

User Ratings of Computer Systems

Datapro is proud to present the 1980 edition of the annual User Ratings of Computer Systems report. This year, the survey has been based on results received from questionnaires mailed to *Computerworld* readers.

The aims of the 1980 survey are to poll a highly representative cross section of users of computer systems of ANY SIZE—personal computer or microcomputer, small business computer, general-purpose computer or super-computer—and report what users think about their systems. The users were asked to supply selected hardware and software configuration information, identify the financial acquisition method and report on significant problems and advantages of the system. The users were also asked to rate their systems in fourteen subjective categories.

Datapro has improved the sampling methodology and the statistical validity of the 1980 Computer Systems Users Survey (see SURVEY METHODOLOGY). We think the 1980 survey represents our most successful survey of user opinions of computer systems.

Datapro suggests that the reader use the information advisedly and reminds readers that individual profiles or ratings should not be the major consideration in aiding a user 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 need.

SURVEY METHODOLOGY

The survey has been based on results received from 14,900 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 up to two different digital computer systems. The recipient was encouraged to reproduce the form if he/she wished to rate more than two models. *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 (microcomputer through supercomputer) currently being used. Users were asked 87 questions in 14 overall categories.

This report conveys the results of Datapro's 1980 Annual Survey of User Opinion of Computer Systems. Extensive tables summarize the experience of 4,614 users of desktop, personal, microcomputer, minicomputer, small business computer and general-purpose 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 computer acquisition.

After 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 computer systems; or revealed a vested interest on the part of the respondents.

Datapro processed returns from 5,337 respondents, a return of 36% from the *Computerworld* mailings. A total of 397 responses were judged invalid. A total of 316 users rated two different systems. Eight users rated 3 to 8 different systems. Altogether, 4,614 individuals and organizations responded, which (not counting multiple systems) represents a 31% response rate. Figure 1 shows the broad categories of response.

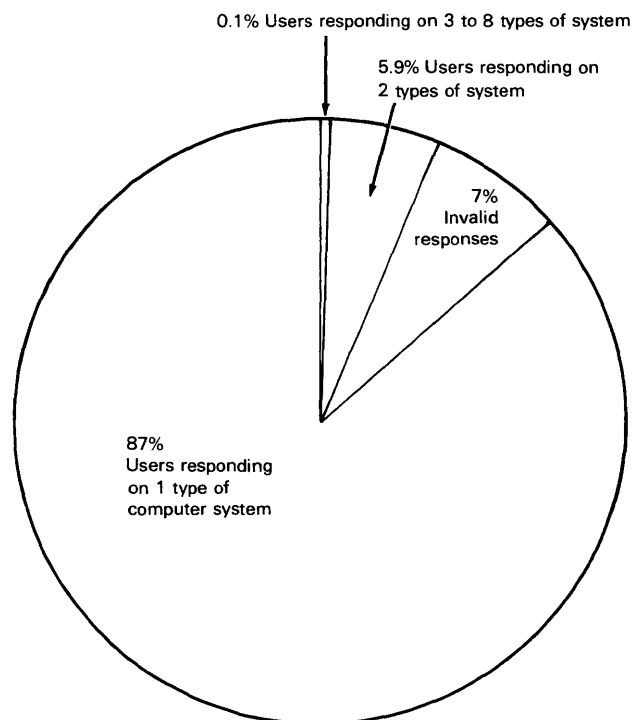


Figure 1. Broad categories of respondents

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▷ Datapro then sorted all returns by manufacturer and model and tallied and tabulated all valid responses. Summary information was prepared either as 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 1980 QUESTIONNAIRE?

Our questionnaire was comprehensive and asked users 87 questions in 14 categories. Each user was asked to identify the manufacturer, model, month/year of acquisition and method of acquisition. Each user was requested to identify all principal applications, and the sources of the applications programs. We asked users to specify the hardware and software configurations, and to identify acquisitions or implementations planned for 1980. Respondents were asked to indicate whether they expected to replace their computer system in 1980.

The next portion of the survey asked users to check any significant problems they had encountered with the system, and any significant advantages of the system.

All users were asked to rate their systems in nine major 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.

The final question users were asked was whether they would recommend the system to another user in their situation.

SURVEY RESULTS

Datapro decided to identify three broad classes of computer systems: mainframes and plug-compatible mainframes (PCMs); minicomputers and small business computers (SBCs); and desktop, personal and microcomputers. Table 1, "Mainframes and Plug-Compatible Mainframes," contains the results on 75 models from 12 mainframe and plug-compatible mainframe vendors, representing 2,006 user responses on 3,885 systems. Table 2, "Minicomputers and Small Business Computers," contains the results on minicomputer and small business computer models from 34 vendors, representing 2,309 user responses on 3,437 systems. Table 3, "Desktop, Personal and Microcomputers," contains results on 23 models from 18 vendors, representing 299 user responses on 549 systems.

In addition to tabulating the individual responses by manufacturer and model, Datapro wanted to examine and

compare the results across manufacturers in each of the broad classes of computer systems. Table 4, "Mainframe and Plug-Compatible Mainframe Vendor Summaries" contains vendor summaries of the information in Table 1. Table 5, "Minicomputer and Small Business Computer Vendor Summaries," contains vendor summaries of the information in Table 2. Although logic suggests a vendor summary table for desktop, personal, and microcomputers, such a table would be practically identical to Table 3 and is not reproduced here.

The remainder of this report discusses results excerpted from responses presented in the five tables.

FINANCIAL ACQUISITION ALTERNATIVES

The rapid advances in technology with declining costs of hardware have posed some pricing problems for vendors. One of the interesting balances for vendors to achieve is keeping users happy with increases in price/performance, usually with lower performance/unit costs; and keeping sales personnel happy with "net=ups." One way to achieve this balance can be to price purchase as a more attractive alternative than rental/lease. The great majority of users of "classical" minicomputers such as those produced by DEC and Data General have usually purchased their systems. Such users have enjoyed benefits such as the investment tax credit and depreciation schedule allowances. Until recently, users of small business computers from companies such as IBM and NCR were predominantly oriented toward rental from the manufacturer, since financial terms and plans benefited the rental customer. Now there is a change, due in large part to the balance already explained.

One of the questions we asked, therefore, was how users acquired their systems: outright purchase, rental from the manufacturer, or third party lease. We also wanted to know what changes in financial acquisition patterns, if any, had occurred since our 1975 survey. The 1980 and 1975 results appear in Figure 2.

Reference to Figure 2 shows that more minicomputer and small business computer (SBC) users purchase than mainframe or plug-compatible mainframe (PCM) users do (72% compared to 52%). Figure 2 also shows that today purchase is a more prevalent financial acquisition alternative for both classes: mainframes and PCMs as well as minis and SBCs. ▷

	1980		1975	
	Mainframes/ PCMs	Minis & SBCs	Mainframes/ PCMs	Minis & SBCs
Purchase (%)	52	72	33	53
Rental (%)	10	6	47	41
Lease (%)	38	22	23	8

Figure 2. Financial acquisition alternatives: 1980 and 1975

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▷ PRINCIPAL APPLICATIONS

As an industry, we are moving steadily in the direction of management's awareness of how to make computers into a business tool to solve business problems through appropriate applications. In the past, our focus often was blurred by the immediate necessity of keeping the system running. As we mature in our understanding of how to make computers work for us, we are also able to branch into other technologies and applications. We are integrating such technologies and are creating a base of experience for continuing successful implementation.

The 1980 top three principal applications, accounting, payroll/personnel, and manufacturing, have been the top three for 20 years. The rest of the list shows some interesting trends, however, and some changes. A look at Figure 3, User Rankings of Principal Applications, shows that transaction processing appears on the top-ten list for both mainframes and PCMs and minis and SBCs. Five years ago, it did not make either list.

Reference to Figure 3 also shows that service bureau applications are alive and well—they placed fourth in mainframes and PCMs and fifth in minicomputer and SBC rankings. These responses were not from users who were using service bureaus, rather they were from users whose computers provided service bureau capabilities to other users.

Yet another interesting trend visible from the user results in Figure 3 involves word processing applications. Word processing appears fourth in the user rankings of principal applications for minicomputers and SBCs. It does not appear at all in the table for mainframes and PCMs. This certainly mirrors results from other Datapro studies, which show that large users are not integrating word processing into or even performing word processing applications on their mainframe computers. On the other hand, small computer users are integrating the technologies. They are actively pursuing the productivity increases that come from computerizing clerical functions, and are attempting to do something about the mere 4% increase in office productivity over the past 20 years. Integrated word processors/data processors offer the best of both worlds to the small system user.

The last notable change in application patterns appears in the mini and SBC listing: distributed processing is ranked tenth. As more manufacturers provide good systems and applications software for such applications, users may rank distributed processing higher on the list in future years.

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 2 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

Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
1. Accounting	1. Accounting
2. Payroll/Personnel	2. Payroll/Personnel
3. Manufacturing	3. Manufacturing
4. Service Bureaus	4. Word Processing
5. Banking/Finance	5. Service Bureaus
6. Engineering/Scientific	6. Engineering/Scientific
7. Education	7. Transaction Processing
8. Transaction Processing	8. Education
9. Government	9. Government
10. Retail	10. Distributed Processing

Figure 3. User rankings of principal applications

proprietary software industry increases in maturity and sophistication, "packaged software" becomes a desirable adjunct to in-house development.

We asked 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).

Proprietary software packages appear second on the mainframe and PCM list of rankings of sources of applications packages. This confirms the high degree of acceptance of proprietary software packages as an adjunct to in-house development.

Proprietary software packages appear fourth on the minis and SBCs list in Figure 4. This is probably due to two reasons: it's harder for the proprietary software vendors to find and to market to the small computer user; and also, the small computer user at one and the same time needs more hand-holding and more control over his computerization effort. This often translated to a person readily accessible, which is often not cost-effective either for the software vendor or for the user. A local contact—in-house, contract, or manufacturer's rep—is often preferable, hence the placement of contract programming as second on the minis and SBCs list, and "ready-made" programs from the manufacturer as third.

Contract programming appears fourth on the mainframe and PCM list, probably because of the difficulty of cost-justifying contract programming when an in-house staff, proprietary software, or "ready-made" programs from the manufacturer exist.

Last on both lists in Figure 4 is manufacturer's personnel. Historically, custom software from the manufacturer has been the most expensive way to get software. ▷

Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
1. In-house personnel	1. In-house personnel
2. Proprietary Software	2. Contract Programming
3. "Ready-made" programs from manufacturer	3. "Ready-made" programs from manufacturer
4. Contract programming	4. Proprietary software
5. Manufacturer's Personnel	5. Manufacturer's Personnel

Figure 4. User rankings of sources of applications programs

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▷ PRIMARY PROGRAMMING LANGUAGES

"Which programming language should I use?" as a question 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." As Figure 5 shows, for large system users, the most frequently used language is COBOL; for small system users, it is either Basic (first) or Fortran (second). For small system users, Pascal was so frequent a write-in that it appears third on the list, even above COBOL and RPG. We were surprised that RPG was fifth on the minis and SBCs list. We revisited the survey returns and found simply that many people had checked multiple languages, and Basic is offered on more small computers than any other language. RPG, of course, is offered on IBM small systems and on systems competing heavily with IBM (Univac's BC/7, Honeywell's "Liberator/3", etc.).

We expect Basic to hold its place on the user rankings, especially now that IBM is offering a Basic compiler on the S/34.

Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
1. COBOL	1. BASIC
2. Assembler	2. Fortran
3. Fortran	3. Pascal
4. RPG	4. COBOL
5. APL	5. RPG
6. Basic	6. APL

Figure 5. User rankings of primary programming languages

PLANNED ACQUISITIONS FOR 1980

Industry forecasters predict that the DP industry will enjoy approximately the same percentage growth over 1980 that it has enjoyed in previous years, that is, the recession won't hit us. (Or didn't hit us, depending on your perspective.) We wanted to know how users were planning on spending their enhancement/acquisition dollars in 1980. Figure 6 shows the user rankings of planned acquisitions for 1980. Mainframers, PCMs, minicomputers, and SBC users alike are planning on acquiring or implementing expanded data communications capabilities, additional proprietary software, and additional software from the manufacturer. This certainly portrays a picture of aggressive growth and application optimism.

Last on the users' rankings of planned acquisitions for mainframes and PCMs is distributed processing capabilities, again mirroring the slow but steady acceptance of distributed processing among larger users.

Last on the minis and SBCs list is integrated word processing, which we discussed earlier under **PRINCIPAL APPLICATIONS**.

Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
1. Expanded data comm	1. Expanded data comm
2. Additional proprietary software	2. Additional proprietary software
3. Additional software from manufacturer	3. Additional software from manufacturer
4. Distributed processing capabilities	4. Integrated word processing

Figure 6. User rankings of planned acquisitions for 1980

EXPECTED SYSTEM REPLACEMENTS

Another indicator of the economy is whether or not users are expecting to replace their systems in 1980. Our results confirm our earlier studies that the small computer market will be the more active market (next to proprietary software). Only 62% of the users of small computers said they would not replace their systems in 1980, compared to 80% of the large system users. Of those who said "yes", the mainframers mostly plan to stick with their current manufacturer (12% same manufacturer, 8% different manufacturer); the mini users mostly plan to switch (8% same manufacturer, 13% different manufacturer).

SIGNIFICANT PROBLEMS/ADVANTAGES

Determining the experiences users are having with their systems is a critical part in any computer system acquisition decision. The issues which if going well appear at the top of a user satisfaction list, are the same issues which if not going well will appear at the top of a significant problems list. The major issues are the same whatever the system size.

Figure 7 shows the User Rankings of the Most Significant Problems and the Most Significant Advantages. The No. 1 Most Significant Problem according to users is that "the vendor did not provide all the promised software or support." This is confirmed also by hundreds of comments from users on the survey returns. For more on this, see **USER SATISFACTION RATINGS**.

The Second Most Significant Problem for both classes of user is "the system proposed by the vendor was too small and had to be replaced/expanded" (see Figure 7). In some instances, this is clearly a marketing tactic on the part of the manufacturer; in others, it's due to the rapid assimilation of the computer capability on the part of the user organization with the resultant need of greater capability. Miscalculation on the part of user and/or sales rep is also a common cause of systems that are too small.

On the mainframes list, "power/cooling requirements excessive" was third, reflecting the energy-consciousness (and expense) of the larger system users. For minis and SBCs, the Third Most Significant Problem is "delivery of required software was late." Since contract programming is the second-most popular application software source for minis and SBCs, this is not surprising. We have yet to devise a fool-proof method of scheduling applications software development. ▷

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Mainframes and Plug-Compatible Mainframes	Minicomputers and Small Business Computers
<p>Most Significant Problems</p> <ol style="list-style-type: none"> 1. Vendor did not provide all promised software or support 2. System proposed by vendor was too small and had to be replaced/expanded 3. Power/cooling requirements excessive 4. Delivery and/or installation of equipment was late 5. Program/data compatibility was not what vendor promised 6. Vendor enhancements/changes to hardware/software hard to keep up with <p>Most Significant Advantages</p> <ol style="list-style-type: none"> 1. Users are happy with response time 2. Programs/data are compatible, as vendor promised 3. System easy to expand/reconfigure 4. Terminals/peripherals compatible, as vendor promised 5. System is power/energy efficient 6. Productivity aids help keep programming costs down 	<p>Most Significant Problems</p> <ol style="list-style-type: none"> 1. Vendor did not provide all promised software or support 2. System proposed by vendor was too small and had to be replaced/expanded 3. Delivery of required software was late 4. Delivery and/or installation of equipment was late 5. Vendor enhancements/changes to hardware/software hard to keep up with 6. Equipment excessively noisy <p>Most Significant Advantages</p> <ol style="list-style-type: none"> 1. Users are happy with response time 2. System easy to expand/reconfigure 3. Programs/data compatible, as vendor promised 4. Productivity aids help keep programming costs down 5. System is power/energy efficient 6. Database language is effective/efficient

Figure 7. User rankings of most significant problems and most significant advantages

▷ Late delivery and/or installation of equipment is the Fourth Most Significant Problem for mini and mainframe users alike. This is clearly significant because of the impact on cost-effectiveness decisions and conversion activities. Program/data compatibility not being what the vendor promised was the Fifth Most Significant Problem for mainframes and PCMs, again reflecting the user need to protect the software investment. The fifth most significant problem for minis and SBCs is also the sixth for mainframes and PCMs; that is, the problem of vendor enhancements/changes to hardware/software, which users sometimes find hard to track. Assessing the impact of and incorporating changes, even though desirable, can consume a good deal of the technical staff's time, as well as potentially disrupt operations.

The Sixth Most Significant Problem for minis and SBCs is the noise of the equipment: printers and card readers and sometimes disk fans can create a tremendous amount of noise in office environments often not previously sound-proofed.

Figure 7 also contains the User Rankings of the Most Significant Advantages. Again there is a considerable amount of overlap in the responses from the two classes, and again the responses reflect the same issues: cost/effectiveness and the smooth running of the user organization. First on both lists is the fact that users are happy with response time. This could be interpreted as workstation response time, or job turnaround time, or both.

Also appearing on both lists (second on the mainframe and PCM list and third on the mini and SBC list) is the advantage that "programs/data are compatible, as the vendor promised." This reflects the importance of the protection of the software investment, which is also underscored by the advantage, "productivity aids help keep programming costs down," (fourth on the mini and SBC list and sixth on the mainframe and PCM list).

Second on the mini and SBC users' list and third on the mainframe and PCM users' list is the ease of system reconfiguration/expansion. This is clearly important as

the need for additional computer capability in the organization is realized. Related to this is the advantage, "terminals/peripherals compatible, as vendor promised" (fourth on mainframes and PCMs users' list and sixth on minis and SBCs users' list).

The advantage, "system is power/energy efficient," is a corollary to the disadvantage previously discussed for mainframes and PCM users.

The final advantage on the mini and SBC list is the effectiveness of the database language. Many users who wrote in the language name actually were referring to higher-level, "non-programmer" languages for data manipulation and extraction commonly sold now on minis and SBCs. Univac's Escort, IBM's Brads, Microdata's English, Cado's Easy, and IBM's DFU have sold a lot of systems; so has Hewlett-Packard's Image, and the availability of Cincom's Total on about 18 small computers. Interestingly enough, this advantage does not appear on the mainframe and PCM users' list.

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 (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 again it would be interesting to determine the overall weighted averages of ▷

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▷ the two classes, and to compare them to the weighted averages of five years ago. The results appear in Figure 8. The most astonishing result is that there is virtually no change in the Overall User Satisfaction Ratings from five years ago to those of today.

System Ratings (4.0-0.0)	1980		1975	
	Mainframes & PCMs	Minis & SBCs	Mainframes & PCMs	Minis & SBCs
Ease of Operation	3.4	3.4	3.3	3.3
Reliability of Mainframe	3.3	3.3	3.5	3.5
Reliability of Peripherals	2.8	3.1	3.0	3.1
Maintenance Service:				
Responsiveness	3.1	3.0	3.3	3.0
Effectiveness	2.9	2.9	3.1	2.9
Technical Support:				
Trouble-shooting	2.7	2.6	2.7	2.6
Education	2.6	2.4	—	—
Documentation	2.5	2.5	—	—
Manufacturer's Software:				
Operating System	3.2	3.3	3.0	3.1
Compilers & Assemblers	3.0	2.9	3.1	3.0
Applications Programs	2.7	2.8	2.7	2.6
Ease of Programming	3.2	2.8	3.1	3.1
Ease of Conversion	3.0	2.7	2.9	2.9
Overall Satisfaction	3.1	3.1	3.1	3.0

Figure 8. User satisfaction ratings, 1980 and 1975.

Other interesting results show that users are less happy with the reliability of their mainframes: even though mainframes are more reliable, the expectations of today's user are probably higher than those of the user of five years ago.

The final change worth noting is that users on the whole are happier with their operating systems than the users of 1975 were. In summary, it seems that although the systems are changing, users' expectations are changing right along with them, and are continually heightening.

We thought it would be interesting to identify the vendors whose users rated them highest in overall satisfaction. We thought we'd take a 0.7 point spread down from the highest rating in the classes. The results are:

Mainframes and PCMs		Minis and SBCs	
Amdahl	3.6	Educational Data	4.0
Magnuson	3.5	Pick & Assoc.	4.0
DEC	3.3	Tandem	3.8
NASCO (Itel)	3.2	Texas Instruments	3.5
Control Data	3.1	Hewlett-Packard	3.4
Univac	3.1	Microdata	3.4
Burroughs	3.0	Qantel	3.4
IBM	3.0		
NCR	3.0		

SYSTEM RECOMMENDATIONS

The final question we asked users was whether they would recommend the system to another user in their situation. Most said they would: 80% of the mainframe and PCM users said "Yes," as did 74% of the mini and SBC users. We thought it would be interesting to go into the Tables and determine which vendors received the highest overall percentage of user recommendations. The results are:

Mainframes and PCMs		Minicomputers and SBCs	
Magnuson	100%	AM Jacquard	100%
Amdahl	97%	CHI	100%
DEC	92%	Educational Data Systems	100%
		Texas Instru-ments	98%
		Prime	95%

A WORD ABOUT PERSONAL COMPUTERS

Desktop, personal and microcomputers are one of the exciting segments of our industry. We asked users of such systems to share their experiences also. The results from 299 users of 23 models from 18 vendors appear in Table 3.

We thought some summary information on the desktop, personal and microcomputers also would be interesting. 95% of the users purchased their systems, a significantly higher percentage than the other two classes and totally predictable. Most computers of this size are sold through retail stores. Many of the vendors do not offer other acquisition arrangements, such as rental or lease.

We wanted to get an idea of the types of applications users of such computers are performing. The breakdown is as follows:

1. Accounting
2. Word Processing
3. Miscellaneous (most common was "color graphics")
4. Payroll/Personnel
5. Engineering/Scientific
6. Education
7. Retail
8. Service Bureaus
9. Manufacturing
10. Transaction Processing

We also wanted to know how the users were acquiring their software. "Catalogs" and "mail order houses" and "listings" and "friends" were some of the write-ins; the actual ranking of the sources of applications programs for the computers is:

1. In-house personnel
2. "Ready-made" programs from the manufacturer
3. Proprietary software packages
4. Contract programming

Another question we asked was what was the primary programming language, and not surprisingly, Basic was a significant favorite. Pascal, a write-in, followed Basic, and then came Fortran and special-purpose languages.

Again, we asked about the acquisitions planned for 1980. "Proprietary software" headed the list, followed closely by "additional software from the manufacturer," then "expanded data communications," "integrated word processing," and "miscellaneous." ▷

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- > Users of personal computers answered "No" an average of 92% of the time when asked about system replacement in 1980.

Users of desktop, personal and microcomputers felt their major problem was "late delivery and/or installation of equipment." Other problems were indicated with about the same frequency, so no clear ranking is sensible.

The most significant advantages, however, were very clear: "Users are happy with response time" again headed the list, as it does for the other two classes, followed by "system is easy to expand/reconfigure" and "programs/data compatible, as vendor promised." Tied for fourth on the list were "terminals/peripherals compatible, as vendor promised" and "system is power/energy efficient."

On the whole, users of desktop, personal and microcomputers are as happy with their systems as are the users of other systems as are the users of other systems. The user ratings are:

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

Altos ACS 8000	3.8
Hewlett-Packard 9830 A	3.8
Tektronix 4051	3.8
Alpha Micro AM 100	3.4
IMSAI	3.4
Ohio Scientific Challenger	3.4
Polymorphic Systems	3.4
Apple II	3.3
Commodore	3.3
Cromemco	3.3

Figure 9. Desktop, personal, and microcomputers receiving highest overall user satisfaction ratings

We thought it would be interesting to identify the systems whose users rated them highest in overall satisfaction. The list appears in Figure 9.

The final question we asked users of desktop, personal and microcomputers was whether or not they would recommend their system to another user in their situation. 80% of the users answered "yes."

