.19	54.95	25.00	71.13	71.43
Using Data Base Management System (%)						
None	31.03	77.78	23.67	12.50	42.13	21.43
Manufacturer's Package	68.97	22.22	76.33	87.50	57.87	78.57
Outside Vendor's Package	33.33	14.29	32.65	100.00	90.36	66.67
Home-Grown System	55.56	80.95	59.18	0.00	6.02	33.33
Home-Grown System	11.11	4.76	8.16	0.00	3.61	0.00
Using Communications Monitor (%)						
None	86.21	85.19	43.00	0.00	69.54	30.77
Manufacturer's Package	13.79	14.81	57.00	100.00	30.46	69.23
Outside Vendor's Package	25.00	26.09	54.02	0.00	87.41	50.00
Home-Grown System	70.83	69.57	40.23	0.00	9.63	25.00
Home-Grown System	4.17	4.35	5.75	0.00	2.96	25.00
Using Integrated Word Processing Functions (%)	13.79	25.93	4.98	100.00	5.67	7.14
Planned Acquisitions/Implementations for 1982 (%)						
Additional Software from the Manufacturer	33.45	18.52	32.37	12.50	35.53	7.14
Proprietary Software from other suppliers	68.97	74.07	45.41	0.00	34.52	21.43
Expansions to Data Communications facilities	68.97	62.96	43.00	25.00	50.25	42.86
Distributed Processing capabilities	13.79	25.93	12.56	0.00	25.89	14.29
Expansions to present hardware	58.62	48.15	43.00	25.00	49.24	35.71
Another Computer System, same model	0.00	14.81	6.28	0.00	6.60	0.00
Business graphics	6.90	14.81	1.93	0.00	6.09	7.14
Plans for system replacement in 1982 (%)						
Yes, same manufacturer	17.24	7.41	11.11	0.00	7.61	21.43
Yes, vendor unknown	3.45	11.11	3.38	25.00	4.06	14.29
Yes, different vendor	6.90	7.41	3.86	25.00	4.57	7.14
No	72.41	74.07	81.16	50.00	83.25	57.14

User Ratings of Computer Systems

Table 3. Mainframe and Plug Compatible Mainframe Vendor Summaries

	Magnuson	NAS	NCR	Singer	Sperry Univac	Other Mainframes	Manufacturer and Model
							Survey Item
	68.97	44.44	52.66	87.50	49.75	28.57	Significant Advantages (%)
	89.66	33.33	67.63	75.00	53.81	42.86	Users are happy with response time
	44.83	3.70	16.91	50.00	15.74	14.29	System is easy to expand/reconfigure
	89.66	62.96	64.25	0.00	37.06	14.29	System costs were less than expected
	86.21	59.26	42.51	12.50	19.29	14.29	Programs/data carried over from other systems are compatible, as vendor promised
	93.10	37.04	22.22	0.00	15.74	7.14	Terminals/peripherals carried over from other systems are compatible, as vendor promised
	17.24	3.70	20.29	12.50	40.10	14.29	System is power/energy efficient
