SECOND ANNUAL UCLA SURVEY OF BUSINESS SCHOOL COMPUTER USAGE

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Second Annual UCLA Survey of Business School Computer Usage

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1 Introduction

This report presents a summary of the data gathered in the Second Annual UCLA Survey of Business School Computer Usage.[1] The objective of the survey is to track the expanding and changing nature of the business school computing environment. The purpose over the past two years has remained the same: to provide deans and other policy makers with information they can use in making allocation decisions and program plans with regards to computing.

There are three significant differences between the first and second surveys: the population to be sampled was expanded from 37 selected schools to the 241 schools currently accredited by the American Assembly of Collegiate Schools of Business (AACSB); the questionnaire was greatly expanded to include information not previously gathered; and the survey method was changed from a telephone interview to a mail questionnaire.

The same general method for identifying school representatives was used in the two surveys. A letter was sent to the deans inviting them to participate and requesting the name of an individual who could serve as the school's representative. Two hundred nineteen deans (91%) responded; of this number, 125 schools (57%) completed the questionnaire.[2] The data were gathered between April and June of 1985. Twenty-seven of the 29 American schools and two of the six Canadian schools that participated in last year's survey also participated this year. Table 1 lists the 125 schools that participated in this year's survey. Repeat respondents are marked with an asterisk in the table and in all the appendices.

Throughout the report, the tables and figures are divided into three columns: the total 1985 sample, the schools participating for the first time (labeled "1985 New"), and the 1985 responses from the schools that participated in the 1984 survey (labeled "1985 Repeat"). Also, where available, comparable data from the 1984 survey are included as a fourth column (labeled "1984 Sample"). The schools in the 1984 sample were originally selected based either on their reputation as a leading school of business or management or for their innovative use of computing. In the various tables and figures, the sample size ("N" value) may vary considerably because of missing data.

For several key categories of data (budget expenditures, staff support, and microcomputer support), the data are further divided into quartiles to give a more detailed picture of the distribution of activity across schools. In the case of the 1985 total sample, there are 31 schools in each quartile if all of the schools supplied usable data for the variable in question. As a metric for each quartile, the median was felt to be a more representative measure than the mean, because it avoids the possible skewing problems that can occur with the mean when there are extremely high or low values in the data.

The report is divided into nine sections: introduction, profile of surveyed schools, computer resources, microcomputers, communications, software, instruction and research, administrative uses, and a closing summary section. At the end are three appendices with details on a school-by-school basis, including descriptions of the schools, their computing

[1] For the results of the first survey, see Jason L. Frand, *First Annual Computing Survey of North American Business Schools*, UCLA Graduate School of Management, Los Angeles, 1984.

[2] The complete SAS file of the raw data is available to interested researchers. Not all of the data that were collected are included in this report; some of the more specific items will be presented in subsequent papers. For information on how to obtain the complete 1985 data set in machine-readable form, please contact the authors at the Graduate School of Management, University of California, Los Angeles, California, 90024.

Table 1
Participating Schools

University of Akron
University of Alabama
University of Alabama, Birmingham
*University of Arizona
Arizona State University
University of Arkansas
Arkansas State University
Atlanta University
Babson College
Ball State University
University of Baltimore
Boise State University
Boston College
*Boston University
Bowling Green State University
Bradley University
Brigham Young University
*University of California, Berkeley
*University of California, Los Angeles
California State University, Los Angeles
California State University, Fresno
Canisius College
*Carnegie-Mellon University
*Case Western Reserve University
University of Central Arkansas
Central Michigan University
*University of Chicago
Cleveland State University
University of Colorado
Colorado State University
*Columbia University
*Cornell University
Creighton University
*Dartmouth College
University of Delaware
University of Denver
*Duke University
East Carolina University
Eastern Michigan University
Eastern Washington University
University of Florida
Florida International University
Florida State University
George Washington University
University of Georgia
*Georgia State University
*Harvard University
Hofstra University
University of Houston
Howard University
University of Illinois, Chicago
*University of Illinois, Champaign
Illinois State University
Indiana State University
*Indiana University
James Madison University
University of Kansas
Kansas State University
Kent State University
University of Kentucky
Louisiana State University
University of Louisville
Loyola University of Chicago
University of Maine
*Massachusetts Institute of Technology
Miami University
*University of Michigan
*University of Minnesota
Mississippi State University
University of Missouri, Columbia
University of Missouri, Kansas City
University of Nebraska
University of New Mexico
New Mexico State University
*New York University
University of North Carolina, Charlotte
University of North Carolina, Greensboro
University of North Florida
North Texas State University
Northern Arizona University
*Northwestern University
University of Notre Dame
Ohio State University
Oklahoma State University
*University of Pennsylvania
Pennsylvania State University
University of Portland
*Purdue University
University of Richmond
*University of Rochester
Saint Cloud State University
San Francisco State University
San Jose State University
University of Santa Clara
Seton Hall University
University of South Carolina
*University of Southern California
Southern Illinois University, Carbondale
Southern Illinois University, Edwardsville
*Stanford University
State University of New York, Albany
State University of New York, Buffalo
Syracuse University
Temple University
University of Tennessee, Knoxville
University of Texas, Arlington
*University of Texas, Austin
Texas A & M University
Texas Christian University
University of Utah
Utah State University
*Vanderbilt University
University of Virginia
Virginia State University
Washington University, Saint Louis
West Georgia College
Western Virginia University
Western Illinois University
Western Kentucky University
College of William and Mary
Winthrop College
University of Wisconsin, Eau Claire
University of Wisconsin, Madison
*University of British Columbia
*University of Western Ontario

*Schools that participated in last year's survey

equipment, and their computer networks.

2 Profile of Surveyed Schools

Table 2 displays general information about the 125 schools that participated in this year's survey and the 35 schools that participated last year. For the 1985 sample, there were over twice as many public as private institutions, with almost all the schools offering both an undergraduate and graduate business degree. A full range of school sizes, from the very small to the very large, were present. One-quarter of the schools had their own mini- or mainframe computer facilities within the business school. Appendix 1 lists information on enrollment, budget, and staff ratios on a school-by-school basis.

Table 2
PROFILE OF SURVEYED SCHOOLS

Make	*1985 Sample* Total $N = 125$	New $N = 96$	Repeat $N = 29$	*1984 Sample* $N = 35$
Participating Schools				
Public Institutions	69%	78%	38%	49%
Private Institutions	31%	22%	62%	51%
Degrees offered				
Undergraduate only	2%	2%	0%	0%
Undergraduate and Graduate	86%	94%	62%	66%
Graduate only	12%	4%	38%	34%
Student Enrollment (FTE)				
Less than 1000 students	22%	17%	38%	37%
Between 1000 and 2000	22%	22%	24%	23%
Between 2000 and 3000	26%	31%	7%	20%
More than 3000 students	30%	30%	31%	20%
Mini/Mainframe Facilities Available				
Both School and University	27%	16%	62%	54%
School only	4%	2%	11%	6%
University only	64%	76%	24%	40%

A set of questions relating to budget allocations for the school as a whole and for the school's computer operations were asked. These data indicated that all respondents spent, on average, approximately three percent of their school's total budget on computing. The range of absolute dollar expenditure was extremely wide ($10,000 to $3,000,000).

To provide a more meaningful basis of comparison, these annual budget expenditures are converted into a per student statistic and shown as Figure 1. For the 92 schools

reporting data, the median quartile expenditures-per-student were $444, $147, $52, and $18, respectively. These figures show the marked contrast between schools in the first and fourth quartiles. The schools in the first quartile spent almost 25 times more per student on computing than the schools in the fourth quartile. The schools were also asked to specify

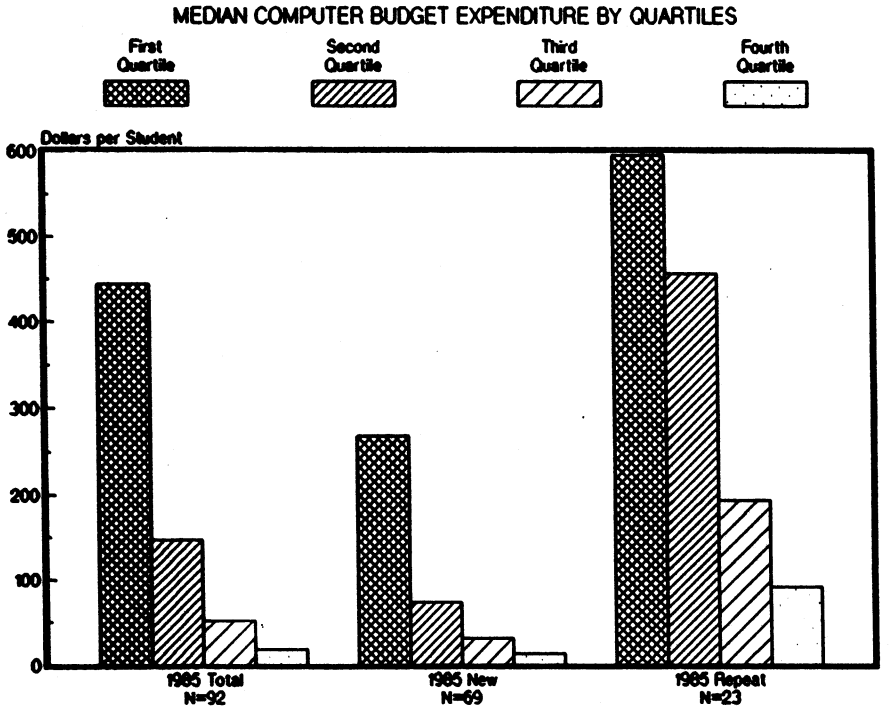

Figure 1

the sources of funding for hardware and software acquisition. For 26 of the 92 schools (28%), more than two-thirds of the hardware acquisition funds came from the school's operating budget. For 15 schools (16%), university funding was the primary source, and for 14 schools (15%), contributions and vendor donations provided two-thirds or more of the funds. For the remaining 37 schools (40%), hardware acquisition funds came from a combination of sources.

When asked to rank the major constraints or bottlenecks delaying the expanded use of computers, funding and space limitations were ranked first and second by all groups. Interestingly, the third most frequently ranked constraint for the repeat schools was "lack of qualified technical personnel" (ranked only seventh by the new schools) with "lack of qualified faculty" ranked third by the new schools (and ranked only seventh by the repeat schools). For both groups, software licensing, lack of faculty consensus, and software availability were ranked fourth, fifth, and sixth, respectively.

The schools were also asked to rank the factors driving them toward the expanded use of computers. Both groups ranked faculty demand, student demand, and quality of instruction as the three most important factors.

3 Computer Resources

For the purposes of this report, "business school computer resources" are broadly defined to be any and all equipment directly available for use by the school's faculty, students, and staff, whether or not the equipment is owned or operated by a central campus organization or the business school itself; and all business school staff assigned to the support computing in the school. Eighty-one schools indicated they had their own computer facilities, ten indicated they were in the process of establishing their own facilities, and the remaining 34 said they did not have their own facilities. In this section, mini/mainframe and staff hardware resources will be discussed, with microcomputer and communications resources discussed in Sections 4 and 5.

3.1 Computing Equipment

One hundred twenty-two of the responding schools indicated they had the use of multi-user time-sharing systems. Five of these schools indicated they used only their own computer systems, 34 schools used both their own and university systems, and the remaining 83 schools relied exclusively on university systems. Almost all the schools using university resources indicated that usage was controlled by a recharge system.

The 39 business schools with their own minicomputer systems account for 59 individual computers. Table 3 displays the make, model, and number of these systems. Although eight vendors are represented in this sample, Digital Equipment Corporation had the largest number of systems installed, with 21. The VAX was the most installed computer (with ten in use), with IBM 4300s (9) and Hewlett Packard 3000s (8) close behind.

Appendix 2 lists the make and number of the mini- and mainframe computers installed on a school-by-school basis.

3.2 Computing Staff

An extremely important dimension of a school's computer resources is its staff support. Therefore, data were gathered as to the staff available for technical, user, and managerial support. As a measure of this resource, the ratio of student FTE (full-time equivalents) per computer staff FTE was calculated. No school reported a ratio of less than 50 students per staff FTE, while 12 of the 90 schools (14%) reporting data had a student-to-staff FTE ratio of between 51 to 100, 39 schools (43%) had a ratio between 101 and 500, and 39 schools had more than 500 students-per-staff FTE. Figure 2 displays median figures for the students-per-staff FTE ratio by quartiles. Again, the disparity between the top and bottom quartiles is dramatic. While the median first quartile school had one staff person for every 90 students, the median fourth quartile school had only one staff person for every 1,820 students.

