User Ratings of Mainframes

Datapro is pleased to present, in conjunction with *Computerworld*, the 1984 edition of the annual Computer Users Survey. This year's survey is based on responses to questionnaires mailed to a cross-section of computer sites listed with International Data Corporation (IDC). This report summarizes the results received from mainframe users. For the results of the minicomputer users polled, please refer to *Datapro Reports on Minicomputers*. The users were asked to rate their systems in 25 subjective categories and respond to a variety of questions covering such areas as system configuration, languages, and data base management. They were also asked if they would recommend the system to other users.

Our purpose in using IDC's list of known computer sites was twofold: to select only currently marketed system models, and to improve the results for those models. The number of responses received for models which are no longer in production, like the IBM System/370 or IBM System/3, was dramatically reduced. In addition, the number of responses received for the systems we selected increased in over 50 percent of the cases. By using IDC's list, we also received responses for systems recently introduced. Nine users of the IBM 4361/4381, delivered for the first time early in 1984, responded to our questionnaire, and the Sperry 1100/70 was also included in the survey for the first time.

We would like to stress that individual profiles or ratings should never 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 is very informative if used with discretion and with the understanding that there are many factors involved in selecting the right computer system to meet your particular needs.

SURVEY METHODOLOGY

The 1984 survey has been based on results received from 15,000 questionnaires mailed to known computer users listed with IDC. The total number of questionnaires was divided into two groups: 9000 surveys were mailed to minicomputer users and 6000 to mainframe users. In addition, the users were chosen based on the computer system they had installed. Datapro supplied IDC with a list of specific system models to be included in the mailing and the model was listed directly on the mailing label. In an effort to improve the response rate and thereby increase the statistical validity, the users were contacted twice; a first request was followed two weeks later by a second request.

Each questionnaire allowed the user to rate one computer system and specifically requested that the rating apply to the system listed on the label. The recipient was encouraged to reproduce the form if he/she wished to rate additional systems. The IDC labels were used as initial validation vehicles and for identification and elimination of invalid

This report presents the results of Datapro's 1984 survey of computer users. User experiences with over 1000 mainframe systems have been summarized and are presented in the accompanying tables. These user ratings evaluate the performance, reliability, and vendor support for the most popular mainframes sold today. The information provided by the actual users of these systems can aid a prospective user in the evaluation of a computer acquisition.

and duplicate returns. All returns were analyzed by senior Datapro analysts and some returns were judged invalid for one or more of the following reasons: more than one system model was rated on a single form; the response was a duplicate; the form was received after the deadline; the ratings section of the questionnaire was not completed; the systems rated were not mainframe or minicomputer systems; or the response revealed a vested interest on the part of the respondent. In addition, system models receiving less than five responses were not included in the final analysis, although the responses were considered to be valid.

Of the 15,000 questionnaires mailed, 3404 responses were received from 3261 respondents, a return of 22 percent on the total mailing. Of the total responses, 352 were judged to be invalid, giving us 3052 valid responses from 2909 users. Of these valid responses, 1079 rated mainframe computer systems, for a return of 18 percent on the 6000 surveys mailed to mainframe users, and 1973 rated minicomputer systems, for a return of 22 percent on the 9000 surveys mailed to minicomputer users.

Datapro batched the valid returns by manufacturer and model and sent the returns to Mathematica Policy Research, Inc. for tabulation of the 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.

THE 1984 QUESTIONNAIRE

Users were asked to answer 27 multiple-part questions. Each user was asked to identify the manufacturer and model of his/her system, as well as the month and year of acquisition and the method of acquisition. Users were requested to identify the type of industry their company was in, principal applications, and the source of those applications programs. We also asked the users for information about their hardware and software configurations, and about acquisitions or implementations planned for 1984.

▷

User Ratings of Mainframes

Chart 2. Computer Usage by Manufacturer and Industry Type

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
Amdahl (30)	3.33	0.00	0.00	3.33	0.00	23.33	0.00	16.67	0.00	16.67	0.00	0.00	3.33	16.67	0.00	13.33	3.33
Burroughs (113)	23.89	1.77	0.00	6.19	0.88	15.93	7.96	2.65	0.00	17.70	1.77	0.88	8.85	2.65	3.54	0.00	5.31
Digital Equipment (53)	0.00	0.00	1.89	41.51	3.77	1.89	3.77	1.89	0.00	13.21	3.77	0.00	3.77	13.21	0.00	1.89	9.43
Honeywell (45)	2.22	2.22	4.44	11.11	2.22	15.56	4.44	11.11	0.00	20.00	2.22	0.00	11.11	0.00	4.44	2.22	6.67
IBM (561)	8.20	2.85	0.36	8.02	1.60	5.88	3.39	6.77	0.18	31.02	1.07	0.18	9.63	4.99	1.60	5.53	8.73
IPL (12)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.33	0.00	8.33	0.00	0.00	0.00	41.67	8.33	0.00	33.33
Magnuson (7)	0.00	0.00	0.00	0.00	0.00	14.29	0.00	14.29	0.00	0.00	14.29	0.00	0.00	28.57	0.00	0.00	28.57
NAS (13)	0.00	7.69	0.00	7.69	0.00	15.38	7.69	0.00	0.00	7.69	0.00	0.00	23.08	23.08	0.00	0.00	7.69
NCR (141)	26.24	0.00	0.71	6.38	0.00	6.38	6.38	0.71	0.71	14.18	0.00	0.71	19.86	10.64	2.13	2.13	2.84
Sperry (79)	1.27	2.53	0.00	11.39	7.59	10.13	2.53	1.27	0.00	25.32	1.27	0.00	8.86	7.59	5.06	6.33	8.86
Other (22)	9.09	0.00	0.00	18.18	4.55	31.82	4.55	0.00	0.00	4.55	0.00	0.00	4.55	0.00	9.09	0.00	13.64
All Mainframes (1076)	10.69	2.04	0.56	9.57	1.86	8.64	4.18	5.20	0.19	23.98	1.21	0.28	10.32	6.88	2.32	4.18	7.90

▷ The remaining questions asked the users to rate various aspects of their computer systems. The categories rated included: ease of operation, reliability of system, 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. Additional ratings added this year included: ease of reconfiguration, compatibility of terminals, peripherals, and software carried over from other systems, power/energy efficiency, productivity aids, software/support promised by the vendor, delivery of hardware and required software, noise level of equipment, and ease of keeping up with and implementing vendor changes to hardware/software. In addition, if utilizing a data base management system or communications monitor, users were asked to identify the vendor and package and to rate the technical support and their overall satisfaction with the package.

Finally, we asked if the computer system did what it was expected to do, and if the users would recommend their computer system to others.

SURVEY RESULTS

Table 1, "Mainframes," contains the results on 21 model groupings from 10 mainframe and plug-compatible mainframe vendors, representing 1079 user responses. Table 2, "Mainframe Vendor Summaries," contains summaries by vendor of the information in Table 1.

Financial Alternatives

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. 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 Chart 1 shows that the percentage of purchased systems has increased again this year. This is undoubtedly because many vendors, including IBM, are making outright purchase more attractive by lowering purchase prices and raising rental and lease prices.

Method of Acquisition	1984	1983	1982
Purchase (%)	51	44	38
Rent/Lease from Mfgr. (%)	24	34	41
Lease from 3rd Party (%)	25	22	21

Chart 1. Financial alternatives.

