

Computer Planning Board
Educational Subcommittee
Implementation Plan

Electronic Studio Plan

for

Jones Graduate School

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THE ELECTRONIC STUDIO FOR THE
JONES GRADUATE SCHOOL

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TIE ELECTRONIC STUDIO FOR THE JONES GRADUATE SCHOOL

1. NARRATIVE INTRODUCTION .

Background

In 1980, computing was an essential tool in only 2 courses in the MBA program of the Jones Graduate School: Quantitative Methods and Marketing Research. As of 1990, computing is an essential tool in over 75% of the courses and is used in one form or another in every course.

Milestones In The Evolution of Computing Use at the Jones Graduate School

- 1) In 1980 all computing was done on the mainframe at ICSA and all word processing was done on a Lanier System.
- 2) In 1984, Apple Computer donated 30 Macintosh computers and in 1985 the school bought 20 MS/DOS microcomputers from Sperry at a reduced price, thus creating two computer labs for student use. Creation of the labs and the purchase of specific software for courses was a first primitive step toward the creation of an electronic studio for the business school. By 1985 all word processing was done on the Macintosh.
- 3) In 1988, Apple Computer donated 15 Macintosh II's and the Macintosh lab was upgraded.
- 4) In 1989 the full-time faculty unanimously voted to require all entering students to have ready access to microcomputers: at least a Mac Plus on the Macintosh side or at least an IBM PS/2 (80086) on the MS-DOS side. (Currently over 60% of our students have a computer.)

Currently the school is approximately three-quarters of the way down the path of creating our ideal electronic studio for the MBA.

Philosophy Of Computing Support For the Curriculum

There are several ways in which the computer acts as an essential support ingredient for the curriculum.

Word Processing The use of microcomputers as word processors has saved students considerable time which they can devote to learning more material. More importantly, however, state-of-the-art word processing allows our students to fully integrate text, tables, graphs and graphics and thus produce the kind of high-quality reports they will be expected to produce after they graduate. On several occasions, these skills have allowed our students to distinguish themselves from competing MBA students working at summer internships between the first and second year of the MBA program.

Spreadsheets. The second major use of the computer in the MBA curriculum is in the creation and manipulation of spreadsheets. Spreadsheets allow the business decision maker to create a model of all factors impacting a particular decision and to then simulate alternative scenarios by asking "what if" questions. This powerful tool is used by practically every business and our students must master it to be competitive. By learning this skill early in the program, however, our students have become both more creative and more analytical. The spreadsheet as a tool allows them to analytically explore alternatives and, as a result, encourages them to creatively consider many more options available on any decision than they have could have in the past.

Data Analysis, Optimization, and Graphs. The third use of the computer in our MBA curriculum is to analyze data. Students are taught how *to* analyze data and understand how that data can help them make better decisions. For example, the analysis of data from test markets helps students decide on the best strategy for introducing a new

product Analysis of data that can be used to predict bankruptcy of companies helps students understand the way in which financial indices can be used to gauge the health of a company. Analysis of results from linear programming solutions helps students decide on the optimum combination of input raw materials to produce desired outputs. And many of the results need to be graphed so the reason for the decision can be easily explained to management

Additional Uses of the Computer. Students are also trained in the use of presentation software to create (and give) presentations to management. Some courses have textbooks which come with disks that provide learning experiences on the computer. Other courses use cases in which background material is provided in the form of a spreadsheet for analysis.

All of these applications have resulted in the computer being a necessary tool for the curriculum. More importantly, however, the availability of the microcomputer and the electronic studio has altered the curriculum in three important ways:

- 1) More material is covered;
- 2) In making a decision for a company being studied in a course, students can explore as many options and consider as many factors as they would if they were actually working for that company; and,
- 3) Reports and presentations are representative of (and often even better than) what they are like in real companies.

2. SPECIFIC REQUIREMENTS

Where We Are Now

As can be seen in Table 1, the school currently has 92 computers, but, of these, 51 are obsolete.

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TABLE 1

Current Computer Inventory By Type and Use

<u>Equipment Type</u>	<u>Faculty</u>	<u>Student</u>	<u>Administrative</u>	<u>Total</u>
<u>State-of-the Art</u>				
Macintosh II or SE	14	13	7	34
MS/DOS (PS 2)	6	0	1	7
<u>Obsolete</u>				
Macintosh (Plus, 512K)	3	0	16	19
MS/DOS (Sperry, XT, AT)	<u>1</u>	<u>14</u>	<u>17</u>	<u>32</u>
	24	27	41	92

Faculty

Every faculty member has a computer and there is a faculty lab with 2 Macintosh computers and another faculty lab with 2 IBM-compatible computers. For faculty use there is a need to maintain the current state-of-the-art deployment and to equip 2 classrooms with state-of-the-art Macintosh and IBM hardware as well as a state of the art projector for use in class presentations.

Students

By 1991, all entering students will be required to have ready access to computing equipment. This requirement should remove some of the pressure from the current student labs, but the labs should still be available for three

reasons. First, they provide an important group-learning environment that is not possible with one student working on one machine alone. Second, there will be times when the student needs to work on a convenient computer during the~day between classes. Third, we need a room with enough computers in one place to train at least 10 students at a time.

The Macintosh lab is reasonably equipped at this time but the MS/DOS lab is not. We need at least 10 state-of-the-art 386 M\$/DOS machines for the student lab.

Administrative

On the administrative side there needs to be gradual upgrading of equipment beginning with word processing.

