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MANAGEMENT, ORGANIZATION, POLICIES, PLANNING

Networking and Information Systems Study – March 1993

1. Mission. The University should develop a formal statement that reflects the strategic importance of information technology. This statement should articulate the role that information technology plays in support of the achievement of the University mission and strategic plans for the future.

Following is a recommended formal statement:

Information technology and network communications are expected to play a vital and strategic role as Kent State University fulfills its mission. Kent encourages the creative and innovative use of technology to improve the quality of instruction; research; information processing, access, and reporting; system integration; and administrative support.

Kent State University should utilize technology to successfully compete with peer institutions for quality students, faculty, and staff. At a minimum, Kent should be current with peer institutions in its use of technology.

Kent State University should seek alternate methods of funding such as vendor partnerships and grants to overcome budget constraints and minimize the up-front monies necessary to move into new technologies.

Status: *The University revised its mission statement but it does not emphasize technology consistent with this recommendation.*

2. Peer Institutions. The University should identify a peer group of institutions which would serve as benchmarks against which comparisons could be made on information technology and network communications development. The team understands that the University currently is involved in a benchmarking project with approximately ninety-seven other institutions. This project is sponsored by the National Association of College and University Business Officers (NACUBO) and coopers Lybrand and Company. Data from this project should help facilitate the benchmark comparison process for institutions participating in the NACUBO study that are identified as peers of Kent. Also, this project should help provide the University with the definition of criteria or categories for measurement.

A beginning list of possible peer institutions should be identified by the Technology Policy Advisory Committee.

Status: *The University participates in the NACUBO benchmark project as well as the annual OHECC salary survey. A formal method for comparing the results of these surveys to KSU is lacking.*

3. Technology Policy Advisory Committee. We recommend that a broad-based committee be established to advise the vice president of Business and Finance on policy matters related to information technology and network communications planning, standards, and priorities. The committee, appointed by the vice president for Business and Finance (in consultation with the other executive officers), should include representatives from faculty, and staff with a maximum of nine members.

We recommend that the director for Information Services serve as an ax-officio member of the committee. We also recommend that the associate vice president for Business and Finance serve as chairperson.

The committee should be empowered to establish subordinate committees for administrative systems, research and instructional technology, networking, and other committees as appropriate. We also

recommend that the committee be given the responsibility for articulating the role of technology in support of the University mission.

Status: *The University Council on Technology has been established.*

4. Universitywide Planning Process. We recommend that the associate vice president for Business and Finance be given the responsibility for coordinating the development and maintenance of University-wide strategic plans and standards for information technology and network communications. In consultation with the Technology Policy Advisory Committee, the associate vice president for Business and Finance should update this plan biannually.

Information technology planning should be an integral part of the on-going planning process for all units (including Regional Campuses) of the University. Biannual unit plans should be shared with the associate vice president for Business and Finance for integration with Universitywide plans. Furthermore, the associate vice president for Business and Finance should be given the responsibility for monitoring and coordinating the implementation of initiatives recommended in this planning report.

Status: *A University-wide planning process has not been done on a biannual basis. It has been six years since NISS and five years since ACS.*

5. Supported Software/Hardware. The Information Services director should coordinate the development of a list of software and hardware that will be supported and maintained by the Computer Services staff. This list should be reviewed, approved, and disseminated by The Technology Policy Advisory Committee. This list should include supported local area networks, personal computers, operating systems, and software packages.

Status: *UIS/ACT has prepared a list of recommended hardware and a list of supported software. Other de facto standards have been established by the supply of Dell computers in the faculty refresh program and by the provision of site licenses for SPSS and SAS by ACT. Microsoft Office use is widespread to the point where it is a de facto standard. See also # 34 & 39 in ACS*

6. Disaster Recovery Plan. The Information Services director should coordinate the development of a disaster recovery plan that includes the central facility, departmental facilities, local area networks, and the University network. In the current and future environment, increasing amounts of crucial data will be held in departmental local area networks, personal computers, and other distributed systems. Thus, this plan also should include procedures for departmental as well as central site database backups and off-site storage. These procedures should be tested and monitored on a periodic basis to ensure that off-site backup and regular save procedures are working as planned.

Status: *The disaster recovery plan for the University's network was recently updated. Much of the plan deals with engineering efforts that will be implemented as part of the University's telecommunications upgrade. These efforts are directed at providing redundancy and Robustness to the network in order to provide various backups in case of point failures in the network infrastructure.*

With the upgrade of the fiber backbone, a ring topology was introduced in the Kent Campus backbone infrastructure. 96 strands of fiber (72 multi-mode and 24 single mode) serve most of the academic and administrative buildings on the Kent Campus. In most cases, there are differing paths for the entering and exiting fiber bundles in order to provide redundancy in the physical infrastructure of the University's backbone. When the backbone electronics upgrade is completed this summer, access switches in each building will be dual-connected to two ATM Switches on the backbone ring. This will allow for disruptions to occur in the fiber

infrastructure or the backbone electronics that will not cause a network outage. All critical network components are backed up with UPS power.

As far as network servers such as DNS, DHCP, Proxy, voice, and video, a distributed computing arrangement is in place. In most cases three servers are configured in different buildings and connected to differing network nodes to offer each of these services. Any one server can handle the load for the entire campus. Even the proposed phone switch will be broken into three nodes that will handle different areas of the campus and will be housed in differing locations. All equipment is backed up on UPS power and is monitored 24 hours a day. Problems will generate an email notification and a page to an appropriate network engineer so that any problems can be immediately corrected.

UIS has established ADSM backup service to provide backup of departmental LANs and individual systems. Information on the system is available at <http://www.uis.kent.edu/adsm.htm>. It currently has about 200 clients. However the existence of the system and the fact that it is now provided free to clients needs to be more widely publicized.

Directors have no knowledge of any Disaster Recovery Plan. If one exists it should be shared with data custodians of legacy systems. As we begin to use local area networks in a variety of ways to support mainframe systems, it is becoming more critical that Disaster Recovery recommendations be formulated and shared with departmental network personnel.

7. Coordinated Database Update Schedule. Information Services should coordinate the development of a schedule for entering and updating University databases. This schedule should ensure that the data is accurate and available when required by users or interfacing systems.

Status: UIS has revised this schedule as part of the policy and procedures manuals that were developed for various legacy systems that run on the University's mainframe. The core systems are now updated interactively rather than using periodic batch updates. However, this information has not been disseminated and is largely unknown outside UIS. Some benefits would be derived by formally communicating more widely dates at which data meets certain expectations. It does not cover the many administrative departmental systems.

8. Data Access/Authorization. The associate vice president for Business and Finance with the assistance of the Technology Policy Advisory Committee should be charged with establishing data access and authorization standards. The University needs to develop and implement a more flexible and uniform approach to authorizing data access. In the context of migration toward an integrated administrative data base, common standards for data access are needed. The University should develop procedures and policies which facilitate appropriate levels of authorized access to needed information. Authorized access to data should be permitted without regard to the medium by which it is either provided or requested. In particular, data available through print should be available in electronic form.

Status: Data access and authorization standards are departmentalized rather than integrated. These are still perceived as rigid rather than flexible. Although SIS, for example, was implemented to provide campus community members (with the right to know) access to student information in an electronic form, many faculty are required to request information from their department or college offices. Leveled security measures should be strengthened to provide faculty with adequate access to SIS and other systems in support of teaching and advising functions. Regional campuses also have not been given full update capabilities to SIS modules which hinders timely processing and heightens inefficiencies. Proper training on systems for all users and formal accountability for its maintenance and use would lessen concerns for data management and integrity.

There is not a University wide policy. Unified login and authorization facility not yet completed. Data, which is available in print form, such as class rosters is still not readily available for upload to departmental systems. The cause of this is a mixture of functionality and ease of use issues with the legacy systems and security concerns. Policy makes information on majors and minors in colleges available to colleges. However generation of rosters requires access to non-majors. Rosters may be obtained in print form or viewed on screens but no easy mechanism exists to create online versions suitable for use by faculty for grade or mailing lists. Certain departments and colleges have implemented this functionality in an ad-hoc manner using scripting languages available in the terminal emulator used to access the mainframe. In many cases information required by colleges for decision support and other functions must also be acquired by screen capture.

FOCUS is not sufficiently user friendly to be of use to most academic departments. The lack of a user friendly Windows or WWW based access to data organized to meet college and departmental needs leads to inefficiency and inaccuracy. For example, in many cases this causes unnecessary reentry of data. Access by faculty to student information for advising purposes is available at the discretion of the college security administrator. However this fact is not widely known and consequently few faculty use this facility. Ease of use may also be an issue here.

POLICIES, PLANNING, AND ORGANIZATION

Academic Computing Study – May 1994

25. Importance of Academic Computing. The University should recognize that, as a student centered organization, priority should be given to acquiring computing equipment for the departments, colleges, and centralized facilities that serve students and for the faculty who educate them. Future reallocation of funding should reflect the positive role that academic computing must play in the instruction and education of students. University policies regarding acquisition of computer resources should appropriately recognize academic computing within the context of other pedagogical resource needs.

Status: University priorities do appear to reflect progress on this recommendation: recent HB equipment dollars were pooled to create central labs in several locations; the 1% technology pool funds the Faculty refresh program. Areas not addressed include funding lines at departmental level for technical support, staff equipment, and instructional equipment. Academic units' Mission Statements, Annual Reports, and budgets have not been structurally changed to reflect these priorities.

BENEFITS: SEE #27 (BELOW).

26. Structure. Given the current organizational structure of the University and the increasing role of decentralized academic computing, significant research and instructional computing responsibilities lie within academic departments, schools, and colleges as well as Libraries and Media Services and Computer Services. As a result, there is a need for advocacy and overall coordination of academic technology activities. Therefore, a director for academic technology advocacy should be appointed, reporting to the Office of the Provost with coordinating ties to the vice president for Business and Finance. This advocate should promote collaboration among those responsible for academic technology within all areas of the University.

The recommended duties and responsibilities of the advocate should include:

1. Provide advocacy for advances in computing and instructional technology;

2. Develop and recommend policies, procedures, and standards for academic computing and instructional technology;
3. Develop plans for meeting the needs of academic users in coordination with academic and administrative units, including Computer Services;
4. Promote the migration to a distributed academic computing environment with local and centralized consulting support;
5. Coordinate management and operation of the Moulton Hall distance learning and instructional technology facility;
6. Monitor and update the University's computing plans on a biennial basis;
7. Identify and recommend core academic software that is to be supported by Computer Services. This should be done on an annual basis in coordination with the director of Information Systems and Technology;
8. Identify, recommend, and negotiate contracts for academic software in cases where the University would benefit from university-wide site licenses;
9. Establish standing or ad hoc subcommittees as needed;
10. Advise the provost, the vice president for Business and Finance, and the Educational Policies Council on academic and instructional technology;
11. Serve as co-chair of the Advisory Committee for Technology (see # 27).

Status: Position was created and filled but is now filled by interim director. This position along with the CIO position must have high priority.

BENEFITS: SEE #27 (BELOW).

