

MINUTES
Computer Committee
President's Boardroom
September 1, 1993
3 PM

PRESENT: Gregory Brown, John Burton, David Goodyear,
George Libey, Tom McAnge, Gerry McLaughlin,
Harlan Miller, Bhaba Misra, Terry Rakes,
K. B. Rojiani, Frank Schima, Peter Shires, Jay
Stoeckel, Ernest Stout, John Tombarge, Mike Williams

ABSENT: Sean Arthur, Earving Blythe, Scott Johnson,
Katherine Johnston, D. B. Taylor

VISITOR(S): Barbara Robinson and Bill Sanders (Computing Center)

AGENDA ITEM 1: COMMITTEE CHAIR (WILLIAMS)

The committee chair of the Computing Committee is normally appointed by the President from the academic faculty members. This year appointment was delayed by his illness and volunteers were solicited. Discussion will continue via electronic mail with the expectation that committee members will make a recommendation to the President before the next Computing Committee meeting.

AGENDA ITEM 2: MINUTES OF THE APRIL 7 MEETING (WILLIAMS)

Motion made, seconded and passed to approve the minutes of the April meeting.

A draft of the Computing Committee's annual report for the 1992/93 year was distributed for comment. A final version will be offered to the Computing Committee for approval at the next meeting and subsequently forwarded to the Commission on University Support.

Several committee members met last May to discuss the changing mission of the Computing Committee and to develop recommendations for revamping subcommittees to better meet the needs of a more distributed computing environment. Attendees felt the Computing Committee needed to become more proactive. They suggested the End User Subcommittee might focus on quality of computing services while the Capacity and Planning Subcommittee, renamed Computer Resources Planning Subcommittee, might focus on quantity or availability of services.

AGENDA ITEM 3: COMMITTEE LOGISTICS (WILLIAMS)

As in past years, committee members agreed to conduct business via electronic mail, eliminating paper distribution of minutes and other documents. Draft minutes will continue to be exchanged with the Communications Resources Committee. Future Computing Committee meetings will be held in the Information Systems Building, conference room D at 3:30 on the first Wednesday of the month, except for January, when it will be held the second Wednesday.

AGENDA ITEM 4: COMPUTING CENTER ANNOUNCEMENTS (WILLIAMS)

VM2 was shut down early this summer. Although some individuals suffered some inconvenience, the project went well overall, and there are no significant outstanding problems.

Many services offered by Information Systems require rigorous user identification for various reasons. Network policies, for example, prohibit anonymous use of telnet, modem pool users must be identified to allow billing, and electronic mail requires an identity for delivery. In order to reduce the number of ids required for use of these facilities, the Computing Center has initiated a new PID (Personal userID) system, whereby one id and password will permit access to several services. Announcements of this program seem to have engendered numerous incorrect rumors, which highlight the difficulty Information Systems has encountered in communicating changes to the University community in a reliable way. Early announcements which offer the opportunity for users to adjust gracefully to changes may be ignored.

Even as the University moves to a more distributed computing model, mainframe services, including electronic mail on VM1, are expected to continue to be offered for the next four to five years.

A summary report of the pilot Faculty Development Institute was distributed. State budget shortfalls may affect the scope of the project, though it is expected to go forward at some level with Information Systems funding. Participants for next summer have not been selected and the possibility of offering the institute during the school year is being explored.

AGENDA ITEM 5: SUBCOMMITTEE REPORTS

No subcommittee met this summer. The Site License Subcommittee will be evaluating proposals in about a week.

AGENDA ITEM 6: ADDITIONS TO THE AGENDA

Some concern was expressed that, although the new governance structure is expected to operate as a twelve month system, the Computing Committee does not meet during the summer. Summer meetings are not practical since the committee has many nine-month faculty members.

The next meeting will be held on October 6 at 3:30 p.m. in conference room D in the Information Systems Building.

Meeting adjourned at 4:00 p.m.

MINUTES
Computing Committee
Information Systems Building
October 6, 1993
3:30 PM

PRESENT: K. B. Rojiani, Sean Arthur, Earving Blythe, John Burton, David Goodyear, Tom McAnge, Harlan Miller, Frank Schima, Peter Shires, John Tombarge, Michael Williams

ABSENT: Gregory Brown, Scott Johnson, Katherine Johnston, George Libey, Gerry McLaughlin, Bhaba Misra, Terry Rakes, Lawrence Skelly, Jay Stoeckel, Ernest Stout, D. B. Taylor

VISITOR(S): Barbara Robinson and Bill Sanders (Computing Center)

AGENDA ITEM 1: MINUTES OF THE SEPTEMBER 1 MEETING

Motion made, seconded and passed to approve the minutes of the September meeting.

