

Agency Comprehensive Information Technology Plan

Agency: University of Nebraska

Date of last revision to this plan: 03/26/2002

1. Agency Contact Information

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|--------------|--------------------|
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|--------------|---|
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If **this document** is posted on your agency's Web site, please provide the URL for this document:

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|---|
| http://www.nebraska.edu |
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2. Agency Mission, Goals and Objectives

The University of Nebraska is the state's only public university and is comprised of the University of Nebraska at Omaha, the University of Nebraska - Lincoln, the University of Nebraska at Kearney, and the University of Nebraska Medical Center in Omaha. The University also includes many research, extension and service facilities statewide and NCTA near Curtis. The University is distinguished as a Carnegie I research institution, by the scope and quality of its doctoral programs and by its scholarly and creative productivity.

Along with the variety of academic programs and research emphases comes a great deal of variation in the tasks, tools, and computing technology in use across the University structure. The mission of the University of Nebraska has evolved over time –but there has consistently been an emphasis on access and affordability as core issues. As we begin the 21st Century, the mission of the university is to meet the educational, economic, social, and cultural needs and aspirations of the citizens of Nebraska through teaching, outreach, research, and the integration and application of knowledge.

2.A. Vision and Goals

Vision

Our vision is that each of our campuses be among the top 30 public universities in their respective peer groups, meeting the needs of Nebraskans in life-long learning, research to enhance the quality of life and health, and outreach programs that ensure the benefits of new knowledge are shared throughout the state.

University of Nebraska Goals

Our strategic framework is based on a number of assumptions; among them:

- The need to keep up with emerging technologies and new knowledge will increase the number of adult and non-traditional learners;
- There will be an increasing level of expectation that the university will contribute to the state's economic competitiveness;
- Technology training and support to serve business, industry, and government will become more critical;
- There will be exciting opportunities to grow in the areas of information and biomedical technology, but that there will be intensified competition and increased costs in these areas.

The following seven University-wide goal and strategy statements outline an overarching framework for achieving the University's shared vision. Execution will differ among the campuses. Each strategy has a timetable and a clearly defined measurable outcome that will be reviewed periodically. This framework document is the key step in the implementation of our vision.

- Promote quality teaching and learning at all levels of University education, especially undergraduate education, to move the University into the nation's top 30 public universities in providing quality education that is affordable and accessible.
- Enhance research and creative activity throughout the University consistent with each campus' role and mission.

- Strengthen outreach to Nebraskans and their communities, to move the University into the Nation's top 30 public universities in the application of knowledge for economic development, health, and quality of life. Expand lifelong educational opportunities for every citizen.
- Develop and maintain excellence in all academic programs, but establish and maintain exceptional capabilities in selected, clearly focused academic fields, collaborative efforts, and programs.
- Enhance the business and administrative operations of the University to support, serve and enhance the learning, research and outreach goals of the University.
- Continue to enhance efforts to recruit and retain Nebraska high school graduates and increase the number of out-of-state students attending the University. Increase commitment to graduate education resulting in increased graduate enrollment.
- Develop and implement a University-wide effort to recruit and retain a diverse faculty, administration and student population and create an environment that welcomes, respects, values and honors diversity.

The University has proposed several computer related initiatives for the FY 2003-2005 Biennium and beyond that would allow us to build the proper technology infrastructure.

Note: Campus specific plans are attached to the end of this u-wide document.

3. Current Use of Information Technology

3.A. Existing IT Environment

3.A.1. Applications

Off-the-shelf Applications

Provide the number of users, or estimated number of users, for each of the following applications:

| | Number of users/licenses |
|--|---------------------------------|
| Productivity Suite (word processing, spreadsheet, etc.) | |
| Microsoft Office | 18,500 |
| Corel WordPerfect Office | 3,200 |
| Other (Specify:) | 211 |
| Internet Browser | |
| Microsoft Internet Explorer | 15,800 |