27. Advisory Committee for Technology (ACT). In recognition of the central role of technology in the achievement of both the University's academic and administrative missions and because both the provost and vice president exercise budgetary control over computer purchases, it is recommended that the charge of the NISS-recommended Technology Policy Advisory Committee (TPAC) be expanded to include advising the provost and the vice president for Business and Finance. The committee should be called the Advisory Committee for Technology (ACT). The committee's primary charge should include advising on policies, standards, and resource allocation priorities relating to information technology, instructional technology, network communications, and related technological areas. ACT should also call for, rank order, and recommend instructional technology incentive proposals from faculty for training, equipment, or software (see Recommendation #3).

It is recommended that other ACT charges include the following:

1. Serve as advocate for constituency information systems, academic computing and instructional technology needs, incorporating them as appropriate in recommendations;
2. Serve as a resource and review group for implementing information systems, instructional technology, and network communications facilities.
3. Advocate and promote advances in technology and network communications.

The membership of ACT should have seven ex officio members, who serve by virtue of their position. These are the:

Director for Academic Technology Advocacy (Co-chair of ACT)
Associate Vice President for Business and Finance (Co-chair of ACT)
Vice Provost and Dean for Research and Graduate Studies
Dean of Libraries and Media Services
Director of Information Systems and Technology
Director of Network Services for Regional Campuses
Undergraduate Student Senate Representative
Graduate Student Senate Representative

The vice president for Business and Finance, with the approval of the provost and the advice of the Faculty Senate, should appoint individuals representing the following constituencies for two-year overlapping terms:

one college dean
one chair or director from an academic department or school
five faculty, to represent the four colleges and one independent school
four administrative directors, to represent Business and Finance, Human Resources, Student Affairs, and University Relations
one computer support staff member from a local academic unit

In appointing members, the vice president for Business and Finance should be mindful of the diversity of technological requirements and platforms used by the academic and administrative constituencies of the University, as well as discipline specific needs and the unique environments of the eight campuses.

The ACT can establish subcommittees to address specific needs it defines.

Because the lines between academic and administrative computing are blurring, it is not advisable to have permanent standing committees related to either academic or administrative computing; rather, all committees must realize the mission-critical importance of academic computing and plan, organize, and implement computing and technology to further the instruction and professional development of undergraduate and graduate students. It is quite possible that subcommittees might be formed around technical/applied issues as well as academic/administrative ones.

ACT members should be proactive and seek input from their University community constituents. ACT should establish an electronic LISTSERV for committee communication and a Kent State University Newsgroup that allows users to communicate quickly and easily with the ACT and each other. The Newsgroup should be used to report back to individuals and constituencies about recommendations made and actions taken. The ACT membership should be publicized so that students, faculty, and staff know whom to inform about issues that need attention. Policies, standards, priorities, and guidelines endorsed or established by the ACT should be made available online and published in CONNECT.

The proposed reporting structure for ACT works through the director for Academic Technology Advocacy to the provost and through the associate vice president for Business and Finance to the vice president for Business and Finance. The solid lines indicate reporting relationships while the dotted lines indicate advisory relationships.

Status: UCT is operational. However, UCT has focused most of its time on computer technologies and has spent little time discussing classroom instructional technologies. A classroom technology sub-committee was formed in the early stages of UCT's formation, but

there was subsequent concern about the formation of numerous sub-committees. As a result the classroom technology sub-committee never met.

BENEFITS

The use of computing and instructional technology in the classroom will be enhanced with the support of an academic advocate

Morale of faculty members will increase as they perceive their concerns are being recognized.

Interdisciplinary cooperation will be facilitated.

Information about computing problems will be available to all.

A Newsgroup will provide a way for currently unrecognized experts (students, faculty, or staff) to share their knowledge to the benefit of the University.

Information about computing purchases will be readily available.

Expanding the role of ACT will help ensure broad-based University participation in plans, priorities, and standards for information technology, instructional technology, network communications, and administrative computing.

28. Campus Wide Information System. An online system that can be used to communicate campus information to the entire University should be implemented by Computer Services and Libraries and Media Services. Examples of information available would be: catalog course descriptions, Schedule of Classes, syllabi for each course/instructor, key contact faculty or staff in various offices, current campus news, the campus bus schedule, a directory of students, faculty, and staff, including e-mail addresses, etc. Such a system would also provide access to external information sources, such as OhioLINK and other library systems, other campuses, gophers, and freenets.

Status: Significant progress appears to have been made in response to this recommendation. Itemized assessment should be done.

BENEFITS:

Important information about the University will be much more widely and conveniently available to current and prospective students and faculty.

29. Planning. The annual planning process should include consideration of the role and use of technology in support of the mission of the academic units. As part of the formal planning process, faculty should be provided opportunities to identify specialized hardware and software requirements for their academic units.

Chairs and directors should consider those needs and include them in the annual planning reports. Operating budgets that include funding lines for academic computing should be earmarked and safeguarded. Capital budget planning should make provision for the installation of network connections in every office and residence hall room, regardless of the age of the building.

Status: The network infrastructure planning has been done and the work is in progress; changes in the planning process at faculty and academic unit level does not appear to be implemented.

BENEFITS:

University computing equipment, software, and facilities will be more current.

30. Acquisition of Discipline-Specific Technology. A plan and strategy should be developed and implemented to provide every faculty member with a computer that is appropriate to his or her instructional and research activities.

Also, plans and implementation strategies need to provide for the acquisition and support of UNIX and Macintosh platforms and evaluation of alternative PC platforms (e.g., Windows, Windows NT, OS/2). The needs of faculty for high-performance computer resources should be identified and the most cost effective means of meeting these needs should be articulated.

Status: *The Faculty Refresh Program is addressing this on-going need. Assessment of how this program has affected high-end technology users is necessary. Network Services provides UNIX desktop support on a paid basis, but otherwise not central support is available for UNIX or Macintosh platforms.*

BENEFITS:

Faculty will have the computing resources they need on campus.

Fewer faculty will be forced to rely on home computing equipment.

More faculty will be present on campus a greater number of hours each week.

High-end users will have better access to high-performance scientific computing.

More faculty and staff will use new high-end technology.

More faculty will be positioned to achieve complex research goals.

Faculty competitiveness in acquiring research grants will be improved.

There will be more support for the inclusion of equipment acquisitions in grant proposals.

Students and faculty who prefer non-DOS systems will have other options available to them.

UNIX systems will receive more central support.

There will be more self-sufficient users of high-end workstations.

31. Budget Considerations. University policy should encourage budget carry-forward plans to ensure better acquisition decisions in support of purchases and upgrades to new technology. In order to maximize efficiency, bureaucracy inherent to the selection and purchasing process should be reviewed and streamlined as much as possible. Coordination of computing hardware and software specifications, quality standards, and service needs should be instituted to ensure that the purchasing process adequately considers the issue of value which is comprised of numerous elements, including cost, functionality, and service quality. Because of the rapid rate of technological obsolescence, the University should amortize equipment over an appropriate time frame. A funding plan needs to be developed to ensure continuous improvement in the rapidly changing computer related technology field. Also, this plan should take into account the total cost of using computers, including the cost to purchase and install hardware and software, train users, maintain, and replace or upgrade equipment, etc.

Status: *Budget carry-forward is to be implemented soon; Faculty Refresh, if continued, will address some part of the obsolescence issue. Outstanding issues: technical support for academic units; obsolescence of instruction facilities.*

BENEFITS:

Academic units will be positioned to make better purchasing decisions with an added emphasis on overall suitability of the equipment to meet its intended use.

Academic units will be able to make better use of bulk discount opportunities and to take advantage of offers requiring a speedy response.

There will be less reliance on obsolete or otherwise inadequate equipment.

Access to computing resources will be improved.

Overall equipment costs will be lower.

Maintenance costs will be lower.

Purchases of equipment will be more timely.

32. Alternative Instruction. Research in the use of alternative instructional delivery systems should be reviewed and augmented as a means of achieving the mission of the University. Although few focus group and survey participants raised the issue, distance education has enormous potential to transform higher education. Both methods of delivery and areas of focus (within and beyond the Kent system) need to be considered.

Many questions and issues pertaining to faculty and distance education need to be addressed. These issues include socialization, sense of community, social mentoring, credentialing, liberal arts education, consumerism, and academic mentoring. There are many planning issues, including the role of administration, faculty, students, and technical support staff; the potential impact of both importing and exporting alternative education; and the need to ensure that funding does not detract from existing programs of strength. Environmental assessment and a needs study should be undertaken to identify Kent's niche and to determine the level and extent of the resources the University should commit to the development and support of alternative instructional delivery systems.

Quality issues include curricular oversight, personal interaction, evaluation, availability of resource materials, teaching methods, and faculty credentials. There are technical quality issues, including adequate technical support staff and equipment, adequate staff at distant locations, and interactiveness. Faculty incentives must also be considered, possibly in terms of double workload credit, compensation, and development release time/workload credit. Student needs include advising (course, career-related), technical support, and administrative support. Curriculum issues need to be considered, including types of courses to be offered (lab, lecture, seminar), type of technology that can be used, size of class/participation, office hours, distancing of faculty from students, and grading.

Responsibility for examining these and other issues should be assigned to a person who would coordinate and foster the activity of those faculty and staff interested in distance education and act as an advocate for it. In addition, a joint subcommittee of the Teaching Council and ACT should be established to advise and participate in planning and implementation. The majority of subcommittee members should be faculty.

Status: Alternative Instruction is being developed through Moulton programs; the review and instructional oversight appears to be left to academic units (if review is occurring at all); a DL/ML "director" is in place; the UCT Standing Committee on DL/ML has met only once.

BENEFITS:

The University will build the expertise base needed to design, support, and implement alternative instruction.

The University will be positioned to be a player in the distance education environment.

33. Classrooms. In consultation with the ACT, academic units should define minimum technological requirements for classroom computer equipment. These minimum configurations should include consideration of: networked computers with a control console and separate instructor's monitor, computer projection monitor systems and access to multimedia devices and products. These standards need to reflect the diversity of platforms used in the curriculum and numerous ergonomic considerations. To better support existing and emerging technological applications, the Space Committee should be apprised of classroom and labs with substandard configured space. Selected space should be configured to serve as both open computer labs for general student use and as classrooms for computer-related instructional purposes. The first installation of a fully mediated classroom should be promoted to enhance the reputation of the University and to seek funding for additional classroom upgrades. In turn, these improved facilities should be used as part of the University's out-reach and continuing education program.

Status: *The ACS study attempts to define these. AV Services has periodically defined minimum standards for classroom computer and projection equipment in association with purchases undertaken using House Bill Movable Equipment funding. Individual departments do so on an ad hoc basis. The Space Committee has undertaken a study of the physical environment in classrooms. This may lead to recommendations on environmental issues. Open computer labs have been established in multiple locations since the recommendation was made. Several "fully mediated classrooms" have been installed in the Library, Moulton Hall, Lowry Hall, the College of Business Administration, and Music and Speech. New computer labs/classrooms were installed in Bowman Hall, Music and Speech Center, and the Math and Computer Sciences building which include computer/video projection systems.*

BENEFITS:

Current and emerging instructional techniques involving technology will be better supported and encouraged.