We wanted to determine the desktop, personal and microcomputer systems whose users recommended them 100% of the time. The list is:

Altos ACS 8000	100%
Apple II	100%
Cromemco System Three	100%
DEC LSI-II	100%
Ohio Scientific Challenger	100%
Polymorphic Systems	100%
Tektronix 4051	100%

THANK YOU

Datapro extends a sincere thanks to all for responding so enthusiastically to our 1980 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. □



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Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model													
	Amdahl 470/V5	Amdahl 470/V6	Amdahl 470/V6-II	Amdahl 470/V7	Amdahl 470/V8	Burroughs B1700	Burroughs B 2700	Burroughs B 3700	Burroughs B 4700	Burroughs B 6700	Burroughs B 7700	Burroughs B 1800	Burroughs B 2800
Survey Item													
No. of User Responses	12	13	10	6	3	44	15	18	14	8	4	78	13
No. of Systems Represented	22	17	13	8	4	65	17	36	16	10	5	80	30
Avg. Life of System (Mos.)	14.5	33.8	29.6	9.8	22.6	39.4	59.4	41.6	49.4	55.7	26.0	11.9	20.5
Acquisition Method (%)													
Purchase	50	62	80	50	33	59	67	28	64	75	25	59	62
Rental	8	0	0	0	33	9	7	0	0	0	0	8	15
Lease	42	38	20	50	33	32	26	73	36	25	75	33	31
Principal Applications (%)													
Accounting	75	54	70	83	67	64	40	56	57	38	75	42	15
Construction	8	8	20	0	0	5	0	0	0	13	0	3	0
Education	16	8	30	17	0	11	0	11	7	13	50	14	0
Government	16	8	40	17	0	11	13	11	0	25	25	19	8
Manufacturing	33	31	30	33	33	20	7	6	7	13	0	22	15
Payroll/Personnel	58	54	60	100	33	52	47	50	43	75	75	49	23
Service Bureaus	8	23	20	33	33	16	40	11	7	25	0	13	31
Transportation	0	8	20	0	33	2	7	0	7	0	0	0	0
Word Processing	8	23	30	0	33	0	0	6	7	13	25	6	8
Banking/Finance	8	31	10	17	0	23	47	44	43	25	25	14	62
Distributed Processing	8	31	30	17	0	2	13	0	0	13	0	9	15
Engineering/Scientific	25	31	50	33	33	5	0	6	7	38	50	0	0
Insurance	8	23	40	0	0	0	7	0	7	13	0	10	0
Medical/Health Care	8	8	20	0	0	11	7	6	7	13	25	9	0
Retail	8	8	0	17	0	9	7	0	14	0	0	3	8
Transaction Processing	25	31	50	83	33	16	7	11	14	13	50	19	15
Utilities-Power	8	15	10	17	0	5	0	0	0	13	25	8	0
Other	8	31	10	0	33	—	20	17	14	13	25	14	8
Source of Applications Prog. (%)													
In-house personnel	100	85	100	100	100	86	80	93	93	100	100	88	85
"Ready-made" programs from manufacturer	17	38	30	83	33	25	47	22	43	25	25	38	38
Contract Programming	50	15	50	33	67	20	27	11	29	50	50	44	8
Manufacturer's Personnel	8	15	10	17	33	2	0	0	7	13	0	4	0
Proprietary Software Packages	58	77	70	100	67	32	60	50	43	50	50	36	54
Other	0	0	0	0	0	0	0	6	0	0	0	0	0
Hardware Configuration													
No. of CPUs	22	17	13	8	11	65	17	36	16	18	9	84	30
No. of Workstations (avg.)	80.2	52.2	252.5	163.0	81.8	4.4	7.6	9.9	36.5	47.0	110.0	10.0	3.8
Software Configuration													
DBMS (%)	100	85	100	67	100	0	20	44	14	88	100	51	23
Datacomm monitors (%)	100	77	100	67	67	0	60	72	50	100	75	73	69
Primary Programming Language													
APL	0	8	0	17	0	0	0	0	0	13	0	0	0
BASIC	8	0	0	0	0	0	7	6	0	0	0	1	0
COBOL	100	77	100	75	67	70	100	100	93	88	100	86	85
FORTRAN	17	15	20	17	33	5	0	6	0	38	50	3	0
RPG	0	0	0	0	0	36	0	0	0	0	0	33	0
Other	25	77	70	50	33	0	0	0	7	88	75	4	8
Planned Acquisitions/Implementations for 1980 (%)													
Additional software from manufacturer	25	31	70	50	33	18	27	11	36	25	25	32	0
Proprietary Software	75	62	90	83	67	18	33	28	43	38	25	22	38
Expanded Datacomm	58	77	100	75	33	43	53	56	71	38	75	67	38
Distributed Processing	50	38	40	50	33	20	7	22	21	13	25	17	8
Integrated Word Processing	25	23	40	17	33	4	0	0	0	13	50	10	15
Other	8	8	0	0	33	0	7	6	7	0	25	3	0
Plans for system replacement in 1980 (%)													
Yes, same manufacturer	0	67	10	17	0	59	33	33	43	38	0	9	15
Yes, different manufacturer	0	0	10	0	0	9	7	11	0	0	0	1	0
No	100	77	80	83	100	25	60	56	57	50	100	86	85

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User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

													Manufacturer and Model
Amdahl 470/V5	Amdahl 470/V6	Amdahl 470/V6-II	Amdahl 470/V7	Amdahl 470/V8	Burroughs B 1700	Burroughs B 2700	Burroughs B 3700	Burroughs B 4700	Burroughs B 6700	Burroughs B 7700	Burroughs B 1800	Burroughs B 2800	Survey Item
													Significant Problems (%)
0	0	10	0	0	59	27	17	21	25	0	13	8	System proposed by vendor was too small
0	0	0	17	0	27	40	22	36	25	0	46	77	Delivery and/or installation of equipment was late
0	0	0	0	0	7	13	0	21	25	50	14	8	Delivery of required software was late
0	0	0	0	0	5	13	17	14	25	0	1	8	System costs exceeded expected total
0	0	0	0	0	30	27	17	21	25	0	15	23	Vendor did not provide all promised software or support
0	0	0	0	0	7	13	0	7	0	0	5	15	Program/data compatibility not what vendor promised
8	0	0	0	0	11	0	0	14	13	0	8	0	Terminals/peripherals compatibility not what vendor promised
0	8	0	0	33	18	27	11	7	13	0	5	8	Vendor enhancements/changes to hardware/software hard to keep up with
8	0	10	17	0	9	13	11	7	0	0	6	8	Equipment excessively noisy
0	0	0	17	0	18	13	6	14	25	0	9	15	Power/Cooling requirements excessive
0	0	0	0	0	18	27	17	0	0	25	5	15	Other
													Significant Advantages (%)
42	69	50	33	33	30	27	28	29	50	0	58	46	Users happy with response time
75	53	30	75	33	43	53	78	36	50	75	81	77	System easy to expand/reconfigure
8	31	20	33	33	5	0	0	7	25	25	14	0	System costs less than expected
75	8	80	100	67	23	33	44	43	25	50	47	54	Programs/data compatible, as vendor promised
58	70	70	75	67	11	20	55	21	50	100	44	31	Terminals/peripherals compatible, as vendor promised
33	46	80	33	33	16	7	0	0	0	0	17	23	System is power/energy efficient
8	23	50	0	33	20	33	22	14	63	25	54	23	Productivity aids help us keep programming costs down
25	8	30	0	33	16	7	17	7	63	50	38	0	Database language effective
42	31	30	50	33	9	7	6	7	13	0	13	0	Delivery and/or installation of equipment was ahead of schedule
8	8	20	17	0	2	7	0	0	13	0	10	0	Delivery and/or installation of software was ahead of schedule
8	0	10	0	0	9	20	17	0	13	0	6	0	Other
													System Ratings (4.0-0.0)
3.5	3.5	3.8	3.4	3.7	3.6	3.6	3.7	3.6	3.9	4.0	3.6	3.7	Ease of operation
3.6	3.9	3.9	3.3	4.0	2.8	3.2	3.3	3.7	3.0	2.5	3.4	3.4	Reliability of Mainframe
3.1	3.2	3.0	3.0	3.3	2.4	2.6	2.6	2.3	2.3	2.5	2.8	2.5	Reliability of Peripherals
													Maintenance service:
3.5	3.5	3.6	3.8	3.0	2.4	3.0	2.7	2.8	2.9	3.0	2.7	2.6	Responsiveness
3.4	3.5	3.4	3.5	3.3	2.3	2.7	2.6	2.4	2.3	2.5	2.5	2.5	Effectiveness
													Technical support:
3.0	3.2	3.6	3.2	2.7	2.1	2.1	2.4	2.0	2.8	2.0	2.4	2.0	Trouble-shooting
2.8	2.7	3.2	2.8	2.7	2.2	2.7	2.3	2.2	2.1	2.7	2.5	2.0	Education
2.9	2.8	3.4	3.0	2.3	1.9	2.3	2.2	2.1	2.3	2.0	2.2	2.3	Documentation
													Manufacturer's software:
3.0	3.2	3.3	3.0	3.0	3.5	3.7	3.7	3.8	3.9	3.8	3.7	3.8	Operating system
3.1	3.4	3.2	3.0	3.5	3.3	3.7	3.5	3.4	3.5	3.3	3.4	3.4	Compilers & Assemblers
3.3	2.6	3.3	3.0	3.0	2.3	2.7	2.3	2.5	2.1	2.0	2.9	2.6	Applications Programs
3.3	3.4	3.6	2.5	4.0	3.4	3.5	3.4	3.2	3.5	3.5	3.5	3.3	Ease of programming
3.2	3.6	3.5	3.3	3.7	3.3	3.2	3.0	3.1	3.1	3.3	3.4	3.2	Ease of conversion
3.3	3.8	3.4	3.7	3.7	2.9	2.9	2.9	2.9	3.1	3.3	3.2	3.0	Overall satisfaction
													Would you recommend system to another user? (%)
100	100	100	83	100	66	73	78	57	75	75	89	62	Yes
0	0	0	17	0	34	27	22	43	25	25	11	38	No

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User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model Survey Item												
	Burroughs B 3800	Burroughs B 4800	Burroughs B 6800	Burroughs B 7800	Burroughs (other models)	Control Data Cyber 170	Control Data Omega 480	Control Data 3000 Series	Control Data 6000, 7000	Control Data (other model)	DEC DECsystem-10	DEC DECsystem-20
No. of User Responses	14	15	16	4	9	12	7	6	5	3	18	38
No. of Systems Represented	18	31	15	4	11	19	7	9	7	4	28	43
Avg. Life of System (Mos.)	16.2	16.4	28.1	5.5	72.2	18.8	9.0	131.8	87.4	58.0	41.2	20.3
Acquisition Method (%)												
Purchase	29	53	75	25	89	25	43	100	60	67	83	68
Rental	14	0	0	25	0	8	14	0	0	0	0	5
Lease	57	47	25	50	11	58	29	0	40	33	17	13
Principal Applications (%)												
Accounting	50	40	69	100	22	33	86	17	40	33	39	50
Construction	0	0	0	0	0	0	0	0	0	33	0	0
Education	14	0	40	25	22	50	0	17	40	100	39	32
Government	7	7	13	25	11	17	0	33	20	33	33	13
Manufacturing	14	27	25	25	0	17	43	33	0	0	6	5
Payroll/Personnel	50	27	69	100	33	33	29	33	20	33	39	26
Service Bureaus	7	20	0	25	22	25	29	33	0	0	33	29
Transportation	0	7	6	0	0	0	0	17	0	0	0	3
Word Processing	0	0	13	25	0	8	0	17	0	0	17	21
Banking/Finance	43	27	0	0	44	0	14	0	0	0	11	21
Distributed Processing	14	13	6	50	0	0	0	0	20	33	17	0
Engineering/Scientific	0	7	0	0	0	67	0	33	60	67	33	29
Insurance	0	7	0	25	0	0	14	17	0	0	6	13
Medical/Health Care	7	13	13	25	0	0	14	17	0	0	22	5
Retail	14	0	13	0	0	0	0	0	0	0	0	0
Transaction Processing	36	20	13	25	0	0	0	0	0	0	11	18
Utilities-Power	0	0	0	0	0	0	0	0	0	0	0	5
Other	0	27	31	0	0	8	29	0	0	0	22	18
Source of Applications Prog. (%)												
In-house personnel	93	100	94	100	78	92	100	100	60	100	100	97
"Ready-made" programs from manufacturer	54	27	44	50	56	50	0	17	0	33	56	45
Contract Programming	36	7	25	0	11	17	14	50	0	0	22	37
Manufacturer's Personnel	0	7	6	25	0	8	0	17	0	0	6	11
Proprietary Software Packages	64	60	31	50	56	92	57	0	40	0	44	58
Other	0	0	0	0	0	8	0	0	0	0	6	3
Hardware Configuration												
No. of CPUs	18	32	24	7	12	19	7	9	7	5	38	7
No. of Workstations (avg.)	30.2	0	41.1	133.5	17.7	46.5	15.3	7.0	177.4	19.5	37.5	38.6
Software Configuration												
DBMS (%)	50	40	94	75	0	50	57	33	20	67	61	37
Datacomm monitors (%)	71	7	69	50	56	50	100	0	0	33	33	13
Primary Programming Language												
APL	0	0	13	0	0	33	14	67	0	0	0	11
BASIC	0	0	0	0	0	17	0	50	0	0	17	16
COBOL	86	100	88	75	78	25	86	0	0	33	72	76
FORTRAN	0	7	13	25	22	83	14	50	60	33	78	58
RPG	0	0	0	0	0	17	14	0	0	0	0	3
Other	14	7	19	25	44	25	0	17	0	67	61	37
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	57	27	38	25	11	42	29	0	20	33	33	34
Proprietary Software	50	40	25	25	22	58	71	0	20	33	39	58
Expanded Datacomm	79	73	50	75	11	58	57	17	40	100	62	55
Distributed Processing	14	13	13	25	0	25	0	0	20	33	22	13
Integrated Word Processing	0	7	0	50	0	17	14	0	0	0	28	24
Other	0	13	19	0	0	0	14	17	20	0	39	3
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	21	20	6	25	22	25	14	17	60	0	6	3
Yes, different manufacturer	0	0	6	0	22	8	29	33	0	0	6	0
No	79	67	88	50	44	67	43	50	40	100	78	92

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User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Burroughs B 3800	Burroughs B 4800	Burroughs B 6800	Burroughs B 7800	Burroughs (other models)	Control Data Cyber 170	Control Data Omega 480	Control Data 3000 Series	Control Data 6000, 7000	Control Data (other model)	DEC DECsystem-10	DEC DECsystem-20	Manufacturer and Model	Survey Item
7	13	13	0	11	0	0	17	0	0	11	29	Significant Problems (%)	System proposed by vendor was too small
71	47	6	50	0	0	0	0	0	0	17	18		Delivery and/or installation of equipment was late
0	27	13	25	0	8	0	0	0	0	11	16		Delivery of required software was late
0	0	6	25	11	8	0	0	0	0	0	11		System costs exceeded expected total
7	33	13	25	22	8	29	17	0	0	11	11		Vendor did not provide all promised software or support
0	0	0	25	0	8	0	0	0	0	0	11		Program/data compatibility not what vendor promised
0	7	6	25	0	8	14	0	0	33	0	5		Terminals/peripherals compatibility not what vendor promised
7	13	0	0	22	8	0	0	0	0	17	18		Vendor enhancements/changes to hardware/software hard to keep up with
7	0	0	0	33	0	0	0	0	0	11	5		Equipment excessively noisy
7	7	6	0	22	0	0	50	0	0	22	5		Power/Cooling requirements excessive
7	33	56	0	0	25	29	17	20	0	28	8		Other
57	33	63	75	22	58	29	67	0	67	78	63		Significant Advantages (%)
50	60	25	25	11	42	29	33	40	67	50	71		Users happy with response time
0	0	25	0	0	17	14	17	0	33	0	5	System easy to expand/reconfigure	
64	47	44	75	11	58	71	17	40	33	44	47	System costs less than expected	
43	40	47	75	0	50	71	0	40	0	33	32	Programs/data compatible, as vendor promised	
0	33	19	0	0	17	71	0	0	0	17	21	Terminals/peripherals compatible, as vendor promised	
29	27	50	25	0	8	0	0	0	33	50	55	System is power/energy efficient	
14	7	69	75	0	8	0	0	0	67	39	16	Productivity aids help us keep programming costs down	
0	0	0	0	0	25	14	17	0	0	17	13	Database language effective	
0	0	6	0	0	0	0	17	0	0	11	3	Delivery and/or installation of equipment was ahead of schedule	
0	7	0	0	0	0	0	0	20	0	22	0	Delivery and/or installation of software was ahead of schedule	
0	0	0	0	0	0	0	0	0	0	0	0	Other	
3.8	3.7	3.5	3.0	2.8	3.4	3.5	3.8	3.8	4.0	3.7	3.8	System Ratings (4.0-0.0)	
3.5	3.3	3.3	3.0	3.4	3.5	2.7	3.3	3.6	4.0	3.3	3.3	Ease of operation	
2.3	2.2	2.7	2.5	2.3	3.1	2.5	2.5	2.6	2.3	2.9	2.9	Reliability of Mainframe	
2.6	2.4	2.9	2.5	2.8	3.6	3.5	3.5	3.2	3.0	3.1	2.2	Reliability of Peripherals	
2.4	2.1	2.6	2.0	2.8	3.3	2.5	3.2	3.2	2.7	2.6	2.9	Maintenance service:	
												Responsiveness	
												Effectiveness	
2.3	2.1	2.4	2.3	1.8	2.9	2.2	3.2	2.7	2.5	2.6	2.8	Technical support:	
2.5	2.3	2.7	2.3	1.8	2.8	2.3	2.8	2.3	1.5	2.0	2.5	Trouble-shooting	
2.3	1.9	2.2	2.0	1.8	2.5	2.2	2.5	2.0	2.5	2.6	2.6	Education	
												Documentation	
3.9	3.6	3.6	3.3	3.0	3.1	3.0	3.0	3.3	3.3	3.4	3.6	Manufacturer's software:	
3.6	3.3	3.5	3.3	2.8	3.2	3.0	3.0	3.3	3.3	3.2	3.3	Operating system	
2.9	2.5	3.0	2.8	2.3	2.4	3.0	2.2	2.5	2.0	2.9	2.6	Compilers & Assemblers	
												Applications Programs	
3.4	3.4	3.4	3.8	2.9	2.8	3.2	3.0	3.3	3.0	3.8	3.6	Ease of programming	
3.7	3.2	3.1	2.3	2.3	2.6	3.2	2.8	3.5	0.0	3.2	3.1	Ease of conversion	
3.1	2.8	3.3	3.0	2.3	3.0	2.8	3.0	3.4	3.3	3.3	3.3	Overall satisfaction	
93	79	81	75	50	91	67	67	80	100	94	89	Would you recommend system to another user? (%)	
7	21	19	25	50	9	33	33	20	0	6	11	Yes	
												No	

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User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model												
	Honeywell Level 64	Honeywell Level 66	Honeywell Series 200	Honeywell 2000	Honeywell 6000	Honeywell, Xerox Sigma Series	Honeywell (other models)	IBM 360/30	IBM 360/40	IBM 360/50	IBM 360/65	IBM 360 (other models)
Survey Item												
No. of User Responses	27	32	17	27	6	7	12	38	59	22	13	5
No. of Systems Represented	27	36	18	28	16	7	14	38	61	23	17	6
Avg. Life of System (Mos.)	31.3	34.8	84.7	65.5	69.5	80.3	59.7	73.3	57.5	44.6	52.0	121.4
Acquisition Method (%)												
Purchase	33	53	82	63	83	57	83	61	56	73	62	100
Rental	11	13	0	7	0	14	8	5	7	0	8	0
Lease	56	28	18	30	17	29	8	34	42	27	31	0
Principal Applications (%)												
Accounting	78	66	59	85	33	29	58	63	61	55	69	80
Construction	4	3	0	4	0	0	0	11	3	0	0	0
Education	7	19	18	4	17	43	25	13	15	9	15	80
Government	7	25	0	8	66	14	0	11	15	9	15	40
Manufacturing	41	25	18	44	0	14	17	32	25	18	15	0
Payroll/Personnel	70	63	41	59	17	43	50	47	49	55	62	60
Service Bureaus	7	28	12	4	0	14	8	26	19	55	46	20
Transportation	19	3	0	4	0	0	0	3	0	9	15	0
Word Processing	0	9	0	4	0	14	0	0	2	5	8	20
Banking/Finance	4	13	12	0	17	0	0	13	22	5	23	0
Distributed Processing	11	16	0	8	0	14	0	5	3	0	8	0
Engineering/Scientific	0	16	0	4	0	29	33	3	5	14	0	100
Insurance	11	9	24	8	0	0	0	5	8	9	8	0
Medical/Health Care	19	6	24	0	17	14	25	8	7	5	0	20
Retail	11	0	12	4	0	0	0	11	5	0	15	0
Transaction Processing	15	25	6	8	0	14	8	13	14	0	31	10
Utilities-Power	0	6	0	0	0	14	0	3	2	0	0	0
Other	0	22	12	19	17	0	0	21	7	14	8	0
Source of Applications Prog. (%)												
In-house personnel	100	100	88	100	100	100	67	97	97	100	100	100
"Ready-made" programs from manufacturer	11	34	6	15	0	43	42	13	20	23	31	40
Contract Programming	11	28	0	19	17	14	25	21	29	18	46	20
Manufacturer's Personnel	4	25	12	15	0	14	0	0	3	0	15	0
Proprietary Software Packages	4	59	29	11	50	29	25	13	37	55	77	40
Other	0	3	0	0	0	0	0	0	7	0	0	0
Hardware Configuration												
No. of CPUs	27	43	18	28	16	8	17	38	61	23	17	6
No. of Workstations (avg.)	10.9	43.2	2.3	2.4	27.3	53.9	18.0	0.6	4.9	52.1	29.0	26.0
Software Configuration												
DBMS (%)	11	81	0	7	33	57	17	3	8	14	23	20
Datacomm monitors (%)	44	84	12	22	67	57	8	0	27	27	46	40
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	0	0
BASIC	0	9	0	0	0	29	0	0	3	0	0	0
COBOL	93	97	82	85	100	71	42	74	71	86	77	40
FORTRAN	4	28	0	0	17	57	25	3	5	0	8	40
RPG	0	0	12	7	0	0	0	3	20	9	0	0
Other	4	0	6	19	67	14	33	5	31	41	69	100
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	33	41	6	11	17	14	8	26	31	27	0	20
Proprietary Software	11	38	6	4	0	14	25	21	32	41	23	40
Expanded Datacomm	44	75	6	26	50	29	33	16	39	36	38	40
Distributed Processing	15	19	0	4	33	14	0	11	10	14	46	20
Integrated Word Processing	0	25	0	4	0	0	0	3	5	5	23	20
Other	4	0	6	4	0	0	0	11	0	5	8	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	4	6	12	15	0	14	17	42	41	45	0	20
Yes, different manufacturer	11	0	47	30	17	0	42	13	8	9	46	60
No	85	84	41	48	67	86	33	42	44	41	8	20

Table continues on facing page.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Honeywell Level 64	Honeywell Level 66	Honeywell Series 200	Honeywell 2000	Honeywell 6000	Honeywell, Xerox Sigma Series	Honeywell (other models)	IBM 360/370	IBM 360/40	IBM 360/50	IBM 360/65	IBM 360 (other models)	Manufacturer and Model
												Survey Item
19	28	0	22	17	14	33	11	2	9	46	0	Significant Problems (%)
22	13	12	4	0	0	17	3	5	0	8	0	System proposed by vendor was too small
11	6	0	4	0	0	0	0	0	5	15	0	Delivery and/or installation of equipment was late
15	13	0	8	0	0	8	11	12	9	0	0	Delivery of required software was late
22	9	0	15	17	43	17	0	5	0	8	0	System costs exceeded expected total
7	9	6	0	0	0	0	0	0	0	0	0	Vendor did not provide all promised software or support
15	3	18	4	0	0	8	0	0	0	8	0	Program/data compatibility not what vendor promised
22	22	0	4	0	0	17	0	0	0	8	0	Terminals/peripherals compatibility not what vendor promised
15	6	6	11	17	14	25	13	14	9	8	0	Vendor enhancements/changes to hardware/software hard to keep up with
15	9	24	19	0	14	8	26	20	41	54	20	Equipment excessively noisy
0	9	6	19	0	14	33	21	10	14	23	20	Power/Cooling requirements excessive
												Other
37	53	24	30	33	57	25	26	24	18	46	20	Significant Advantages (%)
70	75	6	22	83	29	17	18	19	32	15	0	Users happy with response time
7	0	6	15	0	0	0	24	10	14	31	0	System easy to expand/reconfigure
48	38	18	33	33	14	8	21	22	23	38	0	System costs less than expected
7	28	0	0	17	29	17	5	7	23	31	0	Programs/data compatible, as vendor promised
19	9	18	0	17	0	0	0	0	5	0	0	Terminals/peripherals compatible, as vendor promised
22	34	6	8	0	29	17	3	3	18	23	20	System is power/energy efficient
11	44	0	0	17	14	0	0	3	5	8	0	Productivity aids help us keep programming costs down
11	3	6	4	0	14	0	5	3	5	8	20	Database language effective
4	0	0	4	0	0	0	0	3	5	0	0	Delivery and/or installation of equipment was ahead of schedule
4	6	6	15	0	29	17	0	10	0	0	0	Delivery and/or installation of software was ahead of schedule
												Other
3.1	3.3	3.2	3.1	3.2	3.9	3.1	2.9	3.0	3.1	2.7	3.2	System Ratings (4.0-0.0)
3.2	3.6	3.2	3.2	2.5	3.1	2.5	3.3	3.2	2.8	2.5	2.8	Ease of operation
2.8	3.0	2.9	2.8	2.5	2.1	2.6	2.8	2.7	2.8	2.6	2.6	Reliability of Mainframe
2.9	3.0	3.2	2.9	2.7	2.8	2.7	3.0	3.0	2.9	2.9	2.6	Reliability of Peripherals
2.5	2.9	3.1	2.9	2.3	2.3	2.4	3.0	2.8	2.8	2.5	2.6	Maintenance service:
												Responsiveness
												Effectiveness
2.6	2.5	2.9	2.4	2.0	3.0	2.4	2.7	2.6	2.7	2.2	2.2	Technical support:
2.3	2.4	2.1	2.3	2.5	2.9	2.7	2.8	2.5	2.5	2.2	2.8	Trouble-shooting
2.0	2.5	2.3	2.3	2.5	2.9	3.1	2.8	2.6	2.9	2.6	2.2	Education
												Documentation
3.2	3.3	2.7	3.8	2.5	3.4	3.3	2.8	2.9	3.1	2.6	2.8	Manufacturer's software:
3.2	3.2	2.6	3.1	2.8	3.4	3.0	2.9	3.1	3.0	2.8	3.2	Operating system
2.8	2.5	2.6	2.3	2.4	2.7	2.9	2.7	2.9	2.6	2.6	2.3	Compilers & Assemblers
												Applications Programs
3.1	3.0	3.1	2.9	2.8	3.4	3.1	2.9	3.0	2.6	2.8	3.0	Ease of programming
2.7	2.9	2.5	2.7	2.3	2.7	2.2	2.9	2.9	2.8	2.5	2.5	Ease of conversion
2.9	3.1	2.6	2.8	2.5	3.4	3.0	2.8	3.0	2.9	2.7	2.6	Overall satisfaction
70	80	41	52	67	57	45	61	64	68	54	40	Would you recommend system to another user? (%)
30	20	59	48	33	43	55	39	36	32	46	60	Yes
												No