4 Microcomputers

In recent years, the most significant area of computer growth has been in the use of microcomputers. In the 1984 survey, 33 of the 35 schools (94%) reported having micro-

Table 3
BUSINESS SCHOOL MINICOMPUTER SYSTEMS INSTALLED
(Number of systems)

Make	*1985 Sample* Total $N = 39$	New $N = 11$	Repeat $N = 28$	*1984 Sample* $N = 33$
BURROUGHS				
SE 520, SE 550	2	0	2	0
DEC				
PDP 11s	4	1	3	3
DEC 10s	3	0	3	2
DEC 2060	4	0	4	5
VAX 11s	10	3	7	7
HP				
HP3000s	8	3	5	6
IBM				
4300s	9	3	6	2
Others (1 each)	3	2	1	3
NCR				
8750, 9300, Tower	3	2	1	0
PRIME				
750, 780	4	2	2	2
TEXAS INSTRUMENTS				
TI 990/12	2	2	0	0
WANG				
VS 80, 220, OISs	3	2	1	6
Others (1 each)	4	2	2	1
Total	59	22	42	37

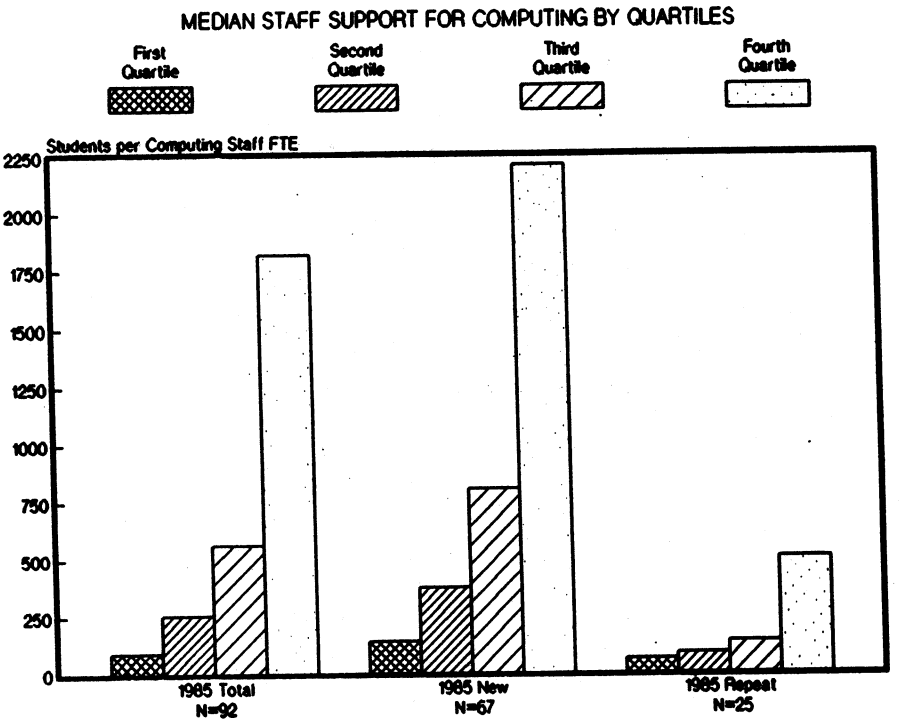

Figure 2

computers available for their students and faculty, while in the current survey, 100% of the repeating schools and 94% (90 of 96) new schools indicated that they have microcomputers available for faculty and student use. For purposes of this report, only microcomputers for which the school said there were more than three of the same make were counted. Twenty-one different makes of microcomputers were listed with 85% of the schools having some type of IBM PC (82% had PCs or PC/XTs, 3% had PC/ATs, and 2% had both). Table 4 displays the variety of microcomputers found in the schools.

Approximately one-third of the schools (42 of 119) had only one make of microcomputer while 45% (53 of 119) had two makes. Seventeen schools (14%) supported three makes, three schools supported four, and four schools actually had five different makes of microcomputers in use.

As a measure of the penetration of the number of microcomputers into the school, two ratios were calculated. The first, a student-per-micro ratio, was calculated by dividing the total student FTE by the number of the school's microcomputers available for student use. The second ratio, faculty-per-micro, was calculated by dividing the faculty FTE by the number of the school's microcomputers available exclusively for faculty use. Note that these ratios do not take into account microcomputers owned by faculty or students. Thus the denominators in the ratios are probably understated and hence the actual ratios are probably better (i.e., lower) than reported. For the 113 schools reporting data, the median student-per-micro density, by quartiles, were 16, 49, 78, and 162, respectively, as shown in Figure 3. The median facutly-per-micro densities were 2, 3, 8, and 26, with 104 schools reporting data, as shown in Figure 4. Appendix 3 lists the microcomputer density information, the make and number of these micros, and networking information on a school-by-school basis.

Table 4
MICROCOMPUTER SYSTEMS INSTALLED
(Rank ordered)

Make	*1985 Sample* Total $N = 119$	New $N = 90$	Repeat $N = 29$
IBM PC, PC/XT	82%	78%	97%
Apple II series	16%	16%	17%
DEC	13%	9%	24%
Macintosh, Lisa	13%	6%	34%
Zenith	10%	10%	10%
Tandy	10%	11%	7%
Hewlett-Packard	7%	2%	21%
IBM PC/AT	5%	2%	14%
Sperry	4%	6%	0%
Televideo	3%	4%	0%
Compaq	3%	2%	7%
Other vendors (1 each)	16%	10%	28%

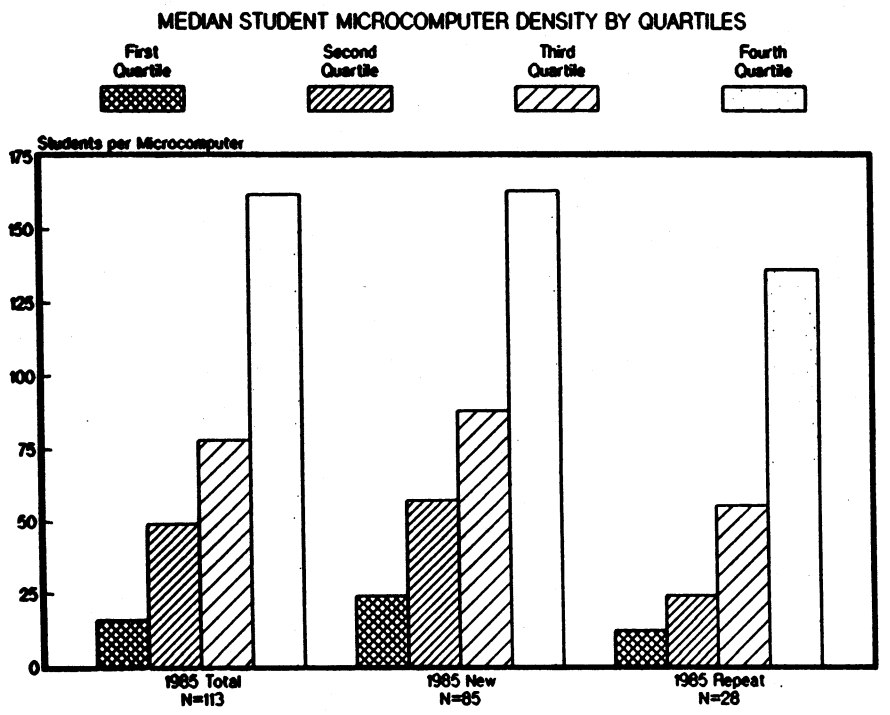

Figure 3

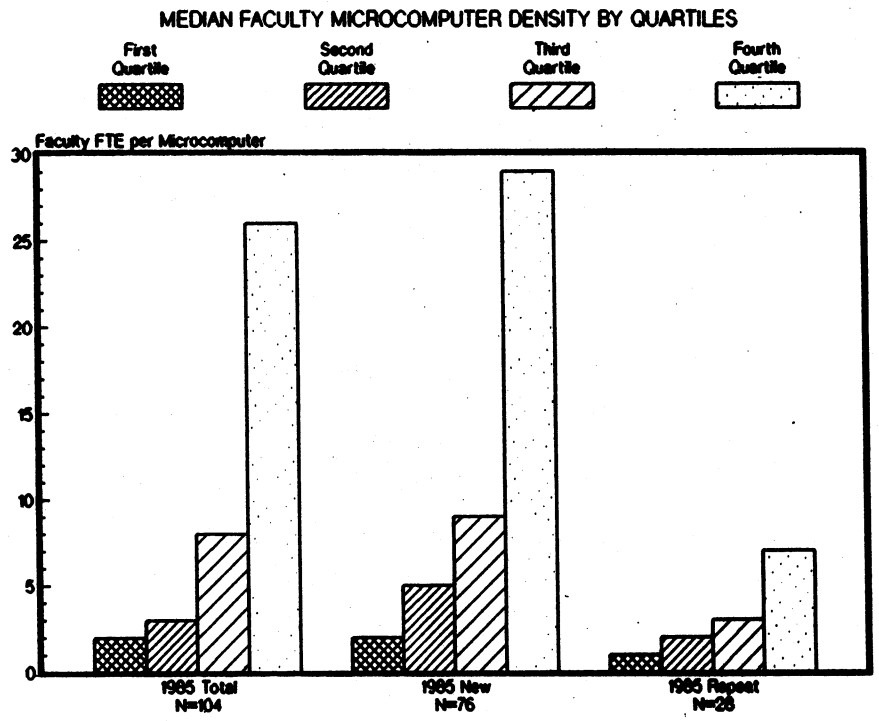

Figure 4

Regarding student purchase of microcomputers, only Harvard requires all of its students to have their own microcomputers. Two others have partial requirements: Boston University requires micros for their MIS majors and Purdue requires them for their executive program students. Three more schools are planning to require micros next year and 12 schools recommend that students purchase their own micros. The remaining schools still have a "wait and see" attitude.

5 Communications

Communication is a key to computer use. Schools were asked to report on their links to mini- and mainframe computers. They were also polled on their use of local and wide area networks.

5.1 Terminal Communications

Although "dumb" terminals are increasingly giving way to intelligent terminals and microcomputers with communications capability, there are still a number of schools that rely on terminals as a means of access to computing. As a measure of the "terminal density," the number of students-per-terminal were calculated. The median student-per-terminal values, by quartile, were 34, 82, 143, and 314, respectively. Interestingly, in every case these ratios are larger than those reported for student microcomputer availability. In other words, for almost all of the schools in the survey, their access to microcomputers is now better than their access to terminals linked to a mini/mainframe.

5.2 Microcomputer Communications

The schools were polled as to whether they used their microcomputers as "stand-alone" devices or whether some communications capability was available, i.e., hardwired as a terminal, via dial-up with telephone and modem, or linked to other microcomputers via a local area network. Figure 5 displays the data on the schools that reported having communications available for their micros. For this graph, "Some with Communications"

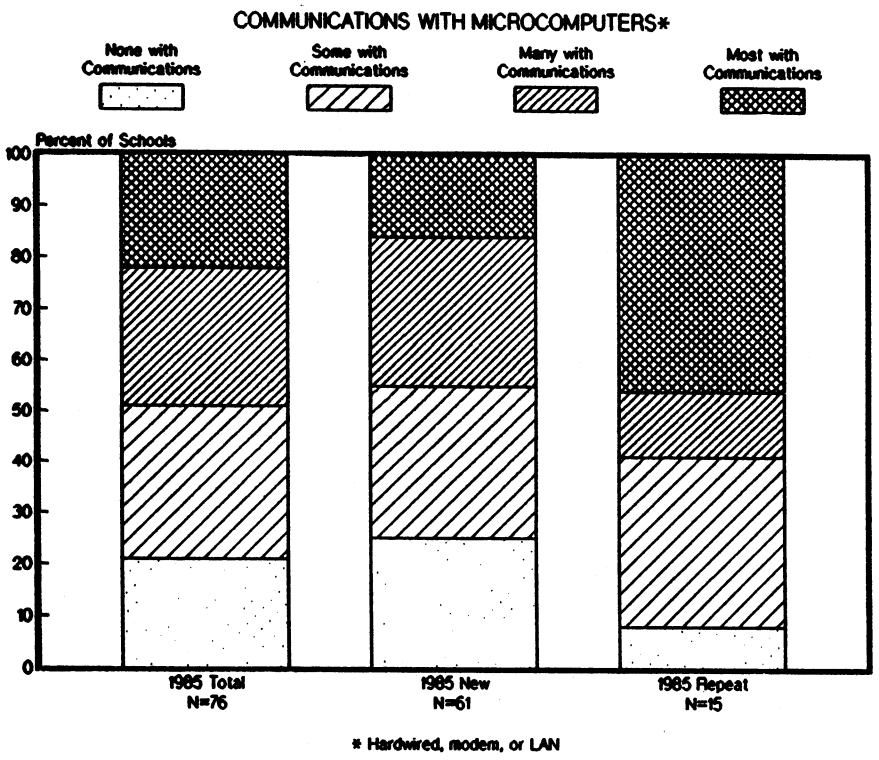

Figure 5

is defined to mean that less than one-third of the micros had communications capability, "Many with Communications" means that between one-third and two-thirds of the micros had communications capability, and "Most with Communications" means that over two-thirds had communications capability. For the 76 schools reporting these data, only 22% (17 schools) were in the "Most with Communications" category, 27% (21 schools) were in the "Many with Communications" category, and only 16 of the 76 schools (21%) reported that none of their microcomputers had communications capability. Appendix 3 lists the percentage of stand-alone microcomputers on a school-by-school basis.

5.3 Local Area Networks

Forty-nine schools reported having some type of networking capability. Of these 49 schools, 15 reported using a port selector to provide access to more than one mini/mainframe and 40 used a local area network to provide peer-to-peer communications among microcomputers (six of these also have a port selector). The 40 schools with local area networks

reported using 59 different LANs: 26 schools had only one LAN, 11 schools used two different LANs, one school had three LANs, and two schools had four different networks. The LANs mentioned more than once are listed in Table 5. Appendix 3 lists the schools and their networks.