There will be improved opportunities for occasional scheduling of class meetings in a computer lab.

Use of technology will increase student learning and improve retention.

34. University Hardware and Software Standards. The academic technology advocate should develop University-wide standards to ensure that all lab equipment is able to run commonly used programs. Minimum standards for computer lab services should be established and met. The University should subsidize a portion of the cost to achieve and maintain minimum software standards and the basic hardware needed to support this software.

Status: *The University contract with Dell Computing is a de facto standard. Also, in one year, a letter from the President to entering freshman recommended minimum computer configurations. ACT is preparing a list of supported software and does provide site licenses for SPSS and SAS. Microsoft Office is a de facto standard. See: ACS 39 and NISS 5 & 37*

BENEFITS:

There will be fewer brands of computers and related software to support.

Lab users will be able to rely on having consistent basic equipment, software, and services in labs.

Occasions of disk and file format incompatibility will be reduced, resulting in less re-entry of data.

Students will have greater incentives to use computers in course-related activities.

Fewer software applications will result in less training time needed to accommodate all versions.

The number of unnecessary exposures to license infringements will be reduced.

Purchase decisions for new software versions will be better and more timely.

35. Student Ownership. Business and Finance, in cooperation with academic units, should support and enable students who want to purchase their own computers for general computing applications. Students should be provided with information regarding local and remote network connections so that they can ensure that their computer is able to connect to the University network. Such computers should be suitable for running general purpose software, (e.g., word processors, spreadsheets, and data bases), but may also require capabilities related to particular disciplines. Academic units should seek consensus regarding hardware and software appropriate to the discipline so that prospective and current students who seek to purchase their own equipment can be properly advised. Part of this effort would include the publication of systems that would be maintained by the University in terms of training, support, and purchase programs, and would also include the wiring of residence hall rooms for network access. Business and Finance, in cooperation with academic units, should coordinate student purchase programs so as to reduce costs to students who choose to purchase their own equipment and should investigate the feasibility of creating an on-campus computer store.

Status: Purchase of Dell computers through the Dell WWW site and Macintosh computers through the School of Art provides reduced pricing for all members of the University community. The letter from the President to entering freshman recommending minimum computer configurations should be continued.

BENEFITS:

Students will receive strong encouragement to purchase computers, enhancing their own experiences and lessening demand for computer labs.

Students who own computers will be better able to take advantage of training, learning tools, and increasingly available network resources.

36. Workplace Environment. Plans for computer acquisition should take into account the need for proper ergonomics in order to avoid the possibility of computer related health problems. The University should retrofit furniture and work areas where computers are located, including classrooms and labs, so as to enhance usability. The University should identify the technological and access needs of students with disabilities and address the needs as identified.

Status: Ergonomics are considered as new computer labs are installed. There does not seem to be any retrofitting. Provisions are being made for students with disabilities.

BENEFITS:

Work spaces will be more conducive to productivity and efficiency.

The possibility of physical injury to students, faculty, and staff will be reduced.

Equipment is less likely to be damaged.

Federally funded projects will be housed in more appropriate environments.

The University will enhance its compliance with the Americans with Disabilities Act of 1990.

Students with disabilities will have better opportunities to use computing resources.

Recruitment and retention of students with disabilities will be improved.

37. Infrastructure. Plans for computer acquisition should take into account the infrastructure necessary for the installation and use of equipment. This includes issues of power, network connections, and security. University infrastructure planning efforts should recognize that substantial deferred costs occur when inadequate provisions are made for current and future instructional technology needs (e.g., power, lighting controls, window covers, conduit, cooling, and telecommunications). In order to ascertain current and future technological needs of the academic community, the Office of Facilities Planning and Operations should consult with the Director of Information Systems and Technology and the academic computing advocate as well as the units affected as academic buildings are being built or renovated.

Status: *Communication between the Office of the University Architect, UIS, Academic Computing and AVS in planning new classrooms is still not effective enough. In particular, the lack of the necessary level of input from AVS has led to the need to renovate recently renovated facilities in some cases. Retrofitting older labs for wiring and light control is not systematically addressed and usually goes undone or the cost is born by the host department. Increased consultation with staff in academic units is needed.*

BENEFITS:

Costly and time consuming post-construction modifications can be avoided.

38. Position Descriptions. In view of the strategic importance of computing to the future of the University, departmental handbooks should provide information regarding workload equivalents for faculty who engage in management or support of computing resources. The University should establish guidelines to ensure that jobs in academic units are properly graded to reflect the technical roles that staff are performing. Position descriptions, grading, and reward structures should reflect and encourage the role of experts in mentoring other users.

Status: *There are no University-wide positions descriptions. Individual units have assigned load on an ad-hoc basis, but this load does not reflect the work responsibilities. A recent University-wide administrative review of staff positions recommended rationalization of the number of technological grades. This report is due to be completed July 1. Salaries, in all areas except that of the CIO, are significantly below the level obtaining in the private sector.*

BENEFITS:

Faculty with computing expertise will receive appropriate recognition for time spent to support and maintain hardware and software within their academic units.

Knowledgeable individuals from one unit who provide installation and user support for other units would be more likely to receive formal recognition or compensation.

39. Computer Services. Given the growing diversity of specialized hardware and software, it will be necessary to identify a limited number of standard configurations that will be supported by Computer Services. General purpose University labs and the software available in those labs should be supported by Computer Services. Software that has been designated as meeting University-wide standards should be supported by Computer Services. Computer Services needs to provide UNIX and Macintosh support to the University community in addition to the present PC and mainframe support. Given the current environment, there is a need to better manage/oversee increasingly distributed computing resources and to

increase the consulting role of Computer Services. The developing role and function of Computer Services within the academic environment should be articulated and communicated to the University.

Status: *The University contract with Dell Computing is a de facto standard. ACT is preparing a list of supported software and does provide site licenses for SPSS and SAS. Microsoft Office is a de facto standard. There is little support for UNIX and Macintosh.*

BENEFITS:

Faculty and staff will develop a common understanding of the mission of Computer Services and a more realistic view of the level of support available.

40. Copyright Concerns. The University should provide a copyright clearance service to ensure that software users and producers are in compliance with the appropriate laws. A review of University policies regarding copyright laws and ownership of software and multimedia developed by faculty, staff, and students needs to occur to ensure that they reflect technological advances. Faculty who use the emerging technologies need to be kept informed of changing laws regarding copyright.

Status: *The issue of ownership of material has received considerable attention. Recommendations on the issue have made as part of the Distance Learning Policy Committee report, and a Copyright Policy Committee was formed and studied the matter extensively. The negotiated agreement with the AAUP faculty bargaining unit will include procedures for determining ownership (Appendix). At this time guidelines have not been widely disseminated. There is duplication of responsibilities for copyright clearance in at least three offices. Copyright infringement assistance is not perceived as effective. There may be changes in the law in this area as a result of the Digital Copyright Law.*

BENEFITS:

The potential for copyright infringement and related legal actions will be reduced.

There will be a clearer understanding by both faculty and the University of the rights of software authors.

41. Fees. It is very difficult for the committee to endorse additional fees for computing. Kent already has the second-highest fee structure in the state. The current general fee structure includes a number of general fees (student organizations-\$12.00, publications-\$0.56, student leader compensation-\$0.27, athletics-\$97.00, intramurals-\$15.00, student center-\$68.75, health center-\$40.00, athletic facilities-\$80.00, medical services-\$2.00, bands-\$1.50, bus-\$41.50, theatre-\$0.50, and registration services-\$7.50). In addition there are numerous course fees and miscellaneous fees for which students are responsible. Endorsement among survey respondents for a new fee to support computing was limited. The survey item was, "How much need is there for the University to institute a new instructional fee to support computer and hardware?" Among students, the responses were "None" - 37 percent; "Little" - 30 percent; "Moderate" - 23 percent; and "Extensive" - 10 percent. Faculty and staff responses were more evenly divided--49 percent responded "Moderate" or "Extensive." If a fee is instituted, it should be earmarked for support and improvement of academic computing.

Status: *The allocation of \$???? Per year from the general fee for technology has not provided the necessary level of support, particularly since it also must fund faculty refresh.*
See NISS 47

42. Facility Access. Present University building security policies that inhibit access to scarce resources should be reviewed and revised as appropriate to provide more cost effective utilization of computing resources. As new labs are planned, consideration should be given to evening and weekend access and to

using the Kent Card recommended by the Network and Information Systems Study to control building access.

Status: *The University is currently implementing door access systems from the Diebold Corporation as part of the FlashCard project. New buildings and buildings that are being renovated are engineered with this equipment as part of the project program. The Diebold system is being used because of its ability to manage University access systems using a central database.*

Access readers that will accept the FlashCard for entry are in the Student Center, Eastway Center, Administrative Services Building, and McGilvrey Hall. The FlashCard will be used for access to the new Student Recreation and Wellness Center. Moulton Hall will be retrofitted to use the FlashCard for access control during the summer of 1999. Engleman Hall will use door access with the Flashcard when it reopens for Fall semester 1999. Additional doors will be outfitted as buildings are renovated or as the need arises.

For an existing door, it will cost \$3,500 to add door access. This cost does assume that the building is appropriately networked.

See NISS 17

BENEFITS:

Students and others who need or want to use labs will have increased access.

43. Universal Student Accounts. A computer account should be established for every student upon request, and this account should persist until the student is no longer active. This account should enable all students to use e-mail and Internet information resources through a UNIX-based system.

Status: *Student accounts set up automatically.*

BENEFITS:

Students will learn to use resources they likely will use after graduation.

The University will gain an image as a place that provides state-of-the-art Internet access.

44. Distributed Computing. The University should move toward a distributed academic computing environment in which all classrooms, labs, residence hall rooms, and faculty and administrative offices are connected to the campus backbone. Academic Computer Services should migrate applications to an open computing environment, such as UNIX in order to facilitate their ultimate transfer to distributed platforms. Ultimately, the role of Academic Computer Services would evolve from that of a hardware and software provider to that of a centralized consulting and support service for computing systems distributed in academic units. Academic units will be responsible for management and support of local distributed systems.

Status: *The campus backbone infrastructure, the classroom and dorm rewiring, and the faculty refresh have provided the connectivity for a distributed computing environment.*

BENEFITS:

Connectivity will increase and enhance access to remote information.

Distributed systems will provide a better access path from academic units to centralized systems.

Intra-unit communication will be enhanced.

INSTRUCTION AND RESEARCH

Academic Computing Study – May 1994

1. Classrooms. Consistent with the goals of the Strategic Plan, all new and renovated classroom facilities need to be equipped with appropriate instructional technologies. The University should create instructional facilities that not only meet today's requirements, but are adaptable to future needs. Designing instructional facilities requires a holistic approach to the classroom environment.