| | |
|--|--------|
| Netscape Navigator | 5,900 |
| Other (Specify:) | 0 |
| Document Viewer | |
| Adobe Acrobat Reader | 12,300 |
| Adobe Acrobat Utility | 75 |
| Other (Specify:) | 0 |
| Anti-Virus Software | |
| Norton | 5,000 |
| McAfee | 16,650 |
| Other (Specify:) | 0 |
| Multimedia/Graphic/Web | |
| Adobe (Photoshop, Premiere, PageMaker, Go Live, Illustrator) | 2,911 |
| Macromedia (Dreamweaver, Shockwave, Fireworks, Flash) | 165 |
| PaintShop Pro | 67 |
| Finale | 30 |
| Soundforge | 30 |
| Miscellaneous Multimedia (Real Player, QuickTime, MediaPlayer) | 15,000 |
| Media 100 I along with Boris, Grafiti and After Affects | 10 |
| Zoom Text | 12 |
| Statistical/Math Software | |
| Maple 7 | 275 |
| Minitab | 347 |
| SAS | 391 |
| SPSS | 1066 |
| Miscellaneous | |
| Microsoft (Visio, Project, Publisher, Picture It) | 10,000 |
| Norton Utilities | 5,000 |
| Scanning/OCR software (HP, Omnipage) | 101 |
| QWS3270 | 892 |
| SAP GUI 4.5b & above | 600 |
| AutoCAD, 3d Max | 534 |

List any other significant off-the-shelf applications utilized by the agency:

- Athletic Ticket Management System
- Library Information System
- Health Management System (for the Student Health Center)
- Food Services System
- Box Office Management System
- Career Services System
- Customer Relationship Management System (for Student Recruiting)
- Inktomi Search Engine (for web servers)
- Network Management Systems
- WebCT (course management)
- WebFocus (ad-hoc reporting software)
- ACEWARE (conference registration system)
- Cash Receipting
- Event Calendar
- Motor Pool tracking/billing
- Easytrieve ad-hoc reporting software

Custom Applications

List any significant custom applications developed for the agency:

Academic Custom Applications

Most of the applications developed within Academic computing are utilized in an unaltered manner. There are several notable exceptions where the applications needed “middleware” to interact with existing systems. These custom developed (in house) applications include:

Blackboard 5.0/SIS

Blackboard 5.0 was implemented for the Fall 2001 semester. This version brought the University a higher level of integration with the SIS system. This integration has allowed for many tasks within Blackboard to be automated. These tasks include:

- Creation of all Blackboard courses taught by faculty
- Handles enrollments of faculty and students into courses
- Automates the following features: creation, password reset and enrollment of visitor accounts, merging of courses, and copying course content between courses.

A Linux front end drives this web interface, with a Windows 2000 Server connection to the main SIS database. Additionally, it uses SSL (Secure Socket Layer) connectivity for the transactions.

Additional software applications:

- SCT - Student Information System (SISPLUS)
- SAP - Interfaces
- Informed Decisions - Cashiering Point of Sale
- Missouri Book Systems - AS400 Point of Sale System
- EBRUNO Web application (For student access)
- Health Professions Tracking System
- Telephone Billing systems
- Center for Continuing Education Course Management System
- DARS (Degree Audit and Records System)
- Nroll Voice Response Systems
- Student Advising Systems
- Union Management Systems
- Energy Management Systems
- Transportation Systems
- ID Card Systems
- Tuition Remission System

3.A.2. Collaboration and Workflow

E-mail

| E-mail Application | Number of users/licenses |
|---|---------------------------------|
| Lotus Notes | 52,450 |
| Microsoft Exchange | 600 |
| POP3 Application (e.g. Microsoft Outlook, Eudora, etc.) | 1,340 |
| OfficeVision | none |
| Other (Specify:) | 7,000 Email relay for web forms |

Calendaring and Scheduling

If utilized by the agency, please list the common calendaring and scheduling product(s) used:

The University of Nebraska has standardized on Lotus Notes as the official email and calendar management software. The system provides full group calendaring and campus wide address book functions that enable individuals to find and communicate with any other faculty, staff or student and includes full Internet email abilities.