	10.34	11.11	7.73	0.00	20.30	7.14	Productivity aids help us keep programming costs down
	62.07	33.33	18.84	0.00	21.83	0.00	Data base language is efficient and effective
	13.79	7.41	9.18	0.00	7.61	0.00	Delivery and/or installation of equipment was ahead of schedule
							Delivery of required software was ahead of schedule
	3.45	7.41	5.31	0.00	18.27	14.29	Significant Problems (%)
	3.45	3.70	16.43	0.00	10.66	14.29	Computer proposed by vendor was too small
	10.34	3.70	12.08	0.00	13.20	14.29	Installation of equipment was late
	0.00	0.00	7.73	0.00	12.18	7.14	Delivery of required software was late
	10.34	14.81	20.77	12.50	20.81	21.43	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
	0.00	0.00	3.86	0.00	7.61	0.00	Vendor did not provide all the promised software or support
	0.00	0.00	4.35	0.00	5.08	7.14	Program/data compatibility not what vendor promised
	0.00	3.70	14.98	12.50	21.83	0.00	Terminals/peripherals compatibility not what vendor promised
	0.00	7.41	3.86	12.50	7.11	7.14	Vendor enhancements/changes to hardware/software hard to keep up with
	0.00	7.41	4.83	12.50	7.11	21.43	Equipment is excessively noisy
							Power and/or cooling requirements are excessive
	3.83	3.33	3.29	3.38	3.28	3.46	System Ratings (4.0-1.0)
	3.34	2.93	3.48	3.75	3.55	3.57	Ease of operation
	3.15	2.58	3.16	2.88	3.13	2.71	Reliability of Mainframe
							Reliability of Peripherals
	3.45	3.07	3.22	3.13	3.26	2.93	Maintenance service:
	3.21	2.81	3.04	3.00	3.11	2.83	Responsiveness
							Effectiveness
	3.11	2.67	2.54	2.43	2.74	2.58	Technical support:
	3.08	2.32	2.61	2.43	2.66	1.83	Trouble-shooting
	3.04	2.46	2.51	2.71	2.58	1.92	Education
							Documentation
	3.21	3.00	3.08	3.43	3.13	3.31	Manufacturer's software:
	3.15	3.18	3.00	3.38	3.16	2.83	Operating system
	3.00	3.08	2.61	3.00	2.71	2.33	Compilers & Assemblers
							Applications Programs
	3.33	3.05	2.96	2.63	3.00	3.00	Ease of Programming
	3.59	2.95	3.04	2.00	2.96	2.22	Ease of conversion
	3.37	3.08	3.04	3.63	3.10	3.00	Overall satisfaction
	93.10	85.19	89.27	100.00	84.69	92.86	Did the system do what you expected it to do? (%)
	0.00	11.11	4.39	0.00	6.63	7.14	Yes
	6.90	3.70	6.34	0.00	8.67	0.00	No
							Haven't decided
	93.10	70.37	77.18	85.71	68.53	50.00	Would you recommend system to another user? (%)
	0.00	29.63	12.14	14.29	18.27	41.67	Yes
	6.90	0.00	10.68	0.00	13.20	8.33	No
							Haven't decided