AGENDA ITEM 2: COMPUTING COMMITTEE ANNUAL REPORT, 1992-93 (ROJIANI)

Motion made, seconded and passed to approve the Computing Committee Annual Report, 1992-93.

AGENDA ITEM 3: COMPUTING CENTER ANNOUNCEMENTS (WILLIAMS)

IBM has announced they will drop support next year for the old versions of VM and MVS which are running on our central mainframes. Our hardware is too old to run newer, supported versions of the operating systems. While the Computing Center is actively working toward a more distributed computing environment, dependencies on mainframes will continue to exist for several years. On VM1, for example, an average of 6500 different userids log on each week. Since some administrative applications, such as those for accounting, must continue to change to meet state and federal requirements, operating system support is critical to assure systems can continue to accommodate those changes.

The problem is most precarious for MVS, which runs on the oldest machine, an IBM 3084. Committees in the Computing Center are examining the dependencies and interdependencies of mainframe systems and are likely to recommend a used machine be purchased to replace the 3084. Such an upgrade would not be a major purchase on the scale of previous mainframe procurements. Used hardware is relatively inexpensive and the objective would be a minimum upgrade which would allow the Computing Center to run supported software in the interim while migration to distributed systems proceeds. Implementing an upgrade would be a major project, however, which would require significant systems programming effort, and the user community would need to make changes as well.

There is some concern that the purchase might be misinterpreted, and the committee was encouraged to convey to the University community that an upgrade in the traditional sense will not occur. Any purchase would besolely to minimize immediate risk for critical transaction systems. The Computing Center continues to ag-

gressively pursue and support migration from mainframes.

It was suggested that owners of mainframe applications be formally asked to initiate planning for their own migration. A proposal will be drafted for the next meeting.

AGENDA ITEM 4: SUBCOMMITTEE REPORTS

o Site License Subcommittee (Robinson)

The subcommittee met in mid-September and discussed how activities might be better publicized. There have been articles in Fastline and Spectrum and a direct mailing to deans, directors and department heads. A small scale effort by Bob Sumichrast, chair of the committee, to put flyers in 150 faculty mailboxes resulted in five inquiries within a few days. This effort may be expanded.

Proposals for this cycle were due September 30 and the subcommittee will meet soon to consider them. Awards will be made by October 18. The next deadline for proposals will be February 7, and publicity for that cycle will begin in early December.

Two pending proposals were also discussed. One is for a volume purchase of Acrobat, software which allows users to view documents even when they don't have the application that created it, and the other is a new Microsoft program which is similar to the WordPerfect plan already in place. Bob Sumichrast has been talking to the bookstore and other vendors about managing the Microsoft distribution, and he hopes to have something in place by the end of the year.

The status of several purchases from last year was also discussed. The Computing Center is now distributing Mathematica, about 300 copies to date. Approximately \$20,000 of Word Perfect software has been purchased by departments and is being distributed. This is a fairly labor-intensive process but seems to be very well received on campus.

o Other subcommittees

No other subcommittee meetings were held.

AGENDA ITEM 5: COMMITTEE ISSUES AND SUBCOMMITTEES (ROJIANI)

The current subcommittee structure has been somewhat ineffective and a transition subcommittee will be appointed to suggest changes. It is hoped the Computing Committee can become more proactive, rather than concentrating on acting as a conduit for information transfer. Ad hoc subcommittees formed to address specific pressing issues may be more effective in helping this occur. With this in mind, a motion was made, seconded and passed to dissolve all existing subcommittees, excepting the Site License Committee.

AGENDA ITEM 6: ADDITIONS TO THE AGENDA

None.

The next meeting will be held on November 3 at 3:30pm in conference room D in the Information Systems Building.

Meeting adjourned at 5:00 p.m.