Future project plans include virus scanning of messages and implementation of an enhanced version of the Lotus Notes web interface called inotes.

Document Management and Imaging

List any document management or imaging system(s) used by the agency:

The University of Nebraska System went live with the SAP system in July of 1999. To assist with the documentation of this system SLUGO (SAP Learning and User Guide Online) was created. SLUGO can be accessed from Lotus Notes or the web (<http://slugo.uneb.edu>). This system contains thousands of documents to assist the users of SAP in doing their job. SLUGO allows for one document to be accessed by hundreds of SAP users. This on-line system gives the user up-to-date documentation on all aspects of SAP. SLUGO has eliminated the need to print forms that the university uses related to Business and Finance and Human Resources.

Additional Imaging Systems:

- Financial Aid Imaging System
- Mark Sense Applications for grade and test reporting
- Student billing archive system
- Paper Vision/PaperFlow
- MetaCat System (in-house developed)
- Lotus Notes Domino Software

Work Flow

List any other work flow application(s) utilized by the agency:

- E-BRUNO, for example, is UNOmaha's web-based enrollment services system. Nroll is the system developed by the University of Nebraska Lincoln for class schedules, register for classes, pay tuition via credit card and much more. These Systems provide access to Student Information Systems (SIS) via World Wide Web.
- Action Request System Help Desk
- Lotus Domino
- NUgrant Request
- Request for Leave
- Performance Reporting
- Time Reporting
- Travel Requests and Reimbursements

3.A.3. Data

Databases

List major databases maintained by the agency and the general purpose of each:

| | |
|------------|--|
| DB2 | SISPLUS and SAP Financial and HR applications |
|------------|--|

| | |
|-------------------------------|--|
| VSAM | SISPLUS |
| Informix | Student Accounts - Cashnet and Short Term Loan applications |
| SQL | Blackboard, Data Warehouse, Project Management |
| Oracle | (Solaris, WinNT, Open VMS) Used as the data store for Facilities Management, graduate and undergraduate recruiting and admissions data, Parking Systems, various web data bases, and the Blackboard software. |
| Sybase Adaptive Server | Used for the UNL Sis Data Warehouse Server and the Action Request System |

Data Exchange

List the significant electronic data exchanges your agency has with other entities:

| | |
|------------|--|
| EDI | Clearing House |
| | Transcript Exchange |
| EFT | Financial Aid Loans |
| EDE | Express Federal Student Aid Application |
| | ISIR Institutional Student Information Record |

Some vendors the University does data exchange with:

- Federal Government
- State of Nebraska
- Boise Cascade Company
- Office Depot
- AACRAO – Transcript Exchange with other Universities
- AMCAS – Feeds information regarding Medicine Applicants to UNMC Tracking System

3.A.4. Electronic Government - External

[Leave blank. Electronic government information from agencies will be collected as part of the Governor's Business Portal project and by the E-Government Architecture Work Group.]

3.A.5. Electronic Government - Internal

[Leave blank. Electronic government information from agencies will be collected as part of the Governor's Business Portal project and by the E-Government Architecture Work Group.]

3.A.6. Hardware, Operating Systems, and Networks

Hardware

Provide a general description of the elements of the computing environment (mainframe, midrange, PC workstations, etc.).