The needs of students (e.g., seating, computer workstations) and instructors (e.g., user friendly teaching stations), as well as the room elements of networks, equipment, screens, lighting, air handling, noise, and their related controls, all need to be considered. Identification of the appropriate classroom technology to support instruction should be incorporated into the annual planning process along with necessary technical and maintenance support. To that end, the Office of Facilities Planning and Operations should consult with academic units, Media Services, the proposed Advisory Committee for Technology (ACT; see Recommendation #27), the Space Committee, Physical Plant Services, the Office of the Registrar, and other pertinent parties to ensure that future classrooms are properly designed to support technological applications.

Status: Classroom Enhancements: Non-moveables in new & renovated classrooms are receiving attention; moveable equipment is questionable. AVS participation in planning for the incorporation of instructional technologies in new and renovated classroom facilities is not consistent; ranging from being involved in the very early stages to not being involved until after all work is done, and modifications to completed construction have to be made. Frequently capital funds for "moveable" equipment (instructional technologies) are used for construction overruns and change orders, thus not available to purchase instructional technology equipment.

Annual Planning Process: At departmental level, there appears to be no significant planning in annual reports or five year plans. Other levels unclear although the Office of the University Architect plans for larger projects. Integrated planning for new buildings and renovations is still occurring only sporadically and does not include sufficient input from technology capable faculty in the departments, and AVS.

Classroom Assessment: The recent Classroom Utilization Report does not include equipment assessment as a major component. These were included only if the survey answers answered included this information. The recent Classroom Quality Report does include some recommendations to improve light control problems, and the need for new or replacement equipment. AVS is working with the Office of Campus Enhancement to implement recommendations. In addition, AVS is beginning an assessment of classroom instructional technologies.

Standard Classrooms. These are defined as general purpose basic or traditional rooms that accommodate between twenty and 100 students.

Permanently installed instructional technologies are minimal. However, the condition of all 172 general purpose classrooms on the Kent Campus should be assessed to ensure that each room has the following equipment and facilities installed and in good working order:

chalkboard;
projection screen (usually 70" x 70");
overhead projector in portable cart;
window treatment (opaque shades);
light control, switches to control lights in sections, from front to back; electrical outlets, minimum of one duplex outlet, centered on front and back walls;
network connection for voice, video, and data (centered on front wall).

Status: *Little has been done to address customization of the environment for electronic delivery. By the end of Phase III of the intra-building wiring project all classrooms should have network connections. The items list above is still appropriate. The campus network is bringing voice, video, and data connections to classrooms. In many rooms window treatment and light control still needs attention. In numerous rooms new overhead projectors and larger projection screens are needed.*

In addition, the Kent Campus maintains seventeen lecture halls with a capacity of 100 or more seats and thirty-two seminar rooms, each with twenty or fewer seats usually arranged or designed in a conference setting with chairs and one or more tables. The condition, furnishings, and technological needs of these rooms should be assessed as well.

Status: *The number of lecture halls has increased. Assessment by AVS is currently taking place and a summary report will be issued.*

Master Classrooms. These are defined as rooms or lecture halls that may be linked via a campus network to a centrally located electronic media distribution system. Located in the room are a minimum number of instructional technologies and a control center located in a teaching station. These rooms, sometimes called multimedia classrooms, may accommodate from twenty to 100 students, or more of they are classed as lecture halls. The University should assess the current condition of each of these classrooms on the Kent Campus and should implement a plan to upgrade 2 percent of the total standard classrooms and lecture halls to master classroom status during each of the next five years. Thus, eventually 10 percent of the classrooms would be upgraded to accommodate the following media and technological applications:

projection screen (electric);
video/graphics projection system;
overhead projector (option: visual presenter, desk-top);
control panel (mounted in teaching station);
sound reinforcement system with wireless microphone;
microcomputer with CD-ROM;
teaching station/equipment cabinet;
laser pointer;
electrical outlets and wiring to accommodate multiple pieces of equipment, including ceiling video/graphics projector;
network connection for voice, video, and data;
light control (incandescent and fluorescent with dimmers, or fluorescent with dimmers) with switches at teaching station;
window treatment (opaque shades).

Status: *While there may have been an assessment of current "master classrooms," that does not appear in Classroom Utilization Report. The target of 10 percent of all classrooms (17) does not appear to have been met. Classrooms that meet these requirements may include those*

in the Library, Moulton Hall (3), Music and Speech, and the Goodyear Electronic Classroom in the College of Business Administration.

A number of rooms in recently renovated buildings incorporate most of the components of a master classroom. The best equipped building is Moulton Hall (nine rooms). A number of rooms in Lowry (one room), Merrill (one room). In addition a number of buildings have rooms with video/computer projection systems: White (four rooms), and Business Administration (six rooms), Cunningham (one room) and Williams (one room) Rockwell (one room) Bowman (one room) have many of the primary components of a master classroom. (Very few have installed computers.) The completion of the campus network will bring voice, video, and data connections to all classrooms.

The recommendations probably need revision to include advances in delivery such as digital video over the network.

In addition, selected lecture halls should be equipped with computerized student response systems.

Status: *No rooms have a student response system. Student response systems are very unique and should be considered only for special applications.*

Computer Classrooms. These are defined as rooms that have a wide range of instructional technologies permanently installed, and a computer workstation for the instructor and for each student or grouping of two students, with a control center located in a teaching station, linked via a campus network to a centrally located electronic media distribution system. The Kent Campus should implement a plan to upgrade 1 percent of the total standard classrooms to computer classrooms during each of the next five years. Thus, 5 percent of the classrooms eventually would be upgraded to serve as computer based or electronic classrooms with each containing the following technological applications:

- projection screen (electric);
- video/graphics projection system;
- overhead projector (option: visual presenter, desk-top);
- videocassette player;
- video disc player;
- control panel (mounted in teaching station);
- sound reinforcement system with wireless microphone;
- microcomputer with CD-ROM;
- teaching station/equipment cabinet;
- laser pointer;
- computer tables and chairs;
- microcomputers (PC/DOS or Macintosh);
- electrical outlets and wiring to accommodate multiple pieces of equipment, including ceiling video/graphics projector;
- network connection for voice, video, and data;
- light control (incandescent and fluorescent with dimmers, or fluorescent with dimmers) with switches at teaching station;
- window treatment (opaque shades).

Status: *No assessment appears in Classroom Utilization Report; the target 5% of all classrooms does not appear to have been met. Moulton Hall has several computer classrooms. The media center and distribution links have not been established.*

In addition, for classrooms where use does not justify permanent installations, portable teaching stations with computer, projection system, videocassette and video disc players, and CD-ROM player should be made available.

Status: *If no clear assessment of classroom technology status has been done, it is unlikely that this effort is underway. Portable teaching stations with a computer projection system are not available from a central service center (AVS).*

Distance Learning Classrooms. The renovation of Moulton Hall will allow for the establishment of a first-class center for instructional technology and distance learning. It will be designed expressly to showcase the use of state-of-the-art educational technology. It will be supported by an integrated, comprehensive cabling system that will be able to handle all communications--voice, video, and data--within the building as well as between it and distant locations.

In addition to supporting the Moulton Hall initiative, the team recommends that Libraries and Media Services proceed with plans and use existing resources to convert the Audio Visual Services classroom into a two-way interactive audio-video distance learning facility. Further appropriate space, in proximity to Audio Visual Services, should be identified and converted into a hands-on computer based electronic classroom to support distance learning initiatives and education and training programs offered by both Libraries and Media Services and Computer Services.

Status: *Moulton Hall has satisfied most elements of this recommendation--if all classrooms and facilities are properly equipped; Library classrooms have satisfied this recommendation. With the completion of the renovation to Moulton Hall, the computer-based distributed learning classroom in AVS was moved to Moulton Hall. Through a grant, the School of Library and Information Science has installed two-way interactive video distributed learning equipment in the AVS classroom.*

BENEFITS:

The quality and efficiency of instruction will increase.

Students will receive more hands-on instruction, resulting in an improved learning experience.

When students see computers and related technology used effectively, they have better models for their own computer use. Computers will be more widely used in the classroom.

Faculty will be better positioned to use multimedia technologies to enhance the learning process.

Faculty will have added incentives to invest their time in computer-based innovation.

Faculty will face fewer environmental difficulties in attempting to use new technologies.

Faculty will have consistent and reliable access to appropriately equipped classrooms.

Less faculty time will be spent in equipment set-up in classrooms.

2. Continuing Education. Technology-equipped classrooms should be available for teaching continuing education courses and workshops in the areas of computer technology and applications. In addition to meeting community needs, such facilities also could be made available for faculty and staff training.

Status: *Continuing Education has occasionally used classrooms in Moulton and will use them in summer and when available. These are for credit workshops, which can be taken by faculty and staff using their tuition credits. Priority is given to traditional classes but credit workshops have second priority.*

BENEFITS:

The University will have more opportunities to increase revenue and enhance its image.

There will be more opportunities to build relationships with and obtain funding from local businesses and other organizations.

Kent will be more competitive with nearby institutions.

Outreach to the local community will increase.

3. Instructional Development. In recognition of the substantial time required to develop and provide technology-based instruction, academic units and the Office of the Provost should provide incentives and workload reductions for faculty to engage in innovative instruction (e.g., summer instructional grants, merit pay, and credit toward promotion and tenure).

Status: Moulton programs (tutorials, etc) provide some support; Support for Moulton Hall fellows, originally funded through the Provost's office must now be funded through departments; limited incentives and workload reductions will be in place after CBU negotiations are concluded (see Appendix). Intellectual Property issues have probably slowed faculty participation in the past and may be significantly reduced by this agreement.

BENEFITS:

Faculty will be more likely to invest their time in the development of technology based instruction.

More faculty will incorporate computer, information, and instructional technologies in their teaching.

More faculty will implement new teaching methods based on technology.

Teaching will improve.

4. Multimedia Distribution. Computer Services and Media Services should investigate possibilities for distribution of multimedia. One option is to use the IBM mainframe as a central server. A possible problem with that solution is the potential loss of network performance. Another option for consideration is a distributed network of powerful workstations. Both methods should be investigated to determine costs and benefits. In an increasingly distributed computing environment, it is important for faculty to have reliable and convenient access to instructional tools such as multimedia applications.

Status: New telephone communications RFP includes switches that will make this possible.

BENEFITS:

The instructional use of multimedia will be promoted and increased.

Faculty will be better positioned to utilize multimedia instructional tools.

5. Faculty and Staff Support Center. The University should establish a faculty and staff support center that contains multiplatform, state-of-the-art, instructional hardware and software, including a software lending library. The budget for this facility should be adequate to ensure timely installation of new technology as it emerges and to provide technical support for the facility. This facility should showcase the use of technology in teaching and provide hands-on training for faculty and staff.

Status: Faculty Development Program and New Media Services are beginning to provide this support.

BENEFITS:

More faculty will make use of available instructional software and other technologies to improve the learning process.

Faculty will be more likely to utilize new technologies in instructional efforts.

6. Student Education and Training. A Technological Education Requirement should be instituted for freshmen that would ensure student computer literacy by developing competency in areas such as word processing, spreadsheets, databases, e-mail, and accessing Internet resources. It is recommended that these skills be applied where relevant into existing courses. An example is the emerging integration of word processing into English composition.