Table 5
LOCAL AREA NETWORKS INSTALLED

Type of LAN	*1985 Sample* Total $N = 49$	New $N = 31$	Repeat $N = 18$
Ethernet	24%	16%	39%
Corvus	12%	10%	17%
Novell (Arcnet or Netware)	12%	16%	6%
IBM SNA	6%	6%	6%
Sytex Broadband	6%	3%	11%
Decnet	6%	3%	11%
Apple Talk	6%	6%	6%
IBM PCnet	4%	6%	0%
Wangnet	4%	3%	6%
Nestar	4%	3%	6%
Burroughs	4%	3%	6%
Others (1 each)	29%	23%	39%

5.4 Wide Area Networks

Just as LANs are providing communications within schools, wide area networks (WANs) are providing communications between schools or access to external database services. Forty-two schools reported having at least one wide area network available. The 42 schools with WANs reported using 67 different networks: twenty-six schools had only one WAN, 11 schools used two WANs, three schools had three WANs, one school had four, and one had six WANs. The WANs mentioned one than once are listed in Table 6. Two-thirds of the schools reported using BITNET, while Compuserve and ARPANET were each reported by one-fifth of the schools.

It should be noted that there were only 22 schools which reported having both LANs and WANs; that is, these technologies appear to be developing independently.

6 Software

The respondents to the survey were asked to list the principal software packages used in their schools for eleven different categories; to specify whether the software was used for instruction or research; and to indicate whether it was used on a mini/mainframe or a

Table 6
WIDE AREA NETWORKS INSTALLED

Type of WAN	*1985 Sample* Total $N = 42$	New $N = 19$	Repeat $N = 23$
BITNET	67%	79%	57%
Compuserve	19%	26%	13%
ARPANET	19%	11%	26%
EDUNET	14%	21%	9%
CSNET	10%	5%	13%
The Source	7%	5%	9%
Others (1 each)	14%	11%	17%

microcomputer. For each category the number of schools reporting using a package were tallied. For six categories (word processing, spreadsheets, database management systems, statistics, mathematical modeling, and programming languages), a clear leader could be identified. For the remaining areas (mail systems, graphics, business games, AI and expert systems, and CAI), almost all packages were unique to a particular school and the same package was generally not used at more than one site.

An overall analysis of the software usage data suggests that word processing, spreadsheet, and general database management packages are dominant on microcomputers, while electronic mail, statistical and mathematical modeling packages, and business games are predominantly used on mini/mainframe systems. Programming languages seem about equally divided between the two systems.

Table 7 lists the packages for which substantial agreement exists across schools. Note that each category has a different number of schools ("N") since some schools did not report that they used software in this category. Some schools reported using software in both computing environments. The results of the analysis of the software data is not broken down by new and repeating schools since the sample sizes became too small to be meaningful. The following observations are based on the data presented in Table 7.

6.1 Word Processing Software

It appears that word processing is migrating from the mini/mainframe environment to microcomputers. Text formatters such as Script and Runoff are used on the large systems rather than true word processing packages which have built-in formatting routines. Over 20 different word processing packages were listed for use with microcomputers. The substantial number of "other" packages indicated in Table 7 suggests that Wordstar, although the unquestionable leader, is not the universal choice. This spread is even more pronounced for researchers whose word processing requirements are broader than most student demands (e.g., mathematical symbols, footnoting, indexing, etc.).

Table 7

COMPUTER SOFTWARE USAGE

(Number of occurrences)

MINI/MAINFRAME				MICROCOMPUTER			
Instruction		**Research**		**Instruction**		**Research**	
Word Processing							
	$N = 54$				$N = 88$		
Script	14	Script	15	Wordstar	42	Wordstar	31
Runoff	4	Runoff	6	WordPerfect	9	WordPerfect	5
Other	27	Other	15	PC Write	7	MultiMate	5
				Other	37	Other	47
Spreadsheets							
	$N = 27$				$N = 93$		
IFPS	11	IFPS	3	Lotus 1-2-3	86	Lotus 1-2-3	43
VisiCalc	4	Other	3	VisiCalc	18	Symphony	14
Other	9			Symphony	16	Framework	9
				SuperCalc	15	VisiCalc	7
				Framework	10	MultiPlan	7
				Other	18	Other	10
Database Management							
	$N = 42$				$N = 85$		
Ingress	6	Ingress	4	dBase II/III	67	dBase II/III	44
Info/Prime	5	Datatrieve	4	K-Man	7	K-Man	6
Datatrieve	4	Info/Prime	3	Condor	6	Condor	2
Dbase	4	Other	5	Other	47	Other	14
Other	10						
Statistics and Mathematical Modeling							
	$N = 98$				$N = 34$		
SPSS	69	SPSS	57	Lindo	21	Lindo	8
SAS	50	SAS	53	Minitab	6	MicroStat	5
Lindo	44	Lindo	18	MicroStat	5	SPSS	5
Minitab	26	BMD	10	SPSS	5	RATS	4
Other	43	Other	27	Other	22	Other	11
Programming Languages							
	$N = 95$				$N = 75$		
COBOL	71	FORTRAN	35	BASIC	71	BASIC	38
BASIC	64	BASIC	29	Pascal	15	Pascal	18
FORTRAN	38	COBOL	28	COBOL	15	FORTRAN	15
Pascal	30	Pascal	23	FORTRAN	13	COBOL	10
Other	34	Other	23	Other	12	Other	12

"N" is number of schools reporting using software in this category.

6.2 Spreadsheet Analysis Packages

For spreadsheets, Lotus 1-2-3 dominates the field. Nothing in the mini/mainframe environment shows anywhere near this penetration. Integrated packages like Symphony and Framework, which combine spreadsheets, word processing, and database management, may achieve a broader following as larger machines that can easily handle these larger programs become available. As an interesting note, based on the sample of 35 schools in last year's survey, Lotus 1-2-3 and VisiCalc were mentioned 16 and 15 times respectively. While this year's results showed a tripling of spreadsheet use, VisiCalc showed no increase in use. Clearly, Lotus 1-2-3 has achieved an extremely powerful and dominant position in the market.

6.3 Database Management Systems

Twice as many schools (85 to 42) reported using database management system (DBMS) on microcomputers than on mini/mainframe systems. Cost and ease of use are probably the reasons for the widespread use of the these systems on microcomputers. However, what is not clear from the data is which systems are receiving more use and whether there is a shift away from the minicomputer environment toward microcomputers.

6.4 Statistics and Mathematical Modeling

This year's survey shows the continuing dominance of the mini/mainframe computers for statistical and mathematical modeling. The major packages are SPSS, SAS, and Lindo for both instructional and research use. However, it appears that only Lindo is making the transition to the microcomputer environment. The need for significant internal storage and processing speed to accommodate the mathematical manipulations involved in calculating the various values explains the dominance of the mini/mainframe packages. This may change as larger and more powerful microcomputers enter the market.

6.5 Programming Languages

COBOL and BASIC appear to be the dominant languages used for instructional purposes in the mini/mainframe environment, while BASIC is the undisputed leader on microcomputers. For researchers, FORTRAN is the most popular on larger machines while BASIC again seems to have a dominant position on microcomputers.

7 Instruction and Research

Several questions were asked relating to the instructional and research use of computing. Specifically, questions were asked to determine the penetration of computing into the curriculum; how computer-related curriculum development is supported; how students and faculty are trained on the use of the various software packages; whether a computer or information systems course or learning a programming language is required; and what databases are used. For course penetration, the new and repeat schools samples were too small for meaningful interpretation; thus only one set of tables is presented. With respect

to computer courses, language requirements, and databases used, there was essentially no difference between the new and repeating schools; and thus the results for these variables are presented for the entire sample.

7.1 Penetration into the Curriculum

The respondents were asked to indicate whether hands-on use of computing was required in their undergraduate and graduate core courses. Specifically, data were gathered on whether required use occurred in none, some, or all sections of the core courses, or whether use was being planned. Figure 6 displays the responses for the core undergraduate courses and Figure 7 for the core graduate courses.

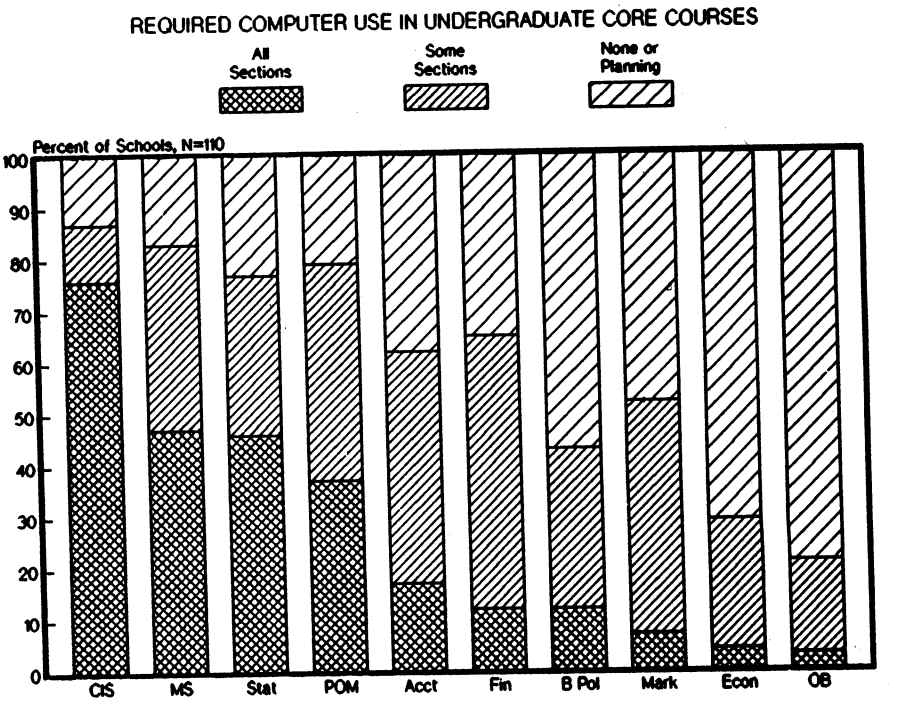

Figure 6

For this analysis, missing data were assumed to mean "no sections required computer use." An examination of the graphs indicate that usage patterns are very similar at both the undergraduate and graduate levels. For Computers and Information Systems, Management Science, Statistics, and Production and Operations Management courses, over 75% of all respondents indicated that some or all sections require hands-on computer use. About one quarter to one half of the undergraduate offerings of Finance, Accounting, Marketing, Business Policy, Economics, and Organizational Behavior require use in some or all sections; but at the graduate level this is true only for Finance, Accounting, and Marketing. For the other core courses, less than half the sections have required computer use as part of the course.

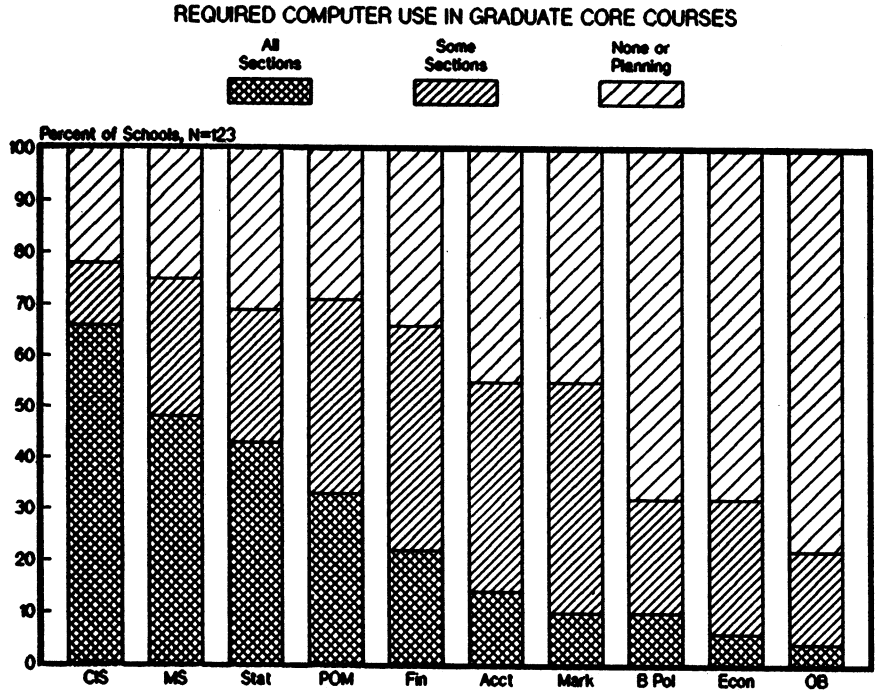

Figure 7

7.2 Curriculum Development Support

The respondents were asked to indicate all the ways being used to support computer-related curriculum development by faculty. Among the total, new, and repeat schools, 86%, 85%, and 90%, respectively, provide faculty some form of support for curriculum development. Seventeen of the 125 schools (14%) reported that they do not currently support any form of computer-related curriculum development. Figure 8 displays the six approaches used to support curriculum development most often mentioned by one-third or more of the schools. The most prevalent forms of support reported were providing faculty with a microcomputer or a teaching or research assistant. The graph clearly identifies a difference between the new and repeat schools in their ability to provide programming support or give credit to faculty for curriculum development in promotion and tenure decisions.

7.3 Training

The respondents were asked to indicate the various approaches used to train students and faculty in the use of computer systems. For the faculty, all of the schools relied very heavily on either university or business school sponsored workshops. For students, however, two very different patterns emerged between the new and repeat schools. Figure 9 shows the five most frequently mentioned approaches used for training students. While both groups used classroom instruction as the primary method of teaching about computing, the repeat schools tended to use workshops, both prior to and during the term, more extensively than did schools which were new to the study.