- **IBM 704 (NT):** Lotus Notes (Faculty, Staff)
- **Dell 6100 (NT):** Lotus Notes (Students)
- **Dell 2300 (NT):** Lotus Notes Database Server
- **Dell 2300 (NT):** Lotus Notes Development Server
- **Dell 4300 (NT):** Resumix (Human Resource Applicant Tracking System)
- **Dell 4300 (Novell):** Consolidated File & Print Server III
- **Dell 2300, 1300 Dimensions (Linux):** Qmaster (Xerox printing),
- **Dell 6450:** Consolidated File & Print Server IV
- **Dell 1300's:** Firewall, SercureID, DHCP Server, Netserv, Backup proxy server
- **Dell 6100 (NT):** Web Development Server
- **Dell 6100 (NT):** Intranet Web Server
- **Dell 6350 (NT):** Web Media Server
- **Dell 6100 (NT):** UNMC Proxy Server
- **HP Netserver (Novell):** Consolidated File & Print Server I
- **HP Netserver (Novell):** Consolidated File & Print Server II
- **Dec Alpha (Unix)** Innovative Systems (library information system)
- **Dec Alpha:** Open VMS
- **Sun Ultra 1 (Solaris):** Primary Internet Server
- **Sun Sparc 10 (Solaris):** Backup Proxy Server
- **IBM RS/6000 (AIX):** Netview, Sybase Databases, SAS Statistics
- **21 centralized Novell servers (Novell Netware):** File/Print Sharing
- **78 NT servers (NT):** Departmental Applications

Desktop Operating System(s)

| Operating System | Number of users/licenses |
|-------------------------|---------------------------------|
| Windows 3.1 | 8000 |
| Windows 95, 98, or ME | 1500 |
| Windows NT | 2900 |
| Windows 2000 | 600 |
| Windows XP | 34 |
| OS/2 | 950 |
| Linux | 1200 |
| Mac OS | 2000 |
| Other (Specify:) | 8000 |

Networks - LANs and WANs

Provide a general description of the agency's network environment, including type of network (e.g. Token Ring):

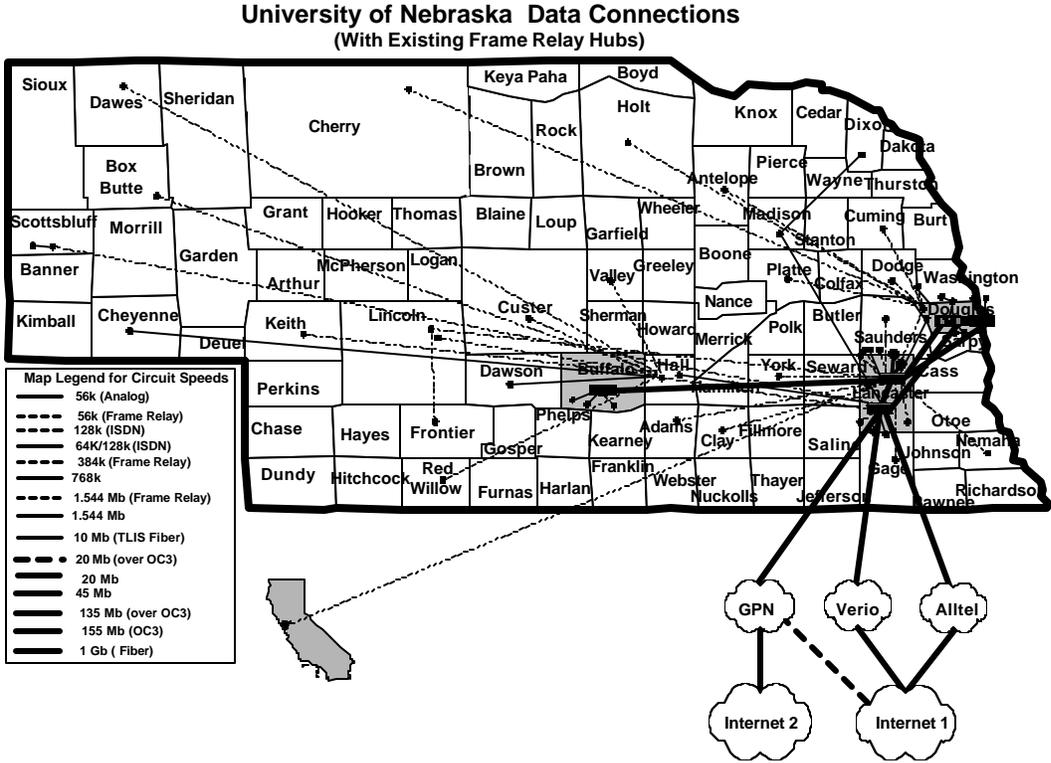
The University's statewide computing network consists of over 20,000 computers connected to a high speed backbone. The vast majority of these computers are connected to the network through dedicated 100Mb Ethernet connections.