Status: *The technology requirement has not been instituted; one has to question whether sufficient facilities are available to enact a requirement.*

BENEFITS:

Students will gain skills in computer use and information access.

Students' computer anxiety will be reduced.

Students will acquire basic computer skills early in their academic careers.

Faculty will know that all students have a minimum level of computer skills enabling the incorporation of computer based assignments into coursework.

Faculty can give assignments that are too time consuming if done manually.

There will be less competition between acquiring computer skills and the academic content of courses.

Students will be better positioned to pursue advanced courses involving computer technology.

More students will be able to use technology to increase their chances of success and to advance their academic and professional careers.

7. Discipline-Specific Needs. Students need access to hardware and software that are as current as that normally used in the professions for which they are being educated. For instance, some students need access to state-of-the-art CAD/CAM systems while others need access to experimental networks that can be used to learn systems and network operations. Academic units should recognize this need and budget for the necessary equipment and software.

Status: *This requirement of academic units is difficult to assess; additional funds to support this recommendation have not been made available to academic units. An assessment of technology needs in individual units is not underway, headed by Mary Lou Holly, Judy Hirschmann and Rosemary Du Mont.*

BENEFITS:

Students will have the opportunity to learn the most up-to-date applications in their chosen fields.

Students seeking employment where current technology is used will be more marketable.

The quality of courses in computer and network technology will be enhanced through hands-on experience for students.

Employers will be assured that students have a basic level of computer literacy.

INSTITUTIONAL INFORMATION AND ACCESS

Networking and Information Systems Study – March 1993

9. Universitywide Systems Implementation Perspective. In order to operate effectively, and remain competitive, the University must develop systems reflecting a Universitywide perspective that respond to student expectations, maximize the use of resources, increase efficiency and accuracy, and enhance quality. To do so, the University should establish an approach to systems development that considers both Universitywide and departmental needs, while at the same time, supports database and systems integration.

Computer Service analysts should be available to consult with University organizational units to help ensure that computing and information technology is used to the maximum benefit of the University. Student information systems, human resource systems, financial record systems, and others must be integrated to respond to local needs as well as support Universitywide functions.

Status: *This has been partially achieved in the case of Student Information Systems. However systems integration across all legacy systems (for example the Financial Aid and Housing modules) has not been realized from a university wide perspective. Student Information Systems have not been integrated with human resource and other systems. The system does not seem to meet the requirement that it “respond to student expectations, maximize the use of resources, increase efficiency and accuracy, and enhance quality.”*

10. Student Information Systems. Student information must be implemented as one integrated system in order to enhance competitiveness and support the achievement of enrollment goals. We recommend that the existing systems for the entire student information systems area be replaced with an integrated system. This includes student financial aid, admissions, registration, housing, and bursar accounts receivable and cashiering.

We recommend that commercially available software packages be considered. In-house development should be attempted only if it can be cost justified or provide superior capability. Also, the future ability to migrate to a distributed processing environment should be a consideration in the software selection process.

Status: *SIS was put into production in February 1996 and included software modules for admissions, bursar, financial aid, records/registration, and housing. SIS provided database integration across all five modules and the eight campus system and dramatically enhanced student information management and academic and student service. All SIS modules have functions that are still not complete or available at all. SIS departments have submitted SROMs requesting completion of system fixes or enhancements, but progress has been slow. Due to the backlog of SROMs and the inability to implement vendor fixes and enhancements called TOSs (Time of Solution), SIS does not have the level of functionality desired and needed. The inability to apply the TOSs has prevented Kent from taking advantage of vendor Y2K releases, webbased transaction software, financial aid software in support of yearly federal regulations, and a variety of current and future contemporary service enhancements. Without the aid of vendor releases and without completion of user requests for service, SIS cannot be maintained*

as a state of the art system and cannot provide the infrastructure needed to take advantage of contemporary software. Decisions must be made to upgrade SIS to the level needed by applying appropriate TOSs and by completing service-critical SROMs, or to migrate to another system that can be appropriately maintained to support the university's academic and service mission.

11. Systems Infrastructure. The infrastructure for an integrated information system should consist of a relational database management system with a data dictionary and user-friendly query and reporting capabilities. Seamless support for distributed computing and imaging technologies also should be included. Integration should support automatic on-line interchange of data between the individual administrative subsystems as well as the ability to extract information (in both data and report formats) in response to particular ad hoc queries. This feature should support user friendly access for faculty for the purpose of advising.

We recommend that the director of Information Services (in consultation with the Technology Policy Advisory Committee) assess University database requirements; evaluate database management software products (including the currently installed IDMA product); and select the relational database management system that the University will use as the infrastructure for its integrated information systems.

Status: A student information system (SIS) based on the DB2 relational database has been implemented. Although the database itself is ODBC compliant, as currently implemented the legacy systems are not. The query and reporting system FOCUS is a traditional SQL system and as such is not perceived as sufficiently user friendly for general use. Systems are not integrated to the extent desired and interchange of information is not facilitated. Permission to access the systems using query systems is restricted to the extent to cause significant duplication of effort at a departmental level.

12. Document Handling and Process Flow Evaluation. The University should understand that technology alone will not provide the break-through solutions that are envisioned for administrative operations. The executive officers should consider coordinating the review of office work flow processes in their respective areas and should determine to what extent document handling and duplicating can be automated, streamlined, integrated, or possibly eliminated. The use of document imaging technologies should be considered where cost effective and appropriate. For example, the following document intensive systems are prime candidates for examination: payroll, personnel, purchasing, admissions, registration, financial aid, housing, billing, graduation, and alumni/development.

Status: Accounts payable and registration processes have been automated. Imaging is being piloted. E forms solutions are not widely available. The purchasing department is partially automated internally. Use of departmental credit cards has improved the purchasing process externally, and the purchasing process has been streamlined to some extent.

13. Universitywide Information System. The director of Information Services should coordinate the implementation of user-friendly access points (such as kiosks, touch-tone phones, work stations, and local area networks) to University information systems. The purpose would be to allow various users to gain direct access to general information about the University and to allow students to access specific information about themselves.

General information could be accessible by anyone, including parents, applicants, and other visitors. This information would provide an overview of Kent State University as well as on-line information pertaining to the following:

Academic Calendar

Admission, Financial Aid, Registrar's, and Bursar's Offices

Course descriptions

Faculty and staff office phone and electronic mail directories

Specific information would be accessible by students, faculty, and staff with authorized security clearance. For example, students could look up information (via a secured path) regarding their own class schedules, admissions, registration, academic records, financial aid, and billing. This type of access should result in shorter, less frequent inquiries at the Registrar's, Financial Aid, and Bursar's offices. More importantly, access to such systems should lead to a much more satisfied student population.

Status: Kiosks have been piloted. These are used more for marketing purpose than for information access. Given that the information for the kiosk systems must be developed separately from the WWW based systems, it does seem unnecessarily duplicative of effort to use them for any significant level of access to information.

Interactive Voice Response (IVR) is available to some systems such as registration.

Access to relatively static information, such as the campus phone book, and the schedule of classes is available from the WWW. Web based access to some other legacy systems is being developed but Web based transactions are not in place. Online student information access is not available. Online advising and student rosters are not available. Personalized information for students of the type advocated in the recommendation, and in requests from student members of UCT, is not available.

14. Health Services System. Information Services should coordinate the interface of the local area network system in Health Services to the existing student information system in order to eliminate the need to use printed reports to verify student enrollment. In addition, it is recommended that Health Services acquire a basic computerized system to handle day-to-day operating needs and more easily comply with federal and state reporting and monitoring regulations.

Status: Not a direct interface. The current procedure involves downloads from the mainframe and utilizes FOCUS.

15. Departmental Systems Coordination. The associate vice president of Business and Finance should be assigned the responsibility for establishing formal communication links between those responsible for departmental computer systems in order to achieve better coordination and synergy. A technical committee of departmental system administrators or other persons with comparable responsibilities should meet on a regular basis. The committee, consisting of representatives from academic and administrative departments, should be appointed by department heads. The responsibility for coordinating departmental systems support should be assigned to a staff member who also should be given ex-officio status on the committee.

Status: Such a committee not been formally constituted. KNUG, which is an informal group of network administrators, partially addresses the recommendation but has no official status.

16. Demographic Information. The associate vice president for Business and Finance, working with the Technology Policy Advisory Committee, should review and recommend changes to procedures and policies associated with the maintenance of demographic information for all individuals associated with the University community. These changes should allow individuals to change their demographic information at a single location with automatic update, when appropriate, to other databases.

Status: *The review in question has not been undertaken. No unified update procedure is in place.*

17. University ID Card. The University should implement a Universitywide all-campus identification card (Kent Card) for faculty, staff, and students. It would serve as an ID card, debit card, security access card, library card, health services card, etc. Video imaging technology should be used to capture and store identification pictures.

Status: *A Flash card utilizing digital video imaging was implemented in Fall Semester 1998. Security access is not yet widely available.*

18. Regional Campuses. Regional Campus information systems need to be more homogeneous among campuses and better integrated with University information systems and Regional Campus strategic plans. Regional Campus enrollment is expected to continue to grow at a steady rate and its operating environment is expected to become more complex. Therefore, an evaluation of Regional Campus computing and information technology requirements should be conducted to define goals and objectives, identify strengths and problems, develop recommendations, and create a five-year implementation plan.

Status: *The legacy systems have been integrated with SIS and voice response is in place. The evaluation in the recommendation has not taken place. No master plan for integration of departmental systems exists.*

19. Application System Priorities. All new systems and major system enhancement requests should be submitted to the Technology Policy Advisory Committee for prioritization. Along with each request, Information Services should provide an estimate of resources required to complete the project. Further, when necessary, Information Services should assign an analyst to assist the committee with clarifying request requirements or developing cost/benefits analysis. Project priorities should be submitted to the vice president for Business and Finance in the form of recommendations.

Status: *The procedure of consulting UCT on major enhancement requests has not been implemented. There are currently considerable backlogs in undertaking programming requests which implies that prioritization is an important concern.*

20. System Development Methodology. The director of Information Services should implement a methodology for institutional systems development that promotes consistency and ensures that user expectations and project deliverables are congruent. It also is essential that this methodology facilitate the development of implementation plans that identify all technical, human, and financial resources required to implement a project in an efficient manner. The plan should include project task/activities, resource and time estimates, responsibilities, deliverables, and documentation requirements.

Status: *Such a methodology is not implemented, or is not meeting user expectations.*

TRAINING AND SUPPORT

Networking and Information Systems Study – March 1993

31. Need for Training. The University should recognize the importance of participating in appropriate training programs as the University moves into a more integrated and technology driven information environment.

Status: *Recognition of the importance of training in technology has not been operationalized. Competencies have not been established university wide. Some departments have developed competency requirements for their staff. The method of enforcement is still being discussed. In the case of civil service employees this is partially addressed during hiring and reclassification. Training is sporadic but improving. There is a need for coordination of and assessment of the success of these programs*

32. Training Strategies. The University should provide overall coordination and systematic strategies to better meet existing and future training requirements. Within this context, the University should establish a formal system for identifying and sharing individual expertise at all levels.