Industry and Applications

One of the questions we asked the users was "What type of industry describes your company?" Chart 2 shows the ▷

User Ratings of Mainframes

Chart 4. Usage of Local and Remote Workstations/Terminals

No. of Workstations/ Terminals per System / Manufacturer & Model	Local						Remote					
	None	1-5	6-15	16-30	31-60	Over 60	None	1-5	6-15	16-30	31-60	Over 60
Amdahl												
470/580	1	1	1	4	7	15	2	1	2	0	1	23
Burroughs												
B 2800, B 3800, B 4800	0	2	4	4	2	4	3	4	2	1	1	5
B 2900, B 3900, B 4900	1	8	13	19	14	17	13	10	11	10	9	18
B 5900	0	2	3	2	7	1	3	2	3	2	2	2
B 6900	0	0	1	3	4	2	2	1	1	1	2	2
Digital Equipment												
DECsystem -10/-20	1	1	13	13	8	17	3	8	8	8	9	15
Honeywell												
DPS 7	0	2	1	4	4	0	4	1	1	3	2	0
DPS 8	1	0	4	11	4	14	4	2	7	6	2	13
IBM												
4331	3	15	68	58	33	6	66	51	30	14	15	6
4341	2	0	16	68	81	76	42	32	41	28	40	57
4361 & 4381	0	0	1	3	3	2	2	1	2	1	1	2
303X Series	0	0	0	3	4	17	0	1	1	6	2	14
308X Series	1	0	5	5	9	69	3	1	5	4	11	64
Other Models	0	1	5	2	2	2	1	6	1	2	0	2
IPL Systems												
4400 Series	0	1	4	1	3	3	5	2	0	0	0	5
Magnuson												
M80 Series	0	1	2	1	2	1	2	3	1	1	0	0
NAS												
AS/6000, AS/7000, AS/9000	0	0	0	2	4	7	1	2	1	2	2	5
NCR												
8400/8500/8600	3	20	41	47	25	5	36	23	21	20	16	22
Sperry												
1100/60	1	0	9	14	15	9	7	11	9	8	5	8
1100/70	0	0	2	3	3	3	0	2	2	3	0	3
1100/80	0	0	0	3	2	15	1	1	2	1	1	13
Other Mainframes	0	2	8	4	2	6	5	1	1	4	2	9
All Mainframes	14	56	201	274	238	291	205	166	152	125	123	288

▷ market penetration in each industry by manufacturer for each class of computer systems.

We also asked the survey respondents to specify their principal applications. In 1984, as in 1983, the top three applications were: accounting/billing, payroll/personnel, and order processing/inventory control. (See Chart 3, "User Rankings of Principal Applications.") Purchasing, in fifth place last year, moved up to fourth place this year. Education, not in the top ten last year, moved up to seventh place.

Applications—1984	Applications—1983
1. Accounting/Billing	1. Accounting/Billing
2. Payroll/Personnel	2. Payroll/Personnel
3. Order Processing/Inv. Control	3. Order Processing/Inv. Control
4. Purchasing	4. Sales/Distribution
5. Sales/Distribution	5. Purchasing
6. Manufacturing	6. Manufacturing
7. Education	7. Banking
8. Banking	8. Math./Statistics
9. Engineering/Scientific	9. Engineering/Scientific
10. Math./Statistics	10. Insurance

Chart 3. User rankings of principal applications.

Hardware Configurations

Several of the survey questions asked users to describe their hardware configurations. Fifty-four percent of the mainframes represented in the survey had from two to eight megabytes of main memory, and sixty-six percent had over 1.2 gigabytes of disk storage. Less than two percent of the systems had more than 32 megabytes of main memory.

In the continuing trend to bring computers to the people who need them, workstations/terminals are the primary means of implementation. We asked the users how many local workstations/terminals and how many remote workstations/terminals they were using. Chart 4 shows the usage of local and remote terminals by manufacturer and model. About 27 percent of the mainframe users had over 60 local terminals and over 60 remote terminals in operation.

This year, we also asked the users if they had installed microcomputers in addition to their mainframes. A list of popular microcomputer vendors was provided. The most frequently checked vendor was IBM, with 618 responses, followed by Apple, with 335 responses, and Radio Shack, ▷

User Ratings of Mainframes

with 193 responses. These responses represented over 7100 IBM micros, over 4700 Apples, and over 1700 Radio Shack units.

Software

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 increases. Because many systems already face a two-year backlog in bringing up desirable applications, it is quite 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 applications software. First on the list was in-house personnel. The preparation of software by in-house personnel is often a highly desirable route because of in-house management control plus the total tailorability of the software to the user's operational requirements (ideally). Packages from independent suppliers came in second place, followed by packages from the manufacturer, contract programming, and programs prepared by the manufacturer's personnel. The 1984 results on this question were identical to the 1983 results.

"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."

For mainframe users, the most frequently used language was Cobol, followed distantly by Fortran, Assembler, and RPG.

We also asked the respondents if they were using a data base management system or a data communications monitor. Fifty-three percent were using a DBMS, while sixty-one percent were using a communications monitor. Additionally, users were asked to identify and rate the packages they used. The results are summarized in Charts 8 and 9 in the "User Satisfaction Ratings" section.

Acquisition Plans

We asked how users were planning to spend their enhancement/acquisition dollars in 1984. Chart 5 shows the user rankings of planned acquisitions. This year the top priority with users in the mainframe class is to expand their data communications facilities, followed closely by expansions to their present hardware. Additional proprietary software slipped from first place in 1983 to third place in 1984. Distributed processing moved up into fifth place this year.

Acquisition Plans—1984	Acquisition Plans—1983
1. Expansions to Data Communications (65%)	1. Additional Proprietary Software (54%)
2. Expansions to Present Hardware (64%)	2. Expansions to Data Communications (52%)
3. Additional Proprietary Software (59%)	3. Expansions to Present Hardware (51%)
4. Additional Software from Mfgr. (49%)	4. Additional Software from Mfgr. (44%)
5. Distributed Processing (25%)	5. Implement Disaster Recovery Plan (22%)

Chart 5. User rankings of planned acquisitions.

Office automation has been one of the "hot topics" during the past few months, so we asked the users if they had implemented office automation. Only 13 percent said they had done so, but 22 percent reported plans for office automation.

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 (troubleshooting, education, and documentation), manufacturer's software (operating system, compilers and 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 Table 1. In analyzing the ratings, we decided to see how many systems could meet the following criteria for special merit: a minimum of 20 user responses, an overall satisfaction rating of at least 3.20, and a rating of no less than 2.80 in all other system rating categories. Only two systems met these criteria:

	Overall Satisfaction	Lowest Score	No. of Responses
IBM 303X Series	3.29	2.83	24
IBM 308X Series	3.24	2.84	89

For a number of other categories, we picked out those systems that received at least 20 responses and a rating of at least 3.50. Chart 6 shows the systems that met these criteria for ease of operation, reliability of mainframe, reliability of peripherals, operating system, and compilers and assemblers. In the ease of programming and ease of conversion categories, none of the systems met the criteria.