The University communications network is designed to meet the needs of the University staff located on all four campuses and throughout the state of Nebraska. These staff members require access to University-wide systems and data, as well as campus specific systems/data.

The primary network topology at the University is based on local area networks (LAN) and wide area networks (WAN). Switched Ethernet is the primary LAN technology in use and we are in the process of removing any remaining token ring networks. Most of the WAN's are based on routed networks using Cisco routers and switches. The WAN provides interconnections between all of the University networks. The wide area network is based on IP routing only. Any other protocols in use are encapsulated inside of the IP packets.

research at UNO and the Peter Kiewit Institute. We are in the process of converting this OC3 to two 100Mb connections.

We also have 25+ low speed (1.5Mb or less) connections going to sites through out the state. These connections are used to support our County Extension Offices, Education and Research Centers, and Distance Learning sites. Most of these connections are 56kbps frame relay connections. We are trying to upgrade these connections to improve our Communications with these offices.



Just about all desktops at the University are now running 100Mb or 10Mb switched Ethernet connections. The move toward 100Mb Fast Ethernet will continue for the foreseeable future, with some moves toward wireless desktops.

The University is working with the State Division of Communications, the Nebraska Information Technology Commission and other to design and build a state wide network that include all of these connections.

UNCA/UNCSN

The UNCA LAN is made up of a 1000Mb backbone. This includes a 1000Mb connection between Nebraska Hall and Varner Hall. All servers are

connected with 100Mb or 1000Mb Ethernet connections. All desktops are supported with 100Mb switched Ethernet connections. All of the UNCA office space is also covered by a wireless network for mobile applications.

Networks – Operating System

Indicate the network operating system(s) utilized (indicate the estimated number workstations for each, if known):

| Network Operating System | Number of users/licenses |
|---------------------------------|---------------------------------|
| Novell Netware | 400 |
| Windows for Workgroups | 50 |
| Windows 9x Peer Networks | 50 |
| Windows NT | 500 |
| Windows 2000 | 2,000 |
| OS/2 LAN Server | 0 |
| Other (Specify:) | 15,000 |

3.A.7. Staffing

Identify, in general terms, the agency personnel resources currently devoted to supporting the items listed in this section (3.A). This should include both personnel whose job titles and description are clearly related to technology, other personnel whose responsibilities relate significantly to technology support regardless of job title, and contract staffing provided to the agency.

The University has 337 Information Technology staff that support the computing activities on all four campuses and Central Administration. The responsibilities of the permanent staff include network services; application development; client services, including helpdesk and training; hardware and software purchasing; Web design and support services; systems management and desktop support; and multimedia services. Part-time student workers assist with networking, purchasing, helpdesk and lab support. Tech Assistants provide technical support to students living in the residence halls who wish to connect a personally-owned computer to the campus network. Lab monitors are employed in the general-purposed computer labs throughout the campuses.

There are Technology Coordinators to provide hardware and software support for faculty and staff desktops as well as for student labs and to supervise part-time student workers who serve as lab monitors.

The Center for Distance Learning has a director and two technicians to provide support for distance education classes.

Within Academic Affairs, a Coordinator for Assessment provides web page support for the division. Many divisions, departments, and offices hire part-time student workers to assist with hardware and software support and to create and maintain Web pages.

3.A.8. Other

Please list any other issues relating to your current IT environment:

Instructional Technologies

Multimedia Technology Services (MTS) foremost goal is to increase the support side of using technology to assist faculty in teaching and learning. Currently MTS provides support for a wide range of media formats in the classroom. The various media types include a networked computer system either IBM compatible or Macintosh, connected to a high lumen overhead projection and sound system. Visual presenters are available in several of these rooms. Currently there are fifty-three classrooms available for faculty to conduct their classes using technology. Also provided are fourteen mobile support services for the locations that do not have a permanent installation at this time. MTS is adding support for digital video on PC and Mac platforms including authoring to CD, MPEG formats for use with PowerPoint, and various streaming rates depending on the instructors planned use. These services are in place, staff are being trained and production work will start in the 2002-2003 school year. MTS staff provide technical assistance for any distance learning classes held in the five distance learning rooms across campus. This assistance is used when classes use NEBSAT to offer distance classes.