User Ratings of Computer Systems

Table 4. Minicomputers & Small Business Computers Vendor Summaries

Survey Item	Manufacturer and Model							
	Basic Four	Burroughs	Data General	Datapoint	Digital Equipment	Four-Phase	General Automation	Harris
No. of User Responses	44	231	131	66	332	51	11	16
No. of Systems Represented	47	262	192	129	466	75	12	16
Avg. Life of System (Mos.)	36.5	25.6	30.7	31.8	31.3	27.0	58.4	22.9
Acquisition Method (%)								
Purchase	81.82	58.26	80.92	57.58	80.61	9.80	45.45	12.50
Rental or Lease from Mfr.	0.00	36.96	2.29	36.36	3.94	72.55	9.09	62.50
Lease from 3rd Party	18.18	4.78	16.79	6.06	15.45	17.65	45.45	25.00
Principal Applications (%)								
Accounting/Billing	88.64	79.65	70.23	87.88	59.64	56.86	45.45	75.00
Banking—check processing/loans/savings	2.27	10.82	7.63	6.06	6.02	1.96	0.00	0.00
Construction/Architecture	9.09	3.46	3.05	1.52	4.22	0.00	9.09	0.00
Education—scheduling/administration	6.82	8.66	9.16	6.06	16.27	3.92	0.00	18.75
Engineering/Scientific	0.00	4.33	11.45	4.55	22.29	1.96	72.73	25.00
Health care/Medical	9.09	5.19	6.11	1.52	5.72	33.33	0.00	6.25
Insurance	6.82	3.90	6.11	4.55	1.51	7.84	0.00	0.00
Manufacturing	22.73	20.78	18.32	15.15	12.95	23.53	36.36	50.00
Mathematics/Statistics	2.27	3.90	13.74	4.55	16.87	3.92	27.27	18.75
Order Processing/Inventory Control	65.91	54.98	48.09	54.55	34.94	50.98	36.36	62.50
Payroll/Personnel	63.64	65.37	38.93	39.39	42.47	47.06	36.36	56.25
Petroleum/Fuel analysis	2.27	3.03	4.58	1.52	2.41	1.96	0.00	0.00
Process control	6.82	1.73	3.82	1.52	4.22	1.96	0.00	6.25
Purchasing	43.18	27.27	21.37	19.70	16.87	23.53	18.18	37.50
Sales Distribution	63.64	32.90	32.06	33.33	21.08	23.53	36.36	31.25
Other	31.82	16.88	22.90	34.85	29.22	25.49	18.18	31.25
Source of Applications Programs (%)								
In-house personnel	75.00	83.98	77.10	81.82	77.71	66.67	72.73	93.75
"Packaged" programs from manufacturer	36.36	39.83	16.03	27.27	29.52	33.33	18.18	31.25
Contract Programming	47.73	29.00	36.64	34.85	28.92	23.53	36.36	18.75
Manufacturer's Personnel	0.00	1.73	0.76	3.03	4.52	5.88	0.00	0.00
Proprietary Software Packages	43.18	24.24	45.04	24.24	43.98	29.41	45.45	25.00
Location of Computer (%)								
Distributed Processing Site	11.36	6.58	11.45	21.21	15.96	37.25	18.18	62.50
Central Processing Installation	88.64	93.42	88.55	78.79	84.04	62.75	81.82	37.50
Using Local Workstations/Terminals (%)	100.00	95.24	100.00	96.92	99.69	100.00	72.73	100.00
Using Remote Workstations/Terminals (%)	58.14	50.88	58.14	54.69	70.55	30.43	36.36	62.50
Using Data Base Management System (%)								
None	15.91	54.55	29.77	10.61	37.95	19.61	27.27	43.75
Manufacturer's Package	84.09	45.45	70.23	89.39	62.05	80.39	72.73	56.25
Outside Vendor's Package	14.29	84.68	69.23	28.57	24.60	40.00	33.33	28.57
Home-Grown System	71.43	6.45	15.38	28.57	51.59	50.00	66.67	71.43
Home-Grown System	14.29	8.87	15.38	42.86	23.81	10.00	0.00	0.00
Using Communications Monitor (%)								
None	13.64	59.21	23.66	45.31	24.40	47.06	18.18	31.25
Manufacturer's Package	86.36	40.79	76.34	54.69	75.60	52.94	81.82	68.75
Outside Vendor's Package	60.00	92.37	56.67	92.86	57.69	73.91	100.00	80.00
Home-Grown System	20.00	3.82	23.33	3.57	25.64	21.74	0.00	20.00
Home-Grown System	20.00	3.82	20.00	3.57	16.67	4.35	0.00	0.00
Using Integrated Word Processing Functions (%)	22.73	6.61	21.37	47.69	36.67	52.94	27.27	18.75
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	2.27	17.75	21.37	34.85	21.08	33.33	0.00	12.50
Proprietary Software from other suppliers	15.91	24.68	29.77	33.33	43.37	16.67	9.09	12.50
Expansions to Data Communications facilities	40.91	36.80	32.06	27.27	28.31	13.73	9.09	18.75
Distributed Processing capabilities	15.91	12.99	12.21	13.64	12.65	15.69	0.00	31.25
Expansions to present hardware	54.55	35.50	46.56	51.52	45.78	45.10	27.27	25.00
Another Computer System, same model	6.82	4.76	10.69	9.09	11.14	9.80	9.09	12.50
Business graphics	6.82	1.73	8.40	4.55	11.14	9.80	0.00	0.00
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	6.82	15.15	5.34	6.06	9.64	17.65	18.18	0.00
Yes, vendor unknown	2.27	2.16	5.34	1.52	1.51	3.92	9.09	6.25
Yes, different vendor	9.09	4.33	6.87	6.06	1.51	9.80	9.09	25.00
No	81.82	77.49	81.68	86.36	86.45	68.63	63.64	68.75