MINUTES
Computing Committee
Information Systems Building
November 3, 1993
3:30 PM

PRESENT: K.B. Rojiani, Sean Arthur, Gregory Brown, John Burton,
David Goodyear, Bill Richardson, Harlan Miller,
Bhaba Misra, Terry Rakes, Frank Schima, Peter Shires,
John Tombarge, Michael Williams

ABSENT: Earving Blythe, Scott Johnson, Katherine Johnston,
George Libey, Gerry McLaughlin, Lawrence Skelly,
Jay Stoeckel, Ernest Stout, D.B. Taylor

VISITOR(S): Barbara Robinson (Computing Center)
Joe Tront (College of Engineering)

AGENDA ITEM 1: MINUTES OF THE OCTOBER 6 MEETING (ROJIANI)

Motion made, seconded and passed to approve the minutes of the
October meeting.

AGENDA ITEM 2: COMPUTING CENTER ANNOUNCEMENTS (WILLIAMS)

A server which handles part of the Campus-Wide-Mail system had a
security failure last month. The problem with the system's
structure was quickly corrected, but passwords were compromised
and the system had to be disabled and rebuilt. Users were asked
to re-register with a new password in order to assure system in-
tegrity. The Computing Center is taking measures to be certain
all production systems are secure.

This experience demonstrated that many users are choosing poor
passwords which can be easily guessed by "crack" programs running
on desktop hardware. Some central systems use filters to reject
commonly used passwords such as names or words. Although users
often don't like the restrictions, password filters may need to
be installed on other hosts. Requiring that passwords be changed
at regular intervals does not appear to increase security, since
the need for frequent change encourages users to give less
thought to their choices and to write them down as well.

AGENDA ITEM 3: ADMINISTRATIVE SYSTEM MIGRATION PLANS (WILLIAMS)

Last month the committee suggested that owners of major applica-
tion systems which are dependent on the mainframes be asked to
develop a plan for migration to the distributed environment which
is expected to evolve over the next few years. A motion was
made, seconded and passed to approve a draft letter and send it
to the owners of the largest, most critical systems. The Com-
puting Center will participate in developing statements of strat-
egy and timetables for these systems over the next six months.
Owners of other applications will be approached later.

AGENDA ITEM 4: COMMITTEE ISSUES AND AGENDA

o Site License Subcommittee (Robinson)

The subcommittee met October 29 to discuss nine proposals. Various questions arose for most requests and letters seeking clarification have been delivered. A general problem continues to surface as some proposals frame requests in terms of local needs and fail to offer a plan that considers general campus requirements.

Proposals still under consideration include Matlab, Acrobat, Atlas Geographic Information System, Systat, and Microsoft, Macromedia and selected Lotus products. The committee will meet on November 9 to continue the evaluation.

o Committee issues (Arthur)

A temporary subcommittee met to discuss the focus of the Computing Committee. The plan is to appoint ad hoc subcommittees to focus on topical issues. The transition from mainframes was identified as the primary concern and several areas of interest were named:

- 1) Technical support: How can technical support be optimized in a distributed environment?
- 2) Data access/security/format: Can the transition be used as an opportunity to make University databases more accessible without compromising security?
- 3) Training/retraining: How can resistance to change among technical support personnel be managed?

This list of issues will be refined and prioritized.

AGENDA ITEM 5: ADDITIONS TO THE AGENDA

A question was raised concerning Information Systems' support of Apple Macintosh computers in the Faculty Development program. The Computing Center is not reducing support for any desktop system. Such support has been historically low. New projects designed to promote uniform computer literacy require that Information Systems leverage its resources as much as possible. Projects such as the pilot Faculty Development Institutes, where Macintosh systems were initially chosen by the participants, have demonstrated that Macintoshes are considerably easier to support than PCs running Windows. This is particularly true in areas where there is little computing technology in place. A principal goal of Information Systems' technology investments is to promote high functionality with maximal user independence. No attempt is being made to standardize desktop technology across the campus. As technology continues to evolve, other choices may be more appropriate in the future. While Information Systems expects to continue investing in Macintosh systems, at least in the near term, other areas are free to make their own choices.

Recent figures show that expenditures on campus for Macintosh systems are fairly close to those for Intel-based machines.

The next meeting will be held on December 1 at 3:30 p.m. in conference room D in the Information Systems Building.

Meeting adjourned at 4:45 p.m.