Distance Education

Over the last year, technical and financial support for Distance Education by campus Information Technology Services and by colleges has been informally based on requests' alignment with campus's Strategic Goals and Statewide Mandates. While significant progress has been made, a comprehensive campus-wide Distance Education Strategic Plan is being developed to assure progress toward campus goals, Academic Priorities and to address a Board of Regents requests.

Middleware

The need for specialized software to deploy applications has been steadily increasing over the past several years. This software is routinely defined as middleware, and some of the most common components include the following.

- E-Commerce Transaction Systems (CyberCash and Verisign)
- Screen-Scraping Utilities (CLEO and Write-1)
- Proxy Software (SQUID software)
- Database Access Engines (Polyserver for DB2 and UDB/DB2)

3.B. Value

Describe and document the tangible and intangible benefits of the agency's investment in information technology.

The value of the University of Nebraska's investment in information technology is substantial and critical to the daily operations of the University. Technology is thoroughly integrated into every function of the university in support of our mission. It is critically important to accomplish the university vision.

The value to the people of Nebraska of these facilities and capabilities is fundamental. There is no way to quantify it, except to say that the University of Nebraska could not operate without these systems, and the people who install, maintain, and modify them.

The knowledge and social capital that are developed in our information technology professionals and users of information technology that allow the university to work together to perform our mission

Technology is thoroughly integrated into every function of the university in support of our mission. It is critically important to accomplish the university vision. Physical assets include a 20,000+ port on-campus network with wide area network connections to the other university campuses and central administration, as well as many external connections to the network including both Internet 1 and Internet 2. The university connects more than 4000 desktop computer systems and servers to its network. The combination of computer systems and networks are intended to bring the information and knowledge assets of the world to university desktops for the use of students, faculty and staff.

The most valuable assets are the knowledge and social capital that are developed in our information technology professionals and users of information technology that allow the university to work together to perform our mission.

Today's academic centers are undergoing major and inevitable transformations. Factors such as governmental influence to make institutions accountable and responsive, an increasing demand by consumers to receive quality care, research and education at lower costs, and stable or declining resources are driving this transformation. One of these factors alone would require change. However, the simultaneous convergence of these forces is requiring academic centers to transform at a rate much faster than many thought possible.

Admissions system. A new web-based Undergraduate Admissions systems have been developed to allow broader access to not only the University community, but for students inquiring about their admission status as well.

Computing mobility. Through the installation of new networking services like DHCP and wireless, faculty, staff, and students now enjoy the ability to take their notebooks into any building on campus and effortlessly reconnect to the computer network. This mobility will greatly foster the teaching and learning opportunities for faculty and students.

Degree audit Using the online degree audit system (accessed via the web), faculty are able to run a real-time audit showing a student's progress toward their degree. There are currently four colleges, at UNL for example, that are live on the system, with another four expected to be online in the summer of 2002. The online audit system takes care of much of the overhead associated with monitoring degree progress, allowing a more meaningful advising experience between faculty and students.

Financial aid imaging system. This system stores and retrieves all financial aid documents for a particular student. This system allows the Financial Aid Office to be 100% paperless.

Research compliance. Several systems have been implemented to assist the institution in meeting its research compliance requirements. These include the animal care system, patent tracking, proposal tracking, the DNA tracking system, and the human subjects system.

Scholarship system. This module supports all of the tracking and selection processes for the Scholarship Office. Students are able to apply for all scholarships at the University by simply filling out a web form indicating they want to be considered for all appropriate scholarships.