User Ratings of Computer Systems

Table 4. Minicomputers & Small Business Computers Vendor Summaries

V									Manufacturer and Model
	Basic Four	Burroughs	Data General	Datapoint	Digital Equipment	Four-Phase	General Automation	Harris	Survey Item
	56.82	56.28	46.56	40.91	63.86	50.98	36.36	43.75	Significant Advantages (%)
	61.36	69.70	54.20	81.82	68.07	47.06	9.09	31.25	Users are happy with response time
	9.09	17.75	9.92	18.18	13.86	11.76	18.18	12.50	System is easy to expand/reconfigure
	29.55	51.95	18.32	45.45	26.20	11.78	45.45	6.25	System costs were less than expected
	22.73	32.03	14.50	34.85	28.92	9.80	18.18	6.25	Programs/data carried over from other systems are compatible, as vendor promised
	22.73	21.21	9.92	25.76	13.86	17.65	9.09	6.25	Terminals/peripherals carried over from other systems are compatible, as vendor promised
	29.55	37.23	20.61	18.18	27.71	23.53	0.00	18.75	System is power/energy efficient
	18.18	37.66	12.21	9.09	17.47	11.76	0.00	0.00	Productivity aids help us keep programming costs down
	13.64	14.72	12.98	13.64	11.75	11.76	0.00	6.25	Data base language is efficient and effective
	2.27	12.12	9.16	7.58	6.93	5.98	0.00	0.00	Delivery and/or installation of equipment was ahead of schedule
	11.36	8.23	13.74	13.64	6.93	13.73	9.09	12.50	Delivery of required software was ahead of schedule
	13.64	27.71	14.50	10.61	12.65	29.41	9.09	6.25	Significant Problems (%)
	13.64	15.58	16.79	13.64	10.24	15.69	45.45	18.75	Computer proposed by vendor was too small
	27.27	4.76	14.50	3.03	6.63	7.84	0.00	6.25	Installation of equipment was late
	25.00	18.61	19.08	12.12	11.14	31.37	54.55	31.25	Delivery of required software was late
	4.55	5.19	8.40	3.03	1.81	11.76	0.00	12.50	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
	4.55	3.46	2.29	3.03	0.90	3.92	0.00	0.00	Vendor did not provide all the promised software or support
	15.91	12.12	11.45	18.18	7.83	17.65	27.27	18.75	Program/data compatibility not what vendor promised
	11.36	3.90	3.82	1.52	9.64	5.88	18.18	0.00	Terminals/peripherals compatibility not what vendor promised
	2.27	6.49	3.82	0.00	5.12	3.92	18.18	0.00	Vendor enhancements/changes to hardware/software hard to keep up with
	3.73	3.62	3.36	3.38	3.50	3.27	2.91	3.00	Equipment is excessively noisy
	3.40	3.45	3.40	3.35	3.65	3.22	3.00	3.44	Power and/or cooling requirements are excessive
	3.23	2.93	2.97	3.03	3.25	2.88	2.82	2.75	System Ratings (4.0-1.0)
	3.27	2.94	3.05	3.14	3.22	3.06	2.82	2.81	Ease of operation
	3.05	2.73	2.93	2.94	3.11	2.96	2.82	2.56	Reliability of Mainframe
	2.65	2.48	2.52	2.69	2.81	2.66	2.10	2.53	Reliability of Peripherals
	2.26	2.50	2.53	2.75	2.72	2.48	1.70	2.14	Maintenance service:
	1.95	2.12	2.45	2.57	2.77	2.34	1.70	2.07	Responsiveness
	3.14	3.67	3.02	3.28	3.47	2.87	2.50	3.06	Effectiveness
	3.09	3.40	2.93	3.15	3.24	2.58	2.70	2.69	Technical support:
	2.68	2.56	2.67	2.77	2.90	2.83	2.44	2.70	Trouble-shooting
	3.55	3.36	3.05	3.15	3.30	2.82	2.82	2.15	Education
	2.91	3.27	2.70	2.98	3.01	2.58	2.64	2.58	Documentation
	3.07	3.18	2.98	3.11	3.31	2.84	2.45	2.63	Manufacturer's software:
	93.18	88.31	80.15	87.69	91.57	74.00	54.55	73.33	Operating system
	0.00	7.31	9.92	7.69	2.11	14.00	9.09	13.33	Compilers & Assemblers
	6.82	4.33	9.92	4.62	6.33	12.00	36.36	13.33	Applications Programs
	72.73	80.35	76.38	86.15	89.43	68.00	27.27	53.33	Ease of Programming
	20.45	9.17	11.02	9.23	6.04	12.00	45.45	40.00	Ease of conversion
	6.82	10.48	12.60	4.62	4.53	20.00	27.27	6.67	Overall satisfaction
									Did the system do what you expected it to do? (%)
									Yes
									No
									Haven't decided
									Would you recommend system to another user? (%)
									Yes
									No
									Haven't decided