An orientation for new faculty and staff should be instituted. It should include an introduction to University computing and information technology services and resources.

New training and support applications should incorporate the Universitywide electronic mail system to address issues related to feedback, hands-on training and consultation, and training follow-up. Training and support programs should be developed to meet the specialized need of personnel who are responsible for the Universitywide network and the growing number of LANs.

Self-paced instructional programs (e.g., computer-based training software modules) should be utilized to support training where appropriate.

Status: *Technology orientation for faculty and staff is not done on a university-wide basis. No formalized Network Training has been instituted for departmental LAN administrators. Some self paced tutorials are in place. Training for staff is not at an appropriate level. A number of units have roles in this area at a centralized and distributed level including ACT, UIS, New Media Services, Human Resources and Development (HRD), various academic departments and the Faculty Professional Development Center. HRD recently assumed responsibility for staff training. The Faculty Professional Development Center is beginning to act as a contact point for training for faculty. There is still a need for more coordination of training programs and possibly a central directory of training resources.*

33. Training Assessment. Information Services should reassess training topics and methods periodically to determine if user needs are being met adequately.

Status: *Responsibility for training has been diversified. Assessment of the perceptions of individual workshops is undertaken through exit questionnaires. However no assessment of the needs in the University community has been undertaken.*

34. Training and Support for Administrative Systems. Unit heads should develop and offer orientation and training programs for authorized users of their systems. Users should also be provided with updates and opportunities for retraining as new features or changes are implemented.

Status: *Training conducted in each administrative unit, but little is available to academic users. Online help is available for legacy systems.*

35. User Systems Documentation. Information Service. should survey user documentation needs to determine the scope of the issue. User systems documentation standards should be developed and presented

to the Technology Policy Advisory Committee for review, endorsement, and prioritization. User departments, with assistance from Information Services, should develop needed documentation.

Status: *User documentation for the legacy systems is available. That for departmental systems varies greatly in quality and quantity. Standards have not been developed or presented to UCT.*

36. Broaden Existing Help Desk. Information Services should broaden support through the existing help desk facility to include all referral services related to departmental and mainframe systems, work stations, network access, connectivity, voice, and video communications.

Status: *The Help Desk Service has been greatly broadened, hours have been extended and more staff is available.*

37. Standards for Vendors. Information Services and purchasing should develop hardware and software performance, service and reliability standards for vendors and discontinue dealing with those that cannot consistently meet those standards.

Status: *Recommended configurations for hardware have been developed by UIS/ACT. However no standards for performance, service and reliability standards for vendors have been evolved.*

38. Peer Consultant Support. Information Services should establish an electronic bulletin board that individuals can use to post technology questions and receive responses from local experts. Furthermore, Information Services should coordinate the publication of a manual which would contain the names and areas of expertise of individuals who volunteer to be peer consultants. In addition, this manual should be available electronically for access by individuals with network connections. [continued]

Status: *KNUG and legacy system listservs are now in place. An accessible knowledgebase is not yet available.*

SUPPORT STAFF AND TRAINING

Academic Computing Study – May 1994

16. Central Help Desk. A central help desk with a single phone number should be available sixteen hours a day to answer a wide variety of questions on any computer related topic. The caller should not be referred to another person unless they are specifically seeking the contact person in their department. Ordinarily, the help desk staff should either be able to answer the question or pass it on to someone who will contact the caller. A data base of frequently asked questions should be maintained so that a student could staff this desk most of the time. This data base would also contain the names of contact people in all units.

A bulletin-board should be available for both the help desk staff and the general user, so that answers not available in the data base and not known to the help desk staff could be sought. Online help should be available to reduce the level of expertise needed locally to use available systems.

Status: *UIS has instituted a central help desk. NEED DETAILS ????*

BENEFITS:

Users will get effective support for computer applications when needed.

The use of computing resources will be facilitated.

The effect of variations in levels of expertise in labs will be minimized.

The University will be perceived as having a well-run, comprehensive, efficient, customer oriented support service for computing.

User frustration will decrease, and productivity will increase.

17. Faculty Development. The administration and the faculty share the obligation for faculty learning about ways in which technology can be applied to their disciplines. The administration should ensure that the faculty have the opportunity to attain a basic level of computer and technological literacy appropriate for their disciplines. Faculty professional development plans should incorporate provision for time to develop skills in basic and advanced computer usage. Basic support services needed to integrate technology into the curriculum should be identified and provided at the University level. Academic units should identify and provide for the specialized instructional support needs of their faculty.

Status: *This seems in general to be little addressed. Some training is provided through New Media services and the Faculty Professional Development Center. Academic units have not, in general, provided for the specialized needs of faculty.*

BENEFITS: SEE #18 (BELOW).

18. Faculty and Staff Training. Academic units should schedule training for faculty. Staff should be given formal release time to take advantage of available training. Academic units should be encouraged and supported in their efforts to offer technological training related to their discipline.

Status: *This is sporadic. Fashion Design and Political Science have scheduled training through New Media Services. Some departments have provided ad hoc training opportunities.*

BENEFITS:

Faculty will be more familiar with the technological tools used in their disciplines and will be better able to remain technologically current.

Faculty will be better able to provide relevant technological education to students.

Staff will have better opportunities to acquire the skills they need for accomplishing their jobs.

Staff talent will be developed to its fullest potential.

More training will be available for faculty and staff who want it.

More faculty and staff will take advantage of existing training programs.

19. Instructional Workshops. University classes for basic skills such as computer fundamentals, word processing, spreadsheets, data bases, and e-mail should provide in-class, hands-on experience. These classes could be a part of expanded Continuing Education offerings or given as shorter workshops.

Status: *Classes have been made available through HRD. There are not currently enough offered to satisfy the demand from staff.*

BENEFITS:

Training will be available when needed.

Students, faculty, and staff will receive the support necessary to become technologically literate.

20. Learning Tools. Computer Services should provide self-paced learning aids such as online tutorials, computer assisted instruction, or videos. These aids need to be available for the multiple platforms, operating systems, and applications that exist in the University.

Status: *Self-paced learning tools for Microsoft systems have been provided by ACT, through a site-wide license for InfoSource. No such materials are available for Mac or UNIX platforms.*

BENEFITS:

Support will be available at the most critical moment--when there is an immediate need to know.

Users will be able to pace their learning to best fit their own styles.

21. Academic Unit Initiatives. As academic units make necessary moves toward more sophisticated computing environments, they need to anticipate the greater level of technical expertise needed to support LANs, multimedia software, etc. Academic units should ensure that technical expertise is available to support computer hardware and discipline-specific software. They may arrange for support by employment of full time systems support staff, shared support staff with other units, formal arrangements with their college or Computer Services, or, when appropriate, on-load assignment to designated faculty. The names of staff assigned support roles should be made available to the entire University community through a centralized help desk. Academic units should have formal backup arrangements for mutual support across a cluster of similar units.

Status: *Most academic units still have not made adequate arrangements for systems support staff. The names of support staff are not made available through the centralized help desk. No formal arrangements exist for mutual support although informal support is sometimes available.*

BENEFITS:

Technical support for local computing will be more even and consistent.

Faculty will spend less time handling support tasks.

Networks and core systems will be better managed and maintained. Fewer ad hoc demands will be placed on Computer Services. Academic units will be more likely to acquire and maintain current technology.

Potential LAN problems will be anticipated prior to a complete failure of a LAN application.

22. Local Staffing. The Office of the Provost, colleges, and independent schools need to work in partnership to allocate funding to meet the growing academic unit technical support staff needs.

Status: *These needs have not been addressed except in isolated cases.*

BENEFITS:

The quality of support for faculty and students, especially for discipline-specific applications, will improve.

Response time for problems and training will improve.

More one-on-one help will be available when needed.

23. Computer Lab Staffing. Academic units need to revise current staffing policies to provide staffing on evenings and weekends. The lack of lab availability in the evening and on weekends inhibits the use of technology by students who are time or place bound. Student lab monitors should receive adequate and formal training appropriate to their assigned responsibilities. This training should begin early in each academic year. Centralized training should be provided for software that is used across units of the University while local training should be provided for discipline-specific software.

Status: *CONSULT KNUG on this.*

BENEFITS:

Labs will be available more hours for students.

Commuter students will have greatly increased access to computing resources.

Students will spend less time queuing for high-demand resources.

Computer resources will be used in a more cost effective manner.

Lab hours will be more consistent across each campus.

Lab monitors will be better able to assist users.

Assistance available at all labs will be consistent and reliable. Students will have more convenient access to computing resources needed to complete assignments.

24. User Groups. Computer Services should encourage the creation of groups of users to provide mutual education and support. A user group of academic lab managers should be formally established as a subcommittee of the Advisory Committee for Technology.

Status: *This has not been done, although KNUG is an informal organization of this form.*

BENEFITS:

Quality of lab support will be more consistent.

New and experienced lab managers will have formal channels for exchanging information and support.

Decisions concerning the management of labs will be in concert with the overall computing and technology goals of the University.

COMMUNICATIONS AND NETWORKING:

Network and Information Systems Study – March 1993

21. **Network as a Utility.** The University should recognize that a University wide network is a required utility (like water or heat) for the survival of a modern campus. The network should be ubiquitous, reliable, and provide an adequate capacity to support voice, data, and interactive video communications.

Status: *The importance of networking to the campus has been recognized. The backbone and intrabuilding wiring plans operationalize this recognition.*

22. **Existing Network Plan Implementation.** The existing network plan, completed in September 1992, endorsed by the Academic Support Systems Task Force, provides the University with a realistic blueprint for a campus wide backbone. In order to support interactive video and distance learning, the plan should be enhanced to include single-mode fiber in the backbone and from the backbone to the Teleproductions Office. The plan also should be expanded to include detailed standards for intra-building connections including classroom, laboratory, local area network, and desk-top access. Funding should be provided for full implementation.

Status: *The implementation of the network plan for the campus backbone, including single-mode fiber, was completed December 1998. Phase I of the Intra-building Wiring Plan was turned over on March 15, 1999 and included 10 buildings (Art, CDC, Henderson, McGilvrey, Nixon, Oscar/Ritchie, the Personnel section of Terrace Hall, Smith, Stockdale and Whitehall). Phase II is in progress and due to be turned over May 25, 1999. These buildings include the Library, Math and Computer Science, Memorial Athletic and Convocation Center, Memorial Gym Annex, Taylor, VanDeusen and Williams. Phase III, including the Administrative Services Building, Airport, Bowman Hall, Business Administration Building, Cunningham Hall, DeWeese Health Center, Golf Club House, Ice Arena, Kent Hall, Maintenance Storage building, Physical Plant Services Building, Fire Safety Building, Satterfield Hall, Kent Student Center and the WKSU Broadcast Center, has been rolled into PBX project. Network Services will provide 10BaseT Ethernet switches for all buildings. This effectively creates a de facto standard for intra-building wiring. The RFP for the PBX project went out for bid in January with bids due by February 25, 1999 with construction anticipated for May 1999. This includes upgrading the ATM backbone to 622Mbps, and adding new backbone switches and wiring to each building. It also includes a VTEL to ATM converter. The issue of whether ATM service will be extended to the regional campuses is currently under discussion by the Regional Campuses.*

In order to provide all departments with the level of connectivity that is enjoyed by the Science Complex and the College of Business, the backbone should be expanded as quickly as possible to other campus buildings in an incremental manner that is consistent with the overall plan. This expansion should initially involve extending the network backbone to Korb, Music & Speech, Nursing, and Taylor. Any partial implementation should be consistent with the overall plan.