User Ratings of Mainframes

Ease of Operation	Weighted Average	No. of Responses
Burroughs B 2900/ B 3900/B 4900	3.76	72
Digital Equipment DECsystem-10/-20	3.62	54
Reliability of Mainframe		
IBM 303X Series	3.83	24
IBM 4341	3.75	244
IBM 4331	3.69	184
IBM 308X Series	3.69	89
Sperry 1100/80	3.60	20
Amdahl 470/580	3.57	30
Sperry 1100/60	3.56	48
Reliability of Peripherals		
IBM 4331	3.51	184
IBM 4341	3.51	244
Operating System		
Burroughs B 2900/ B 3900/B 4900	3.79	72
Digital Equipment DECsystem-10/-20	3.52	54
Sperry 1100/80	3.50	20
Compilers & Assemblers		
Sperry 1100/80	3.58	20
IBM 303X Series	3.50	24

Chart 6. Systems with the highest ratings in key categories.

▷ Vendor service and support are key areas when considering a computer system. Although users have no control over the effectiveness of maintenance service, they can influence promptness of maintenance service by spelling out their requirements in their contract with the vendor. Chart 7 lists those vendors that received the highest overall ratings for maintenance service and technical support. To be listed in this chart, the vendor had to have a minimum of 20 user responses and a rating of at least 3.5 for maintenance service and 3.0 for technical support. Through the years that Datapro has been conducting this survey, we have found that the area of technical support usually receives the lowest ratings. We felt, therefore, that any vendor receiving

Maintenance Service	Weighted Average	No. of Responses
Responsiveness: Amdahl	3.83	30
Effectiveness: Amdahl	3.60	30
Technical Support		
Troubleshooting: Amdahl	3.47	30
IBM	3.08	562
Digital Equipment	3.00	54
Education: Amdahl	3.27	30
Documentation: Amdahl	3.03	30

Chart 7. Vendors receiving highest ratings for service and support.

a 3.0 rating in technical support was deserving of special mention. Amdahl was the only vendor that met our criteria for both maintenance service and technical support, although IBM and Digital Equipment made the list for trouble shooting.

This year, we asked those respondents who said they were using a data base management system or communications monitor to specify the name of the vendor and package and then to rate the package. Chart 8 lists all DBMS packages that received at least 10 user responses. The list is in alphabetical order by vendor. Weighted averages are given for both technical support and overall satisfaction.

DBMS Systems	Weighted Averages	
	Technical Support	Overall Satisfaction
Applied Data Research Datacom/DB (11)	3.36	3.55
Burroughs DMS-II (128)*	3.01	3.49
Cincom Total (62)*	3.03	3.06
Cullinet IDMS (46)	3.17	3.41
Digital Equipment DBMS (17)*	2.65	2.82
Honeywell DM-IV (18)	3.11	3.22
Honeywell IDS (15)	3.07	3.20
IBM IMS (41)	3.02	2.95
IBM IMS/DB (16)	2.69	2.50
IBM DL/1 (102)	2.81	2.83
Software AG ADABAS (24)	2.83	3.13
Software House 1022 (14)	3.43	3.50
Sperry DMS/1100 (42)	3.02	3.38

*Count includes both mainframe and minicomputer users.

Chart 8. User ratings of data base management systems.

We also asked the users who had communications monitors to rate them. Chart 9 lists, in alphabetical order by vendor, all communications monitors that received at least 10 responses.

Communications Monitors	Weighted Averages	
	Technical Support	Overall Satisfaction
Burroughs MCS (25)*	3.00	3.32
Burroughs NDL (12)*	2.92	3.42
Century Analysis Inc. Boss/3 (26)	3.08	3.46
IBM CICS (326)	3.03	3.10
IBM IMS/DC (14)	2.93	2.93
Sperry CMS (26)	3.04	3.23
Westinghouse Westi (12)	3.17	3.42

*Count includes both mainframe and minicomputer users.

Chart 9. User ratings of communications monitors.

Expectations and Recommendations

We asked the computer system users "Did the system do what you expected it to do?" Ninety-six percent answered "Yes," two percent said "No," and two percent said "Haven't decided." In 1983, only 91 percent said their systems performed as expected. ▷

User Ratings of Mainframes

The final question we asked users was whether they would recommend the computer system to another user in their situation. Ninety-two percent said "Yes," four percent answered "No," and four percent said they "Haven't decided." These responses show an improvement over 1983, when only 83 percent said they would recommend their systems, 8 percent said they would not, and 9 percent were undecided.

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

Amdahl	97%
IBM	96%
Burroughs	94%
IPL	92%

THANK YOU

Datapro extends a sincere thanks to all for responding so enthusiastically to our 1984 survey of user experiences with computer systems. Without your participation it could not have been the 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 Mainframes

TABLES 1 AND 2

User Ratings of Mainframes
Table 1. MAINFRAMES

Survey Item	Amdahl 470/580	Burroughs B 2800, B 3800, B 4800	Burroughs B 2900, B 3900, B 4900	Burroughs B 5900	Burroughs B 6900	Digital Equipment DECsystem-10/-20	Honeywell DPS 7	Honeywell DPS 8
No. of User Responses	30	16	72	16	10	54	11	34
Avg. Life of System (months)	38.6	59.1	30.0	26.2	37.6	70.1	25.3	33.0
Acquisition Method (%)								
Purchase	43.33	37.50	54.17	68.75	70.00	84.62	72.73	52.94
Rental or Lease from Mfr.	26.67	43.75	33.33	18.75	30.00	1.92	18.18	26.47
Lease from 3rd Party	30.00	18.75	12.50	12.50	0.00	13.46	9.09	20.59
Principal Applications (%)								
Accounting/Billing	76.67	56.25	69.44	68.75	80.00	64.81	90.91	82.35
Banking—Check Processing/Loans/Savings	6.67	37.50	33.33	6.25	0.00	0.00	9.09	5.88
Construction/Architecture	6.67	0.00	0.00	6.25	0.00	5.56	9.09	5.88
Education—Scheduling/Administration	6.67	0.00	4.17	6.25	50.00	42.59	0.00	20.59
Engineering/Scientific	23.33	6.25	5.56	6.25	30.00	27.78	0.00	5.88
Health Care/Medical	20.00	6.25	16.67	12.50	0.00	7.41	9.09	5.88
Insurance	26.67	0.00	11.11	12.50	0.00	9.26	9.09	17.65
Manufacturing	23.33	25.00	12.50	18.75	30.00	9.26	18.18	20.59
Mathematics/Statistics	30.00	0.00	2.78	12.50	50.00	35.19	0.00	23.53
Order Processing/Inventory Control	36.67	31.25	41.67	56.25	40.00	29.63	81.82	41.18
Payroll/Personnel	76.67	62.50	65.28	50.00	80.00	55.56	72.73	61.76
Petroleum/Fuel Analysis	3.33	0.00	5.56	0.00	0.00	1.85	9.09	2.94
Process Control	3.33	0.00	1.39	12.50	10.00	0.00	0.00	5.88
Purchasing	20.00	37.50	26.39	31.25	50.00	31.48	27.27	32.35
Sales/Distribution	30.00	31.25	20.83	31.25	30.00	12.96	63.64	26.47
Other	13.33	12.50	19.44	6.25	10.00	14.81	9.09	11.76
Source of Applications Programs (%)								
In-house Personnel	93.33	87.50	83.33	87.50	100.00	98.15	100.00	100.00
"Packaged" Programs from Manufacturer	33.33	43.75	34.72	25.00	10.00	25.93	18.18	35.29
Contract Programming	43.33	18.75	16.67	25.00	20.00	11.11	27.27	23.53
Manufacturer's Personnel	3.33	0.00	0.00	6.25	10.00	1.85	9.09	11.76
Independent Suppliers	40.00	56.25	51.39	31.25	50.00	51.85	36.36	35.29
Using Data Base Management System (%)	79.31	18.75	54.17	75.00	80.00	57.41	36.36	82.35
Planning a Data Base Management System in 1984	0.00	18.75	16.67	6.25	20.00	11.11	18.18	8.82
Manufacturer's Package	0.00	66.67	79.49	100.00	100.00	16.13	100.00	100.00
Outside Vendor's Package	95.65	0.00	0.00	0.00	0.00	45.16	0.00	0.00
Using Communications Monitor (%)	80.00	37.50	33.82	31.25	40.00	16.33	36.36	46.67
Planning a Communications Monitor in 1984	0.00	12.50	7.35	0.00	10.00	2.04	9.09	10.00
Manufacturer's Package	0.00	16.67	60.87	100.00	75.00	12.50	0.00	0.00
Outside Vendor's Package	83.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Using Integrated Office Automation Functions (%)	23.33	13.33	8.57	0.00	0.00	27.45	9.09	12.12
Planning Office Automation Functions in 1984	26.67	13.33	20.00	35.71	20.00	23.53	0.00	15.15
Have a Disaster Recovery Plan (%)	66.67	62.50	54.93	33.33	20.00	47.17	45.45	29.41
Plan to in 1984	16.67	12.50	25.35	13.33	60.00	15.09	27.27	41.18