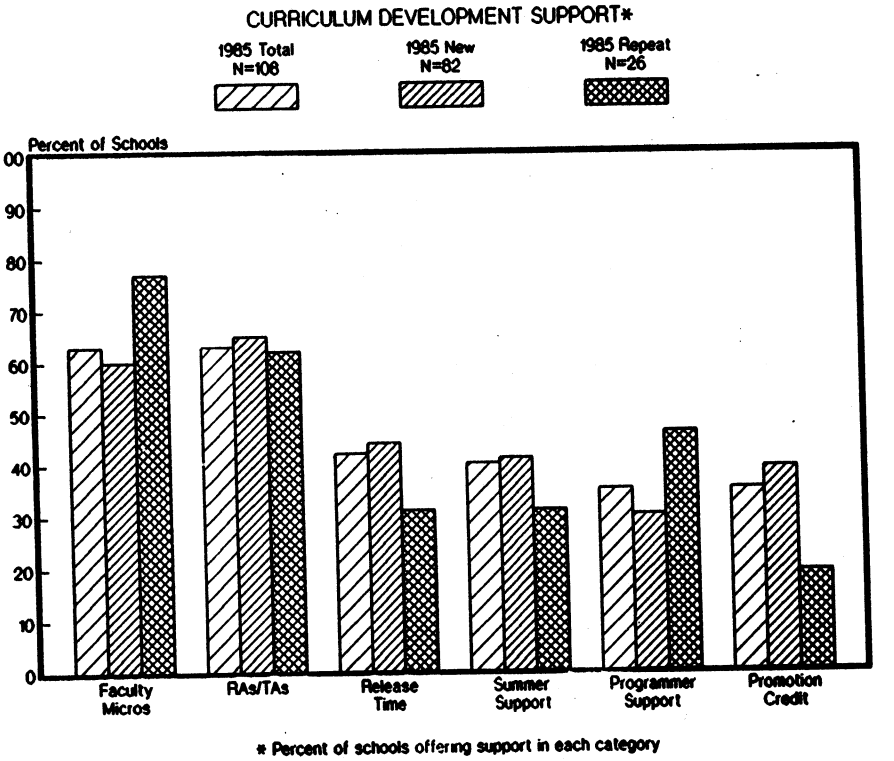

Figure 8

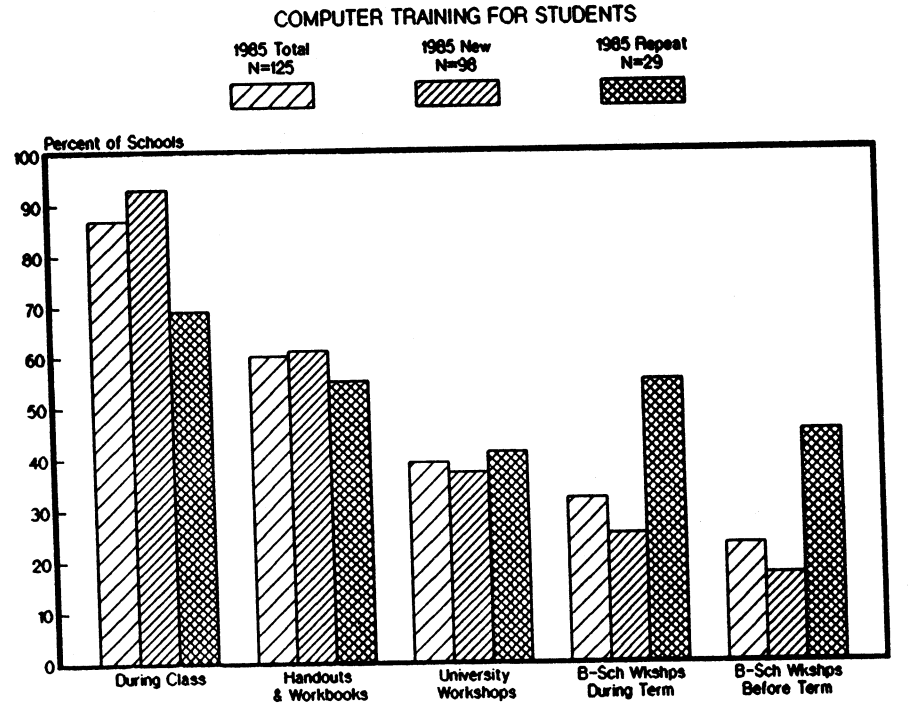

Figure 9

7.4 Computer Course and Language Requirements

Of the 110 schools that have undergraduate programs and the 123 that have graduate programs, 100 (91%) and 92 (75%), respectively, have a required course in computers or information systems. Fifty-nine schools require the learning of a programming language for the undergraduate degree and 44 for the graduate degree. For the undergraduate degree, 49% of the schools required BASIC and 25% required COBOL. For the graduate degree, 52% and 20% required BASIC and COBOL, respectively.

7.5 Databases Available for Instruction and Research

The most frequently mentioned databases for research and instruction were, in order of usage, Compustat (used at 67% of the schools), CRSP (48%), Citibase (18%), Value Line (15%), Dow Jones (14%), DRI (9%), and various "homegrown" sets.

8 Administrative Uses

Budgeting and student records led the list of administrative applications. Table 8 is ordered by the number of occurrences in the total sample. The only significant difference between the new schools and the repeating schools is the higher use for admissions by the latter.

Table 8
ADMINISTRATIVE COMPUTER USE

	1985 Sample		
Usage	Total $N = 125$	New $N = 96$	Repeat $N = 29$
Budget Preparation	56%	53%	66%
Student Records	42%	40%	52%
Alumni & Development	38%	32%	59%
Registration & Enrollment	37%	33%	48%
Publications	34%	32%	38%
Class Scheduling	32%	29%	41%
Admissions	32%	23%	62%
Faculty Records	30%	27%	41%
Direct Faculty Support	26%	27%	24%
Faculty Course Assignment	26%	25%	31%
Contracts & Grants	22%	20%	31%
Other	16%	14%	24%
None	9%	11%	0%

9 Summary

This report has presented information about the current state of computing in 125 AACSB accredited business schools along several dimensions such as computing resources, levels of support, and penetration into the curriculum. The schools were a mixture of public and private, with both graduate and undergraduate programs, large and small.

The overall picture presented by the data suggests that the use of computing is extensive and that schools are allocating considerable resources in this area. Eighty-one of the schools reported having their own in-house computing facilities, with 39 of these containing minicomputer systems and the balance being a mixture of terminals, microcomputers, and computing staff. In the matter of financial support, the data indicate that approximately three percent of each school's budget is currently being spent on computing. On a per-student basis, the computing expenditures range from a high of $444-per-student for the median school in the first quartile to a low of $18-per-student for the median school in the fourth quartile. Although some schools have received substantial donations of equipment from vendors, this number is relatively small. Seventy-five percent of the schools reported that they have had to fund their equipment acquisition entirely from their own sources.

The expanded use of microcomputers has been the most dramatic development, with 95% of the schools indicating that they now have at least one brand of microcomputers available for their students and faculty, with two-thirds reporting two or more makes available. The density of coverage, however, is highly variable, with the median school in the top quartile providing one micro for every 16 students while the median school in the fourth quartile provides only one micro for every 162 students, a ten-to-one difference. The contrast for staff support — the "human capital" so necessary for effective computer usage — is even more extreme. The median top quartile school has one staff FTE for every 90 students; the median fourth quartile school has one staff FTE for every 1820 students, a 20-to-one-difference.

It is possible that the resource differences discussed above will have serious consequences for those schools that are in the lower quartiles. The limited computer resources available to these schools will make it increasingly difficult for them to meet the growing demands of students and faculty. Additionally, the better endowed schools' competitive advantage will grow as computing becomes a more important part of the business school curriculum. School officials will have to address the implications of this issue in the years to come.

Eighty-six percent of the schools reported having some mechanism for supporting computer-related curriculum development by faculty. This effort is apparently paying off since over half the schools reported that some computer usage is required in core Accounting, Computers and Information Systems, Finance, Management Science, Production and Operations Management, and Statistics courses at both the undergraduate and graduate levels. These numbers portray a very positive picture of the penetration of computing into the curriculum. Future surveys will attempt to ,ather details on the nature of the use in various functional areas, and the adequacy of the hardware, software, and support for this usage.

Finally, another area of interest is a comparison of the schools that participated last year and those that joined the survey for the first time this year. The schools which were asked to participate in 1984 were selected based upon their general reputation as "leaders"

in business and management education or their innovative use of computing. The data gathered in this second survey would tend to substantiate their role as leaders in the use of computing if this is defined in terms of amounts of equipment and allocations of resources.

In general, the 1985 repeating schools seem to be about one year ahead of the schools which joined the study for the first time this year. For example, 94% of the 1984 sample had microcomputers (increased to 100% this year) while 94% of the 1985 new schools had microcomputers. Three percent of the schools in 1984 had less than 10 students-per-micro while 4% of this year's new respondents are in this category. The percentage of repeat schools in this category has increased to 11%, showing their continued growth in the use of micros. A similar pattern was found for faculty-per-microcomputer ratios.

As leaders in the use of computing, the repeating schools are identifying current problems that other schools may encounter in the future. For example, while shortage of funds and space were ranked first or second by almost every school in the survey, the third-ranked problem for the "leaders" was finding qualified personnel. This constraint was only ranked seventh for the 1985 new sample. Next year's study will attempt to see if the new schools are beginning to have the same sort of problems or if perhaps they have been able to plan in such a way to overcome some of these issues as they arise.

THE 1985 BUSINESS SCHOOL SURVEY
GENERAL SCHOOL DATA

INSTITUTION	TYPE	UNDERGRAD. (FTE)	MBA (FTE)	PHD (FTE)	FACULTY (FTE)	COMPUTER BUDGET($)	COMP.BUD./ STUDENT($)	COMP./TOTAL BUDGET (%)	OWN COMP. FACILITY	STUDENT/ COMP.STAFF
U OF AKRON	PUBLIC	1852	203	0	99	101000	49	23.5	YES	2055
U OF ALABAMA	PUBLIC	3003	190	109	99	200000	61	.	YES	826
U OF ALABAMA, BIRMINGHAM	PUBLIC	.	.	.	53	10000	.	0.7	NO	.
*U OF ARIZONA	PUBLIC	3875	396	110	146	2400000	548	34.3	YES	381
ARIZONA STATE	PUBLIC	8000	1300	100	180	.	.	.	NO	.
U OF ARKANSAS	PUBLIC	3367	199	87	105	268000	73	6.3	YES	.
ARKANSAS STATE	PUBLIC	0	60	0	59	9500	158	.	NO	.
ATLANTA	PRIVATE	0	171	0	19	60000	351	7.1	YES	143
BABSON COLLEGE	PRIVATE	1410	780	0	110	972575	444	6.5	YES	148
BALL STATE	PUBLIC	4721	134	0	116	.	.	.	NO	.
U OF BALTIMORE	PUBLIC	1876	887	0	60	.	.	.	NO	.
BOISE STATE	PUBLIC	3200	256	0	68	30000	9	1.0	YES	864
BOSTON COLLEGE	PRIVATE	2000	150	0	.	100000	47	2.5	NO	.
*BOSTON UNIV	PRIVATE	1650	900	10	111	76000	30	1.7	YES	640
BOWLING GREEN STATE	PUBLIC	3892	243	0	126	214000	52	4.0	YES	2068
BRADLEY UNIV	PRIVATE	789	0	0	.	.	.	.	NO	.
BRIGHAM YOUNG	PRIVATE	4082	472	0	122	70000	15	1.0	YES	911
*UC, BERKELEY	PUBLIC	550	550	75	92	360000	306	2.9	YES	24
*UCLA	PUBLIC	0	800	100	85	583560	648	5.8	YES	75
CAL STATE L.A.	PUBLIC	4421	419	0	120	200000	41	3.5	YES	807
CAL STATE FRESNO	PUBLIC	2150	60	0	105	200000	90	3.6	YES	2210
CANISIUS COLLEGE	PRIVATE	1592	136	0	43	25000	14	1.5	NO	.
*CARNEGIE-MELLON	PRIVATE	280	161	60	81	300232	599	3.8	YES	67
*CASE WESTERN RESERVE	PRIVATE	184	689	118	59	405000	409	.	YES	137
U OF CENTRAL ARK.	PUBLIC	1500	48	0	.	30000	19	1.7	NO	.
CENTRAL MICH	PUBLIC	3178	235	0	102	100000	29	.	YES	476
*U OF CHICAGO	PRIVATE	0	1500	75	120	.	.	.	YES	45