Table begins on facing page.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model												
	IBM 370/115	IBM 370/125	IBM 370/135	IBM 370/138	IBM 370/145	IBM 370/148	IBM 370/155	IBM 370/158	IBM 370/165	IBM 370/168	IBM 3031	IBM 3032
Survey Item												
No. of User Responses	36	50	61	125	66	117	20	188	8	61	83	39
No. of Systems Represented	36	50	61	182	235	222	45	213	12	250	97	56
Avg. Life of System (Mos.)	44.1	48.1	54.9	24.2	32.8	22.3	44.2	35.0	54.8	34.1	12.0	12.4
Acquisition Method (%)												
Purchase	33	44	49	31	54	28	45	36	63	30	25	36
Rental	42	16	7	18	3	11	5	10	0	3	10	5
Lease	28	42	42	51	44	57	50	58	37	64	65	56
Principal Applications (%)												
Accounting	80	76	75	74	56	66	60	59	63	59	70	67
Construction	6	8	0	2	3	4	0	4	0	3	7	5
Education	3	8	4	6	8	13	5	6	0	7	6	10
Government	8	6	8	2	11	8	20	16	25	18	4	15
Manufacturing	42	44	31	37	27	26	20	26	13	23	17	31
Payroll/Personnel	69	66	59	60	48	57	50	55	63	54	55	59
Service Bureaus	8	4	4	6	20	13	10	12	13	13	11	15
Transportation	6	4	2	8	8	6	0	10	25	5	11	8
Word Processing	0	2	0	1	5	9	0	11	0	10	5	8
Banking/Finance	17	14	15	13	18	28	20	19	25	20	23	23
Distributed Processing	3	4	5	11	9	7	0	14	0	11	15	8
Engineering/Scientific	0	6	5	8	8	13	5	14	0	21	17	11
Insurance	19	6	7	9	15	16	5	15	13	20	13	6
Medical/Health Care	8	12	7	7	11	11	10	11	0	5	7	6
Retail	8	2	4	9	9	7	5	4	13	11	5	0
Transaction Processing	8	10	18	12	15	15	20	26	50	32	20	28
Utilities-Power	3	6	2	1	2	11	0	4	0	2	8	8
Other	17	4	10	12	9	98	5	13	0	3	11	0
Source of Applications Prog. (%)												
In-house personnel	94	98	49	96	98	38	95	97	100	98	98	100
"Ready-made" programs from manufacturer	28	30	26	31	32	28	25	36	25	43	41	44
Contract Programming	25	22	31	22	23	5	25	41	38	41	48	46
Manufacturer's Personnel	0	6	2	4	3	69	5	11	0	18	6	8
Proprietary Software Packages	25	40	49	58	71	2	65	55	75	66	72	74
Other	3	0	0	1	0	0	0	2	0	0	0	0
Hardware Configuration												
No. of CPUs	36	49	67	122	71	222	45	248	12	250	97	57
No. of Workstations (avg.)	54.4	11.8	11.3	24.9	32.8	21.6	20.8	80.3	114.6	49.5	70.1	126.6
Software Configuration												
DBMS (%)	27.7	38	32.6	100	44	48	60	60	75	66	63	59
Datacomm monitors (%)	67	70	59	50	27	81	75	78	63	57	83	82
Primary Programming Language												
APL	0	0	0	0	0	3	0	2	13	3	2	3
BASIC	0	0	0	1	2	20	0	1	0	2	0	0
COBOL	86	90	83	89	89	88	85	84	75	84	94	87
FORTRAN	0	6	0	3	5	2	15	11	0	11	10	15
RPG	53	8	18	16	2	5	0	3	0	0	1	0
Other	31	32	28	30	51	15	50	0	63	57	34	41
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	42	58	41	58	45	44	40	66	50	44	59	69
Proprietary Software	19	46	37	52	62	59	65	59	25	54	65	62
Expanded Datacomm	58	40	39	45	51	53	55	64	50	52	58	59
Distributed Processing	17	6	21	18	15	19	15	29	50	25	29	28
Integrated Word Processing	8	2	11	8	15	13	10	10	0	18	18	15
Other	8	4	3	8	8	5	0	5	0	0	1	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	78	46	44	46	44	21	30	22	25	13	5	18
Yes, different manufacturer	3	0	2	0	0	3	5	2	0	2	0	0
No	17	46	46	51	54	74	65	71	63	80	92	77

Table continues on facing page.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

IBM 370/115	IBM 370/125	IBM 370/135	IBM 370/138	IBM 370/145	IBM 370/148	IBM 370/155	IBM 370/158	IBM 370/165	IBM 370/168	IBM 3031	IBM 3032	Manufacturer and Model	Survey Item	
3	4	8	5	5	7	5	7	0	7	7	3	Significant Problems (%)	System proposed by vendor was too small	
11	12	7	4	6	9	5	7	0	8	5	8		Delivery and/or installation of equipment was late	
8	2	3	2	2	6	0	5	13	2	4	3		Delivery of required software was late	
8	8	8	10	3	9	5	5	25	8	12	8		System costs exceeded expected total	
14	6	5	9	6	9	0	4	13	3	8	10		Vendor did not provide all promised software or support	
8	2	2	2	2	0	0	3	25	3	4	8		Program/data compatibility not what vendor promised	
3	0	7	3	5	2	0	2	13	0	5	3		Terminals/peripherals compatibility not what vendor promised	
8	12	15	20	12	21	5	21	13	30	24	15		Vendor enhancements/changes to hardware/software hard to keep up with	
0	0	3	2	0	0	0	1	0	2	1	0		Equipment excessively noisy	
0	4	4	3	9	3	15	6	13	20	4	15		Power/Cooling requirements excessive	
3	8	13	4	11	3	20	5	0	7	11	8		Other	
39	44	36	40	29	47	60	43	38	52	57	56		Significant Advantages (%)	Users happy with response time
36	34	28	29	21	36	40	31	13	26	40	33		System easy to expand/reconfigure	
6	6	5	2	6	4	5	3	13	5	4	5		System costs less than expected	
50	44	54	52	30	50	35	44	25	39	65	56	Programs/data compatible, as vendor promised		
17	22	34	36	26	43	25	37	13	39	57	53	Terminals/peripherals compatible, as vendor promised		
11	6	7	3	3	4	10	5	13	5	11	8	System is power/energy efficient		
19	34	16	17	18	32	20	23	13	11	29	33	Productivity aids help us keep programming costs down		
8	12	13	10	6	15	5	13	0	28	13	8	Database language effective		
22	8	3	13	8	9	0	10	13	11	23	21	Delivery and/or installation of equipment was ahead of schedule		
11	10	3	4	3	3	5	7	0	7	5	5	Delivery and/or installation of software was ahead of schedule		
3	8	2	0	5	2	5	3	0	5	2	3	Other		
3.3	3.3	2.9	3.1	3.1	3.2	3.2	3.2	3.3	3.0	3.2	3.3	System Ratings (4.0-0.0)	Ease of operation	
3.6	3.7	3.4	3.7	3.4	3.5	3.1	3.4	3.0	3.2	3.4	3.3	Reliability of Mainframe		
3.2	3.4	3.1	3.2	3.1	3.1	2.8	3.1	3.0	3.0	3.2	3.1	Reliability of Peripherals		
3.2	3.3	3.2	3.2	3.2	3.1	2.9	3.2	2.0	3.1	3.1	3.5	Maintenance service:	Responsiveness	
3.4	3.4	3.0	3.2	3.2	3.0	2.5	3.1	3.1	3.0	3.0	3.2	Effectiveness		
2.8	3.0	2.8	2.7	3.0	2.8	2.5	2.9	3.0	2.9	2.8	3.1	Technical support:	Trouble-shooting	
2.9	3.0	2.7	2.7	2.8	2.8	2.7	2.8	2.9	2.9	2.7	2.9	Education		
2.8	3.0	2.6	2.5	2.7	2.7	2.8	2.7	2.9	2.9	2.6	3.0	Documentation		
3.3	3.2	3.0	3.0	3.0	3.0	3.1	3.1	2.9	3.1	3.0	3.3	Manufacturer's software:	Operating system	
3.4	3.2	3.2	3.1	3.2	3.2	3.2	3.2	2.9	3.2	3.1	3.4	Compilers & Assemblers		
3.0	3.1	2.7	2.7	2.9	2.9	2.5	2.9	2.7	2.8	2.8	2.9	Applications Programs		
3.1	3.1	2.9	2.9	3.0	3.0	2.8	3.0	2.9	2.9	2.9	3.0	Ease of programming		
3.0	3.1	2.8	2.9	2.9	2.9	2.7	2.9	2.8	2.8	2.9	3.1	Ease of conversion		
3.2	3.2	2.9	2.9	3.1	3.1	3.0	3.1	3.0	3.1	3.0	3.1	Overall satisfaction		
86	94	77	90	85	85	75	93	75	95	94	80	Would you recommend system to another user? (%)	Yes	
14	6	18	9	14	15	25	7	25	5	6	20	No		

Table begins on facing page.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model												
	IBM 3033	IBM 4331	IBM 4341	ICL System 10	ICL 1900 & 2900 Series	Magnusom M-80/3	NASCO (Ite) AS/3 & AS/3-5	NASCO (Ite) AS/5 & AS/5-3	NASCO (Ite) AS/5-703	NASCO AS/6	NCR Century 101 thru 200	NCR Century 201 thru 300
No. of User Responses	91	46	3	14	5	3	9	15	4	9	47	12
No. of Systems Represented	110	59	3	37	5	5	9	29	4	8	47	15
Avg. Life of System (Mos.)	13.3	5.0	4.0	72.4	16.1	6.7	11.6	17.7	17.5	16.7	55.8	87.0
Acquisition Method (%)												
Purchase	30	22	34	93	40	67	67	60	25	33	53	83
Rental	7	15	34	0	20	0	0	0	25	0	19	25
Lease	62	63	34	7.1	40	33	34	40	25	67	30	8
Principal Applications (%)												
Accounting	57	65	34	86	80	33	67	67	75	78	79	50
Construction	1	2	0	0	0	0	0	0	0	11	2	0
Education	3	11	0	0	20	0	11	0	0	22	6	8
Government	11	2	0	0	0	0	0	13	25	11	2	8
Manufacturing	32	35	34	36	20	0	34	40	25	22	26	0
Payroll/Personnel	52	43	34	43	0	33	67	67	25	67	60	3
Service Bureaus	12	11	0	7	40	33	34	33	25	33	15	8
Transportation	11	2	0	0	20	0	0	6	0	0	4	0
Word Processing	8	2	0	0	0	0	11	0	0	22	0	0
Banking/Finance	27	11	0	7	0	67	0	27	0	0	7	6
Distributed Processing	19	2	34	7	0	0	11	6	0	11	4	0
Engineering/Scientific	21	9	34	0	0	0	11	6	0	22	0	0
Insurance	21	4	0	0	20	0	11	6	0	11	2	0
Medical/Health Care	7	7	0	0	0	0	34	6	25	22	7	8
Retail	8	11	0	14	0	0	11	0	0	11	7	0
Transaction Processing	24	20	0	21	0	0	11	20	0	22	7	0
Utilities-Power	5	2	0	7	0	0	11	0	25	11	7	8
Other	15	20	34	7	0	0	100	0	0	11	17	0
Source of Applications Prog. (%)												
In-house personnel	67	96	100	50	80	100	100	100	75	100	81	83
"Ready-made" programs from manufacturer	44	22	0	50	0	0	11	47	25	67	54	92
Contract Programming	43	13	0	50	40	33	67	7	25	33	26	3
Manufacturer's Personnel	9	2	0	7	40	0	0	0	0	0	4	3
Proprietary Software Packages	69	22	67	21	0	67	44	67	50	89	9	3
Other	0	0	0	0	0	0	0	0	0	0	0	0
Hardware Configuration												
No. of CPUs	128	59	100	37	5	5	80	20	6	9	47	15
No. of Workstations (avg.)	179.2	9.0	27.0	3.1	14.0	4.6	57.3	2.6	4.2	134.0	1.28	21.4
Software Configuration												
DBMS (%)	85	5	100	7	0	0	56	5	50	78	0	25
Datacomm monitors (%)	81	78	67	0	20	100	78	60	75	78	11	17
Primary Programming Language												
APL	0	4	0	0	0	0	0	0	0	11	0	0
BASIC	0	0	0	0	0	0	0	0	0	0	0	0
COBOL	6	77	67	0	80	100	100	93	75	56	51	17
FORTRAN	86	4	33	0	0	0	11	0	0	22	2	0
RPG	0	23	0	14	20	0	0	0	0	0	4	0
Other	58	27	33	100	20	33	11	40	0	67	74	58
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	54	48	67	14	0	0	22	13	25	56	17	67
Proprietary Software	57	39	100	21	20	100	89	60	75	78	15	42
Expanded Datacomm	77	46	67	43	20	33	67	60	75	44	32	42
Distributed Processing	40	28	67	0	0	0	34	13	0	11	11	17
Integrated Word Processing	19	7	33	7	0	0	22	13	0	22	0	0
Other	0	7	0	7	20	0	0	6	0	11	6	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	1	11	0	0	0	0	0	0	0	0	15	58
Yes, different manufacturer	0	0	0	36	40	0	0	6	0	11	21	9
No	92	83	100	64	40	100	100	93	75	78	54	25

Table continues on facing page.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

IBM 3033	IBM 4331	IBM 4341	ICL System 10	ICL 1900 & 2900 Series	Magnuson M-80/3	NASCO (IteI) AS/3 & AS/3-5	NASCO (IteI) AS/5 & AS/5-3	NASCO (IteI) AS/5-703	NASCO AS/6	NCR Century 101 thru 200	NCR Century 201 thru 300	Manufacturer and Model	Survey Item
2	11	0	14	20	0	0	0	0	0	9	8	Significant Problems (%) System proposed by vendor was too small Delivery and/or installation of equipment was late Delivery of required software was late System costs exceeded expected total Vendor did not provide all 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 excessively noisy Power/Cooling requirements excessive Other	
7	24	67	0	0	0	11	13	0	0	5	17		
2	20	33	14	20	0	0	0	0	0	2	8		
9	17	0	7	20	0	11	0	0	0	2	0		
4	20	0	29	40	0	0	20	25	22	13	9		
1	13	0	7	20	0	0	0	0	0	2	0		
1	9	0	0	20	0	0	6	0	0	0	0		
20	28	33	14	0	0	0	0	25	0	9	0		
1	0	0	7	20	0	0	0	0	0	11	0		
7	2	0	7	0	0	0	6	0	0	6	9		
7	11	33	14	40	0	11	13	0	11	13	9		
56	43	67	57	60	33	67	47	50	78	48	67		Significant Advantages (%) Users happy with response time System easy to expand/reconfigure System costs less than expected Programs/data compatible, as vendor promised Terminals/peripherals compatible, as vendor promised System is power/energy efficient Productivity aids help us keep programming costs down Database language effective Delivery and/or installation of equipment was ahead of schedule Delivery and/or installation of software was ahead of schedule Other
37	30	67	57	40	67	67	53	50	22	51	67		
3	4	0	7	0	33	11	6	25	0	2	9		
52	65	33	14	40	100	89	6	100	89	45	42		
57	43	33	0	0	67	78	74	75	89	15	33		
15	65	33	14	20	100	67	53	75	44	11	0		
20	35	33	7	20	33	33	0	0	0	4	0		
22	11	0	7	0	0	22	0	0	0	2	9		
23	28	0	14	0	33	67	33	75	44	11	0		
5	13	0	0	0	0	22	0	0	0	2	0		
2	2	33	7	20	0	0	0	0	0	2	0		
2.5	3.2	3.7	2.4	2.8	4.0	3.8	3.6	3.5	3.3	3.1	3.1	System Ratings (4.0-0.0) Ease of operation 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	
3.2	3.4	3.3	3.4	2.8	3.3	3.3	2.9	3.3	3.8	3.7	3.0		
3.2	3.1	3.3	2.6	2.6	3.0	3.1	2.8	2.3	2.6	3.1	2.8		
3.3	3.3	3.3	2.6	2.0	4.0	3.4	3.1	3.3	3.2	2.9	2.8		
3.1	3.2	3.0	2.8	2.0	3.7	3.3	2.8	3.3	2.9	3.0	2.6		
3.0	2.9	3.0	2.5	2.6	3.7	3.1	2.6	3.3	2.7	2.4	1.9		
2.9	2.8	2.3	2.5	2.0	3.7	2.8	2.6	3.0	2.5	2.7	2.3		
2.9	2.6	2.7	2.4	2.0	3.7	2.9	2.9	2.8	2.4	2.5	2.7		
2.3	3.0	3.7	2.6	3.2	3.5	3.3	3.0	3.7	3.0	3.0	3.3		
3.2	3.3	3.7	2.1	2.6	3.5	3.4	3.2	3.7	2.9	3.0	2.8		
2.8	3.1	2.5	2.6	2.0	3.5	3.5	3.1	3.5	2.9	2.6	2.8		
3.0	3.1	3.0	2.4	3.0	3.5	3.0	3.2	3.7	3.0	2.9	2.8		
3.1	3.3	3.5	2.0	2.3	3.5	3.6	3.3	3.5	3.2	3.0	2.8		
3.2	3.1	3.0	2.7	2.4	3.5	3.3	2.9	3.5	3.0	2.9	2.8		
100	91	100	64	60	100	78	80	75	89	68	83	Would you recommend system to another user? (%) Yes No	
—	4	0	36	40	0	12	20	25	11	30	17		

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User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

Manufacturer and Model Survey Item												
	NCR 8400 Series	NCR 8500 Series	NCR (other models)	Univac 90/30	Univac 90/60 & 90/70	Univac 90/80	Univac 1106, 1108, 1110	Univac 1100/10/11/12	Univac 1100/20/43	Univac 1100/80/81/82	Univac (other models)	Mainframes (other models)
No. of User Responses	45	39	8	59	8	8	11	13	7	13	11	4
No. of Systems Represented	46	44	10	60	8	10	14	13	8	54	14	4
Avg. Life of System (Mos.)	10.3	24.0	31.0	35.6	26.0	18.6	71.8	18.4	20.8	13.2	73.7	14.0
Acquisition Method (%)												
Purchase	44	38	50	37	38	13	55	23	0	38	36	0
Rental	27	31	25	17	25	0	9	15	14	15	9	25
Lease	29	31	25	49	38	87	36	54	86	46	55	75
Principal Applications (%)												
Accounting	76	64	50	92	75	63	55	69	71	62	63	50
Construction	0	3	0	3	13	0	9	0	0	0	0	0
Education	2	0	0	7	25	13	9	0	14	31	18	0
Government	11	5	13	15	25	25	55	0	14	23	18	0
Manufacturing	18	21	0	47	25	38	27	15	14	38	0	0
Payroll/Personnel	56	64	13	68	50	63	45	62	57	54	73	25
Service Bureaus	13	10	0	12	13	13	9	0	0	15	18	0
Transportation	4	5	0	7	13	0	18	15	0	15	18	0
Word Processing	2	0	0	3	0	0	27	0	0	8	0	0
Banking/Finance	13	28	50	3	0	0	0	15	14	0	18	0
Distributed Processing	9	8	25	12	13	25	18	8	0	15	0	0
Engineering/Scientific	2	0	0	5	25	25	27	38	0	38	0	25
Insurance	4	3	0	7	0	0	18	0	0	0	9	25
Medical/Health Care	4	15	0	5	0	0	9	8	0	15	0	0
Retail	9	23	0	17	0	0	0	8	0	0	18	0
Transaction Processing	7	18	50	2	0	13	27	38	71	31	9	0
Utilities-Power	13	3	13	0	13	25	9	8	0	0	0	0
Other	29	10	25	0	25	13	9	15	14	0	9	50
Source of Applications Prog. (%)												
In-house personnel	78	85	63	100	100	100	100	100	100	100	73	75
"Ready-made" programs from manufacturer	53	56	75	29	38	38	45	46	33	38	27	0
Contract Programming	24	18	0	31	63	38	55	38	33	31	9	25
Manufacturer's Personnel	9	15	38	19	0	25	27	31	39	15	45	0
Proprietary Software Packages	29	36	0	31	38	50	55	62	33	62	36	25
Other	0	0	13	0	0	0	9	0	0	0	9	0
Hardware Configuration												
No. of CPUs	46	44	10	60	8	10	16	15	14	54	14	4
No. of Workstations (avg.)	6.2	22.9	7.5	7.0	9.6	62.0	20.4	33.6	124.4	65.0	81.5	301.7
Software Configuration												
DBMS (%)	9	23	13	0	38	100	91	85	86	91	36	75
Datacomm monitors (%)	24	38	50	0	50	100	64	85	71	85	54	25
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	0	0
BASIC	0	0	1	0	0	0	0	0	0	0	0	0
COBOL	78	67	2	81	100	100	64	100	100	85	54	25
FORTRAN	2	0	0	2	13	25	55	38	29	38	9	25
RPG	0	0	0	54	0	0	0	8	0	0	27	0
Other	47	56	50	8	50	13	9	0	14	8	63	25
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	27	41	38	27	13	13	36	38	43	46	28	0
Proprietary Software	24	49	0	27	38	13	45	46	14	31	18	0
Expanded Datacomm	40	64	75	63	75	38	45	69	71	46	18	25
Distributed Processing	2	13	13	22	13	25	25	23	29	23	0	0
Integrated Word Processing	9	10	13	10	0	13	25	8	0	23	0	0
Other	11	5	0	2	0	0	13	8	0	0	9	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	4	23	25	5	13	0	64	8	29	8	27	0
Yes, different manufacturer	2	0	13	21	0	0	0	0	0	0	0	0
No	89	78	50	92	88	88	36	92	71	92	73	75

Table continues on facing page.

User Ratings of Computer Systems

Table 1. Mainframes & Plug-Compatible Mainframes

NCR 8400 Series	NCR 8500 Series	NCR (other models)	Univac 90/30	Univac 90/60 & 90/70	Univac 90/80	Univac 1106, 1108, 1110	Univac 1100/10/11/12	Univac 1100/20/43	Univac 1100/80/81/82	Univac (other models)	Mainframes (other models)	Manufacturer and Model	Survey Item
7	5	13	22	13	0	25	15	14	0	0	25	Significant Problems (%) System proposed by vendor was too small Delivery and/or installation of equipment was late Delivery of required software was late System costs exceeded expected total Vendor did not provide all 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 excessively noisy Power/Cooling requirements excessive Other	
36	33	13	7	38	13	0	15	0	0	18	0		
18	21	13	5	0	13	9	8	0	8	0	0		
7	5	0	15	13	13	0	0	0	0	0	25		
20	26	25	17	13	13	0	23	29	15	18	0		
9	11	25	7	25	13	0	15	14	15	9	25		
0	3	13	3	13	0	0	0	0	8	9	0		
13	10	0	24	25	13	18	15	29	15	0	0		
4	3	0	2	13	0	9	0	0	0	18	0		
0	0	0	2	25	13	9	15	14	0	27	50		
16	3	0	29	13	13	27	9	0	8	0	0		
51	26	50	46	63	88	55	85	57	54	27	0		Significant Advantages (%) Users happy with response time System easy to expand/reconfigure System costs less than expected Programs/data compatible, as vendor promised Terminals/peripherals compatible, as vendor promised System is power/energy efficient Productivity aids help us keep programming costs down Database language effective Delivery and/or installation of equipment was ahead of schedule Delivery and/or installation of software was ahead of schedule Other
64	72	63	66	50	50	55	54	57	54	36	0		
11	13	38	2	0	13	0	0	0	15	18	0		
71	64	38	39	38	25	27	46	0	38	54	25		
44	41	25	5	13	88	9	38	57	38	0	25		
20	18	50	14	13	25	9	15	14	46	0	0		
22	23	25	20	50	13	27	54	0	31	27	0		
16	13	25	12	13	25	18	46	43	23	0	50		
16	15	13	15	25	13	18	9	43	23	9	0		
4	10	13	5	25	0	18	9	0	15	0	0		
2	0	13	3	0	0	18	0	0	0	9	25		
3.4	3.3	3.3	3.3	3.0	3.5	3.5	3.5	3.1	3.5	2.9	3.3	System Ratings (4.0-0.0) Ease of operation 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 Would you recommend system to another user? (%) Yes No	
3.4	2.9	3.5	3.5	3.3	3.3	3.1	3.5	2.8	3.5	3.3	3.3		
3.1	3.1	3.3	3.0	2.9	2.9	2.8	3.2	2.7	2.8	2.9	3.0		
3.3	2.8	3.3	3.2	3.6	3.3	3.4	3.5	3.7	3.3	3.2	2.8		
3.0	2.8	3.5	2.9	3.0	2.9	3.1	3.2	3.5	2.8	3.5	2.8		
2.7	2.3	2.9	2.4	2.8	3.3	2.6	2.7	3.0	2.5	2.7	2.5		
2.8	2.7	2.6	2.4	2.9	2.5	2.5	2.5	2.8	2.6	2.6	2.3		
2.6	2.3	2.3	2.3	2.4	2.4	2.2	2.6	2.7	2.5	2.3	1.5		
3.1	3.1	3.1	3.1	3.4	3.1	3.3	3.5	3.0	3.2	2.5	2.8		
3.2	2.9	3.0	3.2	3.0	2.7	3.2	3.3	3.3	3.2	3.1	1.3		
2.6	2.7	3.5	2.6	2.8	2.4	2.5	3.2	2.2	2.4	2.8	1.3		
3.3	3.0	3.2	3.1	2.9	3.1	3.0	3.3	2.6	2.8	3.1	3.5		
3.3	3.2	3.4	3.0	2.9	3.1	2.8	2.9	2.2	2.6	3.0	2.8		
3.2	3.2	3.1	2.9	3.1	3.3	3.1	3.3	2.7	3.0	3.4	3.3		
89	82	86	82	63	75	82	92	86	62	44	75		
11	13	13	18	37	25	18	8	14	23	36	0		

Table begins on facing page.