MINUTES
Computing Committee
Information Systems Building
December 1, 1993
3:30 PM

PRESENT: K.B. Rojiani, John Burton, David Goodyear, Tom McAnge,
Gerry McLaughlin, Harlan Miller, Bhaba Misra,
Frank Schima, Michael Williams

ABSENT: Sean Arthur, Earving Blythe, Gregory Brown, Scott
Johnson, George Libey, Terry Rakes, Peter Shires,
Lawrence Skelly, Jay Stoeckel, Ernest Stout,
D. B. Taylor, John Tombarge

VISITOR(S): Barbara Robinson (Computing Center)
Stacey Ferraro (Budget Office)
Joe Tront (College of Engineering)

AGENDA ITEM 1: MINUTES OF THE NOVEMBER MEETING (Rojiani)

Motion made, seconded and passed to approve the minutes of the November meeting.

AGENDA ITEM 2: COMPUTING CENTER ANNOUNCEMENTS (Williams)

Information Systems is discussing with senior administration the feasibility of a wholesale migration to new administrative computing systems within a shorter time frame than previously envisioned. Such a move would require not only additional funding for new software and hardware, but also adjustments in the organization of computing support university-wide and modification of some administrative processes.

In October the committee suggested that owners of major application systems which are dependent on mainframes be asked to work with the Computing Center to develop a plan for migration to the distributed environment which is expected to evolve over the next few years. This effort has been delayed pending the outcome of the discussions described above.

The committee favors accelerated migration in a systematic fashion with appropriate allocation of resources. The chair will work with Erv Blythe and Michael Williams to investigate ways that committee support might be used to encourage adoption of such a plan. Other areas at the University not directly affected by a wholesale migration of core administrative systems still need to be educated, however, and the program set out by the committee at the last meeting will be pursued broadly later.

AGENDA ITEM 3: SUBCOMMITTEE REPORTS (Robinson)

The Site License Subcommittee met twice last month. Legal and distribution issues have delayed decisions on many proposals, including those for Acrobat, Microsoft and Macromedia products. The committee will meet again next week.

AGENDA ITEM 4: COMMITTEE ISSUES (Rojiani)

A temporary subcommittee met to discuss the University's transition to distributed computing. It was decided this topic needed further attention and a subcommittee chaired by David Goodyear has been charged with identifying the kinds of problems which will arise during the transition.

Other subcommittees may be formed as the subcommittee identifies specific issues.

AGENDA ITEM 5: ADDITIONS TO THE AGENDA

Following a question about the problems of support for multiple platforms, it was observed that, as new computer hardware which supports multiple operating systems comes into wider use, the incompatibilities of various systems will fade, allowing users to choose an interface based on personal preference alone. Users are demanding that the complexities of mixed environments be concealed and vendors are responding.

The next meeting will be held on February 2 at 3:30 p.m. in conference room D in the Information Systems Building.

Meeting adjourned at 4:40 p.m.

MINUTES
Computing Committee
Information Systems Building
January 20, 1994
3:30 PM

PRESENT: K.B. Rojiani, Erv Blythe, David Goodyear, Tom McAnge,
Gerry McLaughlin, Harlan Miller, Ernest Stout,
D. B. Stout, John Tombarge, Michael Williams

ABSENT: Sean Arthur, Gregory Brown, John Burton, Scott Johnson,
Katherine Johnston, George Libey, Bhaba Misra,
Terry Rakes, Frank Schima, Peter Shires,
Lawrence Skelly, Jay Stoeckel

VISITOR(S): Barbara Robinson and Bill Sanders (Computing Center)
Carol Eggleston (Information Systems)
William Holbach (Internal Audit)
Joe Tront (College of Engineering)

A special meeting was called to inform committee members on an Information Systems proposal to address pressing administrative computing systems problems. Regular business was postponed until the February meeting.

The University has struggled for some years with administrative computing applications based on old proprietary technology with deficient capabilities. Years of development, however, represent an enormous investment from which it is difficult to break loose. Administrative areas believe these old systems, described as obsolete, jury-rigged and incomplete, are preventing them from becoming more effective and efficient. There is concern that the current incremental plan to move to modern systems is random and will take too long.

Information Systems agrees that 90's technology developed from a broad perspective holds promise for administrative systems. Systems development has been piecemeal in the past since allocated resources were only sufficient to handle one system at a time. A parallel implementation plan would involve 30-40 systems, affecting 10,000 administrative users. The University has over one million CMS files, one hundred thousand program modules, one hundred thousand MVS datasets and prints over one hundred million pages per year.