User Ratings of Computer Systems

Table 4. Minicomputers & Small Business Computers Vendor Summaries

Survey Item	Manufacturer and Model							
	Hewlett-Packard	Honeywell	IBM	Microdata	NCR	Perkin-Elmer	Point 4	Prime
No. of User Responses	226	37	1172	43	49	24	8	84
No. of Systems Represented	282	43	1242	61	51	37	9	105
Avg. Life of System (Mos.)	27.7	19.7	30.6	38.3	23.4	26.7	15.9	22.4
Acquisition Method (%)								
Purchase	73.33	83.78	52.87	86.05	55.10	87.50	75.00	68.67
Rental or Lease from Mfr.	10.67	10.81	37.30	2.33	32.65	8.33	12.50	18.07
Lease from 3rd Party	16.00	5.41	9.84	11.63	12.24	4.17	12.50	13.25
Principal Applications (%)								
Accounting/Billing	76.99	78.38	85.49	90.70	81.63	54.17	75.00	64.29
Banking—check processing/loans/savings	2.21	5.41	5.72	4.65	10.20	0.00	0.00	1.19
Construction/Architecture	2.65	2.70	3.41	2.33	6.12	0.00	0.00	5.95
Education—scheduling/administration	11.50	8.11	3.75	4.65	4.08	4.17	0.00	17.86
Engineering/Scientific	14.60	2.70	4.61	4.65	0.00	8.33	0.00	26.19
Health care/Medical	6.19	5.41	5.20	9.30	8.16	4.17	25.00	4.76
Insurance	4.42	13.51	5.12	6.98	4.08	8.33	12.50	2.38
Manufacturing	29.65	8.11	37.37	27.91	16.33	0.00	0.00	14.29
Mathematics/Statistics	14.60	8.11	5.20	4.65	0.00	4.17	0.00	22.62
Order Processing/Inventory Control	52.21	54.05	62.46	74.42	42.86	45.83	50.00	33.33
Payroll/Personnel	50.88	40.54	67.66	46.51	69.39	41.67	62.50	40.48
Petroleum/Fuel analysis	1.33	0.00	2.30	0.00	0.00	0.00	0.00	0.00
Process control	3.10	5.41	4.78	4.65	0.00	0.00	0.00	2.38
Purchasing	32.74	32.43	34.04	46.51	18.37	29.17	37.50	21.43
Sales Distribution	33.19	24.32	47.10	53.49	26.53	12.50	37.50	27.38
Other	25.22	24.32	19.03	16.28	22.45	37.50	62.50	27.38
Source of Applications Programs (%)								
In-house personnel	82.74	75.68	90.36	79.07	73.47	83.33	75.00	85.71
"Packaged" programs from manufacturer	34.96	37.84	44.88	30.23	57.14	25.00	62.50	29.76
Contract Programming	36.73	27.03	33.45	44.19	40.82	54.17	50.00	34.52
Manufacturer's Personnel	2.65	5.41	2.05	2.33	8.16	0.00	0.00	1.19
Proprietary Software Packages	50.88	37.84	22.44	39.53	20.41	37.50	12.50	50.00
Location of Computer (%)								
Distributed Processing Site	10.67	10.81	6.67	9.30	8.16	20.83	12.50	4.76
Central Processing Installation	89.33	89.19	93.33	90.70	91.84	79.17	87.50	95.24
Using Local Workstations/Terminals (%)	100.00	97.23	94.46	100.00	97.96	100.00	100.00	100.00
Using Remote Workstations/Terminals (%)	71.36	63.64	43.22	64.29	47.92	75.00	50.00	78.31
Using Data Base Management System (%)								
None	90.71	32.43	24.06	93.02	12.24	62.50	25.00	57.14
Manufacturer's Package	9.29	67.57	75.94	6.98	87.76	37.50	75.00	42.86
Outside Vendor's Package	97.07	58.33	79.49	90.00	16.67	53.33	0.00	61.70
Home-Grown System	2.44	41.67	9.52	5.00	0.00	33.33	100.00	29.79
None	0.49	0.00	10.99	5.00	83.33	13.33	0.00	8.51
Using Communications Monitor (%)								
None	26.99	54.05	23.69	9.30	2.13	50.00	12.50	27.71
Manufacturer's Package	73.01	45.95	76.31	90.70	97.87	50.00	87.50	72.29
Outside Vendor's Package	89.83	75.00	90.41	25.00	100.00	58.33	100.00	76.19
Home-Grown System	6.78	15.00	5.17	50.00	0.00	41.67	0.00	19.05
None	3.39	10.00	4.43	25.00	0.00	0.00	0.00	4.76
Using Integrated Word Processing Functions (%)	29.73	32.43	17.32	37.21	16.67	20.83	12.50	45.24
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	39.38	24.32	19.11	9.30	26.53	29.17	37.50	27.38
Proprietary Software from other suppliers	51.33	24.32	27.30	34.88	30.61	37.50	0.00	47.62
Expansions to Data Communications facilities	32.30	21.62	29.18	16.28	22.45	62.50	37.50	48.81
Distributed Processing capabilities	14.16	24.32	11.86	9.30	4.08	29.17	0.00	7.14
Expansions to present hardware	61.95	62.16	38.31	48.84	36.73	70.83	87.50	63.10
Another Computer System, same model	9.73	2.70	5.03	18.60	12.24	8.33	12.50	13.10
Business graphics	19.47	8.11	4.01	11.63	2.04	4.17	0.00	22.62
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	10.18	2.70	12.97	18.60	10.20	0.00	12.50	8.33
Yes, vendor unknown	0.44	2.70	2.56	4.65	2.04	0.00	0.00	0.00
Yes, different vendor	0.88	2.70	1.71	4.65	10.20	16.67	0.00	0.00
No	87.17	91.89	82.17	72.09	77.55	83.33	87.50	91.67