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Survey Item	Manufacturer and Model											
	AM Jacquard J100 & J500	Basic Four Models 400 & 410	Basic Four Models 600 & 610	Basic Four (other models)	BTI (all models)	Burroughs B700 Series	Burroughs B80	Burroughs B800	CHI (all models)	Control Data Cyber 18 & 1700	Data General CS Series	Data General Eclipse C Series
No. of User Responses	4	18	17	10	7	23	10	29	4	3	15	33
No. of Systems Represented	4	18	18	12	15	28	11	48	6	4	17	41
Avg. Life of System (Mos.)	22.3	23.9	20.6	33.2	27.0	42.4	26.5	17.8	51.5	26.0	10.7	21.7
Acquisition Method (%)												
Purchase	100	61	71	80	57	65	70	72	25	67	87	85
Rental	0	0	6	10	0	9	20	10	0	0	0	0
Lease	0	39	22	10	43	26	10	17	75	33	13	15
Principal Applications (%)												
Accounting	75	67	88	70	57	65	70	83	50	0	93	42
Construction	0	5	0	10	29	4	0	7	0	0	0	3
Education	0	0	0	0	0	4	0	0	0	0	0	12
Government	0	0	6	0	0	9	10	3	0	0	7	6
Manufacturing	0	39	29	30	29	30	10	35	50	0	20	9
Payroll/Personnel	25	28	41	70	57	65	30	48	50	0	47	18
Service Bureaus	25	11	0	0	43	0	0	21	0	0	13	6
Transportation	0	0	6	0	14	0	0	3	25	0	0	0
Word Processing	75	11	6	0	14	4	0	0	0	0	0	15
Banking/Finance	0	5	6	20	14	13	10	10	0	33	7	3
Distributed Processing	0	5	12	10	0	4	0	10	0	0	7	3
Engineering/Scientific	0	0	0	0	14	4	0	0	25	0	0	18
Insurance	0	0	6	0	0	0	10	0	0	0	0	15
Medical/Health Care	0	5	0	0	0	4	10	7	0	0	13	15
Retail	0	5	24	40	0	9	0	10	0	0	13	6
Transaction Processing	0	5	29	30	0	9	0	17	25	0	13	30
Utilities-Power	0	0	0	0	0	4	0	7	0	33	7	3
Other	0	33	6	20	0	13	20	14	25	33	13	27
Source of Applications Prog. (%)												
In-house personnel	50	61	59	50	71	35	30	41	75	100	67	79
"Ready-made" programs from manufacturer	50	44	18	10	43	43	60	45	50	33	27	6
Contract Programming	25	44	71	50	57	52	40	48	0	0	40	30
Manufacturer's Personnel	25	0	0	0	0	4	0	10	0	67	7	0
Proprietary Software Packages	25	17	53	30	14	4	20	45	25	0	33	30
Other	0	0	0	0	0	4	0	3	25	0	0	0
Hardware Configuration												
No. of CPUs	4	18	18	12	15	28	11	48	6	4	17	41
No. of Workstations (avg.)	3.5	2.3	4.2	3.5	5.1	0.4	11.0	5.0	17.0	8.0	4.1	12.3
Software Configuration												
DBMS (%)	50	0	12	10	85	0	10	14	25	67	13	82
Datacomm monitors (%)	0	6	6	0	14	4	10	55	25	67	27	36
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	33	0	0
BASIC	100	67	89	80	100	0	0	0	0	0	0	15
COBOL	0	0	0	0	0	43	90	93	0	33	100	64
FORTRAN	0	0	0	0	0	0	0	0	75	67	0	27
RPG	0	0	0	0	0	13	20	20	25	33	0	0
Other	25	0	0	10	0	0	0	7	0	0	0	55
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	50	6	12	10	0	0	20	21	25	33	13	21
Proprietary Software	25	17	29	20	14	22	10	24	0	0	40	15
Expanded Datacomm	75	17	53	10	29	4	30	52	25	33	40	33
Distributed Processing	0	6	6	10	0	0	0	10	0	0	20	6
Integrated Word Processing	0	22	18	30	0	0	10	14	0	0	13	15
Other	25	11	6	40	14	39	0	10	0	33	7	15
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	0	11	18	20	0	13	10	14	0	0	13	9
Yes, different manufacturer	0	11	12	10	29	48	10	14	0	0	13	6
No	100	78	71	70	71	30	80	69	100	100	60	76

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

AM Jacquard J100 & J500	Basic Four Models 400 & 410	Basic Four Models 600 & 610	Basic Four (other models)	BTI (all models)	Burrroughs B700 Series	Burrroughs B80	Burrroughs B800	CHI (all models)	Control Data Cyber 18 & 1700	Data General CS Series	Data General Eclipse C Series	Manufacturer and Model	Survey Item	
25	17	35	20	29	9	20	35	0	0	20	21	Significant Problems (%)	System proposed by vendor was too small	
25	6	6	0	0	9	50	41	0	33	47	12		Delivery and/or installation of equipment was late	
25	17	18	10	29	9	30	45	0	67	20	6		Delivery of required software was late	
25	6	24	30	29	0	10	3	0	3.3	7	6		System costs exceeded expected total	
25	28	24	10	0	48	40	38	0	0	33	9		Vendor did not provide all promised software or support	
0	6	0	0	0	13	10	17	0	0	0	3		Program/data compatibility not what vendor promised	
25	0	6	0	0	4	10	17	0	0	0	6		Terminals/peripherals compatibility not what vendor promised	
0	0	12	0	0	13	20	14	0	0	13	9		Vendor enhancements/changes to hardware software hard to keep up with	
0	6	12	10	14	9	10	10	0	0	13	6		Equipment excessively noisy	
0	11	0	0	0	0	0	7	0	0	20	6		Power/Cooling requirements excessive	
0	22	18	10	14	22	30	10	25	0	27	30		Other	
75	56	59	50	43	17	20	35	50	100	27	36		Significant Advantages (%)	Users happy with response time
75	39	76	80	43	17	50	59	50	0	53	61		System easy to expand/reconfigure	
0	22	6	10	0	0	0	10	50	0	0	6	System costs less than expected		
50	6	29	20	14	4	10	21	75	0	33	15	Programs/data compatible, as vendor promised		
0	11	24	30	71	0	10	17	75	0	0	6	Terminals/peripherals compatible, as vendor promised		
0	22	18	0	57	1	10	17	50	33	13	9	System is power/energy efficient		
50	17	29	10	14	0	20	24	50	0	33	21	Productivity aids help us keep programming costs down		
25	17	18	40	43	0	0	7	50	0	13	24	Database language effective		
25	11	6	20	0	9	10	7	50	0	0	21	Delivery and/or installation of equipment was ahead of schedule		
0	11	6	20	0	9	10	7	50	0	0	15	Delivery and/or installation of software was ahead of schedule		
25	6	6	20	14	17	10	0	0	0	7	12	Other		
3.8	3.5	3.8	3.9	3.4	3.1	3.5	3.1	3.5	3.0	3.1	3.3	System Ratings (4.0-0.0)	Ease of operation	
3.3	3.5	3.4	3.0	3.6	3.1	2.6	2.9	3.8	3.7	3.1	3.6	Reliability of Mainframe		
3.3	3.0	3.9	2.8	3.1	2.5	2.3	2.7	3.3	3.3	2.9	3.3	Reliability of Peripherals		
3.3	3.3	3.5	2.9	3.6	2.5	2.7	2.5	3.3	3.3	2.9	2.9	Maintenance service:		
3.3	3.2	3.2	2.8	3.3	2.7	2.6	2.4	3.3	2.7	2.7	2.9	Responsiveness		
												Effectiveness		
3.0	2.6	2.8	2.3	3.1	1.9	1.9	1.9	2.8	2.0	2.1	2.4	Technical support:		
2.3	2.6	2.7	2.8	2.4	1.9	2.3	2.1	2.8	2.3	2.4	2.3	Trouble-shooting		
2.6	2.4	2.7	3.1	3.0	1.7	2.7	2.1	2.3	4.0	2.6	2.2	Education		
												Documentation		
3.8	3.2	3.3	3.8	2.9	2.7	3.6	3.0	3.0	2.3	2.9	2.9	Manufacturer's software:		
3.8	3.1	3.3	3.0	2.5	2.4	3.2	2.6	3.0	2.3	2.9	3.1	Operating system		
3.0	2.8	2.9	3.3	3.2	2.5	2.4	2.5	2.7	2.7	2.6	2.9	Compilers & Assemblers		
												Applications Programs		
3.5	3.4	3.8	3.7	3.4	2.3	2.5	2.8	2.8	2.3	3.1	3.1	Ease of programming		
2.8	2.6	2.9	3.4	3.0	1.7	2.3	2.3	2.8	1.3	2.8	2.9	Ease of conversion		
3.3	3.2	3.2	3.3	3.3	2.4	2.6	2.5	2.8	3.0	3.0	3.1	Overall satisfaction		
100	72	82	90	71	43	60	58	100	67	79	81	Would you recommend system to another user? (%)		
0	28	18	10	14	52	40	42	0	33	21	19	Yes		
												No		

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model Survey Item												
	Datapoint 5500	Datapoint 6600	Datapoint ARC	DEC Datasystem (all models)	DEC PDP-8	DEC PDP-11/03	DEC PDP-11/04, 05	DEC PDP-11/10 thru 11/23	DEC PDP-11/34	DEC PDP-11/35	DEC PDP-11/40	DEC PDP-11/45
No. of User Responses	16	13	15	17	24	16	9	8	99	8	22	20
No. of Systems Represented	32	17	32	18	32	18	21	9	142	18	24	63
Avg. Life of System (Mos.)	28.3	23.2	17.1	20.3	53.8	18.3	50.0	54.4	24.1	30.0	53.8	53.4
Acquisition Method (%)												
Purchase	31	62	40	71	96	87	100	63	84	100	77	90
Rental	25	0	13	0	0	0	0	0	0	0	0	0
Lease	44	39	40	24	4	13	0	13	14	0	23	10
Principal Applications (%)												
Accounting	63	69	67	82	58	40	33	50	52	63	55	35
Construction	0	15	0	6	8	7	0	0	3	13	0	5
Education	0	0	7	0	25	13	11	13	10	0	23	20
Government	13	15	0	0	0	0	0	0	3	25	9	25
Manufacturing	19	15	13	0	13	7	11	0	14	13	14	5
Payroll/Personnel	19	31	40	29	38	7	22	25	28	38	27	15
Service Bureaus	0	0	13	24	4	13	11	13	13	13	14	15
Transportation	0	15	13	0	4	7	0	0	2	0	5	5
Word Processing	0	8	13	12	25	7	22	0	15	25	14	35
Banking/Finance	0	15	13	0	0	0	0	13	4	0	5	5
Distributed Processing	31	15	53	0	8	7	0	13	8	13	9	10
Engineering/Scientific	0	39	0	0	4	33	11	25	21	0	23	40
Insurance	0	0	13	0	0	0	0	0	1	0	0	0
Medical/Health Care	6	23	0	6	8	13	0	0	10	13	14	5
Retail	13	23	7	6	4	0	0	0	1	0	5	5
Transaction Processing	25	39	40	6	12	0	11	0	10	13	23	15
Utilities-Power	0	0	0	0	0	7	0	0	1	0	9	5
Other	25	39	13	18	17	27	22	13	25	50	9	133
Source of Applications Prog. (%)												
In-house personnel	94	100	100	71	46	80	89	88	73	63	96	100
"Ready-made" programs from manufacturer	13	23	27	18	25	7	22	0	10	25	18	25
Contract Programming	25	31	27	12	38	7	33	13	20	25	14	25
Manufacturer's Personnel	0	0	0	0	4	0	11	0	1	13	0	10
Proprietary Software Packages	0	31	20	53	33	13	33	13	34	38	32	50
Other	0	8	0	6	8	7	11	13	4	0	0	0
Hardware Configuration												
No. of CPUs	32	30	100	18	33	18	35	9	165	20	24	63
No. of Workstations (avg.)	4.3	4.4	3.3	2.2	2.1	1.3	8.2	2.4	5.2	17.0	15.2	4.2
Software Configuration												
DBMS (%)	0	15	0	18	88	13	22	25	22	75	46	35
Datacomm monitors (%)	31	23	27	18	8	0	22	25	12	50	18	15
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	0	0
BASIC	0	0	13	24	21	40	22	13	43	75	64	40
COBOL	6	46	27	0	4	0	0	0	8	13	14	30
FORTRAN	0	0	0	0	17	20	22	38	31	0	23	30
RPG	19	31	7	0	0	0	0	0	0	13	0	0
Other	81	92	87	88	79	40	89	75	52	50	27	35
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	19	46	13	12	8	27	33	13	19	25	23	30
Proprietary Software	0	31	20	29	17	13	33	25	21	50	23	40
Expanded Datacomm	13	39	33	18	13	27	44	13	22	25	41	35
Distributed Processing	13	31	20	0	4	0	0	0	8	0	9	10
Integrated Word Processing	19	8	47	24	13	13	22	0	16	25	5	15
Other	19	15	7	0	17	7	22	0	0	38	9	10
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	25	0	0	18	21	27	22	13	19	25	27	25
Yes, different manufacturer	19	0	7	12	17	7	0	13	8	0	9	10
No	50	100	93	71	13	53	33	50	67	63	64	65

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Datapoint 5500	Datapoint 6600	Datapoint ARC	DEC Datasystem (all models)	DEC PDP-8	DEC PDP-11/03	DEC PDP-11/04, 05	DEC PDP-11/10 thru 11/23	DEC PDP-11/34	DEC PDP-11/35	DEC PDP-11/40	DEC PDP-11/45	Manufacturer and Model	Survey Item
25	23	20	12	8	0	22	13	21	0	23	20	<p>Significant Problems (%)</p> <p>System proposed by vendor was too small</p> <p>Delivery and/or installation of equipment was late</p> <p>Delivery of required software was late</p> <p>System costs exceeded expected total</p> <p>Vendor did not provide all promised software or support</p> <p>Program/data compatibility not what vendor promised</p> <p>Terminals/peripherals compatibility not what vendor promised</p> <p>Vendor enhancements/changes to hardware software hard to keep up with</p> <p>Equipment excessively noisy</p> <p>Power/Cooling requirements excessive</p> <p>Other</p> <p>Significant Advantages (%)</p> <p>Users happy with response time</p> <p>System easy to expand/reconfigure</p> <p>System costs less than expected</p> <p>Programs/data compatible, as vendor promised</p> <p>Terminals/peripherals compatible, as vendor promised</p> <p>System is power/energy efficient</p> <p>Productivity aids help us keep programming costs down</p> <p>Database language effective</p> <p>Delivery and/or installation of equipment was ahead of schedule</p> <p>Delivery and/or installation of software was ahead of schedule</p> <p>Other</p> <p>System Ratings (4.0-0.0)</p> <p>Ease of operation</p> <p>Reliability of Mainframe</p> <p>Reliability of Peripherals</p> <p>Maintenance service:</p> <p> Responsiveness</p> <p> Effectiveness</p> <p>Technical support:</p> <p> Trouble-shooting</p> <p> Education</p> <p> Documentation</p> <p>Manufacturer's software:</p> <p> Operating system</p> <p> Compilers & Assemblers</p> <p> Applications Programs</p> <p>Ease of programming</p> <p>Ease of conversion</p> <p>Overall satisfaction</p> <p>Would you recommend system to another user? (%)</p> <p> Yes</p> <p> No</p>	
13	15	33	24	17	47	22	13	31	13	27	30		
19	31	7	6	13	7	0	0	16	38	14	25		
6	0	7	12	13	0	0	13	12	13	14	5		
19	39	7	18	17	0	0	13	17	25	14	10		
0	0	0	0	4	0	0	13	5	0	9	0		
6	0	0	0	0	0	0	13	2	13	0	0		
13	23	7	0	13	13	11	0	14	13	9	10		
13	0	0	0	9	0	44	0	10	0	9	5		
0	8	0	0	4	0	0	0	2	0	5	5		
25	8	7	6	13	27	0	25	11	25	9	5		
44	69	73	53	38	20	33	50	36	25	32	45		
63	92	100	47	46	28	44	50	50	63	46	60		
6	8	7	12	17	7	0	13	7	0	9	5		
31	39	60	24	13	13	0	13	16	0	14	20		
19	8	53	18	9	13	22	13	21	13	23	25		
19	46	33	24	9	27	0	13	22	0	5	5		
13	39	40	29	4	7	11	13	18	13	23	25		
0	8	13	18	17	0	11	13	12	13	23	10		
0	8	20	24	0	0	11	0	7	13	0	5		
0	0	7	24	4	0	11	0	1	0	5	10		
0	0	0	0	13	7	11	0	4	13	5	0		
3.1	3.5	3.3	3.4	3.4	3.4	2.9	3.1	3.3	3.4	3.2	3.4		
2.9	3.3	3.4	3.8	3.4	3.3	3.4	3.5	3.5	3.5	3.2	3.5		
2.5	3.2	3.1	3.5	2.8	3.1	2.8	3.3	3.1	3.0	3.0	3.0		
2.8	3.2	3.1	3.1	2.9	2.7	3.0	3.0	2.8	3.0	2.9	2.8		
2.3	2.8	2.8	3.3	3.0	2.5	3.0	2.9	2.9	3.2	2.9	3.1		
2.3	2.7	2.7	3.0	2.8	2.3	2.6	2.7	2.4	2.7	2.4	2.6		
2.3	2.5	2.9	2.8	2.5	2.2	2.9	2.4	2.5	3.0	2.0	2.5		
2.3	3.5	2.5	2.6	2.5	2.3	2.6	2.4	2.6	3.3	2.3	2.8		
3.1	3.2	3.4	3.2	3.2	3.1	3.5	2.9	3.3	3.1	3.1	3.3		
3.0	3.3	3.3	3.3	3.1	3.0	3.0	2.9	3.1	3.0	2.4	3.1		
2.7	3.1	2.7	3.1	3.8	1.7	3.2	3.0	2.7	2.4	2.9	3.1		
3.2	3.2	3.5	3.0	2.9	3.3	2.8	2.7	3.3	3.3	3.1	3.3		
3.4	3.1	3.4	2.6	2.5	3.0	2.0	2.7	2.7	3.0	2.8	3.1		
2.8	3.2	3.3	3.2	2.9	3.0	3.0	2.9	3.1	2.6	2.9	3.4		
63	85	100	94	67	80	78	63	81	75	81	95		
38	15	0	6	33	20	22	38	15	25	19	5		

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model												
	Data General Eclipse S Series	Data General Eclipse M/600	Data General Eclipse (other models)	Data General Nova 3	Data General Nova 4	Data General Nova 800	Data General Nova 1200	Data General (other models)	Datapoint 1100	Datapoint 1500	Datapoint 1800	Datapoint 4000
No. of User Responses	24	8	4	33	10	5	9	8	7	10	5	13
No. of Systems Represented	36	12	19	43	10	6	12	9	24	10	5	20
Avg. Life of System (Mos.)	24.2	9.8	19.2	30.3	6.1	62.0	74.3	27.5	37.7	16.1	10.2	21.3
Acquisition Method (%)												
Purchase	83	75	75	78	70	100	100	88	57	70	0	62
Rental	0	0	0	6	0	0	0	0	14	0	0	8
Lease	17	25	25	15	30	0	0	12	29	30	100	31
Principal Applications (%)												
Accounting	42	75	50	69	40	20	0	63	57	60	20	54
Construction	0	0	0	12	10	20	0	13	0	10	0	8
Education	8	0	0	9	10	0	22	13	0	0	0	0
Government	4	13	0	0	0	20	0	0	0	0	0	15
Manufacturing	13	13	25	9	10	0	11	25	0	10	0	15
Payroll/Personnel	20	38	0	42	50	0	0	38	0	30	0	31
Service Bureaus	4	13	25	12	10	0	0	0	14	30	0	8
Transportation	0	0	0	6	0	0	0	0	0	0	0	0
Word Processing	8	25	25	3	30	0	0	38	29	0	20	23
Banking/Finance	4	0	0	12	0	0	0	0	0	10	0	8
Distributed Processing	0	25	50	6	0	0	0	0	29	30	20	23
Engineering/Scientific	33	13	0	6	10	80	55	25	0	10	20	8
Insurance	4	13	0	0	0	0	0	0	0	0	0	0
Medical/Health Care	8	25	25	15	0	0	0	0	0	0	0	8
Retail	8	0	25	9	0	0	0	0	0	10	0	23
Transaction Processing	8	38	0	27	30	0	11	0	0	0	20	15
Utilities-Power	0	0	25	0	0	0	0	0	14	0	0	0
Other	12	50	25	27	10	20	22	25	43	30	0	15
Source of Applications Prog. (%)												
In-house personnel	83	75	100	69	80	80	77	63	86	80	100	62
"Ready-made" programs from manufacturer	11	13	0	3	30	0	22	38	57	30	20	23
Contract Programming	20	50	25	42	40	20	22	13	29	0	20	46
Manufacturer's Personnel	8	0	0	3	60	0	0	0	0	0	0	8
Proprietary Software Packages	54	38	75	30	20	60	11	50	29	10	0	54
Other	4	0	0	0	0	0	0	0	0	10	0	8
Hardware Configuration												
No. of CPUs	40	12	19	43	11	6	12	9	24	10	5	24
No. of Workstations (avg.)	7.3	12.0	8.8	4.9	9.7	2.2	2.9	3.6	1.0	1.0	1.2	4.6
Software Configuration												
DBMS (%)	13	75	0	21	30	20	22	0	14	0	0	0
Datacomm monitors (%)	25	50	0	15	40	0	11	0	14	10	20	15
Primary Programming Language												
APL	8	0	0	0	0	0	44	0	14	0	0	0
BASIC	46	0	25	60	50	20	33	75	0	0	0	0
COBOL	4	75	50	21	0	0	0	0	0	0	0	8
FORTRAN	42	13	25	18	40	60	44	38	0	0	0	0
RPG	4	0	0	0	0	0	0	0	14	0	20	0
Other	29	50	25	15	20	20	11	25	71	100	0	92
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	17	38	50	18	10	0	0	25	14	10	0	46
Proprietary Software	33	50	100	21	40	40	22	50	29	10	0	31
Expanded Datacomm	17	50	50	33	40	20	11	0	29	30	40	39
Distributed Processing	0	0	25	15	0	0	11	0	29	30	0	23
Integrated Word Processing	13	13	25	18	60	0	0	13	29	20	20	46
Other	8	13	0	12	10	0	22	13	14	20	20	23
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	8	0	0	12	10	0	11	13	43	20	0	23
Yes, different manufacturer	8	0	50	12	0	0	11	13	29	30	20	0
No	71	100	50	75	90	100	77	75	29	50	80	77

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Data General Eclipse S Series	Data General Eclipse M/600	Data General Eclipse (other models)	Data General Nova 3	Data General Nova 4	Data General Nova 800	Data General Nova 1200	Data General (other models)	Datapoint 1100	Datapoint 1500	Datapoint 1800	Datapoint 4000	Manufacturer and Model	
												Survey Item	
33	25	50	21	10	40	22	0	29	20	0	15	Significant Problems (%)	
38	0	25	9	70	40	33	13	43	20	40	8	System proposed by vendor was too small	
25	0	25	15	40	40	22	25	14	0	40	15	Delivery and/or installation of equipment was late	
13	0	50	12	0	0	11	0	29	10	0	0	Delivery of required software was late	
17	25	75	27	20	0	22	25	14	10	40	8	System costs exceeded expected total	
8	13	0	12	6	60	11	0	14	10	20	0	Vendor did not provide all promised software or support	
4	0	25	6	10	0	11	0	0	0	0	0	Program/data compatibility not what vendor promised	
20	13	25	12	0	0	11	0	0	10	0	8	Terminals/peripherals compatibility not what vendor promised	
0	0	0	6	10	20	11	13	14	10	0	0	Vendor enhancements/changes to hardware software hard to keep up with	
0	0	0	3	10	0	0	0	0	10	0	0	Equipment excessively noisy	
25	13	0	24	0	0	22	13	43	20	0	23	Power/Cooling requirements excessive	
												Other	
46	13	25	39	70	20	22	63	43	30	20	46	Significant Advantages (%)	
58	88	50	42	60	40	44	75	43	40	40	92	Users happy with response time	
4	0	0	6	0	0	11	13	14	30	20	15	System easy to expand/reconfigure	
13	38	25	18	30	40	11	25	29	10	40	8	System costs less than expected	
25	13	0	21	30	20	22	13	0	10	0	0	Programs/data compatible, as vendor promised	
13	25	50	18	20	0	0	0	57	0	0	39	Terminals/peripherals compatible, as vendor promised	
25	50	25	12	30	0	0	13	29	20	20	15	System is power/energy efficient	
4	50	0	18	0	20	0	25	14	10	0	8	Productivity aids help us keep programming costs down	
4	13	25	9	0	0	0	0	0	0	20	8	Database language effective	
13	0	0	3	0	0	0	13	0	10	0	15	Delivery and/or installation of equipment was ahead of schedule	
13	13	0	6	0	0	11	0	43	10	0	8	Delivery and/or installation of software was ahead of schedule	
												Other	
3.2	3.4	3.7	3.2	3.3	3.2	3.0	3.6	3.3	3.5	3.6	3.5	System Ratings (4.0-0.0)	
3.6	3.4	3.5	3.4	3.3	2.8	3.3	3.8	3.1	3.4	3.4	3.7	Ease of operation	
3.1	3.0	3.0	2.9	3.0	2.8	2.6	3.4	2.4	2.4	3.0	3.4	Reliability of Mainframe	
												Reliability of Peripherals	
2.8	2.6	2.8	2.7	3.0	2.2	1.8	2.6	2.9	3.0	3.0	3.4	Maintenance service:	
2.9	2.9	2.5	2.8	2.7	3.2	2.2	2.7	2.4	2.6	2.6	3.2	Responsiveness	
												Effectiveness	
2.6	2.4	2.0	2.6	2.6	2.8	2.0	2.7	2.4	2.1	2.4	2.8	Technical support:	
2.4	2.8	2.3	2.4	2.6	2.0	1.8	2.7	2.2	1.9	2.4	2.8	Trouble-shooting	
2.5	2.3	2.3	2.2	2.2	2.2	2.0	2.9	2.1	2.4	2.0	2.8	Education	
												Documentation	
3.3	3.5	2.3	2.9	3.4	2.8	2.8	3.3	3.4	3.1	3.4	3.4	Manufacturer's software:	
2.9	3.3	2.5	2.8	3.1	3.0	2.8	3.5	3.1	3.1	3.6	3.6	Operating system	
2.8	3.0	2.3	2.6	1.9	2.8	2.5	2.5	2.5	2.8	1.0	3.3	Compilers & Assemblers	
												Applications Programs	
2.9	3.3	3.3	2.9	2.9	3.0	3.0	3.1	2.6	3.0	3.6	3.5	Ease of programming	
2.5	2.7	3.0	2.5	3.0	2.8	3.0	3.1	2.0	3.0	3.0	3.0	Ease of conversion	
2.9	3.1	2.8	2.8	3.0	2.8	2.9	3.1	2.7	2.9	3.2	3.3	Overall satisfaction	
75	88	75	60	80	40	50	100	100	90	60	92	Would you recommend system to another user? (%)	
25	12	25	38	20	60	50	0	0	10	40	8	Yes	
												No	