All systems can be migrated on a fast-track schedule into open systems technology with improved integration. It would not be possible to mimic current processes, however, since the migration would require using largely unmodified, off-the-shelf software, at least initially. Real gains in efficiency come from examining business processes, however, and the migration could encourage that to happen.

The knowledge of administrative systems and processes lies outside Information Systems, and it would be necessary to draw on that knowledge and experience for rapid migration to succeed. Most development/maintenance work must be suspended, restructuring the efforts of all computer staff for core administrative areas, 90% of whom work outside Information Systems. (University data processing staff has more than doubled since the 70's to over 200 employees. Since 1982, however, there has been virtually no growth in Computing Center/Systems Development staff and nearly all application development occurs outside Information Systems. FRS, for example, was implemented by the Controller's Office.) Since the project entails significant risk and extraordinary effort, it is important to utilize the University's most talented staff members, even at the expense of some normal operational activities.

An Information Systems management group, including select individuals from affected administrative areas, would oversee the project which would be divided into three areas, database management systems/server services, administrative client infrastructure and training, and the administrative system migration teams. The project must be tightly coordinated and highly disciplined, building and enforcing a project management plan with deliverables.

Updating the skill set of University application developers is difficult when traditional development and maintenance activities are so demanding and management is not uniformly focused on that goal. Restructuring would provide leadership committed to providing comprehensive training for all developers.

An arbitrator with the authority to effect changes to processes and systems will also be required, a responsibility delegated to the Vice President for Information Systems. At the same time, the Vice President must be assured of access to the Executive Vice President and Provost to keep them informed of problems requiring arbitration.

Proposed funding for the project, about \$2 million per year, would be obtained via reallocations within Information Systems and administrative areas. Funding would be required for end user technology and literacy infrastructure, database servers and core systems hardware and software, and contract labor, and training of development staff.

In three years, a baseline set of integrated core systems would be in place, eliminated the University's dependency on proprietary hardware.

This proposal has been generally well-received. There is a good understanding in the University community of the inefficiencies of existing systems, as evidenced by the concerns expressed by the Computing Committee. A decision on implementation is expected by the end of January. A positive reaction on the part of the committee can be helpful in building momentum toward a decision to proceed.

The next meeting will be held on February 2 at 3:30 p.m. in conference room D in the Information Systems Building.

Meeting adjourned at 5:25pm.

MINUTES
Computing Committee
Information Systems Building
February 2, 1994
3:30PM

PRESENT: K.B. Rojiani, Sean Arthur, Erv Blythe, John Burton,
David Goodyear, Katherine Johnston, Gerry McLaughlin,
Harlan Miller, Bhaba Misra, Sandra Muse (for Earnest
Stout), Barbara Robinson (for Michael Williams),
Peter Shires, Dan Taylor, John Tombarge

ABSENT: Gregory Brown, Scott Johnson, George Libey, Tom McAnge,
Terry Rakes, Frank Schima, Lawrence Skelly,
Jay Stoeckel

VISITOR(S): Bill Sanders (Computing Center)
Joe Tront (College of Engineering)

AGENDA ITEM 1: MINUTES OF THE DECEMBER AND JANUARY MEETINGS (Rojiani)

Motion made, seconded and passed to approve the minutes of the December and January meetings.

AGENDA ITEM 2: COMMITTEE ISSUES (Rojiani)

SITE LICENSE SUBCOMMITTEE (Robinson)

The subcommittee met in December and funded cost-sharing proposals for MathWorks and Atlas GIS. The Microsoft proposal still faces legal hurdles. The Acrobat proposal has been modified and will be revisited during the next evaluation period. Proposals for MacroMedia and Lotus have been forwarded to the bookstore, which is investigating the feasibility of offering the products.

The subcommittee also met in January to reexamine its mission. Discussion centered around the possibility of becoming more proactive in order to assure that the committee's money is wisely spent and its activities focused on productive ideas. To further this goal, the subcommittee will experiment with assigning a member to each proposal to communicate with both the author and vendor, as necessary, to assure all proposals get a thorough evaluation.