THE 1985 BUSINESS SCHOOL SURVEY
GENERAL SCHOOL DATA

INSTITUTION	TYPE	UNDERGRAD. (FTE)	MBA (FTE)	PHD (FTE)	FACULTY (FTE)	COMPUTER BUDGET($)	COMP.BUD./ STUDENT($)	COMP./TOTAL BUDGET (%)	OWN COMP. FACILITY	STUDENT/ COMP.STAFF
CLEVELAND STATE	PUBLIC	1628	555	0	105	311983	143	5.4	.	1455
U OF COLORADO	PUBLIC	2400	300	70	68	.	.	.	YES	2770
COLORADO STATE	PUBLIC	1850	250	0	64	80000	38	2.5	YES	137
*COLUMBIA	PRIVATE	0	1350	101	138	315000	217	1.3	YES	104
*CORNELL	PRIVATE	0	507	29	30	.	.	.	YES	54
CREIGHTON	PRIVATE	730	138	0	42	197000	227	4.1	IN PROCESS	1736
*DARTMOUTH COLLEGE	PRIVATE	0	310	0	35	145325	469	2.5	YES	89
U OF DELAWARE	PUBLIC	2030	160	0	94	200000	91	5.0	YES	548
U OF DENVER	PUBLIC	2140	1065	0	96	100000	31	1.9	YES	291
*DUKE UNIV	PRIVATE	0	600	13	42	287811	470	.	YES	68
E. CAROLINA	PUBLIC	600	140	0	60	50000	68	2.5	.	211
E. MICH.	PUBLIC	796	112	0	99	470000	518	10.4	YES	91
E. WASH.	PUBLIC	1280	200	0	46	.	.	.	NO	118
U OF FLORIDA	PUBLIC	2500	200	30	121	50000	18	.	YES	390
FLORIDA INTL	PRIVATE	1230	228	0	85	43700	30	0.9	NO	.
FLORIDA STATE	PUBLIC	2600	150	43	105	300000	107	5.5	IN PROCESS	559
GEORGE WASHINGTON	PRIVATE	1159	1100	187	81	100000	41	2.0	YES	306
U OF GEORGIA	PUBLIC	3521	280	118	.	93000	24	1.2	YES	435
*GEORGIA STATE	PUBLIC	4304	1798	177	207	2325000	370	15.5	IN PROCESS	483
*HARVARD	PRIVATE	0	1550	50	180	2000000	1250	.	YES	64
HOFSTRA	PRIVATE	3138	722	0	120	.	.	.	YES	7720
U OF HOUSTON	PUBLIC	2439	1035	159	120	80000	22	1.1	YES	661
HOWARD	PRIVATE	2075	145	0	61	750000	338	16.7	YES	370
U OF ILLINOIS, CHICAGO	PUBLIC	2550	350	40	104	.	.	.	NO	.
*U OF ILLINOIS, CHAMPAIGN	PUBLIC	3500	600	231	140	.	.	.	IN PROCESS	.
ILLINOIS STATE	PUBLIC	4711	113	0	109	295000	61	5.8	YES	3859
INDIANA STATE	PUBLIC	2325	120	0	54	.	.	.	YES	2264

THE 1985 BUSINESS SCHOOL SURVEY
GENERAL SCHOOL DATA

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*INDIANA	PUBLIC	2795	606	140	136	.	.	.	NO	506
JAMES MADISON	PRIVATE	3000	250	0	80	.	.	.	NO	.
U OF KANSAS	PUBLIC	800	420	0	57	.	.	.	YES	813
KANSAS STATE	PUBLIC	2325	50	0	50	65000	27	2.6	YES	731
KENT STATE	PUBLIC	2104	248	80	101	29000	12	0.5	YES	811
U OF KENTUCKY	PUBLIC	3310	225	50	102	75000	21	2.5	NO	.
LOUISIANA STATE	PUBLIC	2546	388	58	126	86717	29	1.2	YES	2992
U OF LOUISVILLE	PUBLIC	769	126	0	88	69800	78	1.8	YES	218
LOYOLA UNIV, CHICAGO	PRIVATE	1450	550	0	15	.	.	.	IN PROCESS	.
U OF MAINE	PUBLIC	1077	53	0	20	6360	6	25.4	IN PROCESS	565
*MIT	PRIVATE	75	504	84	84	500000	754	3.1	YES	77
MIAMI UNIV	PUBLIC	5336	134	0	131	100000	18	2.3	YES	729
*U OF MICHIGAN	PUBLIC	600	1175	90	100	850000	456	.	YES	104
*U OF MINNESOTA	PUBLIC	1530	1945	148	105	280000	77	3.0	NO	.
MISSISSIPPI STATE U	PUBLIC	2725	100	38	66	100000	35	3.3	NO	.
U OF MISSOURI, COLUMBIA	PUBLIC	1333	270	13	69	227499	141	4.4	NO	.
U OF MISSOURI, KANSAS CITY	PUBLIC	875	363	0	43	8075	7	0.4	IN PROCESS	1238
U OF NEBRASKA	PUBLIC	3450	370	100	72	50000	13	1.2	NO	.
U OF NEW MEXICO	PUBLIC	635	386	0	47	150000	147	6.8	YES	215
NEW MEXICO STATE	PUBLIC	2178	53	0	64	680000	305	27.4	YES	124
*NEW YORK UNIV	PRIVATE	2100	2600	80	226	2050000	429	6.8	YES	143
U OF N.C., CHARLOTTE	PUBLIC	1888	220	22	69	.	.	.	.	.
U OF N.C., GREENSBORO	PUBLIC	2100	400	0	78	.	.	.	NO	2500
U OF N. FLORIDA	PUBLIC	1500	250	0	45	.	.	.	NO	.
N. TEXAS STATE	PUBLIC	4400	600	83	142	59200	12	1.1	YES	254
NORTHERN ARIZONA	PUBLIC	1500	110	0	58	20000	12	6.7	YES	460
*NORTHWESTERN	PRIVATE	0	1450	80	105	200000	131	.	YES	139

THE 1985 BUSINESS SCHOOL SURVEY
GENERAL SCHOOL DATA

INSTITUTION	TYPE	UNDERGRAD. (FTE)	MBA (FTE)	PHD (FTE)	FACULTY (FTE)	COMPUTER BUDGET($)	COMP.BUD./ STUDENT($)	COMP./TOTAL BUDGET (%)	OWN COMP. FACILITY	STUDENT/ COMP.STAFF
NOTRE DAME	PRIVATE	1498	271	0	78	387000	219	7.7	YES	337
OHIO STATE	PUBLIC	3400	550	150	143	300000	73	2.9	YES	272
OKLAHOMA STATE	PUBLIC	4718	212	102	89	100000	20	1.5	NO	.
*U OF PENN(WHARTON)	PRIVATE	2567	1483	326	191	1000000	229	2.0	YES	133
PENNSYLVANIA STATE	PUBLIC	4965	330	85	120	120000	22	1.5	YES	1345
U OF PORTLAND	PUBLIC	.	.	.	.	.	.	.	NO	.
*PURDUE	PUBLIC	1820	320	110	78	400000	178	5.4	YES	346
U OF RICHMOND	PRIVATE	375	120	0	45	10000	20	.	YES	.
*U OF ROCHESTER	PRIVATE	0	540	50	38	.	.	.	YES	79
ST. CLOUD STATE	PUBLIC	3032	34	0	57	198200	65	9.4	YES	4576
SAN FRANCISCO STATE	PUBLIC	2622	249	0	145	.	.	.	YES	574
SAN JOSE STATE	PUBLIC	.	.	.	.	.	.	.	YES	.
U OF SANTA CLARA	PRIVATE	1070	1095	7	56	300000	138	.	NO	310
SETON HALL	PRIVATE	1900	500	0	85	420000	175	13.1	YES	2400
U OF SOUTH CAROLINA	PUBLIC	2804	614	104	147	1130685	321	13.0	YES	160
*U OF SOUTHERN CALIFORNIA	PRIVATE	3150	900	100	200	800000	193	.	YES	461
S. ILL. U, CARBONDALE	PUBLIC	2400	115	16	61	12000	5	0.4	YES	1446
S. ILL. U, EDWARDSVILLE	PUBLIC	1225	365	0	.	.	.	.	YES	374
*STANFORD	PRIVATE	0	650	80	80	360000	493	.	YES	91
SUNY, ALBANY	PUBLIC	845	317	0	55	560000	482	21.5	YES	332
SUNY, BUFFALO	PUBLIC	1798	982	100	.	.	.	.	YES	480
SYRACUSE	PRIVATE	1615	180	28	80	.	.	.	NO	.
TEMPLE	PRIVATE	4000	1300	160	380	300000	55	2.5	YES	1820
U OF TENNESSEE, KNOXVILLE	PUBLIC	3500	200	100	117	220000	58	4.9	IN PROCESS	633
U OF TEXAS, ARLINGTON	PUBLIC	5750	350	38	26	300000	49	4.3	YES	3069
*U OF TEXAS, AUSTIN	PUBLIC	10000	1100	500	.	.	.	.	YES	1568
TEXAS A&M	PUBLIC	5700	500	110	152	400000	63	4.4	YES	332

THE 1985 BUSINESS SCHOOL SURVEY
GENERAL SCHOOL DATA

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TEXAS CHRISTIAN	PRIVATE	1380	223	0	.	.	.	.	YES	802
U OF UTAH	PUBLIC	900	175	50	60	295000	262	.	YES	90
UTAH STATE	PUBLIC	1683	152	0	56	41000	22	2.6	NO	918
*VANDERBILT	PRIVATE	0	403	4	38	72500	178	1.4	NO	.
U OF VIRGINIA	PUBLIC	0	400	12	61	120000	291	2.7	YES	69
VIRGINIA TECH	PUBLIC	2770	364	68	119	500000	156	.	NO	.
WASHINGTON UNIV, ST. LOUIS	PRIVATE	450	360	10	36	220000	268	.	IN PROCESS	205
WEST GEORGIA COLLEGE	PUBLIC	1950	48	0	35	.	.	.	YES	799
W. VIRGINIA	PUBLIC	0	124	0	.	30000	242	1.5	YES	29
W. ILLINOIS	PUBLIC	2300	123	0	83	.	.	.	NO	.
W. KENTUCKY	PUBLIC	1475	33	0	62	10000	7	0.3	YES	1005
WILLIAM AND MARY	PUBLIC	500	270	0	39	.	.	.	NO	.
WINTHROP COLLEGE	PUBLIC	1100	80	0	42	90000	76	4.5	YES	393
U OF WIS, EAU CLAIRE	PUBLIC	700	0	0	10	.	.	.	NO	.
U OF WIS, MADISON	PUBLIC	1256	720	110	74	300000	144	5.6	YES	226
*U OF BRITISH COLUMBIA	PUBLIC	1500	355	60	122	175000	91	.	IN PROCESS	.
*U OF W. ONTARIO	PRIVATE	150	500	40	76	80000	116	1.3	YES	110

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
U OF AKRON		48			
	IBM 370-158 (1976)		UNIV-WIDE	NO CHARGE	YES
	IBM 370-3033 (1982)		UNIV-WIDE	NO CHARGE	YES
	IBM SERIES 1 (WIDJET)		UNIV-WIDE	NO CHARGE	YES
U OF ALABAMA		25			
	VMV 2C (1970'S)		UNIV-WIDE	NO CHARGE	YES
	IBM 3081 (1984)		UNIV-WIDE	NO CHARGE	YES
U OF ALABAMA, BIRMINGHAM		35			
	IBM		.	.	YES
	PRIME		.	.	YES
	HEATH-ZENITH Z-90'S		UNIV-WIDE	NO CHARGE	NO
*U OF ARIZONA		32			
	CDC CYBER 175		UNIV-WIDE	RE-CHARGE	YES
	DEC10, VAX 11/780 (1982-1985)		UNIV-WIDE	RE-CHARGE	YES
	DEC PDP 11/44 (1983)		B-SCH ONLY	NO CHARGE	NO
	NCR 9300 (1984)		B-SCH ONLY	NO CHARGE	NO
	NCR TOWER (1984)		B-SCH ONLY	NO CHARGE	YES
ARIZONA STATE		80			
	IBM 3081 (1983)		UNIV-WIDE	NO CHARGE	YES
	DEC PDP 11/70 (1978)		UNIV-WIDE	NO CHARGE	YES
	HARRIS		UNIV-WIDE	NO CHARGE	.
U OF ARKANSAS		58			
	AMDAHL V-6 (1983)		UNIV-WIDE	RE-CHARGE	YES
	AMDAHL V-6 ADDITIONAL (1984)		UNIV-WIDE	RE-CHARGE	YES
	PRIME 9750 (1985)		B-SCH ONLY	NO CHARGE	.
ARKANSAS STATE		.			
	HARRIS/800 (1983)		UNIV-WIDE	.	NO
	FORMATION (1983)		B-SCH ONLY	NO CHARGE	NO
ATLANTA		.			
	DEC VAX		UNIV-WIDE	NO CHARGE	.
	DEC PDP 11/44		UNIV-WIDE	NO CHARGE	.
	DEC 20		UNIV-WIDE	NO CHARGE	.
BABSON COLLEGE		55			
	DEC PDP 11/70 (1976)		.	.	.
	DEC VAX 11/780 (1979)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780 (1980)		UNIV-WIDE	NO CHARGE	YES
BALL STATE		39			
	IBM 370-3083 (1984)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780 (4 CLUSTERED)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780 (1 DEDICATED TO INTERGRAPHIC)		UNIV-WIDE	NO CHARGE	NO