User Ratings of Mainframes

Table 1. MAINFRAMES

Amdahl 470/580	Burroughs B 2800, B 3800, B 4800	Burroughs B 2900, B 3900, B 4900	Burroughs B 5900	Burroughs B 6900	Digital Equipment DECsystem-10/-20	Honeywell DPS 7	Honeywell DPS 8	Manufacturer and Model / Survey Item
								Planned Acquisitions/Implementations for 1984 (%)
50.00	25.00	38.89	43.75	50.00	22.22	36.36	61.76	Additional Software from the Manufacturer
83.33	31.25	41.67	43.75	60.00	40.74	36.36	50.00	Proprietary Software from Other Suppliers
76.67	37.50	70.83	56.25	90.00	51.85	90.91	67.65	Expansions to Data Communications Facilities
26.67	12.50	30.56	18.75	40.00	22.22	27.27	23.53	Distributed Processing Capabilities
76.67	37.50	63.89	37.50	70.00	59.26	45.45	55.88	Expansions to Present Hardware
13.33	6.25	11.11	18.75	40.00	16.67	9.09	8.82	Business Graphics
6.67	6.25	11.11	0.00	10.00	12.96	18.18	8.82	Power Conditioning Systems
								System Ratings (4.0-1.0)
3.43	3.75	3.76	3.56	3.70	3.62	3.27	3.27	Ease of Operation
3.57	3.44	3.49	3.31	3.10	3.35	3.64	3.39	Reliability of Mainframe
3.38	3.06	3.03	3.31	3.00	3.15	3.55	3.24	Reliability of Peripherals
								Maintenance Service:
3.83	3.06	3.33	3.19	3.40	3.40	3.18	3.45	Responsiveness
3.60	3.00	3.22	2.88	3.30	3.25	3.09	3.06	Effectiveness
								Technical Support:
3.47	3.00	2.77	2.94	3.00	3.00	2.73	2.91	Trouble-shooting
3.27	2.56	2.69	2.67	2.78	2.67	2.64	2.73	Education
3.03	2.44	2.61	2.19	2.67	2.81	2.64	2.47	Documentation
								Manufacturer's Software:
3.12	3.69	3.79	3.56	3.90	3.52	3.18	3.21	Operating System
3.11	3.31	3.32	3.25	3.70	3.36	3.27	3.21	Compilers & Assemblers
2.85	2.93	2.69	2.82	2.67	2.85	2.40	2.52	Applications Programs
2.78	3.47	3.46	3.31	3.40	3.39	3.00	3.09	Ease of Programming
2.90	3.21	3.36	3.14	3.20	3.06	3.09	2.81	Ease of Conversion
3.14	3.40	3.31	3.31	3.30	3.31	3.09	3.03	Overall Satisfaction
								Additional Ratings (4.0-1.0)
3.45	3.47	3.49	3.40	3.30	3.20	3.36	3.13	Ease of Reconfiguration
3.69	2.69	3.14	3.13	3.00	3.27	2.91	2.41	Compatibility of Hardware carried over from other systems
3.72	2.88	3.18	3.07	3.10	2.98	3.27	2.61	Compatibility of Programs/data carried over from other systems
3.19	2.69	3.37	3.13	2.80	2.52	3.00	3.00	Power/energy Efficiency
2.95	2.93	2.96	2.63	3.30	2.63	2.64	2.48	Productivity Aids help keep programming costs low
3.30	2.69	2.75	2.63	2.90	2.58	2.89	2.68	Software/Support promised by vendor
3.13	3.25	3.39	3.06	3.10	2.85	3.30	2.97	Keeping up with & implementing vendor changes to hardware/software (very easy=4.0; very difficult=1.0)
3.03	2.50	2.89	2.81	2.80	2.90	3.00	2.97	Delivery/Installation of equipment (ahead of schedule=4.0; very late=1.0)
3.08	2.63	2.93	2.94	3.00	2.75	2.73	2.85	Delivery of required Software (ahead of schedule=4.0; very late=1.0)
								Did the system do what you expected it to do? (%)
100.00	93.33	100.00	75.00	90.00	90.74	100.00	97.06	Yes
0.00	6.67	0.00	12.50	10.00	3.70	0.00	2.94	No
0.00	0.00	0.00	12.50	0.00	5.56	0.00	0.00	Undecided
								Would you recommend system to another user? (%)
96.67	86.67	98.57	81.25	90.00	79.63	90.91	76.47	Yes
3.33	0.00	1.43	6.25	10.00	12.96	9.09	5.88	No
0.00	13.33	0.00	12.50	0.00	7.41	0.00	17.65	Undecided