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model Survey Item	DEC PDP-11/50 & 11/55	DEC PDP-11/60	DEC PDP-11/70	PDP-11 (unspecified)	DEC VAX-11/780	DEC (other models)	Digital Scientific Corp.	Educational Data Systems Point 4	Four-Phase IV/40	Four-Phase IV/70	Four-Phase IV/90	Four-Phase (other models)
	No. of User Responses	7	13	136	6	17	10	5	6	6	10	16
No. of Systems Represented	9	13	373	17	18	16	5	6	6	29	80	4
Avg. Life of System (Mos.)	35.6	16.9	26.4	47.5	12.6	22.2	44.8	6.7	39.3	40.8	27.0	15.0
Acquisition Method (%)												
Purchase	86	100	82	100	82	100	80	100	0	40	7	0
Rental	0	0	1	0	0	0	0	0	17	30	7	75
Lease	14	0	16	0	18	0	20	0	83	40	57	25
Principal Applications (%)												
Accounting	29	15	38	17	24	20	60	67	67	40	43	25
Construction	0	0	2	6	6	0	0	0	0	0	0	0
Education	43	15	15	17	24	0	60	0	17	0	0	0
Government	0	8	6	0	12	0	0	0	0	0	29	0
Manufacturing	14	15	18	17	0	0	40	17	0	20	21	25
Payroll/Personnel	14	8	22	17	12	0	60	33	33	40	21	0
Service Bureaus	0	0	13	0	12	0	20	17	17	10	0	25
Transportation	0	0	5	0	6	0	0	0	0	10	0	0
Word Processing	14	8	19	0	18	40	20	50	0	0	14	25
Banking/Finance	0	15	11	0	12	0	0	0	0	0	0	0
Distributed Processing	0	15	11	50	18	0	20	0	0	40	21	0
Engineering/Scientific	0	46	20	50	88	30	20	0	0	0	0	0
Insurance	0	0	4	0	0	0	0	17	0	10	7	0
Medical/Health Care	0	8	5	17	0	20	0	0	67	10	29	25
Retail	0	0	4	0	0	0	0	17	0	0	0	0
Transaction Processing	0	8	13	17	0	0	0	0	17	10	29	25
Utilities-Power	14	0	1	0	6	0	0	0	0	0	0	0
Other	0	8	22	17	29	10	20	17	0	20	21	25
Source of Applications Prog. (%)												
In-house personnel	86	77	74	67	100	40	100	83	50	50	64	50
"Ready-made" programs from manufacturer	29	31	21	33	35	50	20	0	33	40	14	25
Contract Programming	14	8	29	0	6	10	0	33	0	10	14	50
Manufacturer's Personnel	0	0	52	0	0	0	0	0	0	0	0	25
Proprietary Software Packages	29	23	51	33	35	20	20	33	67	20	29	25
Other	0	0	3	17	12	0	20	0	0	0	0	0
Hardware Configuration												
No. of CPUs	9	100	383	17	18	13	5	6	6	29	80	4
No. of Workstations (avg.)	14.6	8.4	8.5	1.5	17.0	2.7	4.8	6.0	3.7	6.0	3.9	2.3
Software Configuration												
DBMS (%)	29	23	34	33	35	10	0	0	0	10	0	50
Datacomm monitors (%)	29	8	19	0	12	10	20	0	17	20	0	50
Primary Programming Language												
APL	0	0	1	0	0	0	0	0	0	10	0	0
BASIC	57	39	42	17	18	0	0	100	0	0	0	0
COBOL	29	15	15	17	18	0	0	0	50	20	7	50
FORTRAN	43	46	27	33	88	20	60	0	0	0	0	0
RPG	0	0	2	0	0	0	0	0	0	0	0	0
Other	43	23	51	83	41	70	60	0	50	30	57	75
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	0	15	24	33	47	40	0	0	17	20	21	75
Proprietary Software	0	23	39	33	35	20	60	50	33	0	21	25
Expanded Datacomm	14	39	40	50	59	10	80	17	0	10	21	25
Distributed Processing	14	15	10	33	18	0	0	0	17	0	29	25
Integrated Word Processing	0	8	13	17	24	10	0	50	33	10	29	50
Other	0	15	9	17	0	30	0	17	17	10	7	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	14	17	5	0	6	10	20	0	33	20	0	25
Yes, different manufacturer	0	0	2	17	0	0	20	0	50	10	14	0
No	86	83	92	83	88	90	40	83	17	70	86	75

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

DEC PDP-11/50 & 11/55	DEC PDP-11/60	DEC PDP-11/70	PDP-11 (unspecified)	DEC VAX-11/780	DEC (other models)	Digital Scientific Corp.	Educational Data Systems Point 4	Four-Phase IV/40	Four-Phase IV/70	Four-Phase IV/90	Four-Phase (other models)	Manufacturer and Model	Survey Item
14	23	15	0	18	0	0	0	0	0	36	0	Significant Problems (%)	System proposed by vendor was too small
43	15	24	33	24	20	20	0	0	10	36	50	Delivery and/or installation of equipment was late	
0	15	21	17	18	10	0	0	0	10	29	25	Delivery of required software was late	
0	8	11	17	6	0	0	0	17	0	29	25	System costs exceeded expected total	
14	8	13	33	6	0	20	0	33	0	36	50	Vendor did not provide all promised software or support	
14	0	6	0	12	0	0	0	0	0	0	0	25 Program/data compatibility not what vendor promised	
0	0	6	17	6	0	0	0	0	0	7	0	Terminals/peripherals compatibility not what vendor promised	
0	23	9	17	0	0	40	17	33	10	0	0	Vendor enhancements/changes to hardware software hard to keep up with	
14	15	4	0	18	0	20	0	0	0	0	0	Equipment excessively noisy	
14	0	4	17	0	0	0	0	0	0	7	0	Power/Cooling requirements excessive	
0	15	12	0	0	20	20	0	0	20	14	25	Other	
14	39	57	17	88	60	40	100	17	40	57	50	Significant Advantages (%)	
57	54	68	50	94	50	40	100	33	20	50	50	Users happy with response time	
0	8	4	0	0	20	20	0	0	0	7	0	System easy to expand/reconfigure	
29	39	15	17	59	20	40	50	0	20	7	25	System costs less than expected	
57	54	21	50	53	20	40	50	0	10	0	0	Programs/data compatible, as vendor promised	
14	0	13	33	6	10	0	17	0	0	21	25	Terminals/peripherals compatible, as vendor promised	
14	23	32	0	71	10	0	33	17	10	14	75	System is power/energy efficient	
14	15	18	33	6	10	0	17	0	20	14	0	Productivity aids help us keep programming costs down	
0	8	7	0	24	0	20	33	17	0	14	0	Database language effective	
0	0	1	0	0	20	20	17	0	0	7	0	Delivery and/or installation of equipment was ahead of schedule	
0	8	2	0	0	30	0	0	17	0	7	25	Delivery and/or installation of software was ahead of schedule	
												Other	
3.4	3.3	3.4	3.2	3.6	3.8	3.0	4.0	2.8	3.6	3.1	3.3	System Ratings (4.0-0.0)	
3.4	3.5	3.5	3.2	3.7	3.8	3.0	3.8	3.5	3.5	3.0	3.8	Ease of operation	
3.3	2.8	3.0	2.8	3.1	3.6	2.5	3.7	3.0	3.2	2.8	3.8	Reliability of Mainframe	
												Reliability of Peripherals	
2.6	3.2	2.9	2.0	3.1	3.3	3.2	3.5	3.3	3.0	2.8	3.3	Maintenance service:	
2.3	3.3	2.7	2.3	2.9	3.4	2.6	3.3	3.0	2.6	2.5	3.3	Responsiveness	
												Effectiveness	
2.5	3.2	2.6	2.0	2.7	3.3	2.5	3.5	2.3	2.7	2.2	3.3	Technical support:	
2.8	3.0	2.6	2.5	2.6	3.2	2.0	3.3	2.0	2.3	2.4	2.7	Trouble-shooting	
2.7	2.9	2.5	2.4	2.9	3.0	2.0	2.7	3.0	2.3	2.4	2.7	Education	
												Documentation	
3.1	3.1	3.3	2.8	3.4	3.3	2.3	3.8	3.0	3.2	2.9	3.3	Manufacturer's software:	
3.3	2.9	3.2	2.8	3.4	3.5	3.0	3.6	3.0	3.1	2.8	3.3	Operating system	
3.0	2.8	2.8	2.7	3.0	3.5	3.5	3.7	2.8	2.8	2.8	3.5	Compilers & Assemblers	
												Applications Programs	
3.3	3.2	3.2	2.3	3.5	3.4	3.2	4.0	3.0	3.2	2.4	3.3	Ease of programming	
2.9	3.3	2.8	2.8	3.3	3.3	3.4	4.0	3.0	2.8	2.1	3.0	Ease of conversion	
3.1	3.2	3.1	3.0	3.4	3.7	2.8	4.0	2.7	3.1	2.6	3.3	Overall satisfaction	
100	92	91	67	88	80	60	100	67	90	71	100	Would you recommend system to another user? (%)	
0	8	9	17	6	10	20	0	33	10	29	0	Yes	
												No	

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model Survey Item												
	General Automation SPC-16/65	General Automation 16/440 & 16/460	General Automation 18/30	Harris (all models)	Hewlett-Packard 1000 Series	Hewlett-Packard 2000	Hewlett-Packard 3000 Series II	Hewlett-Packard 3000 Series III	Hewlett-Packard 3000 Series 33	Hewlett-Packard 3000 (unspecified)	Hewlett-Packard (other models)	Honeywell Level 6
No. of User Responses	4	5	8	8	17	8	31	55	10	24	4	29
No. of Systems Represented	4	9	9	8	24	16	35	65	11	36	4	37
Avg. Life of System (Mos.)	62.0	29.0	72.0	29.0	30.0	56.4	25.9	15.9	6.1	23.1	10.0	12.4
Acquisition Method (%)												
Purchase	75	100	88	63	88	88	80	82	50	54	100	79
Rental	0	0	0	0	0	0	7	2	0	8	0	3
Lease	25	0	12	37	12	13	13	15	50	38	0	17
Principal Applications (%)												
Accounting	50	0	88	37	6	25	65	75	60	50	75	59
Construction	0	0	25	0	6	0	7	4	0	0	0	7
Education	0	0	13	37	6	75	23	11	10	1	0	7
Government	0	0	0	25	0	0	16	2	10	1	0	0
Manufacturing	0	60	25	0	35	0	23	24	20	33	0	31
Payroll/Personnel	25	0	88	37	12	0	42	49	40	38	25	38
Service Bureaus	0	0	0	0	18	0	10	22	10	8	50	3
Transportation	0	0	13	0	0	0	0	4	0	0	25	3
Word Processing	25	0	0	13	6	13	7	22	10	13	50	3
Banking/Finance	0	0	0	13	0	0	3	16	10	8	25	0
Distributed Processing	0	20	0	25	24	13	7	22	10	13	0	21
Engineering/Scientific	50	40	50	13	41	13	0	11	20	21	25	0
Insurance	0	0	0	0	0	0	7	7	0	8	0	0
Medical/Health Care	0	0	0	0	0	0	7	4	0	13	0	11
Retail	0	0	13	0	0	0	13	11	0	0	0	7
Transaction Processing	0	40	0	13	24	0	23	27	10	21	50	14
Utilities-Power	0	0	0	13	6	0	0	2	0	0	0	7
Other	0	20	25	13	0	13	3	4	30	8	0	31
Source of Applications Prog. (%)												
In-house personnel	100	100	100	100	82	50	87	86	100	88	100	66
"Ready-made" programs from manufacturer	25	40	13	25	18	88	19	26	10	21	50	17
Contract Programming	50	0	25	0	29	13	45	24	10	42	25	24
Manufacturer's Personnel	0	0	13	0	0	0	3	0	0	4	0	21
Proprietary Software Packages	50	20	25	37	35	50	29	47	60	38	50	21
Other	0	0	0	0	0	13	7	0	10	0	0	3
Hardware Configuration												
No. of CPUs	4	9	9	8	32	16	36	65	11	36	4	37
No. of Workstations (avg.)	2.0	5.0	0.5	7.3	6.0	11.0	14.0	16.0	7.0	21.0	6.0	10.0
Software Configuration												
DBMS (%)	25	40	0	50	0	13	84	47	90	92	75	21
Datacomm monitors (%)	0	20	25	25	0	25	19	31	10	92	0	14
Primary Programming Language												
APL	0	0	0	0	0	0	3	2	0	4	0	0
BASIC	0	0	13	37	18	88	29	13	30	38	100	10
COBOL	0	20	0	75	6	0	81	76	70	67	25	76
FORTRAN	100	80	50	37	82	13	19	27	20	42	25	7
RPG	0	0	13	13	0	0	26	31	30	21	25	3
Other	0	40	0	13	0	25	16	20	10	21	25	10
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	0	0	0	13	41	25	19	26	40	25	75	0
Proprietary Software	25	0	0	25	21	13	23	44	60	33	50	28
Expanded Datacomm	0	20	25	25	29	50	39	40	20	25	0	17
Distributed Processing	0	0	25	0	14	38	10	24	20	21	0	38
Integrated Word Processing	0	0	13	0	7	13	16	24	10	4	25	7
Other	0	0	0	0	0	0	19	0	10	4	25	10
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	25	0	0	0	0	13	16	0	0	0	0	10
Yes, different manufacturer	25	40	50	13	0	13	0	0	0	8	0	3
No	25	60	50	87	100	50	81	96	100	92	75	3

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model												
	Honeywell Level 62	IBM Series 1	IBM S/3 Model 6	IBM S/3 Model 8	IBM S/3 Model 10	IBM S/3 Model 12	IBM S/3 Model 15	IBM S/3 Model 15B	IBM S/3 Model 15C	IBM S/3 Model 15D	IBM S/3 Unspecified	IBM S/7
Survey Item												
No. of User Responses	46	45	4	18	86	72	28	13	4	138	13	11
No. of Systems Represented	46	119	4	19	101	72	29	14	4	141	13	12
Avg. Life of System (Mos.)	27.8	12.0	95.0	47.0	83.6	38.8	44.9	36.9	51.5	36.0	73.0	62.2
Acquisition Method (%)												
Purchase	17	91	50	57	77	30	54	38	50	43	46	82
Rental	24	0	25	5	17	26	14	8	25	17	15	28
Lease	37	8	25	28	6	44	29	54	25	40	38	27
Principal Applications (%)												
Accounting	80	35	50	89	86	88	79	77	75	90	85	0
Construction	7	8	0	11	8	4	11	0	0	5	8	0
Education	4	4	25	5	6	4	7	0	0	2	0	27
Government	0	2	0	0	10	0	3	8	0	5	0	0
Manufacturing	33	20	25	44	28	44	25	15	50	48	38	0
Payroll/Personnel	50	16	75	89	71	76	75	53	75	70	69	0
Service Bureaus	11	8	0	11	10	6	18	15	0	7	8	0
Transportation	0	2	0	11	6	10	3	0	0	8	8	0
Word Processing	0	16	0	0	0	1	3	0	0	1	0	0
Banking/Finance	7	2	0	5	10	4	18	15	25	8	8	18
Distributed Processing	7	24	0	0	0	6	0	0	0	8	0	0
Engineering/Scientific	2	4	25	0	0	0	0	0	0	6	0	27
Insurance	9	2	0	5	5	1	7	23	0	3	0	0
Medical/Health Care	4	11	0	0	1	6	7	0	0	6	8	0
Retail	11	4	0	5	7	10	7	8	0	11	8	0
Transaction Processing	17	6	0	17	15	15	11	0	0	21	15	21
Utilities-Power	2	0	0	0	2	7	0	0	0	4	0	21
Other	0	27	25	5	2	14	11	8	0	10	23	36
Source of Applications Prog. (%)												
In-house personnel	85	62	100	89	98	99	96	87	75	100	85	78
"Ready-made" programs from manufacturer	24	18	25	28	23	25	14	31	50	37	38	36
Contract Programming	22	31	25	11	22	31	14	38	25	32	54	36
Manufacturer's Personnel	15	0	0	17	3	6	0	0	25	6	8	0
Proprietary Software Packages	23	27	0	11	10	14	18	23	50	36	31	0
Other	0	2	0	6	0	0	3	0	0	1	0	0
Hardware Configuration												
No. of CPUs	46	119	4	19	101	72	0	0	4	141	13	14
No. of Workstations (avg.)	6.1	1.7	0	0.3	0.3	1.6	4.4	3.9	2.0	11.3	1.8	3.8
Software Configuration												
DBMS (%)	4	22	0	0	0	0	0	0	0	0	0	0
Datacomm monitors (%)	48	18	0	0	0	0	0	0	0	0	0	0
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	0	9
BASIC	0	0	25	0	0	0	0	0	0	0	0	0
COBOL	87	20	0	0	7	11	11	8	0	21	15	0
FORTRAN	7	4	0	0	1	0	0	0	0	2	85	0
RPG	43	0	100	89	86	89	74	100	100	86	0	0
Other	0	80	0	0	0	0	0	0	0	1	0	64
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	24	27	25	5	3	15	0	8	0	21	0	0
Proprietary Software	30	29	0	0	3	8	3	8	0	21	8	0
Expanded Datacomm	43	24	25	11	16	22	21	8	25	41	8	0
Distributed Processing	9	4	50	5	10	7	18	54	0	11	8	0
Integrated Word Processing	4	16	0	0	1	2	3	23	25	9	0	0
Other	0	8	25	11	4	0	7	8	25	9	0	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	0	4	50	28	40	43	14	31	25	22	38	18
Yes, different manufacturer	13	6	25	17	7	11	11	15	0	2	8	18
No	78	82	25	50	53	46	71	38	75	79	46	45

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Honeywell Level 62	IBM Series 1	IBM S/3 Model 6	IBM S/3 Model 8	IBM S/3 Model 10	IBM S/3 Model 12	IBM S/3 Model 15	IBM S/13 Model 15B	IBM S/3 Model 15C	IBM S/3 Model 15D	IBM S/3 Unspecified	IBM S/7	Manufacturer and Model
												Survey Item
24	13	75	0	10	10	3	0	25	12	0	9	Significant Problems (%)
11	24	0	11	1	4	7	0	25	11	0	0	System proposed by vendor was too small
15	16	0	6	2	3	0	0	50	4	0	9	Delivery and/or installation of equipment was late
13	11	25	0	3	1	7	0	0	2	0	9	Delivery of required software was late
28	16	0	0	2	4	3	0	25	8	8	18	System costs exceeded expected total
0	13	0	0	2	1	0	0	0	2	0	0	Vendor did not provide all promised software or support
2	4	0	5	0	5	0	8	0	1	0	0	Program/data compatibility not what vendor promised
17	8	0	5	2	8	7	0	25	6	0	36	Terminals/peripherals compatibility not what vendor promised
7	4	0	5	10	0	11	8	25	8	0	9	Vendor enhancements/changes to hardware software hard to keep up with
11	2	0	0	8	3	3	0	25	4	0	0	Equipment excessively noisy
9	2	25	22	0	11	11	15	50	12	23	27	Power/Cooling requirements excessive
												Other
37	51	0	22	22	19	36	38	25	61	15	18	Significant Advantages (%)
67	58	25	28	21	18	46	38	25	41	23	0	Users happy with response time
11	9	0	11	12	5	0	0	0	4	0	0	System easy to expand/reconfigure
35	7	0	22	19	38	25	31	25	33	8	0	System costs less than expected
4	9	0	0	3	28	7	15	50	17	0	0	Programs/data compatible, as vendor promised
17	24	25	5	6	13	14	0	25	7	8	9	Terminals/peripherals compatible, as vendor promised
17	18	25	5	13	11	18	8	25	43	0	0	System is power/energy efficient
4	13	0	5	3	6	0	0	0	3	0	0	Productivity aids help us keep programming costs down
9	2	0	11	9	14	3	0	25	9	0	0	Database language effective
9	2	0	0	3	6	3	0	25	4	0	0	Delivery and/or installation of equipment was ahead of schedule
2	7	0	11	0	28	18	0	25	3	0	9	Delivery and/or installation of software was ahead of schedule
												Other
3.2	3.2	3.3	3.3	3.2	3.2	3.3	3.5	3.3	3.3	3.8	2.5	System Ratings (4.0-0.0)
3.0	3.5	3.5	3.7	3.6	3.7	3.8	3.8	3.5	3.7	3.0	3.4	Ease of operation
2.9	3.3	3.3	3.4	3.3	3.3	3.3	3.2	3.3	3.5	3.3	2.8	Reliability of Mainframe
												Reliability of Peripherals
3.1	3.1	2.8	3.2	3.2	3.2	3.3	3.0	3.0	3.3	2.8	2.7	Maintenance service:
2.8	3.2	3.3	3.0	3.2	3.3	3.3	3.2	3.0	3.3	3.0	2.7	Responsiveness
												Effectiveness
2.7	2.8	2.3	2.8	3.0	3.0	2.9	3.2	2.8	2.9	2.6	2.4	Technical support:
2.5	2.5	2.8	2.9	3.0	3.1	2.9	3.3	2.8	3.0	3.1	2.0	Trouble-shooting
2.2	2.4	2.3	2.9	3.0	2.9	3.0	3.0	2.5	2.9	2.8	1.9	Education
												Documentation
3.2	2.6	3.5	3.3	3.2	3.2	3.3	3.3	2.8	3.2	3.2	2.8	Manufacturer's software:
3.2	2.7	3.3	3.4	3.2	3.2	3.3	3.3	3.0	3.4	3.5	2.1	Operating system
2.6	2.7	2.5	3.0	3.0	2.5	3.0	2.9	2.5	2.9	3.0	2.6	Compilers & Assemblers
												Applications Programs
3.0	2.5	2.8	3.4	3.2	3.2	3.6	2.9	3.0	3.1	3.3	1.7	Ease of programming
2.7	2.5	0	3.1	2.8	3.0	3.0	3.1	2.8	2.8	3.0	2.0	Ease of conversion
2.9	3.0	2.5	3.3	3.2	3.2	3.3	3.1	3.0	3.2	3.1	2.6	Overall satisfaction
74	84	50	67	81	72	82	100	75	87	62	36	Would you recommend system to another user? (%)
24	16	50	33	19	28	14	0	25	13	38	54	Yes
												No

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model Survey Item												
	IBM S/32	IBM S/34	IBM S/360 Model 20	IBM 1130	IBM 8100	Lockheed System III	Microdata Royale & Reality Series 4000	Microdata Royale & Series 6000	Microdata (other models)	Minicomputer Systems MICOS 200	MODCOMP II	MODCOMP Classic Series
No. of User Responses	48	296	10	11	5	5	25	16	4	5	4	5
No. of Systems Represented	48	347	11	20	6	5	33	16	5	5	6	13
Avg. Life of System (Mos.)	32.8	13.8	105.4	110.0	5.4	53.0	28.8	20.5	33.0	27.2	35.8	2.2
Acquisition Method (%)												
Purchase	35	23	80	82	0	60	80	94	100	80	100	80
Rental	15	23	0	9	60	0	0	0	0	0	0	0
Lease	50	46	20	9	20	40	20	6	0	20	0	20
Principal Applications (%)												
Accounting	81	82	80	64	20	60	76	63	100	100	0	40
Construction	8	6	20	9	0	40	0	6	0	0	25	0
Education	6	4	20	9	0	0	12	25	0	0	0	0
Government	0	7	20	18	20	20	8	13	0	20	25	0
Manufacturing	25	41	0	27	20	0	28	31	50	20	0	0
Payroll/Personnel	52	57	80	55	20	40	48	50	75	40	0	20
Service Bureaus	6	9	30	9	0	20	12	19	50	20	25	20
Transportation	6	3	10	0	0	0	0	13	25	0	25	0
Word Processing	4	4	0	0	20	0	12	6	25	20	0	0
Banking/Finance	2	3	0	0	20	0	4	6	0	0	0	0
Distributed Processing	6	10	0	0	60	0	4	19	25	20	0	20
Engineering/Scientific	4	5	10	27	0	0	4	0	0	0	50	40
Insurance	2	5	0	0	0	40	4	0	0	0	0	20
Medical/Health Care	6	5	10	0	0	0	8	0	0	0	0	20
Retail	0	10	0	9	0	0	4	38	25	0	0	0
Transaction Processing	6	12	0	9	60	0	16	19	25	0	0	20
Utilities-Power	0	5	0	0	0	0	0	6	0	0	0	0
Other	21	0	0	9	0	0	40	6	50	20	0	0
Source of Applications Prog. (%)												
In-house personnel	65	83	100	91	100	80	64	69	75	40	100	100
"Ready-made" programs from manufacturer	42	42	10	18	20	0	8	6	0	20	25	0
Contract Programming	31	30	0	27	0	40	48	56	70	40	0	0
Manufacturer's Personnel	4	2	10	9	0	0	4	6	0	0	0	0
Proprietary Software Packages	6	15	0	27	0	60	32	50	25	40	0	20
Other	0	0	0	9	0	0	4	0	0	0	0	0
Hardware Configuration												
No. of CPUs	48	347	11	31	6	5	32	16	5	5	5	13
No. of Workstations (avg.)	1.0	5.0	0.4	0	1.5	1.0	7.9	12.0	7.8	4.2	2.8	2.5
Software Configuration												
DBMS (%)	0	0	0	0	0	0	40	50	50	20	25	40
Datacomm monitors (%)	0	0	0	0	0	0	12	13	0	20	25	60
Primary Programming Language												
APL	0	0	10	0	0	0	0	0	0	0	0	0
BASIC	0	3	0	0	0	0	80	100	100	100	0	0
COBOL	0	11	10	18	40	0	0	0	0	0	0	0
FORTRAN	2	3	10	64	0	0	0	0	0	0	75	100
RPG	60	41	0	27	0	80	4	6	0	0	0	0
Other	0	0	0	18	20	0	68	19	50	0	0	0
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	10	26	0	9	0	0	12	6	0	0	0	20
Proprietary Software	4	13	20	9	0	0	12	25	25	20	0	0
Expanded Datacomm	6	36	10	9	20	20	32	38	50	20	25	40
Distributed Processing	6	15	0	18	40	0	4	13	25	40	0	40
Integrated Word Processing	2	9	10	0	20	0	4	13	25	20	0	40
Other	12	0	0	18	0	0	12	0	0	40	0	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	35	4	30	18	20	0	4	6	0	0	25	20
Yes, different manufacturer	8	1	10	18	20	0	4	13	25	20	0	0
No	52	82	40	64	40	100	88	81	75	80	75	80

Table continues on facing page.