User Ratings of Computer Systems

Table 4. Minicomputers & Small Business Computers Vendor Summaries

								Manufacturer and Model
Hewlett-Packard	Honeywell	IBM	Microdata	NCR	Perkin-Elmer	Point 4	Prime	Survey Item
59.73	48.65	58.02	48.84	73.47	62.50	87.50	67.86	Significant Advantages (%)
81.42	70.27	67.15	69.77	65.31	37.50	87.50	86.90	Users are happy with response time
11.50	10.81	13.57	16.28	18.37	12.50	12.50	14.29	System is easy to expand/reconfigure
33.19	21.62	34.90	20.93	42.86	20.83	25.00	26.19	System costs were less than expected
15.93	8.11	10.49	20.93	24.49	20.83	37.50	32.14	Programs/data carried over from other systems are compatible, as vendor promised
34.96	16.22	21.76	16.28	12.24	20.83	37.50	23.81	Terminals/peripherals carried over from other systems are compatible, as vendor promised
40.27	32.43	51.71	58.14	26.53	29.17	0.00	36.90	System is power/energy efficient
69.91	21.62	16.72	90.70	6.12	16.67	25.00	25.00	Productivity aids help us keep programming costs down
25.66	21.62	16.38	6.98	20.41	4.17	25.00	30.95	Data base language is efficient and effective
15.49	0.00	9.13	6.98	8.16	0.00	25.00	5.95	Delivery and/or installation of equipment was ahead of schedule
								Delivery of required software was ahead of schedule
7.96	27.03	7.51	20.93	14.29	20.83	0.00	11.90	Significant Problems (%)
7.52	18.92	4.61	11.63	18.37	20.83	0.00	3.57	Computer proposed by vendor was too small
7.52	29.73	3.92	13.95	14.29	8.33	0.00	10.71	Installation of equipment was late
8.41	16.22	8.62	16.28	12.24	4.17	0.00	7.14	Delivery of required software was late
10.18	32.43	7.08	18.60	20.41	25.00	12.50	23.81	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
0.44	13.51	3.33	4.65	6.12	8.33	25.00	4.76	Vendor did not provide all the promised software or support
1.77	10.81	1.62	2.33	2.04	4.17	0.00	1.19	Program/data compatibility not what vendor promised
6.19	16.22	6.14	13.95	10.20	58.33	0.00	11.90	Terminals/peripherals compatibility not what vendor promised
2.65	0.00	4.10	9.30	6.12	4.17	0.00	7.14	Vendor enhancements/changes to hardware/software hard to keep up with
1.33	2.70	2.99	4.65	4.08	4.17	0.00	0.00	Equipment is excessively noisy
								Power and/or cooling requirements are excessive
3.62	3.32	3.45	3.79	3.40	2.63	3.75	3.60	System Ratings (4.0-1.0)
3.81	3.30	3.76	3.37	3.37	3.29	3.75	3.57	Ease of operation
3.52	3.14	3.58	2.95	3.20	2.67	3.25	3.04	Reliability of Mainframe
								Reliability of Peripherals
3.40	3.08	3.45	3.21	3.16	2.67	3.63	3.04	Maintenance service:
3.43	2.89	3.44	2.98	3.13	2.50	3.63	2.77	Responsiveness
								Effectiveness
3.03	2.58	2.99	2.70	2.69	2.27	3.00	2.49	Technical support:
2.96	2.50	2.96	2.62	2.69	2.18	2.71	2.58	Trouble-shooting
2.90	2.33	2.95	2.37	2.45	2.27	2.38	2.51	Education
								Documentation
3.56	3.03	3.35	3.63	3.02	2.37	3.38	3.42	Manufacturer's software:
3.35	3.11	3.37	3.43	2.96	2.65	3.14	3.15	Operating system
3.08	2.92	2.88	2.94	2.64	2.11	3.00	2.77	Compilers & Assemblers
								Applications Programs
3.36	3.11	3.31	3.72	3.06	2.52	3.25	3.35	Ease of Programming
3.16	2.84	2.87	3.24	2.87	2.27	2.63	3.09	Ease of conversion
3.50	3.14	3.34	3.37	3.16	2.61	3.63	3.36	Overall satisfaction
94.69	72.22	92.55	88.37	87.76	91.30	100.00	90.48	Did the system do what you expected it to do? (%)
1.77	5.56	2.31	6.98	6.12	8.70	0.00	4.76	Yes
3.54	22.22	5.14	4.65	6.12	0.00	0.00	4.76	No
								Haven't decided
95.09	72.97	88.22	83.72	83.67	70.83	100.00	94.05	Would you recommend system to another user? (%)
1.34	5.41	6.28	11.63	10.20	20.83	0.00	1.19	Yes
3.57	21.62	5.50	4.65	6.12	8.33	0.00	4.76	No
								Haven't decided