User Ratings of Mainframes
Table 1. MAINFRAMES

Manufacturer and Model / Survey Item	IBM 4331	IBM 4341	IBM 4361 & 4381	IBM 303X	IBM 308X	IBM Other Models	IPL 4400	Magnuson M80
No. of User Responses	184	244	9	24	89	12	12	7
Avg. Life of System (months)	43.7	35.1	17.0	36.6	20.8	89.5	28.3	30.4
Acquisition Method (%)								
Purchase	56.28	44.03	44.44	54.17	56.18	50.00	33.33	50.00
Rental or Lease from Mfr.	20.77	18.52	22.22	4.17	10.11	0.00	66.67	33.33
Lease from 3rd Party	22.95	37.45	33.33	41.67	33.71	50.00	0.00	16.67
Principal Applications (%)								
Accounting/Billing	80.98	82.79	77.78	79.17	76.40	75.00	25.00	42.86
Banking—Check Processing/Loans/Savings	10.33	9.84	0.00	12.50	8.99	8.33	0.00	14.29
Construction/Architecture	1.09	3.28	0.00	4.17	3.37	0.00	8.33	0.00
Education—Scheduling/Administration	14.13	14.34	11.11	8.33	14.61	8.33	0.00	0.00
Engineering/Scientific	4.89	15.16	33.33	8.33	31.46	0.00	0.00	0.00
Health Care/Medical	6.52	7.38	11.11	4.17	11.24	0.00	0.00	0.00
Insurance	9.78	7.79	0.00	12.50	14.61	8.33	25.00	14.29
Manufacturing	32.61	31.97	33.33	16.67	25.84	16.67	16.67	0.00
Mathematics/Statistics	8.15	11.89	11.11-	4.17	21.35	16.67	0.00	14.29
Order Processing/Inventory Control	53.80	58.61	66.67	50.00	50.56	50.00	33.33	14.29
Payroll/Personnel	64.67	65.16	66.67	54.17	64.04	66.67	41.67	28.57
Petroleum/Fuel Analysis	1.09	2.05	0.00	0.00	4.49	0.00	0.00	0.00
Process Control	8.15	5.33	0.00	12.50	7.87	0.00	0.00	0.00
Purchasing	35.87	46.31	44.44	45.83	43.82	16.67	16.67	0.00
Sales/Distribution	42.39	37.30	22.22	20.83	31.46	25.00	16.67	14.29
Other	10.33	11.89	0.00	29.17	16.85	41.67	41.67	42.86
Source of Applications Programs (%)								
In-house Personnel	92.39	95.90	100.00	100.00	97.75	100.00	100.00	100.00
"Packaged" Programs from Manufacturer	32.07	42.62	44.44	58.33	57.30	50.00	0.00	28.57
Contract Programming	20.11	26.64	11.11	41.67	33.71	25.00	16.67	28.57
Manufacturer's Personnel	1.09	0.82	0.00	8.33	3.37	33.33	0.00	0.00
Independent Suppliers	33.15	52.05	33.33	62.50	56.18	16.67	8.33	57.14
Using Data Base Management System (%)	31.49	50.42	62.50	73.91	79.78	58.33	16.67	14.29
Planning a Data Base Management System in 1984	9.94	11.86	12.50	4.35	7.87	0.00	16.67	14.29
Manufacturer's Package	56.14	63.02	60.00	47.06	49.30	28.57	0.00	0.00
Outside Vendor's Package	28.07	29.41	20.00	41.18	33.80	57.14	100.00	100.00
Using Communications Monitor (%)	67.96	78.66	75.00	91.67	77.91	50.00	75.00	42.86
Planning a Communications Monitor in 1984	5.52	6.28	0.00	8.33	5.81	8.33	0.00	0.00
Manufacturer's Package	85.37	84.57	83.33	86.36	74.63	66.67	0.00	0.00
Outside Vendor's Package	7.32	9.57	16.67	9.09	4.48	16.67	66.67	66.67
Using Integrated Office Automation Functions (%)	4.00	10.57	22.22	4.55	29.07	0.00	8.33	0.00
Planning Office Automation Functions in 1984	13.14	23.35	33.33	63.64	25.58	16.67	0.00	16.67
Have a Disaster Recovery Plan (%)	42.86	52.50	22.22	62.50	61.80	50.00	18.18	71.43
Plan to in 1984	19.23	22.92	33.33	25.00	16.85	8.33	27.27	14.29

User Ratings of Mainframes

Table 1. MAINFRAMES

IBM 4331	IBM 4341	IBM 4361 & 4381	IBM 303X	IBM 308X	IBM Other Models	IPL 4400	Magnuson M80	Survey Item
								Planned Acquisitions/Implementations for 1984 (%)
36.96	56.56	77.78	87.50	77.53	66.67	16.67	0.00	Additional Software from the Manufacturer
48.91	67.62	66.67	95.83	87.64	41.67	75.00	57.14	Proprietary Software from Other Suppliers
50.00	65.57	44.44	91.67	85.39	58.33	75.00	57.14	Expansions to Data Communications Facilities
15.76	24.59	11.11	54.17	38.20	0.00	16.67	14.29	Distributed Processing Capabilities
55.43	67.21	66.67	87.50	76.40	50.00	58.33	71.43	Expansions to Present Hardware
4.89	13.52	11.11	29.17	29.21	0.00	8.33	14.29	Business Graphics
3.80	9.02	11.11	20.83	12.36	25.00	0.00	28.57	Power Conditioning Systems
								System Ratings (4.0-1.0)
3.14	3.19	3.33	3.18	3.26	3.00	3.58	3.43	Ease of Operation
3.69	3.75	3.89	3.83	3.69	3.17	3.75	3.57	Reliability of Mainframe
3.51	3.51	3.00	3.21	3.43	3.17	3.17	3.57	Reliability of Peripherals
								Maintenance Service:
3.45	3.48	3.56	3.67	3.47	3.08	3.08	3.71	Responsiveness
3.46	3.47	3.56	3.54	3.36	3.25	3.33	3.43	Effectiveness
								Technical Support:
3.01	3.03	3.22	3.42	3.26	2.83	3.25	2.86	Trouble-shooting
2.89	2.97	3.00	3.42	3.05	3.36	2.80	2.00	Education
2.85	2.83	3.00	3.13	2.98	3.00	3.00	2.29	Documentation
								Manufacturer's Software:
3.19	3.13	3.11	3.38	3.34	3.17	3.38	3.20	Operating System
3.37	3.22	3.22	3.50	3.33	3.25	3.56	3.20	Compilers & Assemblers
2.91	2.87	3.11	2.83	2.84	2.64	3.13	2.67	Applications Programs
2.99	2.91	2.78	2.83	2.93	3.09	3.00	3.00	Ease of Programming
2.87	2.82	2.88	2.91	3.04	2.90	2.86	3.00	Ease of Conversion
3.17	3.11	3.11	3.29	3.24	3.36	3.25	3.33	Overall Satisfaction
								Additional Ratings (4.0-1.0)
2.98	3.06	3.44	3.22	3.19	2.92	3.27	3.17	Ease of Reconfiguration
3.04	3.25	3.25	3.57	3.38	2.92	3.50	3.80	Compatibility of Hardware carried over from other systems
2.97	3.21	3.33	3.57	3.35	3.08	3.30	3.20	Compatibility of Programs/data carried over from other systems
3.25	3.27	3.44	2.70	3.28	1.92	3.60	3.17	Power/energy Efficiency
2.69	2.71	2.89	3.00	2.67	2.90	2.88	2.50	Productivity Aids help keep programming costs low
2.86	2.83	3.00	3.30	2.94	3.09	2.60	2.00	Software/Support promised by vendor
2.88	2.83	3.00	2.67	2.82	3.18	2.60	3.33	Keeping up with & implementing vendor changes to hardware/software (very easy=4.0; very difficult=1.0)
2.99	2.99	3.33	3.04	3.13	3.08	3.00	2.86	Delivery/Installation of equipment (ahead of schedule=4.0; very late=1.0)
2.97	2.95	2.89	3.00	3.06	3.08	2.89	3.00	Delivery of required Software (ahead of schedule=4.0; very late=1.0)
								Did the system do what you expected it to do? (%)
98.37	98.36	100.00	100.00	98.88	100.00	100.00	100.00	Yes
0.00	0.82	0.00	0.00	0.00	0.00	0.00	0.00	No
1.63	0.82	0.00	0.00	1.12	0.00	0.00	0.00	Undecided
								Would you recommend system to another user? (%)
95.08	97.54	100.00	91.67	98.88	58.33	91.67	57.14	Yes
0.55	0.41	0.00	0.00	0.00	41.67	8.33	14.29	No
4.37	2.05	0.00	8.33	1.12	0.00	0.00	28.57	Undecided