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
U OF BALTIMORE		30			
	DEC VAX 11/780 (1983)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/730 (1985)		UNIV-WIDE	NO CHARGE	YES
BOISE STATE		40			
	IBM 4341 (1981)		UNIV-WIDE	NO CHARGE	YES
	HP 3000 (1977)		UNIV-WIDE	NO CHARGE	YES
BOSTON COLLEGE		30			
	GEAC 8000 (1983)		UNIV-WIDE	.	YES
	IBM 4341 (1983)		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 11/780 (QTY 4) (1982(2), 1983(1), 1984(1))		UNIV-WIDE	RE-CHARGE	YES
*BOSTON UNIV		10			
	IBM 3081		UNIV-WIDE	.	YES
	DEC PDP 11/44		B-SCH ONLY	.	YES
	WANG VS/80		B-SCH ONLY	.	NO
BOWLING GREEN STATE		0			
	IBM 4341		UNIV-WIDE	NO CHARGE	YES
	DEC 2060		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/785		UNIV-WIDE	NO CHARGE	YES
BRADLEY UNIV		11			
	DCD 170/171 (1979)		UNIV-WIDE	RE-CHARGE	YES
	DEC PDP 11/44 (1981)		UNIV-WIDE	RE-CHARGE	YES
BRIGHAM YOUNG		9			
	IBM 4381		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 11/780		UNIV-WIDE	RE-CHARGE	YES
*UC, BERKELEY		.			
	DEC PDP 11		B-SCH ONLY	NO CHARGE	YES
	IBM 4341		B-SCH ONLY	NO CHARGE	NO
	IBM 3081		UNIV-WIDE	RE-CHARGE	YES
	DEC 750S		UNIV-WIDE	RE-CHARGE	YES
*UCLA		37			
	IBM 3033 (1980)		UNIV-WIDE	RE-CHARGE	YES
	HP3000/68 (1982)		B-SCH ONLY	NO CHARGE	NO
CAL STATE L.A.		15			
	CDC CYBER 760		UNIV-WIDE	NO CHARGE	YES
	CDC CYBER 730		UNIV-WIDE	NO CHARGE	YES
	DEC PDP 11		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 730		B-SCH ONLY	NO CHARGE	NO
	IBM 3084		B-SCH ONLY	NO CHARGE	NO

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
CAL STATE FRESNO		20			
	DEC PDP 11/45 (1975)		UNIV-WIDE	NO CHARGE	NO
	CYBER 170/720 (1980)		UNIV-WIDE	NO CHARGE	NO
CANISIUS COLLEGE		5			
	DEC VAX 11/780 (1981)		UNIV-WIDE	NO CHARGE	NO
*CARNEGIE-MELLON		4			
	DEC 2060 (6)		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 11/780 (3)		UNIV-WIDE	RE-CHARGE	YES
	DEC PDP 11		UNIV-WIDE	RE-CHARGE	NO
	IBM 3083 (1984)		UNIV-WIDE	RE-CHARGE	YES
*CASE WESTERN RESERVE		5			
	DEC VAX 20		UNIV-WIDE	RE-CHARGE	YES
U OF CENTRAL ARK.		23			
	IBM 4341 (1980)		UNIV-WIDE	NO CHARGE	NO
CENTRAL MICH		18			
	CDC 170		UNIV-WIDE	RE-CHARGE	NO
*U OF CHICAGO					
	DEC 20 (2)		B-SCH ONLY	NO CHARGE	YES
	DEC VAX 750		B-SCH ONLY	NO CHARGE	YES
	IBM 3081		UNIV-WIDE	RE-CHARGE	YES
CLEVELAND STATE		30			
	IBM 3081		UNIV-WIDE	NO CHARGE	NO
	IBM 370/158		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 750		B-SCH ONLY	NO CHARGE	NO
U OF COLORADO		30			
	CDC 720		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/750(2)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780(1)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/785(1)		UNIV-WIDE	NO CHARGE	YES
COLORADO STATE		45			
	CYBER 171/835		UNIV-WIDE	NO CHARGE	NO
	HP3000		B-SCH ONLY	NO CHARGE	NO
*COLUMBIA		8			
	IBM 4341 (1984)		B-SCH ONLY	NO CHARGE	YES
	DEC VAX 11/780 (1982)		B-SCH ONLY	NO CHARGE	YES
	IBM 4341		UNIV-WIDE	RE-CHARGE	YES
	DEC 20		UNIV-WIDE	RE-CHARGE	YES
*CORNELL		20			
	IBM 3081		UNIV-WIDE	RE-CHARGE	YES
	DEC 2060		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 750		B-SCH ONLY	NO CHARGE	YES

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
CREIGHTON	UNIVAC 1100/60 (1979)	8	UNIV-WIDE	RE-CHARGE	NO
*DARTMOUTH COLLEGE		30			
	HONEYWELL DPS 8/44		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 785/VMS		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 785/UNIX		UNIV-WIDE	NO CHARGE	YES
U OF DELAWARE		23			
	IBM 3081D (1984)		UNIV-WIDE	NO CHARGE	.
	DEC VAX 11/780, 785 (1985)		UNIV-WIDE	RE-CHARGE	YES
	CYBER 174 (PLATO SYSTEM)		UNIV-WIDE	RE-CHARGE	.
	BURROUGHS 7700		UNIV-WIDE	RE-CHARGE	.
	DEC 10		UNIV-WIDE	RE-CHARGE	.
U OF DENVER		5			
	DEC VAX 780		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 750		UNIV-WIDE	NO CHARGE	YES
	DEC PDP 11/70		UNIV-WIDE	NO CHARGE	YES
*DUKE UNIV		3			
	IBM 4341 (1983)		B-SCH ONLY	NO CHARGE	YES
	IBM SYSTEM 38 (1983)		B-SCH ONLY	NO CHARGE	YES
E. CAROLINA		1			
	IBM 3081		UNIV-WIDE	RE-CHARGE	YES
	BURROUGHS 6800		UNIV-WIDE	NO CHARGE	YES
	SPERRY 1100		UNIV-WIDE	NO CHARGE	NO
E. MICH.		10			
	DEC 10		UNIV-WIDE	NO CHARGE	NO
	DEC 20		UNIV-WIDE	NO CHARGE	NO
	DEC PDP 11		B-SCH ONLY	NO CHARGE	NO
	MORROW, IBM		B-SCH ONLY	NO CHARGE	NO
	TR PROFESSIONAL		UNIV-WIDE	NO CHARGE	NO
E. WASH.		15			
	IBM 4381		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 11/780		UNIV-WIDE	NO CHARGE	NO
U OF FLORIDA		32			
	IBM 3033 (1981), 3081 (1982), 4341 (1983)		UNIV-WIDE	RE-CHARGE	YES
	IBM 4341(1984, DEC VAX 11/784		UNIV-WIDE	NO CHARGE	YES
	IBM 8100		B-SCH ONLY	NO CHARGE	YES
	GOULD 1		UNIV-WIDE	NO CHARGE	YES
	HARRIS		UNIV-WIDE	NO CHARGE	YES
FLORIDA INTL	UNIVAC 1100	.	UNIV-WIDE	.	NO

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
FLORIDA STATE	CDC CYBER 170/730-2 CDC CYBER 170/760	32	UNIV-WIDE UNIV-WIDE	NO CHARGE RE-CHARGE	NO YES
GEORGE WASHINGTON	IBM 4381 WANG OIS 140	3	UNIV-WIDE B-SCH ONLY	RE-CHARGE .	NO YES
U OF GEORGIA	TI 990/12 (1983) IBM 3081-D (1983) CDC CYBER 170/750 (1981), 205/845 (1984) CDC CYBER 170/825 (1983) IBM 370/158-AD (1973)	75	B-SCH ONLY UNIV-WIDE UNIV-WIDE UNIV-WIDE UNIV-WIDE	NO CHARGE RE-CHARGE RE-CHARGE NO CHARGE NO CHARGE	NO YES YES NO YES
*GEORGIA STATE	UNIVAC 90/80 UNIVAC 90/80 UNIVAC 1100/72 AMDAHL 1100/72 IBM SYSTEM 36 (2)	20	UNIV-WIDE UNIV-WIDE UNIV-WIDE UNIV-WIDE UNIV-WIDE	RE-CHARGE RE-CHARGE RE-CHARGE RE-CHARGE NO CHARGE	NO NO NO NO NO
*HARVARD	DEC 1091 IBM 4381	32	B-SCH ONLY B-SCH ONLY	NO CHARGE .	. .
HOFSTRA	DEC VAX 11/782 UNIVAC 90/80	.	UNIV-WIDE UNIV-WIDE	NO CHARGE NO CHARGE	NO NO
U OF HOUSTON	AS 9000N (1981) DEC VAX 11/780 (1979)	57	UNIV-WIDE UNIV-WIDE	NO CHARGE NO CHARGE	YES YES
HOWARD	IBM 4341	40	B-SCH ONLY	NO CHARGE	YES
U OF ILLINOIS, CHICAGO	IBM 3081 D32 (1983)	60	UNIV-WIDE	NO CHARGE	YES
*U OF ILLINOIS, CHAMPAIGN	CYBER 1 IBM	30	UNIV-WIDE UNIV-WIDE	RE-CHARGE RE-CHARGE	YES YES
ILLINOIS STATE		24			
INDIANA STATE	CDC CYBER 172/720 PRIME 750 (2) DEC VAX 750 IBM 4361	16	UNIV-WIDE UNIV-WIDE UNIV-WIDE UNIV-WIDE	NO CHARGE NO CHARGE NO CHARGE NO CHARGE	YES YES YES YES

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
*INDIANA		130			
	CDC 170/885 (1982)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780 (7)		UNIV-WIDE	NO CHARGE	YES
	PRIME 9950 (1984)		UNIV-WIDE	NO CHARGE	YES
	IBM 4341, 4381, 3033		UNIV-WIDE	NO CHARGE	YES
	DEC 2060 (2)		UNIV-WIDE	NO CHARGE	YES
JAMES MADISON		20			
	DEC VAX 11/780 (1983)		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 11/750 (1985)		UNIV-WIDE	NO CHARGE	NO
U OF KANSAS		5			
	DEC 8600 (1986)		UNIV-WIDE	RE-CHARGE	YES
	IBM 3031AP (1985)		UNIV-WIDE	RE-CHARGE	YES
KANSAS STATE		10			
	NAS 6630		UNIV-WIDE	NO CHARGE	.
KENT STATE		8			
	BURROUGHS 6812 (1978)		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 11/782 VMS (1981)		UNIV-WIDE	NO CHARGE	NO
	IBM 3081 MVS (1985)		UNIV-WIDE	NO CHARGE	NO
U OF KENTUCKY		25			
	PRIME		UNIV-WIDE	NO CHARGE	YES
	IBM 3081		UNIV-WIDE	RE-CHARGE	YES
LOUISIANA STATE		.			
	IBM 370-3033 (1978)		UNIV-WIDE	RE-CHARGE	YES
	IBM 3081 (1984)		UNIV-WIDE	RE-CHARGE	YES
	DG MV10000 (1984)		UNIV-WIDE	RE-CHARGE	YES
U OF LOUISVILLE		6			
	DEC 10		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 11/750		UNIV-WIDE	NO CHARGE	NO
	DEC PDP 11/45		UNIV-WIDE	NO CHARGE	NO
	DEC PDP 11/34		UNIV-WIDE	NO CHARGE	NO
	IBM 3081		UNIV-WIDE	NO CHARGE	NO
LOYOLA UNIV, CHICAGO		25			
	IBM 3033		UNIV-WIDE	RE-CHARGE	YES
	IBM 3081		UNIV-WIDE	RE-CHARGE	YES
U OF MAINE		9			
	IBM 3033		UNIV-WIDE	.	YES
*MIT		31			
	PRIME 850 (1982)		B-SCH ONLY	NO CHARGE	YES
	IBM-4341 (1984)		B-SCH ONLY	NO CHARGE	YES
	IBM-3083 (1984)		UNIV-WIDE	RE-CHARGE	YES
	HONEYWELL		UNIV-WIDE	RE-CHARGE	YES

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
MIAMI UNIV	IBM 4341 (1983) HP 3000 (1978) NCR 8570 (1984)	12	UNIV-WIDE UNIV-WIDE B-SCH ONLY	NO CHARGE NO CHARGE NO CHARGE	NO NO NO
*U OF MICHIGAN	AMDAHL 5860 (1983) IBM 3083 (1983) BURROUGHS XE550 BURROUGHS SE520	3	UNIV-WIDE UNIV-WIDE B-SCH ONLY B-SCH ONLY	RE-CHARGE RE-CHARGE NO CHARGE NO CHARGE	YES YES NO NO
*U OF MINNESOTA	CYBER 74 DEC VAX CRAY	.	UNIV-WIDE UNIV-WIDE .	RE-CHARGE RE-CHARGE .	NO NO .
MISSISSIPPI STATE U	SPERRY 1174 (1985)	35	UNIV-WIDE	RE-CHARGE	YES
U OF MISSOURI, COLUMBIA	IBM 3081 MODEL D (1984) AMDAHL 470-V-8 (1982)	.	UNIV-WIDE UNIV-WIDE	RE-CHARGE RE-CHARGE	YES YES
U OF MISSOURI, KANSAS CITY	DEC11780	7	.	.	NO
U OF NEBRASKA	IBM 3081D CDC 830 CDC 815	16	UNIV-WIDE UNIV-WIDE UNIV-WIDE	RE-CHARGE RE-CHARGE RE-CHARGE	YES YES YES
U OF NEW MEXICO	IBM 3081D (1983) DEC VAX 11/780 (1980)	30	UNIV-WIDE UNIV-WIDE	RE-CHARGE RE-CHARGE	YES YES
NEW MEXICO STATE	AMDAHL 470 V/5 PROCESSOR AMDAHL 470 V/6	30	UNIV-WIDE UNIV-WIDE	. .	YES YES
*NEW YORK UNIV	DEC 2060 (1977) DEC VAX 11/780 (1982) IBM 4341 CYBER 6600 PERKIN ELBER 7/32	55	B-SCH ONLY B-SCH ONLY UNIV-WIDE UNIV-WIDE B-SCH ONLY	. . RE-CHARGE RE-CHARGE .	YES YES . . NO
U OF N.C., CHARLOTTE	BURROUGHS A9	10	UNIV-WIDE	NO CHARGE	NO