User Ratings of Computer Systems

Table 4. Minicomputers & Small Business Computers Vendor Summaries

<div style="text-align: center;">Manufacturer and Model</div> <div style="text-align: left;">Survey Item</div>	Qantel	Sperry Univac	Tandem	Texas Instruments	Wang	Other Minis		
No. of User Responses	6	6	25	32	87	72		
No. of Systems Represented	8	6	57	39	107	104		
Avg. Life of System (Mos.)	38.8	26.8	17.3	20.7	21.0	36.3		
Acquisition Method (%)								
Purchase	83.33	50.00	92.00	81.25	72.94	73.61		
Rental or Lease from Mfr.	0.00	16.67	0.00	6.25	15.29	12.50		
Lease from 3rd Party	16.67	33.33	8.00	12.50	11.76	13.89		
Principal Applications (%)								
Accounting/Billing	83.30	83.33	40.00	84.38	72.41	68.06		
Banking—check processing/loans/savings	0.00	0.00	20.00	3.13	8.05	5.56		
Construction/Architecture	0.00	33.33	0.00	9.38	2.30	2.78		
Education—scheduling/administration	0.00	0.00	0.00	9.38	6.90	6.94		
Engineering/Scientific	0.00	16.67	4.00	3.13	5.75	15.28		
Health care/Medical	16.67	0.00	8.00	3.13	6.90	6.94		
Insurance	16.67	0.00	0.00	3.13	13.79	5.56		
Manufacturing	16.67	33.33	8.00	21.88	14.94	8.33		
Mathematics/Statistics	16.67	16.67	8.00	6.25	5.75	11.11		
Order Processing/Inventory Control	66.67	33.33	28.00	40.63	35.63	50.00		
Payroll/Personnel	50.00	50.00	12.00	68.75	41.38	50.00		
Petroleum/Fuel analysis	0.00	0.00	0.00	9.38	3.45	4.17		
Process control	0.00	0.00	16.00	0.00	2.30	4.17		
Purchasing	50.00	0.00	8.00	15.63	19.54	20.83		
Sales Distribution	16.67	16.67	12.00	25.00	31.03	33.33		
Other	16.67	33.33	52.00	25.00	33.33	25.00		
Source of Applications Programs (%)								
In-house personnel	50.00	50.00	88.00	78.13	77.01	63.89		
"Packaged" programs from manufacturer	50.00	83.33	20.00	9.38	35.63	31.94		
Contract Programming	83.33	50.00	24.00	21.88	41.38	30.56		
Manufacturer's Personnel	0.00	0.00	4.00	0.00	2.30	5.56		
Proprietary Software Packages	33.33	33.33	28.00	50.00	32.18	31.94		
Location of Computer (%)								
Distributed Processing Site	50.00	0.00	8.33	21.88	15.12	15.28		
Central Processing Installation	50.00	100.00	91.67	78.13	84.88	84.72		
Using Local Workstations/Terminals (%)	100.00	100.00	100.00	100.00	100.00	87.14		
Using Remote Workstations/Terminals (%)	0.00	0.00	80.00	41.94	40.70	43.48		
Using Data Base Management System (%)								
None	50.00	16.67	60.00	25.81	13.79	31.94		
Manufacturer's Package	50.00	83.33	40.00	74.19	86.21	68.06		
Outside Vendor's Package	100.00	100.00	86.67	75.00	50.00	34.78		
Home-Grown System	0.00	0.00	6.67	0.00	25.00	43.48		
Using Communications Monitor (%)								
None	16.67	0.00	68.00	18.75	22.99	25.00		
Manufacturer's Package	83.33	100.00	32.00	81.25	77.01	75.00		
Outside Vendor's Package	0.00	0.00	82.35	83.33	89.47	38.89		
Home-Grown System	0.00	0.00	11.76	16.67	5.26	50.00		
Using Integrated Word Processing Functions (%)	100.00	0.00	5.88	0.00	5.26	11.11		
Planned Acquisitions/Implementations for 1982 (%)								
Additional Software from the Manufacturer	66.67	0.00	24.00	32.26	65.52	23.61		
Proprietary Software from other suppliers	50.00	33.33	36.00	18.75	25.29	20.83		
Expansions to Data Communications facilities	16.67	16.67	36.00	37.50	40.23	26.39		
Distributed Processing capabilities	33.33	16.67	52.00	31.25	43.68	12.50		
Expansions to present hardware	16.67	33.33	12.00	21.88	18.39	9.72		
Another Computer System, same model	83.33	66.67	72.00	65.63	62.07	29.17		
Business graphics	16.67	16.67	28.00	0.00	8.05	9.72		
Business graphics	0.00	16.67	12.00	3.13	13.79	6.94		
Plans for system replacement in 1982 (%)								
Yes, same manufacturer	0.00	16.67	8.00	0.00	13.79	6.94		
Yes, vendor unknown	0.00	16.67	0.00	3.13	4.60	2.74		
Yes, different vendor	0.00	16.67	4.00	0.00	1.15	6.94		
No	100.00	50.00	88.00	96.88	79.31	81.94		