User Ratings of Mainframes
Table 1. MAINFRAMES

Manufacturer and Model / Survey Item	NAS AS/6000, AS/7000, AS/9000	NCR 8400/8500/8600	Sperry 1100/60	Sperry 1100/70	Sperry 1100/80	Mainframes Other Models		
No. of User Responses	13	141	48	11	20	22		
Avg. Life of System (months)	28.6	45.5	40.4	29.2	58.4	54.3		
Acquisition Method (%)								
Purchase	38.46	53.19	27.08	27.27	31.58	57.14		
Rental or Lease from Mfr.	30.77	24.11	60.42	63.64	63.16	33.33		
Lease from 3rd Party	30.77	22.70	12.50	9.09	5.26	9.52		
Principal Applications (%)								
Accounting/Billing	76.92	66.67	93.75	81.82	75.00	50.00		
Banking—Check Processing/Loans/Savings	7.69	31.91	2.08	9.09	0.00	4.55		
Construction/Architecture	7.69	0.00	12.50	9.09	5.00	0.00		
Education—Scheduling/Administration	15.38	11.35	14.58	9.09	10.00	36.36		
Engineering/Scientific	15.38	1.42	14.58	18.18	45.00	27.27		
Health Care/Medical	23.08	8.51	8.33	18.18	5.00	18.18		
Insurance	7.69	2.13	6.25	9.09	15.00	0.00		
Manufacturing	23.08	11.35	29.17	36.36	15.00	18.18		
Mathematics/Statistics	15.38	3.55	8.33	18.18	35.00	13.64		
Order Processing/Inventory Control	53.85	45.39	70.83	54.55	35.00	31.82		
Payroll/Personnel	69.23	67.38	77.08	54.55	50.00	45.45		
Petroleum/Fuel Analysis	0.00	2.13	2.08	9.09	10.00	0.00		
Process Control	7.69	4.96	2.08	9.09	5.00	0.00		
Purchasing	30.77	30.50	50.00	27.27	50.00	13.64		
Sales/Distribution	30.77	31.21	50.00	36.36	20.00	13.64		
Other	23.08	10.64	6.25	18.18	30.00	27.27		
Source of Applications Programs (%)								
In-house Personnel	100.00	85.11	97.92	90.91	100.00	90.91		
"Packaged" Programs from Manufacturer	30.77	60.99	54.17	54.55	45.00	50.00		
Contract Programming	38.46	17.02	20.83	9.09	15.00	22.73		
Manufacturer's Personnel	0.00	4.96	25.00	18.18	0.00	13.64		
Independent Suppliers	30.77	38.30	35.42	18.18	30.00	45.45		
Using Data Base Management System (%)	75.00	34.53	72.92	90.91	95.00	54.55		
Planning a Data Base Management System in 1984	0.00	17.27	2.08	0.00	0.00	18.18		
Manufacturer's Package	0.00	0.00	100.00	90.00	78.94	33.33		
Outside Vendor's Package	100.00	72.92	0.00	0.00	5.26	8.33		
Using Communications Monitor (%)	61.54	48.91	53.19	54.55	47.37	42.86		
Planning a Communications Monitor in 1984	15.38	12.41	6.38	18.18	5.26	9.52		
Manufacturer's Package	0.00	8.96	76.00	50.00	44.44	33.33		
Outside Vendor's Package	75.00	38.81	0.00	0.00	0.00	0.00		
Using Integrated Office Automation Functions (%)	16.67	9.09	19.15	9.09	30.00	22.73		
Planning Office Automation Functions in 1984	16.67	21.97	29.79	45.45	20.00	13.64		
Have a Disaster Recovery Plan (%)	41.67	59.29	38.30	70.00	45.00	50.00		
Plan to in 1984	16.67	18.57	29.79	30.00	35.00	13.64		

User Ratings of Mainframes

Table 1. MAINFRAMES

NAS AS/6000, AS/7000, AS/9000	NCR 8400/8500/8600	Sperry 1100/60	Sperry 1100/70	Sperry 1100/80	Mainframes Other Models			Survey Item
								Planned Acquisitions/Implementations for 1984 (%)
7.69	43.97	52.08	54.55	50.00	63.64			Additional Software from the Manufacturer
76.92	61.70	39.58	27.27	40.00	50.00			Proprietary Software from Other Suppliers
76.92	62.41	64.58	90.91	70.00	59.09			Expansions to Data Communications Facilities
15.38	26.95	27.08	36.36	50.00	22.73			Distributed Processing Capabilities
69.23	59.57	83.33	81.82	85.00	54.55			Expansions to Present Hardware
7.69	5.67	14.58	54.55	40.00	13.64			Business Graphics
15.38	12.77	8.33	9.09	10.00	18.18			Power Conditioning Systems
								System Ratings (4.0-1.0)
3.38	3.34	3.29	3.36	3.40	3.45			Ease of Operation
3.69	3.47	3.56	3.55	3.60	3.27			Reliability of Mainframe
3.42	3.33	3.23	3.36	3.10	3.09			Reliability of Peripherals
								Maintenance Service:
3.54	3.29	3.44	3.36	3.65	3.36			Responsiveness
3.46	3.10	3.23	3.27	3.30	3.18			Effectiveness
								Technical Support:
3.31	2.77	2.83	3.00	2.55	2.86			Trouble-shooting
3.00	2.91	2.62	2.55	2.60	2.82			Education
3.08	2.69	2.27	2.36	2.60	2.59			Documentation
								Manufacturer's Software:
3.30	3.21	3.40	3.36	3.50	3.41			Operating System
3.22	3.12	3.29	3.55	3.58	3.36			Compilers & Assemblers
3.33	2.54	2.57	2.89	2.58	2.76			Applications Programs
3.33	2.98	3.10	3.55	3.11	3.23			Ease of Programming
3.22	3.12	2.64	3.09	3.00	2.89			Ease of Conversion
3.44	3.08	3.19	3.45	3.20	3.18			Overall Satisfaction
								Additional Ratings (4.0-1.0)
3.31	3.32	3.06	3.60	3.22	3.14			Ease of Reconfiguration
3.75	3.15	2.55	2.82	2.75	3.06			Compatibility of Hardware carried over from other systems
3.75	3.22	2.34	3.00	2.89	2.85			Compatibility of Programs/data carried over from other systems
3.31	3.06	2.94	3.00	3.00	2.86			Power/energy Efficiency
3.17	2.70	2.55	3.18	2.33	2.64			Productivity Aids help keep programming costs low
2.92	2.49	2.54	2.82	2.95	2.73			Software/Support promised by vendor
3.38	3.16	2.73	2.73	3.15	3.27			Keeping up with & implementing vendor changes to hardware/software (very easy=4.0; very difficult=1.0)
3.08	2.89	2.94	2.91	2.85	3.09			Delivery/Installation of equipment (ahead of schedule=4.0; very late=1.0)
3.09	2.85	2.89	2.82	2.70	3.14			Delivery of required Software (ahead of schedule=4.0; very late=1.0)
								Did the system do what you expected it to do? (%)
92.31	92.20	91.67	90.91	100.00	95.45			Yes
7.69	2.84	2.08	9.09	0.00	0.00			No
0.00	4.96	6.25	0.00	0.00	4.55			Undecided
								Would you recommend system to another user? (%)
76.92	86.52	87.50	81.82	100.00	77.27			Yes
23.08	6.38	4.17	9.09	0.00	18.18			No
0.00	7.09	8.33	9.09	0.00	4.55			Undecided