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
U OF N.C., GREENSBORO	DEC VAX 11/780	.	UNIV-WIDE	RE-CHARGE	.
U OF N. FLORIDA	IBM 4341 W/72 TERMINALS	70	UNIV-WIDE	NO CHARGE	YES
N. TEXAS STATE	NAS-8040 (1984)	80	UNIV-WIDE	RE-CHARGE	YES
	TI-990/12 (2)		B-SCH ONLY	NO CHARGE	YES
NORTHERN ARIZONA	IBM 3083	22	UNIV-WIDE	NO CHARGE	NO
*NORTHWESTERN	DEC VAX 11/780	20	UNIV-WIDE	RE-CHARGE	NO
	CYBER 180/185 (1985)		UNIV-WIDE	RE-CHARGE	NO
	HP3000/33 (1982)		B-SCH ONLY	NO CHARGE	NO
NOTRE DAME	IBM 3033U (1984)	8	UNIV-WIDE	NO CHARGE	YES
OHIO STATE	PRIME 9955, (1985)	65	UNIV-WIDE	NO CHARGE	YES
OKLAHOMA STATE	IBM 3081	20	UNIV-WIDE	RE-CHARGE	YES
	DEC VAX (1982)		UNIV-WIDE	RE-CHARGE	YES
*U OF PENN(WHARTON)	DEC 1090 (1974, UPGRADED '78, '83)	35	B-SCH ONLY	NO CHARGE	NO
	DEC VAX 11/750, (1984)		B-SCH ONLY	NO CHARGE	NO
	DEC VAX 11/750, (1985)		B-SCH ONLY	NO CHARGE	NO
	IBM 4341, (1981)		UNIV-WIDE	RE-CHARGE	YES
	IBM 3081, (1983)		UNIV-WIDE	RE-CHARGE	YES
PENNSYLVANIA STATE	IBM 3081D	17	UNIV-WIDE	RE-CHARGE	YES
	IBM 4341-12		UNIV-WIDE	RE-CHARGE	YES
	IBM 4381-2		UNIV-WIDE	RE-CHARGE	YES
	IBM 4381-2		UNIV-WIDE	RE-CHARGE	YES
	IBM SERIES 1 360/20 (MULTIPLE)		.	.	YES
U OF PORTLAND	DEC VAX 11/780, (1979)	.	UNIV-WIDE	RE-CHARGE	NO
*PURDUE	CYBER 205 (1984)	16	UNIV-WIDE	RE-CHARGE	YES
	CDC 6500 (2) CDC 6600 (1)		UNIV-WIDE	NO CHARGE	YES
	HP 3000 (1982)		B-SCH ONLY	NO CHARGE	YES
	IBM 3083 (1985)		UNIV-WIDE	NO CHARGE	YES

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
U OF RICHMOND		6			
	DEC VAX 11/780 (1984)		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 11/780 (1981)		UNIV-WIDE	NO CHARGE	NO
*U OF ROCHESTER		.			
	HP 3000/64		B-SCH ONLY	.	.
	IBM 3032		UNIV-WIDE	.	.
	IBM 4341		UNIV-WIDE	.	.
	DEC 20		UNIV-WIDE	.	.
	DEC VAX 11/750		UNIV-WIDE	.	.
ST. CLOUD STATE		4			
	UNIVAC 1100/80		UNIV-WIDE	.	YES
	DEC VAX 11/780		UNIV-WIDE	.	YES
	CYBER 74		UNIV-WIDE	.	NO
SAN FRANCISCO STATE		27			
	CYBER 170/730		UNIV-WIDE	NO CHARGE	YES
	DEC PDP 11/70		UNIV-WIDE	NO CHARGE	NO
	CYBER 170/760		UNIV-WIDE	.	YES
SAN JOSE STATE		48			
	CYBER 170/730 (1978)		UNIV-WIDE	NO CHARGE	NO
	HP 3000/42 (1984)		B-SCH ONLY	NO CHARGE	YES
	HP 3000/III (1985)		B-SCH ONLY	NO CHARGE	YES
	TELEVIDEO 816/40		B-SCH ONLY	NO CHARGE	YES
	DEC VAX 750		B-SCH ONLY	NO CHARGE	YES
U OF SANTA CLARA		80			
	DEC 2060		UNIV-WIDE	NO CHARGE	YES
	HP 3000		UNIV-WIDE	NO CHARGE	YES
SETON HALL		2			
U OF SOUTH CAROLINA		35			
	IBM 4381-M01 (1984)		B-SCH ONLY	NO CHARGE	YES
	IBM 3081-D24 (1983)		UNIV-WIDE	RE-CHARGE	YES
	AMDAHL 470/VG-II (1978)		UNIV-WIDE	RE-CHARGE	YES
	IBM 4341-M01 (1982)		UNIV-WIDE	RE-CHARGE	YES
*U OF SOUTHERN CALIFORNIA		16			
	HP 3000/44 (1983)		B-SCH ONLY	NO CHARGE	YES
	IBM 3081 (1984)		UNIV-WIDE	RE-CHARGE	YES
	DEC KL10 (6)		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 750 (MANY)		UNIV-WIDE	RE-CHARGE	YES
S. ILL. U, CARBONDALE		.			
	IBM 3081GX (1984)		UNIV-WIDE	RE-CHARGE	YES
	IBM 4341A (1982)		UNIV-WIDE	RE-CHARGE	YES
	IBM 4341C (1983)		UNIV-WIDE	RE-CHARGE	YES
	PRIME 100 (1982)		UNIV-WIDE	RE-CHARGE	YES

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
S. ILL. U, EDWARDSVILLE		70			
	IBM 4341 (1982)		UNIV-WIDE	RE-CHARGE	
	CDC CYBER 170 (1982)		UNIV-WIDE	RE-CHARGE	YES
*STANFORD		.			
	DEC 20/60		B-SCH ONLY	NO CHARGE	YES
	DEC 20/60		B-SCH ONLY	NO CHARGE	YES
SUNY, ALBANY		4			
	SPERRY UNIVAC 1100/02 (1980)		UNIV-WIDE	RE-CHARGE	YES
	DEC 20 (1983)		UNIV-WIDE	RE-CHARGE	YES
SUNY, BUFFALO		10			
	CYBER CDC 730		UNIV-WIDE	RE-CHARGE	YES
	CYBER CDC 815		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 780, 750		UNIV-WIDE	RE-CHARGE	YES
SYRACUSE		30			
	IBM 3081 (2)		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 8600 (2)		UNIV-WIDE	NO CHARGE	YES
TEMPLE		20			
	CDC 750		UNIV-WIDE	NO CHARGE	NO
	IBM 4381		UNIV-WIDE	NO CHARGE	NO
	DEC VAX 780, PDP 11 /CIS DEPT ONLY		.	.	.
U OF TENNESSEE, KNOXVILLE		4			
	IBM 5520-50 (1985)		B-SCH ONLY	NO CHARGE	YES
	IBM 3081 (1983)		UNIV-WIDE	RE-CHARGE	YES
	IBM 4341 (1981)		UNIV-WIDE	RE-CHARGE	YES
	DEC 10 (2) (1975, '77)		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX (SEVERAL) (1984, '85)		UNIV-WIDE	RE-CHARGE	YES
U OF TEXAS, ARLINGTON		40			
	WANG VS-80 (1985)		B-SCH ONLY	NO CHARGE	NO
*U OF TEXAS, AUSTIN		138			
	DEC VAX 11/780 (1984)		B-SCH ONLY	RE-CHARGE	NO
TEXAS A&M		130			
	AMDAHL		UNIV-WIDE	RE-CHARGE	YES
	IBM 4361 (1984)		B-SCH ONLY	NO CHARGE	YES
TEXAS CHRISTIAN		12			
	IBM 4341/12 (1984)		UNIV-WIDE	.	YES
	IBM SERIES 1 (1984)		UNIV-WIDE	.	YES
	DEC VAX 11/780		UNIV-WIDE	.	NO
U OF UTAH		20			
	SPERRY 1100 (1985)		UNIV-WIDE	RE-CHARGE	YES
	IBM 4381 (1983)		UNIV-WIDE	RE-CHARGE	NO

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
UTAH STATE		.			
	DEC VAX 11/780		UNIV-WIDE	RE-CHARGE	YES
	IBM 4341 (1981)		UNIV-WIDE	RE-CHARGE	YES
*VANDERBILT		35			
	DEC 10 (1980)		UNIV-WIDE	.	NO
	DEC 10 (1985)		B-SCH ONLY	.	NO
	IBM 4341		.	.	NO
U OF VIRGINIA		18			
	CDC CYBER 855		UNIV-WIDE	NO CHARGE	YES
	PRIMES		UNIV-WIDE	NO CHARGE	YES
	HP		UNIV-WIDE	NO CHARGE	YES
VIRGINIA TECH		17			
WASHINGTON UNIV, ST. LOUIS		.			
	IBM 43XX (6)		UNIV-WIDE	RE-CHARGE	YES
WEST GEORGIA COLLEGE		3			
	CDC OMEGA 480/11		UNIV-WIDE	.	YES
	CDC OMEGA 480/1		UNIV-WIDE	.	YES
	IBM SERIES/1 MODEL F		UNIV-WIDE	.	YES
	TI 990/12		UNIV-WIDE	.	NO
W. VIRGINIA		.			
	IBM 3081 D (1981)		UNIV-WIDE	RE-CHARGE	YES
	DEC VAX 11/750 (1981)		UNIV-WIDE	RE-CHARGE	YES
	AMDAHL V7A (1979)		UNIV-WIDE	RE-CHARGE	YES
W. ILLINOIS		.			
	IBM 4381 M2 (1984)		UNIV-WIDE	NO CHARGE	NO
	CDC CYBER 170 M730		UNIV-WIDE	NO CHARGE	YES
	DEC PDP 11/44	.	UNIV-WIDE	NO CHARGE	YES
W. KENTUCKY		30			
	IBM 4341		UNIV-WIDE	NO CHARGE	YES
	DEC PDP 11/44		UNIV-WIDE	NO CHARGE	YES
	DEC VAX 11/780		UNIV-WIDE	NO CHARGE	YES
WILLIAM AND MARY		50			
	PRIME 850		UNIV-WIDE	NO CHARGE	YES
	PRIME 750		B-SCH ONLY	NO CHARGE	YES
	PRIME 9950		UNIV-WIDE	NO CHARGE	YES
	NAS		UNIV-WIDE	RE-CHARGE	YES
WINTHROP COLLEGE		25			
	DATA GENERAL MV 8000		UNIV-WIDE	NO CHARGE	NO
	DEC PDP 11/24		UNIV-WIDE	NO CHARGE	YES

THE 1985 BUSINESS SCHOOL SURVEY
MAINFRAME AND MINICOMPUTERS

INSTITUTION	COMPUTER MAKE(S), MODEL(S), YEAR(S) INSTALLED	# TERM.	ACCESS	CHARGE	NETWORKED
U OF WIS, EAU CLAIRE	HONEYWELL DPS/8-44 (1980)	22	UNIV-WIDE	NO CHARGE	NO
U OF WIS, MADISON	UNIVAC 1180		UNIV-WIDE	RE-CHARGE	YES
	DEC PDP 1170		UNIV-WIDE	RE-CHARGE	NO
	DEC VAX		UNIV-WIDE	RE-CHARGE	NO
*U OF BRITISH COLUMBIA	AMDAHL 470/V8	40	UNIV-WIDE	RE-CHARGE	YES
	AMDAHL 470/V7A		UNIV-WIDE	RE-CHARGE	YES
	DATA GENERAL MV10000		B-SCH ONLY	NO CHARGE	YES
*U OF W. ONTARIO	IBM 4341 MODEL 12 (1985)	25	B-SCH ONLY	NO CHARGE	YES
	PRIME 750 (1979-TO BE REMOVED SUMMER 85)		B-SCH ONLY	NO CHARGE	YES
	CYBER 825		UNIV-WIDE	RE-CHARGE	YES
	CYBER 835		UNIV-WIDE	RE-CHARGE	YES
	DEC 10		UNIV-WIDE	RE-CHARGE	YES

THE 1985 BUSINESS SCHOOL SURVEY
MICROCOMPUTERS & NETWORKS

INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
U OF AKRON	121	19	8.3	.	IBM PC, PC/XT	
U OF ALABAMA	85	47	7.6	70.6	IBM PC/ATIBM PC NETWORK II SPERRY	
U OF ALABAMA, BIRMINGHAM	29	.	.	.	HEATH ZENITH Z90	
*U OF ARIZONA	232	24	3.5	.	MACINTOSH, LISA DEC IBM PC, PC/XT NCR	CORVUS, PORT SELECTOR PABX, DECNET, SYTEK COMPUSERVE
ARIZONA STATE	227	78	1.9	.	IBM PC, PC/XTNESTAR	
U OF ARKANSAS	83	66	5.0	33.7	IBM PC, PC/XT LEE DATA	LEE DATA COMM. CONTR
ARKANSAS STATE	4	.	19.7	.		
ATLANTA	45	6	2.4	68.9	DEC IBM PC, PC/XT ZENITH 150	3M
BABSON COLLEGE	134	35	3.1	47.0	APPLE II SERIES DEC IBM PC, PC/XT	NEC200 VOICE/DATA SWITCH
BALL STATE	85	64	29.0	.	IBM PC, PC/XT TANDY	
U OF BALTIMORE	16	230	15.0	25.0	TANDY	ETHERNET
BOISE STATE	58	86	7.6	.	IBM PC, PC/XT NORTHSTAR	
BOSTON COLLEGE	178	16	.	67.4	APPLE II SERIES MACINTOSH, LISA	APPLENET, DECNET