Status: *Completed.*

In addition, in order to realize as quickly as possible communications gains inherent in the existing segments of the backbone, Computer Services should, concurrent with the expansion of the backbone, connect all department LANs and selected work stations in a manner that permits communication among the LANs and access to Internet resources.

Status: *10BaseT switches have been acquired by Network Services to provide connectivity to the backbone, using the new intrabuilding wiring, for all currently active ports in rewired buildings.*

The director of Information Services should package the plan for wider dissemination to the University community including academic leadership, executive officers, and the Board of Trustees.

Status: *The plan has been disseminated and implemented.*

23. **Network Service Requirements.** Information Services should develop a network infrastructure that provides a conduit for high-speed and user-friendly files, software, and specialized hardware sharing; laboratory and dormitory connectivity; campus mail; personal computer and mainframe links; Regional Campus high-speed connectivity; access to Library catalogs and CD-ROM and on-line databases; integrated voice mail and voice communications with a consistent user interface; electronic mail with access to national and international networks. The network also should have the capacity to support interactive video and distance learning initiatives. The network should serve the needs of students, faculty, researchers, staff, and administrators.

The network should include tools that facilitate the management and maintenance of central and distributed (voice, video, and data) communications systems through integrated access, monitoring, and administration from all locations.

Status: *The upgraded backbone and intrabuilding wiring will provide a conduit for high-speed and user-friendly files, software, and specialized hardware sharing; laboratory and dormitory connectivity; campus mail; personal computer and mainframe links access to Library catalogs and CD-ROM and on-line databases.. The Regional Campus links have been upgraded to T-1 lines.*

Integrated voice mail and voice communications with a consistent user interface and tools that facilitate the management and maintenance of central and distributed (voice, video, and data) communications systems through integrated access, monitoring, and administration from all locations have not yet been achieved.

24. **Financial Support for Network.** In order to achieve these above goals, the University needs to provide the funding to implement existing network plan. for a campus backbone and improved connectivity for the Regional Campuses. Additional funding should be provided when necessary to meet the standards established in the plan to avoid interim throwaway efforts. Plans for new capital projects or renovations also should incorporate the cost of implementing networking requirements. Furthermore, there is a need for a continuing financial commitment to manage and support the network as well as respond to future needs and requirements.

Status: *The network plans have been implemented. Network Services has been expanded. However there is still no continuing funding specifically for network support. Most network improvements have been undertaken with capital funds from state grants.*

25. **Remote Access.** The quality and capacity of remote (dial-up, etc.) access to the University network should be enhanced. In particular, Information Services should evaluate how the existing modem banks -(including departmental local area networks) can be expanded and reconfigured to provide more dial-in ports at higher communication speeds (e.g. 9600 baud).

Status: *Remote access for faculty and staff has been improved through the provision of the 672-2NET bank of 192 modems supporting PPP access. The issue of the mode of provision*

of enhanced remote access for students is still unresolved.

26. **Electronic Mail.** Convenient access to an easy-to-use electronic mail system is of strategic importance to the University. Information Services should coordinate the establishment of standards for electronic mail that will allow all users to communicate within and beyond the campus in a seamless manner. Strong consideration should be given to moving electronic mail from primarily a mainframe-based system to a user-friendly local area network system.

Further, Information Services should develop an electronic mail directory to enhance the utilization of the electronic mail system. Also, a desirable feature for the electronic mail system would be direct work station/fax capabilities.

Status: *Campus-wide mail support responsibility has been transferred to ACT. A Unix based mail system which supports direct login and POP access has been provided as an alternative to the KentVM mainframe based system. The KentVM system is due to be phased out by December of 1999. Accounts have been created on the Unix system for all faculty, staff and students. Students are given an introduction to this mail system as part of orientation.*

27. **Campus Telephone System/Voice Mail.** The University should examine campus telephone system needs to determine if the current system adequately fulfill current/future needs as well as accommodates changing technological requirements. Strong consideration should be given to implementing a central switch for voice communications. This would facilitate the implementation of voice mail on a campus wide basis. Voice mail currently is installed in a few departments within the University. With a central switch, Business Services could establish standards and provide for the evolutionary integration of electronic mail and voice mail.

Status: *A study of the telephone system was completed in 1998. The request for bids for a campus-wide phone and voice mail system has been distributed and bids are due in March 1999 with completion scheduled for December 1999. This will permit bids for both central campus switch (PBX) and centrex based systems. No plans for integration of voice and electronic mail systems exist at present.*

28. **Student access.** The University network should permit evolution to integrated campus wide access by students to University facilities (e.g., library and other information resources, computing resources, and student information systems). This would include improved access from student laboratories and dormitories, dial-in, touch-tone telephones, and possibly kiosk systems. The network should provide students with a means of communicating with other students and faculty (on/off campus), access to bulletin boards, and to distance learning from other locations.

Status: *The upgraded backbone, intrabuilding wiring and Unix based mail and news system achieve this.*

29. **Classroom Access.** The University network should permit the establishment of fully mediated classrooms. For example, classrooms need to be wired for different kinds of applications and equipment, such as networked computers with a control console, computer projection monitor systems, and access to multimedia devices and products.

Status: *Selected classrooms have been upgraded. These are mostly those involved in the Distance and Distributed Learning Initiative, located in Moulton Hall, the Library, the*

College of Business and Music and Speech. Funding for some of these classrooms has come from external sources.

30. **Distance Learning.** The University network should have the capacity and flexibility to support the use of multiple classrooms in a distance learning context and permit easy interchange of classes between mediated classrooms.

Status: *The backbone has the necessary capacity.*

Academic Computing Study – May 1994

8. Campus Network. This committee concurs with the Network and Information Systems Study recommendation that,

The University should recognize that a University wide network is becoming a required utility (like water and heat) for the survival of a modern campus. The network should be ubiquitous, reliable, and provide adequate capacity to support voice, data, and interactive video communications.

Assuming the completion of the campus backbone it is imperative that connection of offices, classrooms, labs, and rooms in residence halls to the Kent Campus network should be a top priority in order to provide access to campus and global educational resources. Such connection is required for the network to be used for online course discussions, delivery of class assignments, course based research, student-faculty communication, and access to library resources. Connection of LANs to the network also will allow the sharing of resources such as specialized hardware and common software.

Status: *See comments on NISS 22 and NISS 23.*

BENEFITS:

- Overall support for the emerging technological needs of the University will be improved.
- It will be possible to achieve the plan for classroom network access.
- Students and faculty will have easy access to OhioLINK and other national, state, and local computer-based resources.
- Students and faculty will have remote access to the library CD- ROM data bases.
- Students will have enhanced access to televised education and entertainment programming.

9. Future Network Enhancements. First, University support of the widespread use of multimedia will require more bandwidth for LANs and more power for workstations. Second, the University should plan for the growing use of personal laptop computers by providing points of power and network access across the campuses, recognizing security requirements for both the laptops and the network.

Status: *Not yet addressed. The upgrade of the campus backbone, as part of the telephone*

switch plan implementation, will provide improved bandwidth. However the current plan calls only for 10 Mbps connection to workstations. No provision has been made for personal laptop computers.

BENEFITS:

- The growth of multimedia use will not be slowed by lack of power and bandwidth.
- Classrooms and student workstations will be able to use multimedia, providing both an in-class experience and an opportunity for further study for the student.
- Students will be more likely to purchase laptop computers, knowing that they can connect to the campus network from a number of locations. Expansion of computer use will be supported.
- As new applications and hardware become available, students and faculty will be positioned to access, retrieve, and manage data from local and remote sites.

10. Electronic Mail and Network Access. Since the current IBM mainframe is not suitable for thousands of e-mail users and cannot adequately support the VT100 emulation required for more sophisticated Internet access applications such as remote login (telnet), electronic mail should be migrated from the mainframe to user friendly LAN based systems connected to the Internet. An interface is needed to provide both menu driven access to enhance friendliness for beginners and direct command options for experienced users to enhance speed and response time. An electronic mail directory service should be developed on a UNIX platform to enhance the mail system, allowing users to address mail by name (e.g., susan.b.anthony@kent.edu). In the ultimate distributed LAN based environment the server could be used to forward mail to the appropriate LAN thus enabling transparent correspondence between incompatible mail systems on different LANs. It would also reduce the need for individual LANs to maintain full e-mail directory information on all University users. The UNIX system would also be used as a main platform for campus-wide mail and Internet access and as a central node for a distributed campus wide information system.

Status: Completed. See NISS 26.

BENEFITS:

- It will be possible for all students and faculty to have e-mail accounts, promoting e-mail as a communication tool.
- Students and faculty will be able to incorporate the resources of the information superhighway (e.g., electronic journal articles) into their work.
- Communication between students and faculty both at Kent and other institutions will, in some cases, be further facilitated and in other cases, made possible.
- Students and faculty will gain a better appreciation of the concept of a global village.
- E-mail will be easier and faster to use.

- Response times during peak periods will be improved.

11. Dial-In Access. University dial-in modem lines on the Kent and Regional campuses should be connected to networked terminal servers instead of individual computers in order to enable transparent access from all locations to all University computers and local area networks. These dial-in connections should be enhanced to support direct Internet connection using protocols such as SLIP or PPP. In view of the greater role of computing, increasing demand from students and faculty for remote access will necessitate constant expansion of the number of dial-in lines.

Status: *See NISS 25.*

BENEFITS:

- Students and faculty will have greater success in dialing in to the campus network.
- Students and faculty will have better access to the resources that they need.
- Remote access to University resources will be greatly facilitated.

RESOURCES AND EQUIPMENT:

Network and Information Systems Study - March 1993

39. Staffing Level/Expertise. The University needs to ensure that adequate levels of staffing and expertise are provided to manage, maintain and implement the vast array of information technology and network communications equipment and software. The questionnaires and interviews associated with this study indicated that many members of the University community believe that many current needs remain unmet despite the excellent efforts of existing technical staff.

The Technology Policy Advisory Committee should work with the vice presidents to evaluate and develop recommendations on technical staff requirements after assessing current staffing levels, determining new staff requirements (consistent with plans), and identifying any staff adjustments (in terms of expertise, level and number). Where appropriate, retraining programs should be identified to provide technical staff with the skills necessary to support the new environment.