User Ratings of Mainframes

TABLE 2. MAINFRAME VENDOR SUMMARIES

Survey Item	Amdahl	Burroughs	Digital Equipment	Honeywell	IBM	IPL	Magnuson	NAS
No. of User Responses	30	114	54	45	562	12	7	13
Avg. Life of System (months)	38.6	34.3	70.1	31.0	36.7	28.3	30.4	28.6
Acquisition Method (%)								
Purchase	43.33	55.26	84.62	57.78	50.54	33.33	50.00	38.46
Rental or Lease from Mfr.	26.67	32.46	1.92	24.44	16.96	66.67	33.33	30.77
Lease from 3rd Party	30.00	12.28	13.46	17.78	32.50	0.00	16.67	30.77
Principal Applications (%)								
Accounting/Billing	76.67	68.42	64.81	84.44	80.78	25.00	42.86	76.92
Banking—Check Processing/Loans/Savings	6.67	27.19	0.00	6.67	9.79	0.00	14.29	7.69
Construction/Architecture	6.67	0.88	5.56	6.67	2.49	8.33	0.00	7.69
Education—Scheduling/Administration	6.67	7.89	42.59	15.56	13.88	0.00	0.00	15.38
Engineering/Scientific	23.33	7.89	27.78	4.44	14.06	0.00	0.00	15.38
Health Care/Medical	20.00	13.16	7.41	6.67	7.47	0.00	0.00	23.08
Insurance	26.67	8.77	9.26	15.56	9.61	25.00	14.29	7.69
Manufacturing	23.33	16.67	9.26	20.00	30.25	16.67	0.00	23.08
Mathematics/Statistics	30.00	7.89	35.19	17.78	11.92	0.00	14.29	15.38
Order Processing/Inventory Control	36.67	42.11	29.63	51.11	55.34	33.33	14.29	53.85
Payroll/Personnel	76.67	64.04	55.56	64.44	64.41	41.67	28.57	69.23
Petroleum/Fuel Analysis	3.33	3.51	1.85	4.44	1.96	0.00	0.00	0.00
Process Control	3.33	3.51	0.00	4.44	6.76	0.00	0.00	7.69
Purchasing	20.00	30.70	31.48	31.11	41.81	16.67	0.00	30.77
Sales/Distribution	30.00	24.56	12.96	35.56	36.83	16.67	14.29	30.77
Other	13.33	15.79	14.81	11.11	13.35	41.67	42.86	23.08
Source of Applications Programs (%)								
In-house Personnel	93.33	85.96	98.15	100.00	95.37	100.00	100.00	100.00
"Packaged" Programs from Manufacturer	33.33	32.46	25.93	31.11	42.35	0.00	28.57	30.77
Contract Programming	43.33	18.42	11.11	24.44	25.98	16.67	28.57	38.46
Manufacturer's Personnel	3.33	1.75	1.85	11.11	2.31	0.00	0.00	0.00
Independent Suppliers	40.00	49.12	51.85	35.56	45.91	8.33	57.14	30.77
Using Data Base Management System (%)	79.31	54.39	57.41	71.11	50.27	16.67	14.29	75.00
Planning a Data Base Management System in 1984	0.00	15.79	11.11	11.11	10.02	16.67	14.29	0.00
Manufacturer's Package	0.00	85.48	16.13	100.00	56.16	0.00	0.00	0.00
Outside Vendor's Package	95.65	0.00	45.16	0.00	31.52	100.00	100.00	100.00
Using Communications Monitor (%)	80.00	34.55	16.33	43.90	74.91	75.00	42.86	61.54
Planning a Communications Monitor in 1984	0.00	7.27	2.04	9.76	6.00	0.00	0.00	15.38
Manufacturer's Package	0.00	63.16	12.50	0.00	83.01	0.00	0.00	0.00
Outside Vendor's Package	83.33	0.00	0.00	0.00	8.25	66.67	66.67	75.00
Using Integrated Office Automation Functions (%)	23.33	7.34	27.45	11.36	11.11	8.33	0.00	16.67
Planning Office Automation Functions in 1984	26.67	21.10	23.53	11.36	22.03	0.00	16.67	16.67
Have a Disaster Recovery Plan (%)	66.67	50.00	47.17	33.33	50.72	18.18	71.43	41.67
Plan to in 1984	16.67	25.00	15.09	37.78	20.68	27.27	14.29	16.67