Communication was also discussed. Increased interest has been shown since flyers asking for proposals were distributed to all faculty. Information on INFO and Gopher will also be enhanced to include proposals under consideration and those which have been rejected.

New proposals will be examined shortly after the next deadline, February 7.

TEMPORARY COMMITTEE ON TRANSITION ISSUES (Goodyear)

A temporary subcommittee charged with identifying transition issues developed the following list:

- o Communication of what is going on is important - what is the best way to accomplish effective communication and what needs to be communicated?
- o What services will or should be provided centrally vs. locally?
- o Where does one go to get technical help as the computing environment changes rapidly?

- o Who needs to be trained and at what level - who will do training?
- o Should there be a transition committee for the conversion and who should be on it? What would their role be?
- o Are students getting what they need to function effectively in today's workplaces with respect to computer training?
- o What is the perception of technology on the part of the instructional staff and is that the proper or desired perception?
- o Where does one go to obtain the official University data for the various areas that need it? Also, what help is available in retrieving such data?
- o There are different variations of mail, calendars and other packages currently being used around the University. Will there or should there be some sort of standards developed that can be used to help select compatible packages?

Many of these items grew out of the January discussion of the new administrative systems proposal, indicating an interest in pursuing details not included in the presentation. Since the Computing Committee is the only place where all the constituencies are represented, it is appropriate to consider what role it might play in the transition. Students' needs are an undergraduate curriculum issue, however, although the committee might assure processes are in place to allow the training to take place.

Planning for a transition is underway within Information Systems. If no serious impediments are disclosed during the planning phase, the project is expected to go forward, with over 100 people outside of IS fully involved within 90 days. The infrastructure development and training at the desktop will continue regardless. The need to meet state and federal mandates does not appear to be a significant problem.

Information Systems will be meeting with President Torgersen in mid-February to apprise of him of the proposal. The aggressive plan entails significant risk which needs to be evaluated at all levels with care. At this point, however, there is substantial momentum.

Committee members emphasized the importance of continued communication to the University regarding the project, suggesting that quarterly forums be held, similar to the budget forums held for Deans, Directors and Department Heads. Effective communication can reduce frustration born of anxiety. Information Systems has begun producing Spectrum articles on a regular basis.

There was also considerable enthusiasm for increasing the training and support available at the University, with a significant investment focused on continuing development. Existing expertise within departments could be better utilized if incentives to participate were provided. The committee can assist in identifying areas of expertise and effective incentives. Adequate support will require resources far beyond that available in Computing Center User Services today.

Information Systems will offer comments on the subcommittee's issue list for discussion at the next meeting.

AGENDA ITEM 3: ADMINISTRATIVE CLIENT PROJECT (Robinson)

The presentation was postponed until next month.

AGENDA ITEM 4: ADDITIONS TO THE AGENDA

none.

The next meeting will be held on March 2 at 3:30 p.m. in conference room D in the Information Systems Building.

Meeting adjourned at 5:06 p.m.

MINUTES
Computing Committee
Information Systems Building
March 2, 1994
3:30PM

PRESENT: K.B. Rojiani, Sean Arthur, Gregory Brown,
William Holbach (for David Goodyear), Bill Richardson
(for Tom McAnge), Harlan Miller, Bhaba Misra,
Sandra Muse, John Tombarge, Barbara
Robinson (for Michael Williams)

ABSENT: Erv Blythe, John Burton, Scott Johnson, Katherine
Johnston, George Libey, Gerry McLaughlin, Terry Rakes,
Peter Shires, Lawrence Skelly, Jay Stoeckel,
D. B. Taylor

AGENDA ITEM 1: MINUTES OF THE FEBRUARY MEETING (Rojiani)

Motion made, seconded and passed to approve the minutes of the February meeting.

AGENDA ITEM 2: ADMINISTRATIVE CLIENT PROJECT (Robinson)

The Administrative Workstation and Literacy Project seeks to create ubiquitous, highly functional, user-friendly computing capability at the administrative desktop. This will allow computing which is now done on the mainframe, such as word processing, to be done on a more appropriate, efficient and effective platform. It will also assure staff have machines which are capable of accessing new large-scale administrative systems as they are acquired.

Providing this environment presents many challenges as control becomes more decentralized and many pieces have to work together. One important way to limit the magnitude of the problem is to confine efforts to a single client system. That may be an unpopular decision in some circles, but Information Systems simply does not have the people to do any more than that, if efforts are to be successful.