Status: *Adequate levels of staffing have not been achieved. There is recognition of the difficulty in retaining computer staff due to salary differential with the private sector in North-East Ohio, and a salary review has been undertaken. However, although salary inequities in the CIO's area have recently been addressed, no concerted action has been taken to address the salary deficiencies in other areas. This has increased the salary inequities in other areas, with resulting increase in dissatisfaction.*

40. On-Going Hardware/Software Resources. The University needs to plan for on-going budget resources to address the need to support, upgrade, maintain, and replace hardware and

software. One should recognize that the appropriate level of technology varies widely from department to department. In addition, planning should incorporate the migration of equipment from users with high-end work station needs to users with low-end work station needs. Note that there is a base level below which it is not cost effective to retain old equipment because of operating and maintenance costs.

Status: *In the case of members of the tenure track faculty collective bargaining unit, this has been remedied through the faculty refresh program. No ongoing budget is provided for the upgrade of equipment for academic administrators, non-tenure track faculty or support staff. The needs of students at a departmental level is addressed mostly through Moving Equipment House Bill Monies, which is inadequate for the purpose. This is used mostly for general purpose laboratories for undergraduates and for computer classrooms. The need for special purpose laboratories and equipment for graduate students is largely unmet. Utilization of general-purpose laboratories is increasing due to the use of computer-based testing and the introduction of asynchronous courses, in addition to the considerable increase due to the incorporation into more courses of assignments which require computer usage including Internet access.*

41. Mainframe Computer Upgrade. The University should plan to upgrade its mainframe computing capacity to support the data base, integration, and access requirements of the proposed information systems and network. This upgrade should include replacing the existing "water cooled" mainframe computer system with a more energy efficient "air cooled" system. A detail analysis of capacity requirements should be performed and used to select an appropriate mainframe processor that will serve current and future needs (i.e. three to five years).

If current trends continue, this may be the last mainframe processor that the University will have to acquire because systems are being re-engineered to run on smaller down-sized and net-worked computers. These systems are expected to be widely available in the later part of this decade.

Status: *The mainframe has been updated twice in the six years since the NISS report. A new "air cooled" mainframe was acquired. It is unclear whether this has led to the expected improvements in the level of support of "data base, integration, and access requirements."*

42. Minimum Equipment Standards. Information Services, in coordination with the Technology Policy Advisory Committee, should develop and provide departments with minimum standards for hardware and software that must be met in order to interface with the University network and receive support from the computer equipment services staff. Faculty and staff who require a work station to do their work should have one as soon as possible. These work stations should be appropriate both in terms of access capabilities and capacity. Where possible, hardware allocated to faculty should be suitable for instruction and research as well as administrative systems access.

Status: *The University Council on Technology has requested University Information Systems to develop a list of supported software. The concept of University level standards, which would be required of departments, is now considered inappropriate. In the case of members of the tenure track faculty collective bargaining unit, provision of standardized workstations has been achieved through the faculty refresh program. In most cases these are appropriate in terms of capabilities. No ongoing budget is provided for equipment for academic administrators, non-tenure track faculty, research staff, or support staff.*

43. Migration to UNIX Systems. Information Services should work with appropriate staff (designated by the deans) to develop a plan for migrating from the obsolete DEC VAX

computing environment to a more contemporary environment (possibly UNIX). This specifically includes all nine existing DEC VAX systems. Consideration should be given to cost effective and distributed UNIX systems, especially for computational intensive applications.

Status: *The Academic Computing Technology DEC VAX (Zeus) is due for decommissioning spring 1999. Users are migrating to PC, Linux and IBM SP based applications.*

44. Hardware Maintenance. Information Services should evaluate computer hardware maintenance resources to determine how best to provide cost-effective, adequate, and timely service and support in the current and future environment.

Status: *Academic Computing Technology and Network Services have initiated joint appointments of systems staff with academic and administrative departments. However, this continues to be a major unresolved issue. In recognition of this situation, at its December 4, 1998, meeting, the University Council on Technology unanimously passed motions that:*

- *The "Integrated Technology Planning Committee" ensure that adequate technical support for both faculty and staff is a major consideration in their deliberations.*
- *The CIO request approximately \$300,000 of continuing funding for additional technical support staff with cross divisional responsibility beginning in fiscal year 2000.*

45. Site Licensing. Information Services in coordination with the Technology Policy Advisory Committee and the Purchasing Department, should negotiate site licenses or volume purchase discounts whenever possible when acquiring work station software. When cost effective, site licenses should be pursued to encourage the use of supported software.

Status: *As part of the migration from KentVM, site licenses for PC versions of SPSS and SAS have been acquired. In addition, a McAfee virus protection site license has been obtained and various utility software and tutorials for the MS Office suite are available for downloading from the ACT web site.*

Academic Computing Study – May 1994

12. External Funding. The University should engage in development efforts to secure additional external funding to upgrade teaching and laboratory environments.

Status: *Additional funds have been secured from Goodyear to create the Goodyear Electronic Classroom in the College of Business Administration, and from Ameritech to create the Ameritech Classroom in Moulton Hall. Other external funding has been obtained from AT&T, ??? to complete further facilities in Moulton Hall. The Centennial Commission considered necessary enhancements in learning technologies and recommended a major fund drive which could generate funding for this purpose. Rosemary Du Mont is currently compiling a report on External Funding from all sources, public and private for these purposes.*

BENEFITS:

- It will be possible to enhance some teaching and learning environments in ways not otherwise achievable.

13. Funding for New Equipment and Maintenance. Ongoing funding needs to be provided for the purchase of new equipment, equipment replacement, and maintenance for discipline-specific applications. Equipment acquisitions should take into account the rapidly increasing requirements for capacity and functionality occasioned by recent software and multimedia

advances. Academic units must recognize that maintenance should be given a higher priority in the budget, so that there is adequate funding of departmental lines to manage equipment maintenance. Academic units, in consultation with the proposed advocate for academic technology (see Recommendation #26), should periodically review the need to upgrade or replace aging equipment. The advocate, with the assistance of Computer Services, should investigate alternative ways to contract for maintenance and repair, for example the use of off-campus vendors with centralized coordination and quality control. The advocate should review the pricing structure for service contracts offered by Computer Equipment Services to ensure they remain competitive with outside vendors.

Status: *In the case of members of the tenure track faculty collective bargaining unit, provision of standardized workstations has been achieved through the faculty refresh program. In most cases these are appropriate in terms of capabilities. No ongoing budget is provided for the upgrade of equipment for academic administrators, non-tenure track faculty or support staff. Funding for this purpose for academic administrators at the unit level is currently being considered.*

The needs of students at a departmental level is addressed mostly through Moving Equipment House Bill Monies, which is inadequate for the purpose. This is used mostly for general purpose laboratories for undergraduates and for computer classrooms. The need for special purpose laboratories and equipment for graduate students is largely unmet.

Utilization of general-purpose laboratories is increasing due to the use of computer-based testing and the introduction of asynchronous courses, in addition to the considerable increase due to the incorporation into more courses of assignments which require computer usage including Internet access.

In addition, ACT has negotiated volume PC discounts with Dell in conjunction with the faculty refresh program. These discounts are available to all members of the University community.

Ongoing maintenance issues in general have not been addressed. Computer Equipment Services has been disbanded.

BENEFITS:

- There will be significant improvements in equipment repair practices.
- Equipment repair will be more timely.
- Unit expectations for maintenance and support will be more closely met.
- Equipment will be more cost effectively utilized.
- Computing equipment will receive better service.
- Equipment will be more reliable and downtime will be reduced.

14. Central Pool of Equipment. In cases where low departmental usage does not justify acquisition, the department should work with Audio Visual Services (AVS) to borrow equipment from a central pool when needed. Funds should be made available to academic units and/or AVS to acquire and support commonly needed hardware and software.

Status: *AVS supplies academic units with projection equipment. Departmental usage is*

increasing to the point where most departments require continuous use of projection equipment. In addition, AVS provides maintenance for AV equipment and Teleproductions for cameras, which conforms to their standards. However, the AVS equipment budget is not adequate to acquire sufficient pieces of portable equipment to meet the demand. As the demand exceeds the efficiency of delivering portable equipment, neither AVS nor most academic departments have sufficient funds to acquire equipment to be installed in high demand locations.

BENEFITS:

- More specialized instructional technology will be used in the classroom.
- Support for grant proposal presentations and field research will be increased.

15. Peripherals. At least one network/LAN connected laser printer should be provided in each academic building.

Status: There is still great disparity between departments. Some departments still do not have departmental LANs, much less LAN connected laser printers.

BENEFITS:

- Access to quality printing will be improved.
- Travel time to laser quality printing facilities will be reduced.

OTHER INFORMATION TECHNOLOGY ISSUES:

Network and Information Systems Study - March 1993

46. Academic Computing Plan. With exception of the network and information systems infrastructure, the scope of this study did not include the needs of academic computing. The IBM consultant cautioned against making the study too broad and recommended that a separate study be undertaken to develop an academic computing plan. The objectives of this study would be to develop an institutional plan for academic computing, and instruction and classroom support that integrates research and instructional technology with the overall network and information systems infrastructure proposed here.

This plan should make provision for adequate and consistent general purpose computer laboratory facilities and access to computers, projection technology, CDs, and video disks to support classroom teaching. To realize the benefits of the proposed infrastructure in the areas of computer-aided instruction and distance learning, additional hardware, software and support staff will be required. Members of this team believe the full potential benefits of this study cannot be realized without this plan. Therefore, it is recommended that the University conduct a follow-up study to develop a plan that addresses the aforementioned academic computing issues.

Status: An academic computing plan (i.e., the ACS plan) was completed in May 1994.

47. Student Computer Usage Fee. The University should consider instituting a student computer usage fee. This fee would help provide the funds necessary to keep computer laboratory equipment current and consistent. In addition, these funds would help provide students with: direct access to information systems through kiosks and personal computers; better network communication s access to computing from

dormitory rooms; more short courses on computing; and additional computer laboratory support. The team anticipates that the Academic Computing Study will provide additional insight into the scope of the above anticipated improvements. Therefore, the investigation of the concept of a student computer usage fee should be one of the charges of the Academic Computing team.

Status: *The Academic Computing Study considered the issue of a student computer usage fee.*

ACS Recommendation #41 was:

Fees. It is very difficult for the committee to endorse additional fees for computing. Kent already has the second-highest fee structure in the state. The current general fee structure includes a number of general fees (student organizations-\$12.00, publications-\$0.56, student leader compensation-\$0.27, athletics-\$97.00, intramurals-\$15.00, student center-\$68.75, health center-\$40.00, athletic facilities-\$80.00, medical services-\$2.00, bands-\$1.50, bus-\$41.50, theatre-\$0.50, and registration services-\$7.50). In addition there are numerous course fees and miscellaneous fees for which students are responsible. Endorsement among survey respondents for a new fee to support computing was limited. The survey item was, "How much need is there for the University to institute a new instructional fee to support computer and hardware?" Among students, the responses were "None" - 37 percent; "Little" - 30 percent; "Moderate" - 23 percent; and "Extensive" - 10 percent. Faculty and staff responses were more evenly divided--49 percent responded "Moderate" or "Extensive." If a fee is instituted, it should be earmarked for support and improvement of academic computing.

Nonetheless, given the problems with financing the required level of computing resources, the matter is again a matter for discussion.