User Ratings of Mainframes

TABLE 2. MAINFRAME VENDOR SUMMARIES

Amdahl	Burroughs	Digital Equipment	Honeywell	IBM	IPL	Magnuson	NAS	Manufacturer and Model Survey Item
								Planned Acquisitions/Implementations for 1984 (%)
50.00	38.60	22.22	55.56	55.34	16.67	0.00	7.69	Additional Software from the Manufacturer
83.33	42.11	40.74	46.67	65.30	75.00	57.14	76.92	Proprietary Software from Other Suppliers
76.67	65.79	51.85	73.33	64.23	75.00	57.14	76.92	Expansions to Data Communications Facilities
26.67	27.19	22.22	24.44	24.38	16.67	14.29	15.38	Distributed Processing Capabilities
76.67	57.02	59.26	53.33	65.30	58.33	71.43	69.23	Expansions to Present Hardware
13.33	14.04	16.67	8.89	13.52	8.33	14.29	7.69	Business Graphics
6.67	8.77	12.96	11.11	8.72	0.00	28.57	15.38	Power Conditioning Systems
								System Ratings (4.0-1.0)
3.43	3.73	3.62	3.27	3.18	3.58	3.43	3.38	Ease of Operation
3.57	3.42	3.35	3.45	3.72	3.75	3.57	3.69	Reliability of Mainframe
3.38	3.07	3.15	3.32	3.47	3.17	3.57	3.42	Reliability of Peripherals
								Maintenance Service:
3.83	3.28	3.40	3.39	3.47	3.08	3.71	3.54	Responsiveness
3.60	3.15	3.25	3.07	3.45	3.33	3.43	3.46	Effectiveness
								Technical Support:
3.47	2.85	3.00	2.86	3.08	3.25	2.86	3.31	Trouble-shooting
3.27	2.67	2.67	2.70	2.99	2.80	2.00	3.00	Education
3.03	2.53	2.81	2.51	2.88	3.00	2.29	3.08	Documentation
								Manufacturer's Software:
3.12	3.75	3.52	3.20	3.20	3.38	3.20	3.30	Operating System
3.11	3.35	3.36	3.23	3.30	3.56	3.20	3.22	Compilers & Assemblers
2.85	2.74	2.85	2.49	2.87	3.13	2.67	3.33	Applications Programs
2.78	3.44	3.39	3.07	2.94	3.00	3.00	3.33	Ease of Programming
2.90	3.30	3.06	2.88	2.88	2.86	3.00	3.22	Ease of Conversion
3.14	3.32	3.31	3.05	3.17	3.25	3.33	3.44	Overall Satisfaction
								Additional Ratings (4.0-1.0)
3.45	3.45	3.20	3.19	3.07	3.27	3.17	3.31	Ease of Reconfiguration
3.69	3.06	3.27	2.53	3.21	3.50	3.80	3.75	Compatibility of Hardware carried over from other systems
3.72	3.11	2.98	2.77	3.17	3.30	3.20	3.75	Compatibility of Programs/data carried over from other systems
3.19	3.19	2.52	3.00	3.21	3.60	3.17	3.31	Power/energy Efficiency
2.95	2.94	2.63	2.52	2.72	2.88	2.50	3.17	Productivity Aids help keep programming costs low
3.30	2.73	2.58	2.72	2.89	2.60	2.00	2.92	Software/Support promised by vendor
3.13	3.30	2.85	3.05	2.85	2.60	3.33	3.38	Keeping up with & implementing vendor changes to hardware/software (very easy=4.0; very difficult=1.0)
3.03	2.82	2.90	2.98	3.02	3.00	2.86	3.08	Delivery/Installation of equipment (ahead of schedule=4.0; very late=1.0)
3.08	2.89	2.75	2.82	2.98	2.89	3.00	3.09	Delivery of required Software (ahead of schedule=4.0; very late=1.0)
								Did the system do what you expected it to do? (%)
100.00	94.69	90.74	97.78	98.58	100.00	100.00	92.31	Yes
0.00	3.54	3.70	2.22	0.36	0.00	0.00	7.69	No
0.00	1.77	5.56	0.00	1.07	0.00	0.00	0.00	Undecided
								Would you recommend system to another user? (%)
96.67	93.69	79.63	80.00	95.90	91.67	57.14	76.92	Yes
3.33	2.70	12.96	6.67	1.25	8.33	14.29	23.08	No
0.00	3.60	7.41	13.33	2.85	0.00	28.57	0.00	Undecided

User Ratings of Mainframes

TABLE 2. MAINFRAME VENDOR SUMMARIES

Survey Item	NCR	Sperry	Other Mainframes					
No. of User Responses	141	79	22					
Avg. Life of System (months)	45.5	43.6	54.3					
Acquisition Method (%)								
Purchase	53.19	28.21	57.14					
Rental or Lease from Mfr.	24.11	61.54	33.33					
Lease from 3rd Party	22.70	10.26	9.52					
Principal Applications (%)								
Accounting/Billing	66.67	87.34	50.00					
Banking—Check Processing/Loans/Savings	31.91	2.53	4.55					
Construction/Architecture	0.00	10.13	0.00					
Education—Scheduling/Administration	11.35	12.66	36.36					
Engineering/Scientific	1.42	22.78	27.27					
Health Care/Medical	8.51	8.86	18.18					
Insurance	2.13	8.86	0.00					
Manufacturing	11.35	26.58	18.18					
Mathematics/Statistics	3.55	16.46	13.64					
Order Processing/Inventory Control	45.39	59.49	31.82					
Payroll/Personnel	67.38	67.09	45.45					
Petroleum/Fuel Analysis	2.13	5.06	0.00					
Process Control	4.96	3.80	0.00					
Purchasing	30.50	46.84	13.64					
Sales/Distribution	31.21	40.51	13.64					
Other	10.64	13.92	27.27					
Source of Applications Programs (%)								
In-house Personnel	85.11	97.47	90.91					
"Packaged" Programs from Manufacturer	60.99	51.90	50.00					
Contract Programming	17.02	17.72	22.73					
Manufacturer's Personnel	4.96	17.72	13.64					
Independent Suppliers	38.30	31.65	45.45					
Using Data Base Management System (%)	34.53	81.01	54.55					
Planning a Data Base Management System in 1984	17.27	1.27	18.18					
Manufacturer's Package	0.00	92.19	33.33					
Outside Vendor's Package	72.92	1.56	8.33					
Using Communications Monitor (%)	48.91	51.95	42.86					
Planning a Communications Monitor in 1984	12.41	7.79	9.52					
Manufacturer's Package	8.96	65.00	33.33					
Outside Vendor's Package	38.81	0.00	0.00					
Using Integrated Office Automation Functions (%)	9.09	20.51	22.73					
Planning Office Automation Functions in 1984	21.97	29.49	13.64					
Have a Disaster Recovery Plan (%)	59.29	44.16	50.00					
Plan to in 1984	18.57	31.17	13.64					

User Ratings of Mainframes

TABLE 2. MAINFRAME VENDOR SUMMARIES

NCR	Sperry	Other Mainframes								Manufacturer and Model / Survey Item
										Planned Acquisitions/Implementations for 1984 (%)
43.97	51.90	63.64								Additional Software from the Manufacturer
61.70	37.97	50.00								Proprietary Software from Other Suppliers
62.41	69.62	59.09								Expansions to Data Communications Facilities
26.95	34.18	22.73								Distributed Processing Capabilities
59.57	83.54	54.55								Expansions to Present Hardware
5.67	26.58	13.64								Business Graphics
12.77	8.86	18.18								Power Conditioning Systems
										System Ratings (4.0-1.0)
3.34	3.33	3.45								Ease of Operation
3.47	3.57	3.27								Reliability of Mainframe
3.33	3.22	3.09								Reliability of Peripherals
										Maintenance Service:
3.29	3.48	3.36								Responsiveness
3.10	3.25	3.18								Effectiveness
										Technical Support:
2.77	2.78	2.86								Trouble-shooting
2.91	2.60	2.82								Education
2.69	2.37	2.59								Documentation
										Manufacturer's Software:
3.21	3.42	3.41								Operating System
3.12	3.40	3.36								Compilers & Assemblers
2.54	2.61	2.76								Applications Programs
2.98	3.17	3.23								Ease of Programming
3.12	2.78	2.89								Ease of Conversion
3.08	3.23	3.18								Overall Satisfaction
										Additional Ratings (4.0-1.0)
3.32	3.17	3.14								Ease of Reconfiguration
3.15	2.64	3.06								Compatibility of Hardware carried over from other systems
3.22	2.58	2.85								Compatibility of Programs/data carried over from other systems
3.06	2.96	2.86								Power/energy Efficiency
2.70	2.59	2.64								Productivity Aids help keep programming costs low
2.49	2.68	2.73								Software/Support promised by vendor
3.16	2.84	3.27								Keeping up with & implementing vendor changes to hardware/software (very easy=4.0; very difficult=1.0)
2.89	2.91	3.09								Delivery/Installation of equipment (ahead of schedule=4.0; very late=1.0)
2.85	2.83	3.14								Delivery of required Software (ahead of schedule=4.0; very late=1.0)
										Did the system do what you expected it to do? (%)
92.20	93.67	95.45								Yes
2.84	2.53	0.00								No
4.96	3.80	4.55								Undecided
										Would you recommend system to another user? (%)
86.52	89.87	77.27								Yes
6.38	3.80	18.18								No
7.09	6.33	4.55								Undecided