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

IBM S/32	IBM S/34	IBM S/360 Model 20	IBM 1130	IBM 8100	Lockheed System III	Microdata Royale & Reality Series 4000	Microdata Royale & Series 6000	Microdata (other models)	Minicomputer Systems MICOS 200	MODCOMP II	MODCOMP Classic Series	Manufacturer and Model
												Survey Item
17	17	10	9	20	0	20	31	25	20	0	0	Significant Problems (%)
0	11	10	0	20	0	0	19	0	0	25	0	System proposed by vendor was too small
0	2	0	0	20	0	4	25	25	0	25	0	Delivery and/or installation of equipment was late
13	3	10	9	20	20	12	6	0	0	0	0	Delivery of required software was late
13	5	10	0	0	0	12	38	50	20	0	0	System costs exceeded expected total
4	3	10	0	0	0	0	6	0	0	25	0	Vendor did not provide all promised software or support
0	2	0	0	0	20	0	6	0	20	0	0	Program/data compatibility not what vendor promised
2	7	0	0	0	20	4	19	0	0	25	20	Terminals/peripherals compatibility not what vendor promised
2	2	30	9	0	0	0	0	0	0	0	0	Vendor enhancements/changes to hardware software hard to keep up with
4	2	20	9	0	0	4	0	0	0	0	0	Equipment Excessively Noisy
12	5	10	9	40	0	8	31	0	0	0	20	Power/Colling requirements excessive
												Other
35	62	10	9	40	0	68	50	50	20	25	60	Significant Advantages (%)
19	75	0	27	0	20	58	69	50	60	25	80	Users happy with response time
0	7	0	27	0	0	4	6	0	20	25	0	System easy to expand/reconfigure
21	47	30	9	40	0	16	13	0	20	50	80	System costs less than expected
4	4	0	0	60	0	4	13	0	40	50	40	Programs/data compatible, as vendor promised
19	26	0	9	0	0	40	25	50	0	0	60	Terminals/peripherals compatible, as vendor promised
23	52	10	9	20	20	52	50	25	20	0	40	System is power/energy efficient
10	6	0	0	20	0	88	94	75	20	0	60	Productivity aids help us keep programming costs down
10	13	10	0	0	0	16	13	50	20	0	40	Database language effective
12	8	0	0	0	0	4	6	25	0	0	20	Delivery and/or installation of equipment was ahead of schedule
2	2	0	9	0	0	4	6	0	20	0	0	Delivery and/or installation of software was ahead of schedule
												Other
3.5	3.6	3.2	3.5	3.4	3.4	3.8	3.8	3.5	3.4	2.3	3.6	System Ratings (4.0-0.0)
3.8	3.6	3.4	3.6	3.3	2.8	3.6	3.4	3.5	3.0	3.8	3.6	Ease of operation
3.7	3.6	2.9	3.3	2.8	3.0	3.4	3.3	2.5	2.8	3.3	2.8	Reliability of Mainframe
							2.9					Reliability of Peripherals
3.6	3.4	2.9	3.1	3.0	2.4	3.2	2.9	2.5	2.0	2.8	2.2	Maintenance service:
3.7	3.4	2.9	3.2	3.0	2.8	3.2	2.9	2.5	2.4	2.8	2.2	Responsiveness
												Effectiveness
3.3	3.0	2.7	3.0	3.0	1.8	2.9	2.4	3.3	2.4	3.3	2.2	Technical support:
3.1	3.0	2.6	2.3	2.8	1.6	2.5	1.9	2.5	2.8	3.0	2.8	Trouble-shooting
3.2	3.1	2.6	2.2	2.8	1.6	2.5	2.0	2.5	2.8	2.5	3.0	Education
												Documentation
3.5	3.5	3.0	3.3	3.2	2.8	3.7	3.4	3.3	3.6	3.3	3.4	Manufacturer's software:
3.5	3.5	2.9	3.2	3.0	2.8	3.7	3.3	2.8	2.5	3.3	3.4	Operating system
2.9	3.0	2.7	3.0	3.0	2.8	3.2	2.9	2.8	3.3	2.5	3.5	Compilers & Assemblers
							3.7					Applications Programs
2.9	3.5	3.0	3.0	3.0	2.5	3.7	3.4	3.3	3.6	2.7	3.2	Ease of programming
3.0	3.2	3.2	2.4	3.0	4.0	3.4	3.2	3.0	3.0	2.7	3.0	Ease of conversion
3.4	3.5	2.9	3.2	3.0	2.6	3.7	3.2	3.3	3.0	2.8	3.4	Overall satisfaction
83	98	50	27	100	60	92	81	75	80	75	100	Would you recommend system to another user? (%)
17	2	50	64	0	40	8	19	25	20	25	0	Yes
												No

Table begins on facing page.

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Survey Item	Manufacturer and Model											
	MODCOMP (other models)	NCR 399	NCR Century 50 thru 100	NCR 8200	NCR 8300	NCR (other SBC models)	Nixdorf 8870	Perkin-Elmer 6/16, 7/16 & 8/16	Perkin-Elmer 7/32 & 8/32	Phillips P-350 Series	Pick & Associates Evolution	Prime Computer 300 & 350
No. of User Responses	3	10	13	40	4	6	5	5	6	2	3	7
No. of Systems Represented	13	10	13	75	4	7	5	9	38	4	7	14
Avg. Life of System (Mos.)	14.2	65.0	78.4	27.3	14.5	23.5	20.0	35.0	42.3	41.0	31.0	25.2
Acquisition Method (%)												
Purchase	100	70	69	50	50	83	60	100	100	100	100	71
Rental	0	20	8	20	50	0	40	0	0	0	0	0
Lease	0	10	23	30	0	17	0	0	0	0	0	29
Principal Applications (%)												
Accounting	33	60	100	75	25	50	40	60	33	50	100	0
Construction	0	10	0	5	0	0	0	0	0	0	0	14
Education	0	0	15	3	0	0	0	0	0	0	67	29
Government	67	0	0	3	0	17	0	0	0	0	0	0
Manufacturing	33	10	31	23	25	0	20	0	17	0	67	29
Payroll/Personnel	0	30	92	48	25	75	0	0	17	100	67	29
Service Bureaus	0	10	15	3	0	0	0	0	17	0	67	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0
Word Processing	0	0	8	0	0	0	0	20	0	0	67	0
Banking/Finance	0	30	8	5	50	17	0	0	0	0	33	14
Distributed Processing	0	10	0	3	0	0	20	0	17	0	0	0
Engineering/Scientific	33	0	0	0	0	0	0	0	33	0	0	14
Insurance	0	0	15	0	0	0	0	20	0	0	33	14
Medical/Health Care	0	0	8	13	0	17	0	0	0	0	0	0
Retail	0	0	23	3	0	17	0	0	17	0	67	0
Transaction Processing	0	0	8	10	0	34	20	20	17	0	0	0
Utilities-Power	0	0	0	5	0	17	0	0	0	50	0	0
Other	67	0	15	15	25	0	0	0	0	0	33	0
Source of Applications Prog. (%)												
In-house personnel	100	60	100	43	25	33	60	80	83	0	100	86
"Ready-made" programs from manufacturer	33	30	69	63	50	33	100	0	17	0	33	14
Contract Programming	0	10	15	25	25	17	20	40	17	50	0	14
Manufacturer's Personnel	0	40	23	5	0	17	20	0	0	50	0	0
Proprietary Software Packages	33	0	8	23	50	33	40	0	50	0	33	29
Other	0	0	0	0	0	0	0	0	0	0	0	0
Hardware Configuration												
No. of CPUs	13	10	0	75	4	7	5	17	9	3	7	12
No. of Workstations (avg.)	1.3	0	0	2.3	8.2	0	4.4	48.0	90.0	0	12.8	50.0
Software Configuration												
DBMS (%)	33	0	0	0	0	0	0	0	0	0	100	0
Datacomm monitors (%)	33	0	0	0	0	0	0	0	0	0	67	0
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	0	0
BASIC	0	0	0	0	0	17	80	20	0	0	67	14
COBOL	0	0	31	83	50	0	0	0	33	0	0	14
FORTRAN	100	0	0	0	0	0	0	40	33	0	0	57
RPG	0	0	0	0	0	0	0	0	17	0	0	14
Other	0	100	100	17	75	83	20	0	0	0	0	0
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	0	0	8	23	50	0	40	20	17	0	0	14
Proprietary Software	0	0	8	15	0	0	20	40	17	0	33	29
Expanded Datacomm	33	0	8	8	25	0	40	20	33	0	33	29
Distributed Processing	33	0	0	5	0	0	0	0	0	0	0	14
Integrated Word Processing	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	10	0	0	0	0	0	0	0	0	0	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	0	0	38	20	25	17	0	20	17	0	0	29
Yes, different manufacturer	0	30	24	13	0	17	20	20	33	100	0	0
No	100	70	38	63	75	17	80	60	67	0	100	71

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

MODCOMP (other models)	NCR 399	NCR Century 50 thru 100	NCR 8200	NCR 8300	NCR (other SBC models)	Nixdorf 8870	Perkin-Elmer 6/16, 7/16 & 8/16	Perkin-Elmer 7/32 & 8/32	Phillips P-350 Series	Pick & Associates Evolution	Prime Computer 300 & 350	Manufacturer and Model
												Survey Item
33	20	8	25	0	0	20	20	33	50	0	57	Significant Problems (%)
0	20	15	28	50	33	0	0	33	50	0	0	System proposed by vendor was too small
0	30	8	23	0	33	0	0	33	50	0	0	Delivery and/or installation of equipment was late
33	20	8	13	25	0	0	20	17	0	0	0	Delivery of required software was late
100	50	8	18	25	33	0	0	17	0	0	0	System costs exceeded expected total
0	20	0	15	0	0	20	0	0	0	0	14	Vendor did not provide all promised software or support
0	0	0	0	25	0	0	0	0	0	0	0	Program/data compatibility not what vendor promised
33	0	8	13	0	17	20	0	17	0	0	—	Terminals/peripherals compatibility not what vendor promised
0	20	31	15	0	17	0	0	17	50	0	14	Vendor enhancements/changes to hardware software hard to keep up with
0	0	15	10	0	0	0	0	0	0	0	14	Equipment Excessively Noisy
33	0	23	15	0	33	0	40	17	0	0	29	Power/Colling requirements excessive
0	10	8	33	75	0	0	40	0	50	100	57	Other
33	0	15	48	50	0	40	20	33	0	100	100	Significant Advantages (%)
0	0	8	3	0	0	80	0	0	50	33	—	Users happy with response time
0	0	15	18	75	17	0	40	0	0	33	29	System easy to expand/reconfigure
33	0	0	13	25	0	0	40	0	0	33	29	System costs less than expected
0	10	0	15	25	0	0	20	0	0	0	14	Programs/data compatible, as vendor promised
0	10	0	13	0	0	0	0	0	0	100	—	Terminals/peripherals compatible, as vendor promised
33	10	0	18	0	17	40	0	0	0	100	29	System is power/energy efficient
0	0	0	3	25	17	20	0	0	50	33	14	Productivity aids help us keep programming costs down
0	0	0	5	0	0	0	0	0	0	0	14	Database language effective
0	0	0		0	17	0	20	0	50	0	—	Delivery and/or installation of equipment was ahead of schedule
3.0	2.7	2.9	3.3	3.3	3.2	3.4	3.2	2.8	3.5	4	3.7	Delivery and/or installation of software was ahead of schedule
3.3	3.3	3.2	2.9	3.5	3.3	3.6	3.8	2.8	2.5	3.7	3.6	Other
2.3	3.1	3.1	3.1	3.0	3.3	3.4	3.4	2.7	2.0	3.3	3.0	System Ratings (4.0-0.0)
1.3	3.1	2.9		3.3	3.3	3.0	3.2	3.3	3.0	3.7	3.6	Ease of operation
3.0	3.0	2.9		3.3	3.6	3.0	3.0	2.3	2.5	3.7	3.1	Reliability of Mainframe
			3.3									Reliability of Peripherals
			2.4									Maintenance service:
			2.4									Responsiveness
			2.3									Effectiveness
			2.7									Technical support:
1.3	3.0	2.5	2.3	2.8	3.0	2.8	2.8	2.2	2.5	4	2.9	Trouble-shooting
1.6	2.8	2.5		2.8	2.5	2.6	2.3	2.0	1.5	3.3	2.4	Education
1.3	2.7	2.5		3.3	2.5	2.8	2.3	1.5	2.0	3.0	2.3	Documentation
			2.7									Manufacturer's software:
2.3	2.4	3.3	2.7	4.0	2.8	2.4	3.2	2.0	3.0	4.0	3.1	Operating system
2.0	2.1	3.1		3.3	3.0	3.0	2.8	2.7	—	4.0	2.9	Compilers & Assemblers
2.0	1.8	2.5	2.9	3.3	2.7	3.4	3.0	1.8	2.0	4.0	2.7	Applications Programs
			2.5									
2.3	2.3	2.9	2.8	3.7	2.8	3.3	3.3	2.0	1.0	3.7	3.6	Ease of programming
1.0	1.8	2.8		2.7	2.2	3.0	3.0	2.4	1.0	3.3	2.7	Ease of conversion
2.0	2.4	3.2		3.0	3.6	3.0	3.2	3.0	2.0	4.0	3.1	Overall satisfaction
			65									Would you recommend system to another user? (%)
33	20	54	35	100	50	80	100	67	0	100	86	Yes
67	80	64		0	33	20	0	33	100	0	14	No

Table begins on facing page.

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model												
	Prime Computer 400 & 500	Prime Computer 550, 650, 750	Qantel 960 & 970	Qantel 1400 & 1450	Systems (SEL) (all models)	Tandem T-16	Texas Instruments 990 Series	Texas Instruments (other models)	Univac BC/7 Series	Univac V70 & V77 Series	Univac 9200	Univac 9300
Survey Item												
No. of User Responses	16	16	8	5	3	10	46	5	14	11	8	8
No. of Systems Represented	18	18	8	5	14	17	62	9	16	20	8	4
Avg. Life of System (Mos.)	23.6	11.0	17.2	32.6	49.3	15.7	163.0	19.0	21.0	48.9	104.8	104.8
Acquisition Method (%)												
Purchase	75	44	88	60	67	60	93	80	43	91	75	50
Rental	0	0	0	20	0	0	2	0	21	0	0	0
Lease	25	44	12	20	33	40	4	20	29	9	25	50
Principal Applications (%)												
Accounting	50	50	88	80	0	10	65	80	79	27	88	75
Construction	6	6	0	0	0	0	2	20	14	0	0	0
Education	31	6	0	0	0	10	4	0	0	0	12	0
Government	0	25	0	0	100	0	0	0	14	0	38	25
Manufacturing	19	12	38	20	0	0	13	20	21	18	38	0
Payroll/Personnel	31	19	25	60	0	20	41	40	71	9	63	25
Service Bureaus	12	37	0	0	0	0	19	20	14	0	12	0
Transportation	0	0	0	20	0	0	6	0	0	18	0	0
Word Processing	31	37	50	20	0	20	24	80	21	9	0	0
Banking/Finance	0	12	0	0	0	30	4	20	0	18	0	0
Distributed Processing	0	19	0	20	33	10	15	0	7	9	0	0
Engineering/Scientific	37	12	0	0	67	10	4	0	0	27	0	0
Insurance	0	6	12	0	0	0	2	0	0	9	0	25
Medical/Health Care	6	6	0	0	0	10	6	20	7	9	0	0
Retail	0	19	0	0	0	0	13	20	7	0	12	0
Transaction Processing	12	19	0	40	0	50	15	0	0	45	0	0
Utilities-Power	0	0	0	0	0	0	4	0	0	0	0	0
Other	0	0	50	20	0	0	19	0	0	0	25	0
Source of Applications Prog. (%)												
In-house personnel	94	75	63	80	67	70	74	60	71	81	100	100
"Ready-made" programs from manufacturer	25	19	75	20	0	20	6	0	50	0	0	0
Contract Programming	43	19	50	40	67	50	26	20	29	36	12	0
Manufacturer's Personnel	0	0	0	20	0	0	0	0	29	9	12	0
Proprietary Software Packages	56	50	38	40	0	50	37	40	21	45	0	0
Other	0	0	0	0	0	0	4	0	0	0	0	0
Hardware Configuration												
No. of CPUs	18	18	8	5	14	60	64	5	16	21	8	4
No. of Workstations (avg.)	421.0	186.0	2.3	5.4	4.2	512.0	184.0	11.0	2.7	6.0	0	0
Software Configuration												
DBMS (%)	0	0	0	20	0	0	0	0	0	54	0	0
Datacomm monitors (%)	0	0	0	0	33	0	0	0	0	73	0	0
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	0	0
BASIC	19	19	88	60	0	0	26	60	0	0	0	0
COBOL	31	44	0	0	0	50	59	0	0	36	0	25
FORTRAN	75	69	0	0	100	10	9	0	0	36	0	0
RPG	6	0	0	0	0	0	15	0	100	9	50	100
Other	0	0	0	40	67	0	0	0	0	45	50	0
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	25	31	25	0	0	50	24	20	36	0	50	0
Proprietary Software	31	44	25	0	0	20	41	40	7	9	0	0
Expanded Datacomm	31	31	0	20	0	70	35	20	21	18	25	0
Distributed Processing	12	6	0	0	0	20	24	20	0	9	0	0
Integrated Word Processing	19	19	12	0	0	10	19	100	14	0	0	0
Other	0	0	0	0	0	0	11	0	0	0	0	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	12	0	12	0	0	0	13	20	0	0	38	0
Yes, different manufacturer	0	0	0	0	0	0	0	0	21	18	24	75
No	81	94	75	100	100	100	78	80	79	82	38	25

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Prime Computer 400 & 500	Prime Computer 550, 650, 750	Qantel 960 & 970	Qantel 1400 & 1450	Systems (SEL) (all models)	Tandem T-16	Texas Instruments 990 Series	Texas Instruments (other models)	Univac BC/7 Series	Univac V70 & V77 Series	Univac 9200	Univac 9300	Manufacturer and Model	Survey Item	
12	12	12	40	67	10	9	20	43	18	25	25	Significant Problems (%) System proposed by vendor was too small Delivery and/or installation of equipment was late Delivery of required software was late System costs exceeded expected total Vendor did not provide all 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 excessively noisy Power/Cooling requirements excessive Other	0	
6	6	12	0	33	0	19	0	14	27	0	0		0	
19	0	25	20	33	0	6	20	21	18	0	0		0	
0	0	0	0	0	10	0	0	0	18	0	0		0	
19	6	25	20	33	30	11	0	35	36	0	0		0	
6	12	12	0	0	10	4	0	7	9	0	0		0	
6	0	0	0	33	0	0	0	7	18	0	0		0	
6	0	12	0	0	20	9	0	7	27	0	0		0	
0	0	0	0	33	0	2	0	7	0	38	100		0	
0	0	0	0	0	0	0	0	7	0	12	75		0	
12	6	50	0	0	0	11	40	7	36	25	0		0	
62	81	75	60	0	40	52	80	29	36	0	25		Significant Advantages (%) Users happy with response time System easy to expand/reconfigure System costs less than expected Programs/data compatible, as vendor promised Terminals/peripherals compatible, as vendor promised System is power/energy efficient Productivity aids help us keep programming costs down Database language effective Delivery and/or installation of equipment was ahead of schedule Delivery and/or installation of software was ahead of schedule Other	0
87	75	88	100	33	90	65	40	64	0	0	0			0
6	12	12	0	0	0	17	20	7	0	0	0	0		
43	50	0	60	0	0	28	20	29	9	38	0	0		
25	44	0	40	33	10	13	40	7	18	12	0	0		
43	37	25	40	0	30	26	60	7	0	0	0	0		
43	31	25	60	0	50	37	60	50	18	0	0	0		
12	44	50	60	0	60	11	20	7	9	0	0	0		
12	25	12	40	0	40	17	20	7	9	12	0	0		
12	6	12	0	0	0	13	20	7	0	12	0	0		
6	6	12	0	0	20	4	0	0	18	0	0	0		
3.8	3.8	3.6	3.6	1.7	3.6	3.5	4.0	3.1	2.9	3.0	3.0	System Ratings (4.0-0.0) Ease of operation 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 Would you recommend system to another user? (%) Yes No		0
3.8	3.6	3.4	3.6	3.7	3.9	3.6	3.6	3.0	2.4	2.6	3.2			0
3.3	3.0	3.1	3.1	2.3	3.3	3.5	3.6	2.5	3.2	2.4	2.2		0	
3.1	3.0	3.6	3.2	1.3	3.4	3.1	3.0	2.9	2.5	2.8	3.0		0	
3.0	2.9	3.4	3.1	2.0	4.6	3.2	2.3	2.6	2.2	2.5	3.2		0	
3.1	3.2	3.0	3.0	1.5	3.1	2.9	3.2	2.5	2.2	2.4	2.0		0	
2.5	2.7	2.4	2.2	2.3	3.2	2.4	2.8	2.0	1.7	2.4	2.0		0	
2.7	2.9	2.6	2.8	1.3	2.9	3.4	2.8	2.0	1.9	2.1	2.0		0	
3.7	3.7	3.4	3.6	1.7	3.7	3.3	3.6	2.7	2.5	2.6	2.0		0	
3.4	3.6	3.5	3.2	2.3	3.6	3.3	3.0	2.4	2.2	2.5	1.0		0	
3.2	2.9	3.1	3.0	1.0	3.2	2.8	3.5	2.6	2.2	2.0	0		0	
3.3	3.6	3.7	3.6	1.6	3.3	3.3	3.8	2.9	2.5	2.8	2.2		0	
3.1	3.3	3.3	3.5	1.5	3.0	3.0	3.3	2.7	2.7	2.6	2.0		0	
3.6	3.6	3.5	3.2	2.0	3.8	3.4	3.5	2.9	2.6	2.7	2.0	0		
100	100	100	60	33	100	96	100	71	45	27	0	0		
0	0	0	40	33	0	4	0	29	55	33	100	0		

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User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Manufacturer and Model							
	Wang Labs 2200T	Wang Labs 2200VP	Wang Labs 2200VS	Wang Labs 2200MVP	Wang Labs 2200, unspecified	Wang Labs (other models)	Minis SBC (other vendors)
Survey Item							
No. of User Responses	5	8	29	22	5	9	50
No. of Systems Represented	6	48	35	34	15	17	107
Avg. Life of System (Mos.)	27.0	33.0	12.0	16.0	35.0	17.0	25.3
Acquisition Method (%)							
Purchase	80	75	57	82	88	67	78
Rental	0	12	18	14	0	22	6
Lease	20	14	25	4	12	11	16
Principal Applications (%)							
Accounting	60	50	48	73	63	22	52
Construction	0	13	14	14	12	11	4
Education	0	25	0	0	0	0	4
Government	0	13	7	0	0	0	4
Manufacturing	20	13	10	18	25	11	16
Payroll/Personnel	60	50	28	45	25	11	40
Service Bureaus	0	25	17	18	0	0	8
Transportation	0	0	3	0	0	0	2
Word Processing	20	13	34	36	12	44	32
Banking/Finance	20	25	7	9	12	0	4
Distributed Processing	0	0	14	5	0	0	10
Engineering/Scientific	0	0	7	5	25	33	14
Insurance	0	0	10	5	12	22	4
Medical/Health Care	0	0	14	0	0	0	12
Retail	40	0	7	9	12	0	4
Transaction Processing	0	13	17	5	38	0	8
Utilities-Power	0	0	0	0	0	0	2
Other	20	13	17	23	25	0	32
Source of Applications Prog. (%)							
In-house personnel	20	88	79	68	63	44	64
"Ready-made" programs from manufacturer	20	25	10	9	0	55	44
Contract Programming	60	50	31	32	63	0	24
Manufacturer's Personnel	0	0	0	0	0	0	2
Proprietary Software Packages	40	25	28	55	12	33	6
Other	0	0	3	5	12	11	0
Hardware Configuration							
No. of CPU's	6	48	35	34	15	17	119
No. of Workstations (avg.)	1.8	2.0	7.0	2.6	1.0	9.0	9.3
Software Configuration							
DBMS (%)	0	13	17	23	25	33	12
Datacomm monitors (%)	0	13	10	5	12	0	8
Primary Programming Language							
APL	0	0	0	0	0	0	2
BASIC	100	75	21	86	88	44	30
COBOL	0	0	83	0	0	0	16
FORTRAN	0	0	0	0	0	0	24
RPG	0	0	31	0	0	0	14
Other	0	0	10	0	0	11	36
Planned Acquisitions/Implementations for 1980 (%)							
Additional software from manufacturer	40	13	24	14	0	11	24
Proprietary Software	40	0	34	41	12	0	14
Expanded Datacomm	20	25	52	40	25	0	26
Distributed Processing	0	25	14	14	12	11	10
Integrated Word Processing	20	0	45	9	12	11	24
Other	0	13	17	14	12	33	12
Plans for system replacement in 1980 (%)							
Yes, same manufacturer	20	0	3	0	0	11	8
Yes, different manufacturer	0	25	0	0	25	11	22
No	80	75	86	100	63	66	76

Table continues on facing page.