The plan is to seed Macs throughout the University. Information Systems cannot afford to buy everyone a computer, however, and part of the effort involves encouraging others to spend their own money on Macs as well. In some cases, cost sharing arrangements will be used and it is expected that improved support offered by Information Systems will encourage many departments to adopt the platform.

Information Systems, with the full support of senior administration, feels the administrative staff can be more efficient and effective with a more uniform desktop environment. There will be no effort, however, to dictate a platform for any area. The Computing Center has not, in the past, supported any desktop platform very much, and some areas have independently developed their own environment, doing it very well. If those areas feel comfortable with their environment, IS fully supports a decision to continue in that arena. IS will continue to provide the level of support they have received in the past.

There was a major effort this summer to examine the question of which platform would best meet the University's needs as a client environment. A review of the advantages and disadvantages of Microsoft Windows, Macintosh and Unix, viewed as the platforms with the most potential, was produced and is available to interested parties. Criteria considered in the evaluation

include support cost, ease of use, stability, software consistency, hardware consistency, depth of applications, vendor independence, and hardware/software cost.

The standard advice for choosing a computer is to first look at the software needed. For general office productivity, any of the three platforms probably has adequate offerings, though Unix is marginal. If all platforms meet the software test, then support cost has to be the biggest issue for Information Systems, since it is obliged to provide an environment which can be supported with its limited resources.

There are well-regarded, highly functional Macintosh programs to meet nearly all the needs of administrative areas, including word processing, spread sheets, databases, calendars, e-mail and so on.

Ingram Laboratories, an independent testing lab, recently published the results of a comparative performance test for a variety of Macintosh and PC computers. They ran 57 tests using 9 applications, producing a performance index which showed the Quadra 610 and 660AV's used in this project to perform at a level equivalent to a 33 megahertz 486 PC. The 610 costs \$2700. An equivalent PC on the WIN contract is \$2400.

The area where there is a real difference is ease of use. Almost everyone agrees that the Macintosh is easier to use than Windows or UNIX because the interface is more intuitive and consistent. Even PC users who are familiar with both platforms generally agree. Apple has also managed to influence software developers so that applications are more consistent across vendors than in the PC world. That is important when using several applications. Surveys have shown that consistency is a major factor for people in deciding which system is easiest to use.

Being tied to one vendor may not be optimum, but it does offer another advantage for support - the hardware is predictable. While it may be attractive to be able to choose among many competitors when buying a computer, monitor, video board, hard disk, etc, those options can create a nightmare when a problem crops up because an element is incompatible.

The advantages in ease of use offered by the Mac means that it takes less training for the novice to become proficient on the machine and experienced users are generally able to operate independently without much support.

In general, individuals across campus who support both Macs and PCs agree the Mac is easier, by far, to support than Windows.

Information Systems had to make a decision about platforms in order to proceed with the program, but the choice may change as technology changes. The PowerPC, the new RISC chip which Apple and IBM will be using, might be a very attractive way to satisfy nearly everyone, since the vendors claim they will be able to run Windows, OS/2, Macintosh System 7 and Unix all on the same machine. Those promises cannot be expected to be fulfilled immediately, but much more interoperability can be expected in the next few years. Hardware choices may not make much difference in the long run.

Some individuals have concern about the future of Apple. Windows is offering strong competition. Profits are down, and the software advantage in traditionally strong Mac areas such as desktop publishing and graphics is no longer so clear cut. To counter this concern, MacWeek had an article recently which listed some points which describe some of Apple's strengths:

- o Apple has built the Macintosh into a \$15 billion industry .
- o About 11 million Macs have been sold worldwide and the installed base is growing at a rate of 3.5 million units a year.
- o Apple has \$800 million in cash and no long-term debt.

o Two-thirds of multimedia vendors have developed Macintosh applications.

There are important areas where Apple still has a technology lead and the company is likely to remain an important player for some time to come.

The first pilot project to distribute Macs involved the Personnel Services department. This area was chosen because their computing equipment was very old and they were operating almost entirely on the mainframe. IS felt their efficiency could be significantly improved. They were enthusiastic about the changes and willing to make the effort that would be required for a transition. Since a human resource system had been targeted by the administration as one of the first systems to be moved to a new environment, it was also important that the department acquire and learn to use computers which could access the new system.