User Ratings of Computer Systems

Table 4. Minicomputers & Small Business Computers Vendor Summaries

								Manufacturer and Model
								Survey Item
		Dantel	Sperry Univac	Tandem	Texas Instruments	Wang	Other Minis	
		66.67	33.33	48.00	56.25	70.11	52.78	Significant Advantages (%)
		50.00	66.67	84.00	84.38	78.16	44.44	Users are happy with response time
		16.67	0.00	4.00	34.38	14.94	16.67	System is easy to expand/reconfigure
		33.33	0.00	8.00	25.00	36.78	27.78	System costs were less than expected
		16.67	0.00	24.00	9.38	10.34	25.00	Programs/data carried over from other systems are compatible, as vendor promised
		0.00	0.00	20.00	18.75	21.84	20.83	Terminals/peripherals carried over from other systems are compatible, as vendor promised
		16.67	33.33	56.00	34.38	74.71	20.83	System is power/energy efficient
		50.00	16.67	48.00	6.25	8.05	13.89	Productivity aids help us keep programming costs down
		16.67	0.00	52.00	18.75	17.24	16.67	Data base language is efficient and effective
		16.67	0.00	32.00	9.38	3.45	12.50	Delivery and/or installation of equipment was ahead of schedule
		0.00	16.67	16.00	15.63	11.49	11.11	Delivery of required software was ahead of schedule
		0.00	0.00	0.00	6.25	12.64	11.11	Significant Problems (%)
		16.67	33.33	4.00	9.38	11.49	12.50	Computer proposed by vendor was too small
		16.67	0.00	8.00	12.50	6.90	6.94	Installation of equipment was late
		0.00	33.33	8.00	18.75	20.69	20.83	Delivery of required software was late
		0.00	0.00	0.00	0.00	3.45	4.17	System costs (for hardware, vendor-supplied software, support) exceeded the expected total
		16.67	0.00	4.00	0.00	3.45	0.00	Vendor did not provide all the promised software or support
		0.00	0.00	0.00	12.50	4.60	4.17	Program/data compatibility not what vendor promised
		0.00	0.00	0.00	9.38	9.60	13.89	Terminals/peripherals compatibility not what vendor promised
		0.00	16.67	0.00	9.38	5.75	11.11	Vendor enhancements/changes to hardware/software hard to keep up with
		3.50	3.83	3.32	3.59	3.76	3.24	Equipment is excessively noisy
		3.83	4.00	3.80	3.73	3.60	3.32	Power and/or cooling requirements are excessive
		3.17	3.00	3.08	3.38	3.05	3.18	System Ratings (4.0-1.0)
		3.33	3.17	3.25	3.00	3.00	3.20	Ease of operation
		3.17	3.00	3.26	3.13	2.89	3.04	Reliability of Mainframe
		3.17	2.50	3.00	2.84	2.66	2.76	Reliability of Peripherals
		2.50	1.83	3.13	2.53	2.36	2.43	Maintenance service:
		2.50	2.00	3.04	2.55	2.25	2.54	Responsiveness
		3.60	3.67	3.50	3.42	3.39	3.04	Effectiveness
		3.33	3.60	3.21	3.32	3.44	2.83	Technical support:
		3.33	2.67	2.50	3.11	3.13	2.63	Trouble-shooting
		3.17	3.50	3.32	3.39	3.67	3.03	Education
		3.00	3.00	3.08	2.96	3.31	2.76	Documentation
		3.17	2.67	3.42	3.29	3.36	2.97	Manufacturer's software:
		100.00	100.00	84.00	84.38	90.80	87.14	Operating system
		0.00	0.00	4.00	6.25	1.15	7.14	Compilers & Assemblers
		0.00	0.00	12.00	9.38	8.05	5.71	Applications Programs
		83.33	66.67	86.96	84.38	86.21	69.44	Ease of Programming
		16.67	16.67	0.00	6.25	2.30	19.44	Ease of conversion
		0.00	16.67	13.04	9.38	11.49	11.11	Overall satisfaction
								Did the system do what you expected it to do? (%)
								Yes
								No
								Haven't decided
								Would you recommend system to another user? (%)
								Yes
								No
								Haven't decided