User Ratings of Computer Systems

Table 2. Minicomputers & Small Business Computers

Wang Labs 2200T	Wang Labs 2200 VP	Wang Labs 2200 VS	Wang Labs 2200 MVP	Wang Labs 2200, unspecified	Wang Labs (other models)	Minis & SBC other vendors	Manufacturer and Model		Survey Item
0	25	3	9	25	11	20	Significant Problems (%)		System proposed by vendor was too small
0	0	24	14	25	11	16			Delivery and/or installation of equipment was late
0	0	10	0	25	11	12	Significant Advantages (%)		Users happy with response time
0	25	0	18	12	0	10			System easy to expand/reconfigure
20	38	14	0	25	22	16	System Ratings (4.0-0.0)		Reliability of Mainframe
0	13	3	5	12	0	6			Reliability of Peripherals
0	13	3	9	0	0	2	Maintenance service:		Responsiveness
0	0	14	9	25	11	10			Effectiveness
0	25	7	9	25	0	8	Technical support:		Trouble-shooting
0	0	0	5	12	0	12			Education
40	13	7	5	38	0	26	Manufacturer's software:		Operating system
0	75	55	59	38	44	46			Compilers & Assemblers
0	63	69	82	63	22	44	Ease of programming		Ease of conversion
20	0	10	5	12	0	10			Overall satisfaction
0	13	34	50	0	11	28	Would you recommend system to another user? (%)		Yes
0	13	0	36	0	0	26			No
0	25	24	27	25	22	16	Significant Advantages (%)		System is power/energy efficient
20	50	76	32	0	11	12			Productivity aids help us keep programming costs down
0	13	10	14	0	11	18	Significant Advantages (%)		Database language effective
20	0	10	14	0	11	6			Delivery and/or installation of equipment was ahead of schedule
0	0	7	14	0	0	4	Significant Advantages (%)		Delivery and/or installation of software was ahead of schedule
0	13	0	9	0	11	8			Other
4.0	3.3	3.8	3.9	3.4	3.5	3.3	Significant Advantages (%)		System easy to expand/reconfigure
3.2	3.4	3.7	3.6	3.4	3.2	3.2			System costs less than expected
3.4	3.1	3.4	3.0	3.3	3.1	3.0	Significant Advantages (%)		Programs/data compatible, as vendor promised
3.0	3.1	3.1	2.9	2.1	2.4	2.8			Terminals/peripherals compatible, as vendor promised
2.8	3.0	3.2	2.9	2.3	2.5	2.8	Significant Advantages (%)		Terminals/peripherals compatible, as vendor promised
2.6	2.8	2.9	2.9	2.0	2.4	2.6			System is power/energy efficient
1.8	2.3	2.2	2.5	2.0	2.5	2.3	Significant Advantages (%)		Productivity aids help us keep programming costs down
2.8	2.6	2.3	2.5	2.1	2.9	2.2			Database language effective
4.0	3.3	3.6	3.1	2.8	3.2	3.2	Significant Advantages (%)		Delivery and/or installation of equipment was ahead of schedule
4.0	3.2	3.5	3.6	3.0	3.0	3.2			Delivery and/or installation of software was ahead of schedule
2.3	3.0	3.2	2.6	2.3	3.0	2.9	Significant Advantages (%)		Other
4.0	3.3	3.8	3.6	3.3	3.2	3.1			System Ratings (4.0-0.0)
4.0	2.8	3.3	3.3	2.0	3.1	3.0	Significant Advantages (%)		Ease of operation
3.0	3.3	3.6	3.4	2.9	3.3	3.1			Reliability of Mainframe

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User Ratings of Computer Systems

Table 3. Desktop, Personal, & Microcomputers

Manufacturer and Model Survey Item												
	Alpha Micro AM-100	Altos ACS 8000 Series	Apple II (all models)	Commodore (all models)	Cromemco System Three	Cromemco Z-2 (all models)	Data General MicroNova	DEC LSI-11	Heath (all models)	Hewlett-Packard 9830A	IBM 5100	IBM 5110
No. of User Responses	17	4	38	12	4	8	9	7	7	4	10	21
No. of Systems Represented	19	5	47	56	6	8	15	24	8	11	28	34
Avg. Life of System (Mos.)	24.0	15.0	12.0	15.6	19.0	19.3	10.7	19.9	11.1	60.5	42.8	20.5
Acquisition Method (%)												
Purchase	100	75	100	100	100	100	89	86	100	100	100	90
Rental	0	0	0	0	0	0	0	0	0	0	0	5
Lease	0	25	0	0	0	0	11	14	0	0	0	5
Principal Applications (%)												
Accounting	76	25	34	50	75	38	44	42	43	75	40	52
Construction	12	0	0	0	25	0	0	0	0	25	0	0
Education	0	50	37	33	25	0	0	14	0	25	0	14
Government	0	0	5	8	25	0	0	0	0	0	0	0
Manufacturing	5	0	3	8	0	13	11	14	0	50	10	14
Payroll/Personnel	41	0	5	0	50	25	22	29	0	25	40	33
Service Bureaus	12	0	0	0	0	0	0	0	29	0	0	10
Transportation	0	0	0	0	0	0	0	0	0	25	0	0
Word Processing	76	75	26	42	75	38	33	29	14	0	20	5
Banking/Finance	0	0	5	0	0	25	0	0	0	25	10	0
Distributed Processing	0	0	5	8	0	0	11	0	14	0	0	5
Engineering/Scientific	24	0	11	25	25	25	22	14	0	50	20	0
Insurance	0	0	3	0	0	0	0	0	0	0	30	14
Medical/Health Care	5	0	3	0	0	0	22	0	0	0	0	10
Retail	5	0	8	0	50	13	22	14	0	0	20	14
Transaction Processing	5	0	0	8	25	13	11	14	0	0	10	5
Utilities-Power	0	0	0	0	0	0	0	0	0	0	0	0
Other	24	50	45	0	0	38	22	14	43	0	30	38
Source of Applications Prog. (%)												
In-house personnel	76	100	76	67	100	100	89	71	86	75	80	76
"Ready-made" programs from manufacturer	41	50	47	17	25	0	11	14	57	75	30	24
Contract Programming	18	0	5	8	50	0	22	29	14	25	10	19
Manufacturer's Personnel	0	0	0	0	0	0	11	0	0	0	0	0
Proprietary Software Packages	29	75	37	17	50	38	22	0	0	50	0	14
Other	0	0	11	33	0	0	0	0	0	0	0	0
Hardware Configuration												
No. of CPUs	19	5	47	56	6	8	15	29	8	11	28	34
No. of Workstations (avg.)	2.8	1.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Software Configuration												
DBMS (%)	0	0	0	0	0	0	11	0	0	0	0	0
Datacomm monitors (%)	0	0	0	0	0	0	11	0	0	0	0	0
Primary Programming Language												
APL	0	0	0	0	0	0	0	0	0	0	60	10
BASIC	88	100	79	100	50	50	44	29	100	50	50	76
COBOL	0	75	0	0	75	25	0	0	0	0	0	0
FORTRAN	0	50	0	0	75	50	44	0	14	0	0	0
RPG	0	0	0	0	0	0	0	0	0	0	0	0
Other	12	25	0	17	25	38	22	42	43	0	10	0
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	24	50	26	17	50	13	11	42	29	0	0	0
Proprietary Software	47	75	42	33	75	25	22	14	0	25	10	5
Expanded Datacomm	41	0	8	25	25	25	11	14	0	0	10	10
Distributed Processing	29	0	8	0	0	13	0	14	0	0	0	5
Integrated Word Processing	12	25	8	25	25	25	0	14	29	0	0	14
Other	12	0	0	25	0	0	22	0	0	0	30	5
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	5	0	0	17	0	13	11	14	0	0	20	14
Yes, different manufacturer	12	0	0	8	0	0	22	0	0	0	10	5
No	82	100	84	67	100	87	67	58	100	75	70	71

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User Ratings of Computer Systems

Table 3. Desktop, Personal, & Microcomputers

Alpha Micro AM-100	Altos ACS 8000 Series	Apple II (all models)	Commodore (all models)	Cromemco System Three	Cromemco Z-2 (all models)	Data General MicroNova	DEC LSI-11	Heath (all models)	Hewlett-Packard 9830A	IBM 5100	IBM 5110	Manufacturer and Model	Survey Item
0	0	2	0	25	0	0	0	0	25	30	19	Significant Problems (%) System proposed by vendor was too small Delivery and/or installation of equipment was late Delivery of required software was late System costs exceeded expected total Vendor did not provide all 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 Excessively Noisy Power/Cooling requirements excessive Other	
18	0	2	17	25	13	11	42	57	25	0	5		
12	25	5	8	25	0	11	14	43	0	0	0		
12	0	11	0	0	0	11	0	0	0	0	10		
29	0	5	17	0	0	0	14	29	0	10	0		
12	25	0	17	0	0	11	0	0	0	0	10		
12	0	0	8	0	0	0	14	0	25	0	0		
24	25	5	17	25	13	0	0	0	0	0	0		
12	0	0	0	0	0	11	0	14	25	0	5		
0	0	0	0	0	0	0	0	0	0	0	0		
12	25	13	25	25	0	22	14	0	0	10	24		
71	75	39	50	0	50	22	71	43	25	20	43		Significant Advantages (%) Users happy with response time System easy to expand/reconfigure System costs less than expected Programs/data compatible, as vendor promised Terminals/peripherals compatible, as vendor promised System is power/energy efficient Productivity aids help us keep programming costs down Database language effective Delivery and/or installation of equipment was ahead of schedule Delivery and/or installation of software was ahead of schedule Other
71	50	61	25	75	38	33	0	43	0	10	24		
18	25	24	17	25	25	22	14	43	0	10	10		
12	25	0	0	25	38	0	14	29	0	0	10		
29	0	5	8	50	38	11	14	29	0	0	0		
35	0	39	50	0	25	22	29	29	0	10	43		
24	0	11	0	0	25	0	14	0	0	0	14		
0	0	8	0	0	0	0	0	0	0	10	14		
12	0	5	0	25	13	11	0	0	0	10	19		
12	0	5	0	0	13	11	0	0	0	10	5		
0	2.5	11	2.5	0	0	11	0	0	0	0	9		
3.2	3.8	3.6	3.3	3.8	3.7	3.3	4.0	3.4	3.8	3.4	3.2	System Ratings (4.0-0.0) Ease of operation 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 Would you recommend system to another user? (%) Yes No	
3.2	3.5	3.7	3.3	3.5	3.8	3.0	4.0	3.6	3.8	3.5	3.6		
3.1	3.5	3.3	2.9	2.5	3.3	2.8	3.4	3.2	3.5	3.3	3.5		
2.8	3.0	3.1	2.1	3.3	3.6	3.3	3.0	2.2	3.6	3.5	3.2		
2.9	2.7	3.2	2.5	3.0	3.3	3.3	3.0	3.4	3.6	3.3	3.4		
3.0	3.0	2.6	2.1	3.3	3.2	2.9	3.0	2.4	3.5	2.8	3.1		
2.3	2.5	2.5	1.9	2.8	2.3	2.6	3.0	2.4	3.3	2.1	2.6		
2.6	2.0	3.2	1.7	3.0	2.0	2.8	3.0	2.7	3.5	2.4	2.5		
3.4	3.6	3.1	2.9	3.5	3.0	3.1	3.0	2.4	3.3	3.1	2.8		
3.3	3.6	3.2	3.1	3.5	2.3	2.8	3.2	2.4	—	2.7	2.5		
2.6	2.5	2.7	2.3	—	2.6	3.1	2.3	—	—	2.5	2.6		
3.5	3.6	3.4	3.2	3.5	3.0	3.0	3.2	3.5	4.0	3.6	3.0		
3.2	3.6	3.1	3.4	—	2.8	2.8	3.0	2.4	—	2.7	2.5		
3.4	3.8	3.3	3.3	3.0	3.3	3.0	3.5	3.0	3.8	2.7	2.9		
94	100	100	67	100	88	67	100	86	50	30	71		
6	0	0	33	0	12	33	0	14	25	60	29		

Table begins on facing page.

User Ratings of Computer Systems

Table 3. Desktop, Personal, & Microcomputers

Manufacturer and Model											
	Survey Item	IMSAI (all models)	Intel (all models)	North Star Horizon	Ohio Scientific Challenger I/II	Ohio Scientific Challenger III	Perotec (all models)	PolyMorphic Systems	Radio Shack TRS-80 Model I	Radio Shack TRS-80 Model II	Tektronix 4051
No. of User Responses	7	5	12	5	6	8	5	57	13	4	36
No. of Systems Represented	8	9	15	5	7	17	8	110	22	4	83
Avg. Life of System (Mos.)	32.8	15.6	12	8	13.5	21.6	22.8	16.3	6	31.5	12.1
Acquisition Method (%)											
Purchase	100	100	100	100	83	88	80	100	92	100	97
Rental	0	0	0	0	0	12	0	0	0	0	0
Lease	0	0	0	0	0	0	20	0	8	0	3
Principal Applications (%)											
Accounting	71	0	50	60	67	75	60	52	77	0	50
Construction	0	0	8	0	0	12	0	0	6	0	14
Education	14	0	25	0	0	0	0	30	6	50	17
Government	0	0	0	0	0	12	0	4	0	25	3
Manufacturing	0	20	0	0	0	12	0	4	15	0	8
Payroll/Personnel	14	0	17	20	17	50	20	20	42	0	33
Service Bureaus	14	0	33	40	17	0	60	10	0	25	3
Transportation	0	0	0	0	0	0	0	0	0	0	0
Word Processing	43	20	75	60	33	75	60	40	42	0	47
Banking/Finance	0	0	0	0	0	12	0	12	6	0	8
Distributed Processing	14	0	0	0	0	12	0	0	6	0	5
Engineering/Scientific	29	60	17	0	0	0	0	9	23	25	25
Insurance	0	0	0	0	0	12	0	0	0	0	8
Medical/Health Care	0	0	0	40	0	12	40	2	6	0	3
Retail	14	0	0	40	17	38	0	12	31	0	19
Transaction Processing	14	40	17	0	0	12	0	10	15	0	0
Utilities-Power	14	0	0	0	0	0	0	0	0	0	3
Other	29	20	50	20	33	38	20	0	23	0	39
Source of Applications Prog. (%)											
In-house personnel	100	80	92	80	83	62	60	83	85	75	69
"Ready-made" programs from manufacturer	29	40	25	60	17	25	80	48	15	50	47
Contract Programming	0	20	0	20	17	25	20	12	6	25	8
Manufacturer's Personnel	0	0	0	0	0	0	0	4	0	0	3
Proprietary Software Packages	43	20	58	20	33	75	40	39	33	0	61
Other	0	0	0	0	0	12	10	0	0	0	0
Hardware Configuration											
No. of CPUs	8	9	15	5	11	16	8	110	22	0	83
No. of Workstations (avg.)	1	0.6	0.9	1	0.6	1.1	0.7	1	0.6	0	1
Software Configuration											
DBMS (%)	0	0	0	0	0	0	0	0	0	0	8
Datacomm monitors (%)	0	0	0	0	0	0	0	0	0	0	3
Primary Programming Language											
APL	0	0	0	0	0	0	0	0	0	0	0
BASIC	100	20	75	100	50	100	100	56	92	25	69
COBOL	0	0	25	0	17	0	0	0	0	0	8
FORTRAN	0	60	25	0	17	0	20	5	0	0	8
RPG	14	0	0	0	0	0	0	0	0	0	0
Other	29	80	50	20	17	0	60	0	46	0	25
Planned Acquisitions/Implementations for 1980 (%)											
Additional software from manufacturer	14	40	17	40	33	12	80	33	33	0	33
Proprietary Software	43	20	58	60	33	62	60	46	70	0	61
Expanded Datacomm	14	20	33	20	17	25	80	16	38	0	13
Distributed Processing	14	0	0	0	0	12	20	2	8	0	6
Integrated Word Processing	29	0	42	20	17	12	20	21	15	0	16
Other	43	20	25	0	17	12	0	0	8	0	27
Plans for System replacement in 1980 (%)											
Yes, same manufacturer	0	0	8	20	0	12	20	12	0	0	13
Yes, different manufacturer	0	0	17	60	17	0	0	16	8	0	6
No	86	100	66	0	67	88	80	61	85	75	91

Table continues on facing page.

User Ratings of Computer Systems

Table 3. Desktop, Personal, & Microcomputers

	IMSAI (all models)	Intel (all models)	North Star Horizon	Ohio Scientific Challenger I/II	Ohio Scientific Challenger III	Pertec (all models)	PolyMorphic Systems	Radio Shack TRS-80 Mdl I	Radio Shack TRS-80 Mdl II	Tektronix 4051	Other Personal Computers	Manufacturer and Model	Survey Item
	14	0	8	0	0	0	0	7	8	0	6	Significant Problems (%)	
	14	0	42	0	17	25	0	12	46	0	16	System proposed by vendor was too small	
												Delivery and/or installation of equipment was late	
	14	0	8	0	0	0	0	12	8	0	19	Delivery of required software was late	
	0	20	8	0	17	12	40	5	8	0	0	System costs exceeded expected total	
	0	0	0	0	33	25	0	7	8	0	14	Vendor did not provide all promised software or support	
	0	0	0	0	17	0	0	7	0	0	3	Program/data compatibility not what vendor promised	
	0	0	0	0	17	0	0	2	0	0	0	Terminals/peripherals compatibility not what vendor promised	
	0	20	0	0	0	0	40	12	15	0	3	Vendor enhancements/changes to hardware/software hard to keep up with	
	0	0	0	0	0	25	0	5	8	0	6	Equipment Excessively Noisy	
	0	0	0	0	0	0	0	2	0	0	0	Power/Cooling requirements excessive	
	14	0	8	0	33	25	0	20	15	0	22	Other	
												Significant Advantages (%)	
	29	20	25	100	17	12	60	30	31	25	44	Users happy with response time	
	57	20	58	60	33	38	80	30	31	75	67	System easy to expand/reconfigure	
	14	0	17	0	17	25	0	24	15	0	39	System costs less than expected	
	14	0	25	40	17	12	0	7	15	0	25	Programs/data compatible, as vendor promised	
	14	0	17	0	0	12	20	4	0	0	22	Terminals/peripherals compatible, as vendor promised	
	0	0	17	60	33	50	60	39	23	0	58	System is power/energy efficient	
	0	20	0	0	17	0	40	12	8	0	14	Productivity aids help us keep programming costs down	
	0	0	8	40	17	12	20	7	8	25	6	Database language effective	
	0	0	0	40	0	12	20	10	0	0	17	Delivery and/or installation of equipment was ahead of schedule	
	0	0	0	0	0	0	0	2	0	0	0	Delivery and/or installation of software was ahead of schedule	
	0	20	8	0	17	0	0	7	0	0	11	Other	
												System Ratings (4.0-0.0)	
	3.5	2.6	3.4	3.6	3.0	3.6	3.4	3.3	3.4	3.3	3.5	Ease of operation	
	3.4	3.0	3.5	3.4	2.7	3.6	3.6	3.2	3.0	4.0	3.7	Reliability of Mainframe	
	3.1	2.8	3.1	3.2	3.2	3.4	3.6	2.7	2.8	4.0	3.3	Reliability of Peripherals	
												Maintenance service:	
	3.3	2.6	1.6	2.8	2.4	2.8	2.8	2.8	2.4	3.5	3.3	Responsiveness	
	3.7	2.3	2.0	2.8	2.8	2.6	3.4	2.5	2.7	3.5	2.6	Effectiveness	
												Technical support:	
	3.0	2.2	2.3	3.0	2.3	2.6	3.0	2.5	1.9	3.0	3.0	Trouble-shooting	
	3.0	2.5	2.0	2.6	1.8	2.8	2.5	2.5	2.1	2.5	3.6	Education	
	3.0	2.0	2.4	2.0	1.8	2.5	2.8	2.9	2.7	3.3	2.9	Documentation	
												Manufacturer's software:	
	3.0	2.8	3.1	3.6	2.6	2.8	3.8	2.8	2.2	4.0	3.1	Operating system	
	3.0	2.8	2.6	3.4	2.5	2.5	3.6	2.9	2.4	4.0	3.1	Compilers & Assemblers	
	2.8	2.0	2.2	3.0	2.5	2.0	2.2	2.5	1.7	4.0	3.1	Applications Programs	
												Ease of programming	
	3.3	2.6	3.1	3.8	3.0	3.0	3.6	3.4	3.4	3.3	3.4	Ease of conversion	
	2.8	2.3	2.4	3.0	2.7	2.5	2.8	2.8	2.9	3.0	3.3	Overall satisfaction	
	3.4	2.8	3.1	3.4	2.8	3.0	3.4	3.0	3.0	3.8	3.3		
												Would you recommend system to another user? (%)	
	71	60	75	100	67	62	100	79	85	100	94	Yes	
	29	20	25	0	33	25	0	21	15	0	6	No	

Table begins on facing page.

User Ratings of Computer Systems

Table 4. Mainframe and Plug-Compatible Mainframe Vendor Summaries

Manufacturer and Model Survey Item												
	Amdahl	Burroughs	Control Data	DEC	Honeywell	IBM	ICL	Magnuson	NASCO (Itel)	NCR	Univac	All Other Mainframes
No. of User Responses	44	252	33	56	128	1,149	19	3	37	151	130	4
No. of Systems Represented	64	338	46	71	146	1,776	42	5	50	162	181	4
Avg. Life of System (Mos.)	22.1	34.3	61.0	31.0	61.0	39.1	116.7	6.7	15.9	41.6	21.4	14.0
Acquisition Method (%)												
Purchase	55	55	59	76	65	47	67	67	46	54	30	0
Rental	8	6	4	3	8	10	10	0	6	25	13	25
Lease	37	40	32	15	25	44	24	33	42	25	56	75
Principal Applications (%)												
Accounting	70	51	42	45	58	65	83	33	72	64	69	50
Construction	7	2	7	0	2	3	0	0	3	1	3	0
Education	14	16	41	36	19	11	10	0	8	3	15	0
Government	16	13	21	22	17	12	0	0	12	8	22	0
Manufacturing	32	14	19	6	23	26	28	0	30	13	26	0
Payroll/Personnel	61	53	30	33	49	55	22	33	57	39	59	25
Service Bureaus	23	17	17	31	10	16	24	33	31	7	10	0
Transportation	12	2	3	2	4	7	10	0	2	2	11	0
Word Processing	19	8	5	19	4	5	0	0	8	0	5	0
Banking/Finance	13	30	3	16	7	17	4	67	7	21	6	0
Distributed Processing	17	7	10	9	7	8	4	0	7	9	11	0
Engineering/Scientific	34	9	39	31	12	14	0	0	10	0	20	25
Insurance	14	5	6	10	7	16	10	0	7	2	4	25
Medical/Health Care	7	10	6	14	15	8	0	0	22	7	5	0
Retail	7	5	0	0	4	6	7	0	6	8	5	0
Transaction Processing	44	18	0	15	11	19	11	0	14	16	24	0
Utilities-Power	10	4	0	3	3	3	4	0	12	9	7	0
Other	16	13	7	20	10	15	4	0	28	16	11	50
Source of Applications Prog. (%)												
In-house personnel	97	91	90	99	94	91	65	100	94	78	97	75
"Ready-made" programs from manufacturer	40	38	20	51	22	29	25	0	38	66	37	0
Contract Programming	43	24	16	30	16	28	45	33	33	14	37	25
Manufacturer's Personnel	17	5	5	9	10	8	24	0	0	14	24	0
Proprietary Software Packages	74	49	38	51	30	52	11	67	63	15	46	25
Other	0	0	2	5	0	1	0	0	0	3	4	0
Hardware Configuration												
No. of CPUs	71	368	47	45	157	1,708	21	5	9	162	191	4
No. of Workstations (avg.)	126.0	35.0	53.1	38.1	22.6	41.5	9.0	4.6	49.5	11.8	49.6	301.7
Software Configuration												
DBMS (%)	90	46	45	49	29	50	4	0	58	14	66	75
Datacomm monitors (%)	82	58	37	23	42	57	10	100	73	28	64	25
Primary Programming Language												
APL	5	2	23	6	0	2	0	0	3	0	0	0
BASIC	2	1	13	17	5	1	0	0	0	0	0	0
COBOL	84	88	29	74	81	68	40	100	81	43	97	25
FORTTRAN	20	13	48	68	19	9	0	0	8	1	26	25
RPG	0	5	6	2	3	6	17	0	0	0	11	0
Other	51	22	22	49	20	33	60	33	30	57	21	25
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	42	25	25	34	19	40	7	0	29	38	31	0
Proprietary Software	75	31	36	49	14	42	21	100	76	26	29	0
Expanded Datacomm	69	56	54	59	38	43	22	33	62	51	53	25
Distributed Processing	42	15	16	18	12	22	0	0	15	13	17	0
Integrated Word Processing	28	11	6	26	4	10	4	0	14	6	10	0
Other	10	6	10	21	2	3	14	0	4	4	4	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	19	25	23	5	10	21	0	0	0	25	19	0
Yes, different manufacturer	2	4	14	3	21	4	38	0	4	9	0	0
No	88	65	60	85	63	56	52	100	87	59	79	75

Table continues on facing page.

User Ratings of Computer Systems

Table 4. Mainframe and Plug-Compatible Mainframe Vendor Summaries

	Amdahl	Burroughs	Control Data	DEC	Honeywell	IBM	ICL	Magnuson	NASCO (Itel)	NCR	Univac	All Other Mainframes	Manufacturer and Model
													Survey Item
2	16	3	20	19	5	17	0	0	8	11	25		Significant Problems (%)
3	34	0	18	10	9	0	0	0	21	10	0		System proposed by vendor was too small
0	16	2	14	3	6	17	0	0	12	5	0		Delivery and/or installation of equipment was late
0	10	2	6	6	8	14	0	3	0	5	25		Delivery of required software was late
0	20	11	11	18	7	35	0	17	3	16	0		System costs exceeded expected total
0	5	2	6	3	4	14	0	0	19	12	25		Vendor did not provide all promised software or support
2	6	11	3	7	3	10	0	2	3	4	0		Program/data compatibility not what vendor promised
8	10	2	18	9	14	7	0	6	4	17	0		Terminals/peripherals compatibility not what vendor promised
7	7	0	8	13	3	14	0	0	4	5	0		Vendor enhancements/changes to hardware/software hard to keep up with
3	11	10	14	13	13	4	0	2	3	13	50		Equipment excessively noisy
0	16	18	18	12	12	27	0	9	8	12	0		Power/Cooling requirements excessive
													Other
45	40	44	71	37	42	59	33	61	48	59	0		Significant Advantages (%)
38	51	42	61	43	29	49	67	48	63	53	0		Users happy with response time
25	8	16	3	4	8	4	33	11	15	6	0		System easy to expand/reconfigure
66	43	44	46	27	42	27	100	71	52	33	25		System costs less than expected
68	41	32	33	14	30	0	67	79	32	31	25		Programs/data compatible, as vendor promised
45	9	17	19	9	10	17	100	60	20	17	0		Terminals/peripherals compatible, as vendor promised
23	30	8	53	17	21	14	33	8	15	27	0		System is power/energy efficient
19	28	15	28	12	9	4	0	6	13	23	50		Productivity aids help us keep programming costs down
37	4	11	15	5	11	7	33	55	11	19	0		Database language effective
10	3	3	7	1	5	0	0	6	6	9	0		Delivery and/or installation of equipment was ahead of schedule
4	5	4	11	11	4	14	0	0	3	4	25		Delivery and/or installation of software was ahead of schedule
													Other
3.6	3.6	3.7	3.8	3.3	3.1	2.6	4.0	3.6	3.2	3.3	3.3		System Ratings (4.0-0.0)
3.7	3.2	3.4	3.3	3.0	3.3	3.1	3.3	3.3	3.3	3.3	3.3		Ease of operation
3.1	2.5	2.6	2.9	2.7	3.0	2.6	3.0	2.5	3.1	2.9	3.0		Reliability of Mainframe
													Reliability of Peripherals
3.5	2.7	3.3	2.7	2.9	3.0	2.3	4.0	3.3	3.0	3.4	2.8		Maintenance service:
3.4	2.4	3.0	2.8	2.6	3.0	2.4	3.7	3.1	3.0	3.1	2.8		Responsiveness
													Effectiveness
3.1	2.2	2.7	2.7	2.5	2.7	2.6	3.7	2.9	2.4	2.8	2.5		Technical support:
2.8	2.3	2.8	2.3	2.5	2.7	2.3	3.7	2.7	2.6	2.6	2.3		Trouble-shooting
2.9	2.1	2.3	2.6	2.5	2.7	2.2	3.7	2.8	2.5	2.4	1.5		Education
													Documentation
3.1	3.6	3.1	3.5	3.2	3.0	2.9	3.5	3.3	3.1	3.1	2.8		Manufacturer's software:
3.2	3.4	3.1	3.3	3.0	3.2	2.4	3.5	3.3	3.0	3.1	1.3		Operating system
3.0	2.5	2.4	2.8	2.7	2.8	2.3	3.5	3.3	2.8	2.6	1.3		Compilers & Assemblers
													Applications Programs
3.4	3.4	3.1	3.7	3.1	3.0	2.7	3.5	3.2	3.0	3.0	3.5		Ease of programming
3.5	3.1	2.4	3.2	2.6	3.0	2.2	3.5	3.4	3.1	2.8	2.8		Ease of conversion
3.6	3.0	3.1	3.3	2.9	3.0	2.6	3.5	3.2	3.0	3.1	3.3		Overall satisfaction
97	73	81	92	59	80	62	100	81	82	73	75		Would you recommend system to another user? (%)
3	27	19	9	41	20	38	0	17	17	22	0		Yes
													No

Table begins on facing page.