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MICROCOMPUTERS & NETWORKS

INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
*BOSTON UNIV	14	320	55.5	71.4	DEC IBM PC, PC/XT	ETHERNET, BITNET COMPUSERVE
BOWLING GREEN STATE	74	125	4.8	93.2	IBM PC, PC/XT	
BRADLEY UNIV	25	44	.	88.0	APPLE II SERIES IBM PC, PC/XT	
BRIGHAM YOUNG	268	32	1.1	.	MACINTOSH, LISA IBM PC, PC/XT	NOVELLE, COMPUSERVE
*UC, BERKELEY	20	78	18.4	90.0	IBM PC, PC/XT	PABX, ARPNET, BITNET
*UCLA	71	24	2.8	.	HP, IBM PC, PC/XT, PC/AT	ARPANET, BITNET
CAL STATE L.A.	42	127	120.0	.	IBM PC, PC/XT MUSYS NETWORK	IBM PC NETWORK
CAL STATE FRESNO	37	74	17.5	100.0	TELEVIDEO	
CANISIUS COLLEGE	41	58	4.8	73.2	IBM PC, PC/XT	COMPUSERVE
*CARNEGIE-MELLON	147	8	1.4	22.4	MACINTOSH, LISA IBM PC, PC/XT	ETHERNET, NOVELLE NETWARE BITNET, MAILNET
*CASE WESTERN RESERVE	67	25	2.9	0.0	IBM PC, PC/XT	ETHERNET
U OF CENTRAL ARK.	76	24	.	84.2	IBM PC, PC/XT TANDY COMMODORE 8032	COMPUSERVE
CENTRAL MICH	64	76	8.5	29.7	IBM PC, PC/XT	
*U OF CHICAGO	137	26	2.1	74.5	MACINTOSH, LISA DEC HP IBM PC, PC/XT	ETHERNET, DECNET

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INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
					ZENITH	
CLEVELAND STATE	65	55	7.0	84.6	IBM PC, PC/XT TANDY ITT XTRA	
U OF COLORADO	49	68	11.3	65.3	IBM PC, PC/XT	CORVUS
COLORADO STATE	16	175	21.3	.	HP IBM PC, PC/XT	
*COLUMBIA	144	13	6.9	17.4	IBM PC, PC/XT IBM PC/AT	SERIES/1 YALE ASCII
*CORNELL	76	16	1.4	32.9	MACINTOSH, LISA DEC IBM PC, PC/XT	SYTEK BROADBAND, BITNET
CREIGHTON	11	87	.	90.9	SPERRY	
*DARTMOUTH COLLEGE	80	5	1.7	.	MACINTOSH, LISA IBM PC, PC/XT	TELENET
U OF DELAWARE	126	61	1.3	76.2	IBM PC, PC/XT	
U OF DENVER	72	58	6.4	2.8	IBM PC, PC/XT SANYO	CORVUS, ETHERNET, NOVELL NETWARE, ARCNET
*DUKE UNIV	102	12	1.3	.	IBM PC, PC/XT CDC	BITNET
E. CAROLINA	29	39	12.0	.	IBM PC, PC/XT ZENITH Z-150	
E. MICH.	6	454	49.5	.		
E. WASH.	25	59	.	16.0	IBM PC, PC/XT	

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INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
U OF FLORIDA	27	114	.	63.0	IBM PC, PC/XT	IBM SNA, BITNET
FLORIDA INTL	21	146	9.4	95.2	IBM PC, PC/XT	
FLORIDA STATE	40	164	7.0	.	IBM PC, PC/XT ZENITH Z150	
GEORGE WASHINGTON	27	153	11.6	88.9	APPLE II SERIES IBM PC, PC/XT	WANGNET
U OF GEORGIA	102	170	.	71.6	MACINTOSH, LISA IBM PC, PC/XT CORONA	
*GEORGIA STATE	175	63	5.2	17.1	APPLE II SERIES IBM PC, PC/XT TANDY	CORVUS, DNA
*HARVARD	105	53	2.4	.	IBM PC, PC/XT	PABX
HOFSTRA	25	154	.	.	APPLE II SERIES IBM PC, PC/XT	
U OF HOUSTON	60	151	4.8	15.0	IBM PC, PC/XT SPERRY 10,40,45	BITNET, SYSTEK
HOWARD	45	56	.	.	HP IBM PC, PC/XT	
U OF ILLINOIS, CHICAGO	6	.	26.0	.	IBM PC, PC/XT	BITNET
*U OF ILLINOIS, CHAMPAIGN	130	61	3.1	.	APPLE II SERIES IBM PC, PC/XT IBM PC/AT COMPAQ ZENITH	BITNET

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MICROCOMPUTERS & NETWORKS

INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
ILLINOIS STATE	76	78	12.1	.	IBM PC/AT COMPAQ	
INDIANA STATE	48	57	27.0	47.9	IBM PC, PC/XT ZENITH 150	PORT SELECTOR, PABX NOVELLE NETWARE/0
*INDIANA	95	136	7.2	63.2	APPLE II SERIES IBM PC, PC/XT NCR	CORVUS, ETHERNET, IBM SNA WANGNET, DOW JONES
JAMES MADISON	26	163	80.0	100.0	COMPAQ	
U OF KANSAS	31	49	57.0	.	ZENITH 100/150 ZENITH 89	
KANSAS STATE	51	82	3.1	54.9	IBM PC, PC/XT ZENITH	IBM PC NETWORK ZENITH STANDARDNET, BITNET
KENT STATE	56	61	14.4	98.2	APPLE II SERIES IBM PC, PC/XT	
U OF KENTUCKY	14	.	8.5	.	IBM PC, PC/XT	
LOUISIANA STATE	94	47	4.5	50.0	IBM PC, PC/XT ZENITH Z-100	
U OF LOUISVILLE	72	16	7.3	40.3	APPLE II SERIES IBM PC, PC/XT	
LOYOLA UNIV, CHICAGO	3	.	5.0	.		
U OF MAINE	6	283	20.0	50.0	IBM PC, PC/XT	BITNET
*MIT	158	20	0.8	55.7	APPLE II SERIES IBM PC, PC/XT XEROX 8014	ETHERNET, WATERLOO MICRONET ARPANET, BITNET, CSNET, EDUNET

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MICROCOMPUTERS & NETWORKS

INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
MIAMI UNIV	82	109	4.9	78.0	IBM PC, PC/XT NCR	
*U OF MICHIGAN	371	20	0.9	.	MACINTOSH, LISA IBM PC, PC/XT BURROUGHS B25	UMNET, BURROUGHS 820, ARPANET BITNET, COMPUSERVE, CSNET EDUNET, THE SOURCE
*U OF MINNESOTA	161	151	1.1	.	APPLE II SERIES IBM PC, PC/XT IBM PC/AT LANIER LBP WYSE PC	LANIER LAN
MISSISSIPPI STATE U	25	.	4.4	80.0	APPLE II SERIES IBM PC, PC/XT	
U OF MISSOURI, COLUMBIA	.	.	.	.		BITNET, EDUNET
U OF MISSOURI, KANSAS CITY	19	103	8.6	.	IBM PC, PC/XT	
U OF NEBRASKA	69	115	2.2	81.2	APPLE II SERIES IBM PC, PC/XT	
U OF NEW MEXICO	58	33	2.0	60.3	DEC IBM PC, PC/XT	PORT SELECTOR, PABX
NEW MEXICO STATE	67	70	2.0	89.6	MACINTOSH, LISA IBM PC, PC/XT	
*NEW YORK UNIV	256	58	1.6	87.9	IBM PC, PC/XT IBM PC/AT	BITNET
U OF N.C., CHARLOTTE	28	76	.	67.9	IBM PC, PC/XT	IBM PC NETWORK
U OF N.C., GREENSBORO	70	56	3.4	.	MORROW SPERRY	

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INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
U OF N. FLORIDA	1	.	45.0	100.0		
N. TEXAS STATE	75	145	4.7	.	TI-PC	SYTEC BROADBAND
NORTHERN ARIZONA	47	40	19.3	100.0	IBM PC, PC/XT	
*NORTHWESTERN	165	14	2.6	.	HP ZENITH Z-150	BITNET
NOTRE DAME	96	31	2.2	93.8	APPLE II SERIES MACINTOSH, LISA IBM PC, PC/XT	
OHIO STATE	70	152	3.4	.	DEC IBM PC, PC/XT	CORVUS, PABX, MICROLINK BITNET, ARPANET, CSNET
OKLAHOMA STATE	89	123	2.3	89.9	APPLE II SERIES IBM PC, PC/XT	
*U OF PENN(WHARTON)	495	30	0.7	85.7	MACINTOSH, LISA DEC HP IBM PC, PC/XT	PORT SELECTOR, PABX ARPANET, THE SOURCE
PENNSYLVANIA STATE	43	256	5.5	46.5	IBM PC, PC/XT	ARPANET, BITNET, EDUNET
U OF PORTLAND	1	.	.	.		
*PURDUE	58	75	3.1	.	MACINTOSH, LISA HP IBM PC, PC/XT	PORT SELECTOR, PABX
U OF RICHMOND	40	26	2.1	67.5	DEC IBM PC, PC/XT	
*U OF ROCHESTER	35	98	1.3	14.3	MACINTOSH, LISA DEC IBM PC, PC/XT IBM PC/AT	PORT SELECTOR, PABX, BITNET

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INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
ST. CLOUD STATE	52	88	3.4	100.0	APPLE II SERIES IBM PC, PC/XT	
SAN FRANCISCO STATE	45	74	48.3	22.2	IBM PC, PC/XT TELEVIDEO	3 COM
SAN JOSE STATE	101	.	.	.	DEC HP TELEVIDEO 803	ETHERNET, PABX
U OF SANTA CLARA	145	18	2.5	13.8	IBM PC, PC/XT	
SETON HALL	18	185	42.5	.	IBM PC, PC/XT	
U OF SOUTH CAROLINA	120	55	6.4	7.5	IBM PC, PC/XT	ETHERNET, PABX, BITNET
*U OF SOUTHERN CALIFORNIA	135	55	3.4	3.7	IBM PC, PC/XT COMPAQ	NESTAR, PABX, ARPANET, BITNET
S. ILL. U, CARBONDALE	27	121	20.3	.	IBM PC, PC/XT	
S. ILL. U, EDWARDSVILLE	160	14	.	93.8	APPLE II SERIES IBM PC/AT	
*STANFORD	151	7	1.7	13.2	DEC HP IBM PC, PC/XT	ETHERNET, ARPANET
SUNY, ALBANY	16	83	27.5	68.8	IBM PC, PC/XT	
SUNY, BUFFALO	36	131	.	97.2	IBM PC, PC/XT	PORT SELECTOR, PABX, BITNET
SYRACUSE	25	182	8.0	80.0	IBM PC, PC/XT ZENITH 151-52	

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INSTITUTION	# MICROS	STUD/ MICRO	FACULTY/ MICRO	% STAND ALONE	MICROCOMPUTERS (N>3)	NETWORKS
TEMPLE	66	109	31.7	75.8	DEC IBM PC, PC/XT	
U OF TENNESSEE, KNOXVILLE	164	127	1.3	12.2	IBM PC, PC/XT	PABX, BITNET, EDUNET
U OF TEXAS, ARLINGTON	20	341	13.0	.	TANDY	
*U OF TEXAS, AUSTIN	52	283	.	.	MACINTOSH, LISA IBM PC, PC/XT TI-PC	
TEXAS A&M	194	47	2.5	94.3	DEC IBM PC, PC/XT TANDY TI ATARI	PORT SELECTOR, PABX, BITNET
TEXAS CHRISTIAN	50	134	.	84.0	TANDY	
U OF UTAH	118	19	2.0	.	MACINTOSH, LISA IBM PC, PC/XT SPERRY/LEADING EDGE	ARCNET, GATEWAY, BITNET
UTAH STATE	90	31	2.2	100.0	IBM PC, PC/XT TELEVIDEO 1605 (10), 803 (70)	
*VANDERBILT	26	27	3.5	92.3	IBM PC, PC/XT AT&T 6300 AT&T 3B2	BITNET
U OF VIRGINIA	84	10	1.6	95.2	APPLE II SERIES IBM PC, PC/XT	
VIRGINIA TECH	56	146	3.7	41.1	IBM PC, PC/XT	BITNET

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WASHINGTON UNIV, ST. LOUIS	27	33	18.0	.	IBM PC, PC/XT	THE SOURCE
WEST GEORGIA COLLEGE	10	222	35.0	.	IBM PC, PC/XT	
W. VIRGINIA	45	4	.	.	IBM PC, PC/XT SPERRY	BITNET, EDUNET
W. ILLINOIS	31	162	8.3	.	IBM PC, PC/XT	
W. KENTUCKY	27	75	.	92.6	IBM PC, PC/XT TANDY	IBM SNA, COMPUSERVE
WILLIAM AND MARY	0	.	.	.		
WINTHROP COLLEGE	34	44	14.0	88.2	IBM PC, PC/XT COMMODORE SUPER PET	SUPERPET-TO-DEC NET
U OF WIS, EAU CLAIRE	176	4	2.0	.	IBM PC, PC/XT TANDY	
U OF WIS, MADISON	113	50	1.2	88.5	IBM PC, PC/XT	
*U OF BRITISH COLUMBIA	20	.	6.1	.	IBM PC, PC/XT	X.25, BITNET, CSNET, ETC.
*U OF W. ONTARIO	27	38	25.3	.	HP IBM PC, PC/XT	