A group of 20 people were chosen in the dept to receive the machines, about half the staff. Mike Naff from USAS was already working with Personnel Services on reengineering projects and was assigned to act as first line of support. He was assisted by several others in USAS and Judy Watson in User Services led the efforts to set up the machines and provide training.

In early October 20 computers were delivered. Software was pre-installed and configured. An icon was provided to allow quick access to the mainframe, so most recipients were able to simply replace their terminal or PC and keep working the old way at the same time they were developing Macintosh skills.

Software installed on the machine included Eudora (electronic mail), Brown tn3270 (full screen terminal emulation), NCSA telnet (terminal emulation), Gopher/Mosaic (Internet information and file retrieval), Fetch (file transfer), Disinfectant (virus protection), Stuffit (file compression), MacTCP (communication), Dark Side of the Mac (screen saver), Apple File Exchange (DOS file conversion), Meeting Maker (calendar), Retrospect (backup), and Microsoft Word (word processor).

Other software was included as required on an individual basis, including Excel (spreadsheet) and FileMaker Pro (database).

Training covered, in six 2-hour sessions, Macintosh basics, e-mail, network applications, calendars and Microsoft Word. This may be modified for other projects to include a half-day session before machines are delivered, but it appears that less than 20 hours of training will be generally required to cover basic needs.

As the number of users increases, it may be necessary to offer more classes, but those are expected to focus primarily on specific topics of interest, such as how to do form letters in Microsoft Word. Alternate methods of training, such as computer and video tutorials are also being investigated.

Information Systems focused on helping the individuals in Personnel Services develop the skills they would need to move to more independent operation. The user of a PC database, for example, was encouraged to develop her own Macintosh version with IS help. She now has a useful system she understands and is able to modify herself as required.

Progress in the project has been monitored through questionnaires and direct logging of VM usage. The group has successfully migrated to using desktop electronic mail, calendars and word processing, and their VM usage has declined accordingly.

Other groups which are currently scheduled to participate in the program include Enrollment Services, several areas in the Provost's Office (which hopes to move all their administrative offices to the Macintosh in two years, with about 70 participants this spring), Research and Graduate

Studies, and Budget and Financial Planning. This project will also be helping to convert staff who support participants in the Information Systems faculty programs.

Criteria for choosing participants include:

- o degree to which dependence on central mainframe resources will be reduced,
- o impact on administrative efficiency,
- o commitment to maximizing use of equipment,
- o compatibility with central computing strategy,
- o central support requirements, and
- o commitment for cost-sharing or other contribution such as internal support.

Large scale migrations are favored as more efficient.

In return for Informations Systems assistance, participants are expected to make some commitments as well:

- o Costs will be shared, as feasible, with an agreement to be developed on an individual basis.
- o Mainframe usage will be decreased to the full extent possible. No further development efforts will be undertaken on the mainframe and word processing, mail and calendars, with Information Systems assistance, will be promptly migrated to the Macintosh environment.
- o The department will name a liaison to Information Systems to facilitate a continuing relationship between the organizations. In turn, one or more individuals will be named from Information Systems to act as first point of contact to answer questions and otherwise assist during the first three months of migration. After the initial transition period the bulk of individual assistance will be handled by the department.
- o The department will assume principal responsibility for converting existing applications to the new environment.
- o The department will pay monthly Ethernet costs.
- o With assistance of Information Systems, users in the department will be apprised and periodically reminded of good security practices and measures will be taken to assure that all reasonable practices and precautions are observed.
- o Only legally licensed copies of software will be installed on the machines.
- o The department will assume responsibility for the cost of hardware and software maintenance.
- o This equipment configuration is expected to meet current needs. Any additional funding requirements are the responsibility of the department.

At least 250 Macs will be installed this fiscal year. The program is projected to be a continuing effort, including future replacement of equipment as it becomes obsolete.

AGENDA ITEM 3: COMMITTEE ISSUES

SITE LICENSE SUBCOMMITTEE (Robinson)

The subcommittee will be meeting in two weeks to consider new proposals. Management of the Word Perfect volume purchase agreement has been moved to Computer Purchasing, under the guidance of Keith Kenyon. An agreement with Microsoft is expected shortly and distribution of their software will be handled in Computing Purchasing as well.