User Ratings of Computer Systems

Table 5. Minicomputer and Small Business Computer Vendor Summaries

Manufacturer and Model Survey Item												
	AM Jacquard	Basic Four	BTI	Burroughs	CHI	Control Data	Dta General	Datapoint	DEC	Digital Scientific Corp.	Educational Data Systems	Four Phase
No. of User Responses	4	45	7	62	4	3	149	79	412	5	6	36
No. of Systems Represented	4	48	15	87	6	4	205	140	791	5	6	119
Avg. Life of System (Mos.)	22.3	25.9	27.0	28.9	52.0	26.0	23.0	22.0	34.6	44.8	6.7	30.5
Acquisition Method (%)												
Purchase	100	71	57	69	25	67	84	46	88	80	100	12
Rental	0	5	0	13	0	0	1	9	1	0	0	32
Lease	0	23	43	18	75	33	15	45	10	20	0	51
Principal Applications (%)												
Accounting	75	75	57	73	50	0	49	56	41	60	67	61
Construction	0	5	29	4	0	0	6	5	4	0	0	0
Education	0	0	0	1	0	0	7	1	15	60	0	4
Government	0	2	0	7	0	0	5	6	15	0	0	7
Manufacturing	0	33	29	25	50	0	14	10	9	40	17	17
Payroll/Personnel	25	46	57	48	50	0	25	22	20	60	33	24
Service Bureaus	25	4	43	7	0	0	8	9	10	20	17	13
Transportation	0	2	14	1	25	0	1	4	2	0	0	3
Word Processing	75	6	14	1	0	0	14	13	17	20	50	10
Banking/Finance	0	10	14	11	0	33	3	7	5	0	0	0
Distributed Processing	0	9	0	5	0	0	9	29	11	20	0	15
Engineering/Scientific	0	0	14	1	25	0	24	11	26	20	0	0
Insurance	0	2	0	3	0	0	3	2	0	0	17	4
Medical/Health Care	0	2	0	7	0	0	10	5	8	0	0	33
Retail	0	23	0	6	0	0	6	11	2	0	17	0
Transaction Processing	0	21	0	9	25	0	16	20	9	0	0	20
Utilities-Power	0	0	0	4	0	33	4	2	3	0	0	0
Other	0	20	0	16	25	33	23	24	27	20	17	17
Source of Applications Prog. (%)												
In-house personnel	50	57	71	35	75	100	77	80	77	100	83	54
"Ready-made" programs from manufacturer	50	24	43	49	50	33	15	28	23	20	0	28
Contract Programming	25	55	57	47	0	0	30	25	17	0	33	19
Manufacturer's Personnel	25	0	0	5	0	67	8	1	6	0	0	6
Proprietary Software Packages	25	33	14	23	25	0	26	21	33	20	33	35
Other	0	0	0	2	25	0	0	4	5	20	0	0
Hardware Configuration												
No. of CPUs	4	38	15	87	6	4	121	225	925	5	6	119
No. of Workstations (avg.)	3.5	3.3	5.1	6.0	17.0	8.0	6.4	2.8	7.4	4.8	6.0	3.9
Software Configuration												
DBMS (%)	50	7	85	8	25	67	23	4	14	0	0	15
Datacomm monitors (%)	0	4	14	23	25	67	20	20	16	20	0	22
Primary Programming Language												
APL	0	0	0	0	0	33	5	2	0	0	0	3
BASIC	100	79	100	0	0	0	25	2	34	0	100	0
COBOL	0	0	0	75	0	33	31	11	11	0	0	32
FORTRAN	0	0	0	0	75	67	31	0	29	60	0	0
RPG	0	0	0	18	25	33	0	13	1	0	0	0
Other	25	3	0	2	0	0	25	75	56	60	0	53
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	50	9	0	14	25	33	19	21	23	0	0	33
Proprietary Software	25	22	14	19	0	0	41	17	27	60	50	20
Expanded Datacomm	75	26	29	29	25	33	29	32	30	80	17	14
Distributed Processing	0	7	0	3	0	0	8	21	8	0	0	18
Integrated Word Processing	0	16	0	8	0	0	16	27	14	0	50	31
Other	25	19	14	16	0	33	9	17	12	0	17	9
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	0	16	0	12	0	0	8	16	20	20	0	20
Yes, different manufacturer	0	11	29	24	0	0	11	15	6	20	0	19
No	100	73	71	60	100	100	77	68	66	40	83	62

Table continues on facing page.

User Ratings of Computer Systems

Table 5. Minicomputer and Small Business Computer Vendor Summaries

AM Jacquard	Basic Four	BTI	Burroughs	CHI	Control Data	Dta General	Datapoint	DEC	Digital Scientific Corp.	Educational Data Systems	Four Phase	Manufacturer and Model
												Survey Item
25	24	29	21	0	0	24	19	11	0	0	9	Significant Problems (%)
25	4	0	33	0	33	29	25	26	20	0	24	System proposed by vendor was too small
25	15	29	28	0	67	22	18	13	0	0	16	Delivery and/or installation of equipment was late
25	20	29	5	0	33	10	7	8	0	0	18	Delivery of required software was late
25	21	0	42	0	0	25	13	13	20	0	30	System costs exceeded expected total
0	2	0	13	0	0	11	3	4	0	0	6	Vendor did not provide all promised software or support
25	2	0	10	0	0	6	1	4	0	17	2	Program/data compatibility not what vendor promised
0	4	0	16	0	0	10	8	9	40	0	11	Terminals/peripherals compatibility not what vendor promised
0	9	14	10	0	0	8	5	9	20	0	0	Vendor enhancements/changes to hardware software hard to keep up with
0	4	0	2	0	0	4	1	3	0	0	2	Equipment excessively noisy
0	17	14	21	25	0	15	15	11	20	0	15	Power/Cooling requirements excessive
												Other
75	55	43	24	50	100	36	37	40	40	100	41	Significant Advantages (%)
75	65	43	42	50	0	57	67	54	40	100	30	Users happy with response time
0	13	0	3	50	0	4	14	7	20	0	2	System easy to expand/reconfigure
50	18	14	12	75	0	25	31	19	40	50	13	System costs less than expected
0	22	71	9	75	0	15	13	27	40	50	3	Programs/data compatible, as vendor promised
0	20	57	9	50	33	20	28	12	0	17	12	Terminals/peripherals compatible, as vendor promised
50	19	14	15	50	0	26	25	20	0	33	29	System is power/energy efficient
25	25	43	2	50	0	15	8	14	0	17	9	Productivity aids help us keep programming costs down
25	12	0	9	50	0	7	8	7	20	33	8	Database language effective
0	12	0	9	50	0	4	3	5	20	17	2	Delivery and/or installation of equipment was ahead of schedule
25	11	14	9	0	0	6	9	6	0	0	12	Delivery and/or installation of software was ahead of schedule
												Other
3.8	3.7	3.4	3.2	3.5	3.0	3.3	3.4	3.3	3.0	4.0	3.2	System Ratings (4.0-0.0)
3.3	3.3	3.6	2.9	3.8	3.7	3.4	3.3	3.5	3.0	3.8	3.5	Ease of operation
3.3	3.2	3.1	2.5	3.3	3.3	3.0	3.8	3.1	2.5	3.7	3.2	Reliability of Mainframe
												Reliability of Peripherals
3.3	3.2	3.6	2.6	3.3	3.3	2.6	3.1	2.9	3.2	3.5	3.1	Maintenance service:
3.3	3.1	3.3	2.6	3.3	2.7	2.8	2.7	2.9	2.6	3.3	2.9	Responsiveness
												Effectiveness
3.0	2.6	3.1	1.9	2.8	2.0	2.4	2.5	2.7	2.5	3.5	2.6	Technical support:
2.3	2.7	2.4	2.1	2.8	2.3	2.4	2.4	2.6	2.0	3.3	2.4	Trouble-shooting
2.6	2.7	3.0	2.2	2.3	4.0	2.3	2.5	2.7	2.0	2.7	2.6	Education
												Documentation
3.8	3.4	2.9	3.1	3.0	2.3	3.0	3.3	3.2	2.3	3.8	3.1	Manufacturer's software:
3.8	3.1	2.5	2.7	3.0	2.3	3.0	3.3	3.1	3.0	3.6	3.1	Operating system
3.0	3.0	3.2	2.5	2.7	2.7	2.6	2.6	2.9	3.5	3.7	2.9	Compilers & Assemblers
												Applications Programs
3.5	3.6	3.4	2.5	2.8	2.3	3.1	3.2	3.1	3.2	4.0	2.9	Ease of programming
2.8	3.0	3.0	2.1	2.8	1.3	2.8	3.0	2.9	3.4	4.0	2.7	Ease of conversion
3.3	3.2	3.3	2.5	2.8	3.0	3.0	3.1	3.1	2.8	4.0	2.9	Overall satisfaction
100	81	71	54	100	67	73	84	82	60	100	82	Would you recommend system to another user? (%)
0	19	14	46	0	63	27	16	16	20	0	18	Yes
												No

Table begins on facing page.

User Ratings of Computer Systems

Table 5. Minicomputer and Small Business Computer Vendor Summaries

Manufacturer and Model Survey Item												
	General Automation	Harris	Hewlett-Packard	Honeywell	IBM	Lockheed	Microdata	Minicomputer Systems MICOS 200	Modcomp	NCR	Nixdorf	Perkin-Elmer
No. of User Responses	17	8	149	75	802	5	45	5	12	73	5	11
No. of Systems Represented	22	8	191	83	960	5	54	5	32	109	5	5
Avg. Life of System (Mos.)	54.3	29.0	23.9	20.1	53.1	53.0	27.4	27.2	20.7	41.7	20.0	38.7
Acquisition Method (%)												
Purchase	88	63	77	48	53	60	91	80	93	64	60	100
Rental	0	0	2	14	18	0	0	0	0	20	40	0
Lease	12	37	20	27	29	40	9	20	7	16	0	0
Principal Applications (%)												
Accounting	46	37	51	70	68	60	80	100	24	62	40	47
Construction	8	0	2	7	6	40	2	0	8	3	0	0
Education	4	37	21	6	7	0	12	0	0	4	0	0
Government	0	25	7	0	6	20	7	20	31	4	0	0
Manufacturing	28	0	19	32	28	0	36	20	11	18	20	9
Payroll/Personnel	38	37	29	44	58	40	58	40	7	54	0	9
Service Bureaus	0	0	17	7	9	20	27	20	15	6	0	9
Transportation	4	0	4	2	4	0	13	0	8	0	0	0
Word Processing	8	13	17	2	3	0	14	20	0	2	0	10
Banking/Finance	0	13	9	4	9	0	3	0	0	22	0	0
Distributed Processing	7	25	13	14	7	0	16	20	7	3	20	9
Engineering/Scientific	47	13	19	1	6	0	1	0	41	0	0	17
Insurance	0	0	3	5	3	0	1	0	7	3	0	10
Medical/Health Care	0	0	3	8	4	0	3	0	7	8	0	0
Retail	4	0	3	9	5	0	22	0	0	9	0	9
Transaction Processing	13	13	2	16	13	0	20	0	7	10	20	19
Utilities-Power	0	13	1	5	2	0	2	0	0	4	0	0
Other	15	13	8	16	12	0	32	20	22	11	0	0
Source of Applications Prog. (%)												
In-house personnel	100	100	35	76	88	80	83	40	100	52	60	82
"Ready-made" programs from manufacturer	26	25	33	21	29	0	5	20	19	49	100	9
Contract Programming	25	0	27	23	25	40	58	40	0	18	20	29
Manufacturer's Personnel	4	0	1	18	6	0	3	0	0	17	20	0
Proprietary Software Packages	32	37	44	22	2	60	36	40	18	23	40	25
Other	0	0	3	2	1	0	1	0	0	0	0	0
Hardware Configuration												
No. of CPUs	22	8	200	83	930	5	53	5	31	96	5	26
No. of Workstations (avg.)	4.0	7.3	11.6	8.1	2.4	1	9.2	4.2	2.2	2.1	4.4	69.0
Software Configuration												
DBMS (%)	22	50	57	13	1	0	47	20	33	0	0	0
Datacomm monitors (%)	15	25	35	31	1	0	8	20	39	0	0	0
Primary Programming Language												
APL	0	0	1	0	1	0	0	0	0	0	0	0
BASIC	4	37	45	5.0	2	0	93	100	0	3	80	10
COBOL	7	75	46	82	11	0	0	0	0	33	0	17
FORTRAN	77	37	33	7	11	0	0	0	92	0	0	38
RPG	4	13	19	23	54	80	3	0	0	0	0	9
Other	13	13	17	5	11	0	46	0	0	75	20	0
Planned Acquisitions/Implementations for 1980 (%)												
Additional software from manufacturer	0	13	36	12	10	0	18	0	7	16	40	19
Proprietary Software	8	25	35	29	8	0	21	20	0	5	20	29
Expanded Datacomm	15	25	29	30	18	20	40	20	33	8	40	27
Distributed Processing	8	0	18	24	15	0	14	40	24	1	0	0
Integrated Word Processing	4	0	14	6	8	0	14	20	13	0	0	0
Other	0	0	8	5	8	0	4	40	0	2	0	0
Plans for system replacement in 1980 (%)												
Yes, same manufacturer	8	0	6	5	26	0	3	0	15	20	0	19
Yes, different manufacturer	38	13	3	8	11	0	14	20	0	17	20	27
No	45	87	85	41	56	100	81	80	85	53	80	64

Table continues on facing page.

User Ratings of Computer Systems

Table 5. Minicomputer and Small Business Computer Vendor Summaries

General Automation	Harris	Hewlett-Packard	Honeywell	IBM	Lockheed	Microdata	Minicomputer Systems MICOS 200	Modcomp	NCR	Nixdorf	Perkin-Elmer	Manufacturer and Model
												Survey Item
15	13	10	59	14	0	25	20	11	11	20	27	Significant Problems (%)
26	25	10	13	8	0	6	0	8	29	0	17	System proposed by vendor was too small
37	0	13	32	7	0	18	0	8	19	0	17	Delivery and/or installation of equipment was late
7	0	6	21	7	20	6	0	11	13	0	19	Delivery of required software was late
48	25	10	32	7	0	33	20	33	27	0	9	System costs exceeded expected total
7	0	0	9	2	0	2	0	8	7	20	0	Vendor did not provide all promised software or support
0	0	6	5	2	20	2	20	0	5	0	0	Program/data compatibility not what vendor promised
11	13	15	17	7	20	7	0	26	8	20	9	Terminals/peripherals compatibility not what vendor promised
4	13	0	4	8	0	0	0	0	17	0	9	Vendor enhancements/changes to hardware software hard to keep up with
11	0	5	7	5	0	1	0	0	5	0	0	Equipment excessively noisy
22	13	16	8	17	0	13	0	18	14	0	29	Power/Cooling requirements excessive
												Other
17	75	55	45	29	0	56	20	28	25	0	20	Significant Advantages (%)
23	37	65	67	28	20	62	60	46	23	40	27	Users happy with response time
4	13	12	7	5	0	3	20	8	2	80	0	System easy to expand/reconfigure
40	50	27	26	22	0	10	20	43	25	0	20	System costs less than expected
19	25	15	11	12	0	6	40	41	8	0	20	Programs/data compatible, as vendor promised
0	0	28	21	12	0	38	0	20	10	0	10	Terminals/peripherals compatible, as vendor promised
8	25	37	26	18	20	42	20	13	5	0	0	System is power/energy efficient
0	25	54	7	4	0	86	20	31	9	40	0	Productivity aids help us keep programming costs down
7	0	18	8	7	0	26	20	13	9	20	0	Database language effective
4.3	0	7	5	4	0	12	0	7	1	0	0	Delivery and/or installation of equipment was ahead of schedule
0	0	3	6	7	0	3	20	0	4	0	10	Delivery and/or installation of software was ahead of schedule
												Other
2.8	3.3	3.6	3.1	3.3	3.4	3.7	3.4	3.0	3.1	3.4	3.0	System Ratings (4.0-0.0)
3.1	3.0	3.6	3.1	2.6	2.8	3.5	3.0	3.6	3.3	3.6	3.3	Ease of operation
2.7	3.0	3.3	3.0	3.3	3.0	3.1	2.8	2.8	3.1	3.4	3.1	Reliability of Mainframe
												Reliability of Peripherals
2.9	3.3	3.1	3.0	3.1	2.4	2.9	2.0	2.1	3.1	3.0	3.3	Maintenance service:
2.9	2.8	3.0	2.8	3.2	2.8	2.9	2.4	2.7	3.1	3.0	2.7	Responsiveness
												Effectiveness
1.8	2.5	2.9	2.6	2.9	1.8	2.9	2.4	2.3	2.7	2.8	2.5	Technical support:
1.6	2.4	2.9	2.3	2.8	1.6	2.3	2.8	2.5	2.6	2.6	2.2	Trouble-shooting
1.6	1.9	2.8	2.2	2.7	1.6	2.3	2.8	2.3	2.7	2.8	1.9	Education
												Documentation
2.5	2.9	3.4	3.1	3.2	2.8	3.5	3.6	3.0	3.0	2.4	2.6	Manufacturer's software:
2.7	2.9	3.1	3.1	3.2	2.8	3.3	2.5	2.9	2.9	3.0	2.8	Operating system
2.5	2.3	2.9	2.6	2.8	2.8	3.0	3.3	2.7	2.6	3.4	2.4	Compilers & Assemblers
												Applications Programs
2.5	3.1	3.3	3.0	3.0	2.5	3.6	3.6	2.7	2.9	3.3	2.7	Ease of programming
2.5	2.9	3.0	2.7	2.7	4.0	3.3	3.0	2.2	2.4	3.0	2.7	Ease of conversion
2.3	3.1	3.4	2.9	3.1	2.6	3.4	3.0	2.7	3.0	3.0	3.1	Overall satisfaction
40	75	87	75	72	60	83	80	69	58	80	84	Would you recommend system to another user? (%)
56	13	11	24	26	40	17	20	31	42	20	17	Yes
												No

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User Ratings of Computer Systems

Table 5. Minicomputer and Small Business Computer Vendor Summaries

Manufacturer and Model Survey Item	Phillips	Pick & Associates	Prime	Oantel	SEL	Tandem	Texas Instruments	Univac	Wang Labs	Minis & SBCs (all other models)
	No. of User Responses	2	3	39	13	3	10	51	41	78
No. of Systems Represented	4	7	50	13	14	17	71	48	155	107
Avg. Life of System (Mos.)	41.0	31.0	9.9	24.9	49.3	15.7	91.0	69.9	23.3	25.3
Acquisition Method (%)										
Purchase	100	100	63	74	67	60	87	65	75	78
Rental	0	0	0	10	0	0	1	5	11	6
Lease	0	0	33	6	33	40	12	28	11	16
Principal Applications (%)										
Accounting	50	100	34	84	0	10	73	67	53	52
Construction	0	0	38	0	0	0	11	4	11	4
Education	0	67	22	0	0	10	2	3	4	4
Government	0	0	8	0	100	0	0	19	3	4
Manufacturing	0	67	20	29	0	0	17	19	16	16
Payroll/Personnel	100	67	27	43	0	20	41	42	37	40
Service Bureaus	0	67	16	0	0	0	20	7	10	8
Transportation	0	0	0	10	0	0	3	5	1	2
Word Processing	0	67	23	35	0	20	52	8	27	32
Banking/Finance	0	33	9	0	0	30	12	5	12	4
Distributed Processing	0	0	6	10	33	10	8	4	3	10
Engineering/Scientific	0	0	21	0	67	10	2	7	12	14
Insurance	0	33	7	6	0	0	1	9	8	4
Medical/Health Care	0	0	4	0	0	10	13	4	2	12
Retail	0	67	6	0	0	0	175	5	11	4
Transaction Processing	0	0	10	20	0	50	8	11	12	8
Utilities-Power	50	0	0	0	0	0	2	0	0	2
Other	0	33	0	35	0	0	10	6	16	32
Source of Applications Prog. (%)										
In-house personnel	0	100	85	72	67	70	67	88	60	64
"Ready-made" programs from manufacturer	0	33	19	48	0	20	3	13	20	44
Contract Programming	50	0	25	45	67	50	23	19	39	24
Manufacturer's Personnel	50	0	0	10	0	0	0	13	0	2
Proprietary Software Packages	0	33	45	39	0	50	39	17	32	6
Other	0	0	0	0	0	0	2	0	5	0
Hardware Configuration										
No. of CPUs	3	7	48	13	14	60	69	12	55	119
No. of Workstations (avg.)	0	12.8	5.6	3.9	4.2	51.2	97.5	2.2	3.9	9.3
Software Configuration										
DBMS (%)	0	100	0	10	0	0	0	14	19	12
Datacomm monitors (%)	0	67	0	0	33	0	0	18	7	8
Primary Programming Language										
APL	0	0	0	0	0	0	0	0	0	2
BASIC	0	67	17	74	0	0	43	0	69	30
COBOL	0	0	30	0	0	50	30	15	14	16
FORTRAN	0	0	67	0	100	10	5	9	0	24
RPG	0	0	7	0	0	0	8	65	5	14
Other	0	0	0	20	67	0	0	24	11	36
Planned Acquisitions/Implementations for 1980 (%)										
Additional software from manufacturer	0	0	24	13	0	50	22	22	17	24
Proprietary Software	0	33	35	13	0	20	41	4	21	14
Expanded Datacomm	0	33	30	10	0	70	28	16	27	26
Distributed Processing	0	0	11	0	0	20	22	2	13	10
Integrated Word Processing	0	0	13	6	0	10	60	4	16	24
Other	0	0	0	0	0	0	6	0	15	12
Plans for system replacement in 1980 (%)										
Yes, same manufacturer	0	0	14	6	0	0	17	10	6	8
Yes, different manufacturer	100	0	0	0	0	0	0	35	10	22
No	0	100	82	88	100	100	79	56	78	76

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User Ratings of Computer Systems

Table 5. Minicomputer and Small Business Computer Vendor Summaries

Phillips	Pick & Associates	Prime	Qantel	SEL	Tandem	Texas Instruments	Univac	Wang Labs	Minis & SBCs (all other models)	Manufacturer and Model	Survey Item
50	0	27	26	67	10	1	28	12	20		Significant Problems (%)
50	0	4	6	33	0	1	10	12	16		System proposed by vendor was too small
50	0	6	23	33	0	13	10	8	12		Delivery and/or installation of equipment was late
0	0	0	0	0	10	0	5	9	10		Delivery of required software was late
0	0	8	23	33	30	6	18	20	16		System costs exceeded expected total
0	0	11	6	0	10	2	4	6	6		Vendor did not provide all promised software or support
0	0	2	0	33	0	0	6	4	2		Program/data compatibility not what vendor promised
0	0	2	5	0	20	5	9	8	10		Terminals/peripherals compatibility not what vendor promised
50	0	5	0	33	0	1	36	13	8		Vendor enhancements/changes to hardware software hard to keep up with
0	0	5	0	0	0	0	24	3	12		Equipment excessively noisy
0	0	16	25	0	0	26	17	17	26		Power/Cooling requirements excessive
											Other
50	100	67	68	0	40	66	23	45	46		Significant Advantages (%)
0	100	87	94	33	90	53	16	50	44		Users happy with response time
50	33	6	6	0	0	19	2	8	10		System easy to expand/reconfigure
0	33	41	30	0	0	24	19	18	28		System costs less than expected
0	33	33	20	33	10	27	9	8	26		Programs/data compatible, as vendor promised
0	0	31	33	0	30	43	2	21	16		Terminals/peripherals compatible, as vendor promised
0	100	25	43	0	50	49	17	32	12		System is power/energy efficient
0	100	28	55	0	60	16	4	8	18		Productivity aids help us keep programming costs down
50	33	17	6	0	40	19	7	9	6		Database language effective
0	0	11	6	0	0	17	5	4	4		Delivery and/or installation of equipment was ahead of schedule
50	0	4	5	0	20	2	5	6	8		Delivery and/or installation of software was ahead of schedule
											Other
3.5	4.0	3.8	3.6	1.7	3.6	3.8	3.0	3.7	3.3		System Ratings (4.0-0.0)
2.5	3.7	3.7	3.5	3.7	3.9	3.6	2.8	3.4	3.2		Ease of operation
2.0	3.3	3.1	3.1	2.3	3.3	3.6	2.6	3.2	3.0		Reliability of Mainframe
											Reliability of Peripherals
3.0	3.7	3.2	3.4	1.3	3.4	3.1	2.8	2.8	2.8		Maintenance service:
2.5	3.7	3.0	3.3	2.0	4.6	2.8	2.6	2.8	2.8		Responsiveness
											Effectiveness
2.5	4.0	3.1	3.0	1.5	3.1	3.1	2.3	2.6	2.6		Technical support:
1.5	3.3	2.5	2.3	2.3	3.2	2.6	2.0	2.2	2.3		Trouble-shooting
2.0	3.0	2.6	2.7	1.3	2.9	3.1	2.0	2.5	2.2		Education
											Documentation
3.0	4.0	3.5	3.5	1.7	3.7	3.5	2.5	3.3	3.2		Manufacturer's software:
0	4.0	3.3	3.4	2.3	3.6	3.2	2.1	3.4	3.2		Operating system
2.0	4.0	2.9	3.1	1.0	3.2	3.2	2.3	2.7	2.9		Compilers & Assemblers
											Applications Programs
1.0	3.7	3.5	3.7	1.6	3.3	3.6	2.6	3.5	3.1		Ease of programming
1.0	3.3	3.0	3.4	1.5	3.0	3.2	2.5	3.1	3.0		Ease of conversion
2.0	4.0	3.3	3.4	2.0	3.8	3.5	2.6	3.3	3.1		Overall satisfaction
0	100	95.3	80	33	100	98	36	87	80		Would you recommend system to another user? (%)
100	0	4.7	20	33	0	2	54	13	18		Yes
											No

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