Other Requirements

The school already has the computing equipment deployed in the necessary space so space is not currently an issue. We also have a systems coordinator but keeping a qualified person in that position has been very difficult because of inadequate salary. Software requirements are being satisfied, and by 1991 all students will enter the Jones Graduate School with personal copies of a word processing, a spreadsheet, and a data-analysis package.

3. CONNECTIVITY

It is planned that all computers in the building will be connected to each other and also given a gateway to the campus-wide electronic network.

4. COORDINATION WITH OTHER DIVISIONS

At present with the~exception of Accounting we do not teach undergraduates and the needs in our curriculum are sufficiently different that extensive coordination does not seem warranted. We do benefit from the University site license with Systat and, of course, in terms of research there is a great deal of inter-divisional coordination.

5. ESTIMATE OF COSTS

Computer Related Capital Improvements FY 90-91, 91-92, 92-93, 93-94

PHASE I FY 1990-91

Network all microcomputers, connect to campus mainframe

Macs on AppleTalk, IBM's on EtherNet.

(Assumes 50 Macintosh's and 20 IBM's on a network.)

Phase I - Base network

Admin and Student Lab AppleTalk Network -

			Comments
4 Farallon Star Controller	800	3,200	Hub for AppleTalk network wiring
1 AppleShare FileServer Software	450	450	Software for file sharing
1 AppleShare Print Server	200	200	Software for printer spooling
1 InterPoll Admin. Utility	85	85	Network administration software
1 Mac SE/30 HD80 4MB FileServer	3,974	3,974	AppleTalk file server
1 160 MB External Drive	1,900	1,900	Disk drive for file saver
40 PhoneNet Connector din 8	30	1,200	Computer to wall wiring
4 Patch panels	400	1,600	Terminals for wiring into star controllers
1 15OUB Tape Backup Unit	1,600	1,600	Backup of file server
1 Uninterruptible power supply	800	800	Maintains power during blackouts
2 Kinetics FastPath	2,000	4,000	Appletalk to ethernet gateway

Admin & Faculty Ethernet Network

1 IBM PS/2 Mod 80 w/300MB Drive	7,197	7,197	AdmiMFaculty file server
1 IBM PS/2 80386 Sys Board Memory	436	436	Memory expansion for file server
1 IBM PS/2 monochrome display	165	165	Monitor for file server
1 ELGAR UPS w/LANSafe VAP	958	958	Uninterruptible power supply
1 Emerald 150MB tape backup	1,531	1,531	Tape backup for server
1 RAMP App Kit w/EmSAVE	345	345	Software for tape backup
1 Novell Advanced NetWare 215	1,856	1,856	File Server software
1 Saber LAN Admin Pack	495	495	Network adminisitation utility
1 Lotus 123 v3 F'rleserver	199	199	Allows 123 to run on network
20 Ethernet twisted pair connector	40	800	Computer to wall jack wiring
6 PS2 Ethernet card (CableTron)	559	3,354	Ethernet adapter for PS/2
8 XT Ethernet card (CableTron)	359	2,872	Ethernet adapter for IBM XT's
1 AT Ethernet card (CableTron)	439	439	Ethernet adapter for IBM AT's
1 MMAC 3	675	675	Ethernet repeater enclosure
2 TPT-M 1M	1,423	2,846	Ethernet interface module
1 IRM-NM	1,820	1,820	Repeater module for ethernet
1 NCM-DOS	845	845	Remote administration software
1 Novell Ethernet Adapter	700	700	File server ethernet interface
1 Novell AppleTalk Adapter	700	700	File Server AppleTalk interface
1 Misc. installation costs	3,000	3,000	
SUBTOTAL			50,242

Phase I - Connect to campus backbone for E-Mail

Total cost to be shared by university and Jones Graduate School Cost split to be determined	20,000	
Subtotal - backbone connection(est)		20,000
PHASE I TOTAL		70,242

PHASE II FY 1991-92

Phase II - Begin improvement of administrative computers

5	Macintosh SFJ30 HD40 CPU	3,000	15,000	
3	Macintosh Ilex HD40	4,000	12,000	
4	LaserWriter 11 NTX	4,000	16,000	
	Subtotal - computer enhancement			43,000

Phase II - Enhance

	software base			
	Software costs			7,000
	PHASE II TOTAL			50,000

PHASE III FY 1992-93

Phase III - Bring Macs up to high-speed ethernet standard, install Novell server

4	Cabletron Network Interface	3,000	12,000	
1	Novell Network Software	5,000	5,000	
3	Novell Interface card	700	2,100	
1	IBM PS/2 Model 80	7,000	7,000	
50	Ethernet card for Macintosh	350	17,500	
50	EtherNet Connector	50	2,500	
1	Tape backup Jpower supply systems	3,000	3,000	
1	Misc. installation costs	2,000	2,000	
	Subtotal - phase III network			51,100

Phase III - Finish improvement of administrative CPU's

8	Macintosh SE/30 HD40 CPU	3,000	24,000	
5	Macintosh Ilex HD40	4,000	20,000	
	Subtotal phase III CPU enhancement			44,000

Phase III - Enhance software base

	Software Costs			4,000
	PHASE III TOTAL			99,100

Phase IV - FY 1993-94

	Complete improvement of administrative computers and printers			30,000
	Improve audio-visual equipment			5,000
	Software enhancements			4,000
	Network improvement/maintenance			8,000
	PHASE IV TOTAL			47,000

6. IMPACT ON CURRICULUM

Because the Jones School has had a version of an electronic studio since 1985, and because we are at least 75% of the way to our goal, the discussion of the impact is in section 1 and is based on our real experience.