Short-Term loan system A short-term loan system was developed to allow Student Accounts and Financial Aid to more quickly respond to (and track) student loan requests. Students can also use the web to apply for a short-term loan.

Video enhancements.

Satellite - Video conference services via satellite are increasing due to the need to reach more audiences at their place of work. Programs focus on agriculture, natural resources, rural development, and family and consumer sciences content. These programs are produced and directed by CIT involving IANR faculty and staff, and IANR partnering agencies and groups.

H.323 Interactive Video - H.323 interactive video equipment has been distributed to Research & Extension Centers. This new IP-centric technology required broadband service to support quality interaction among participants. The technology fosters collaboration among faculty and staff internally, and with other land-grant institutions and business/industry organizations with like technology capabilities.

Webcasting. The web is being used to webcast many programs including Backyard Farmer, MarketJournal, and various other events and conferences such as The Nebraska Rural Institute, Ag at the Crossroads, the Nebraska Biotechnology Conference, and others. The analog radio facilities are also being reconfigured to facilitate live and archived webcast programming. The University is also working with state and federal agencies to develop a new weekly web audio/video program intended to provide farmers and ranchers throughout Nebraska and the Great Plains region with access to production, risk management and marketing and research information.

Audio/Video Microwave Link – A wireless audio/video microwave link has been installed to allow live productions to be routed to ETV satellite uplink equipment from most east campus buildings.

Since every classroom is wired for network access, the academic servers and resources can be used to directly support instruction. Multimedia classrooms are available for scheduling and provide high-quality display from a variety of video and audio sources. Blackboard Enterprise Edition is available for the development of Web-based courses and Web-based components for traditional courses. Software applications used by students and faculty and communication with the network are critical components of a high quality learning environment. Modernized library and information access capabilities on the network are equally important.

The deployment of Lotus Notes across the campuses has improved the efficiency of computing use. The upgrading of student computer labs and the standardization of software in the labs has improved the service available to students. Network access within the residence halls allows widespread use of network resources by students living on campus.

3.C. Information Technology Training

Summarize the agency's efforts to address training needs relating to information technology. This should include:

- Training for users of information technology
- Training for IT staff who develop and support the information technology systems

Administrative Systems Training

An important objective of UNCSN is to become a more process oriented, customer focused organization. Our plan is to cultivate a service-oriented culture, emphasize customer service, and bridge the communication gap between users and our organization. The customer support team seeks to build relationships with our customers, identify customer categories, capture usage and customer satisfaction data, and associate with UNCSN products. The team also supports the

delivery of training, documentation, communications, and helpdesk services for all university-wide applications and UNCA activities.

Specific goals are to:

- Build relationships with customers that ensure the provision of information technology solutions.
- Establish shared work approaches to provide increased productivity.
- Deliver and expand the audience for UNCSN products and services.
- Realize value as rapidly by assisting customers in implementing products and services.
- Assist in identifying and reducing redundancy of our products.
- Advertise and improve efficiency and customer service.
- Promote the effective use of recommended products and services.
- Identify customer categories to serve.
- Identify and categorize our products and relate those components to customers.
- Capture application usage information.
- Determine ways to measure customer satisfaction with products and services.

The University of Nebraska Computing Services Network (CSN) developed NUHelp (a Lotus Notes and web-based application) to provide easy access to on-line help for university-wide computer applications supported by CSN. NUHelp provide university employees with a single location for information about university-wide applications along with links to on-line help systems, such as SLUGO (support for SAP) and Nulook Help (support for NULook, the University of Nebraska Data Warehouse).

SLUGO (SAP Learning and User Guide Online) was developed by the University of Nebraska is a tool to support training with our SAP system. SLUGO is a personnel support system dedicating to providing University employees the information they need on a just in time basis. Information can be anything that assists a user with completing his or her job, including business forms, transaction scripts, news articles, and computer based training.

NULook Help is the online help system for NULook and mynulook. NULook and mynulook are Data Warehouse Management Information Systems providing views of financial, student and budget information. NULook Help is the central repository for documentation, data dictionary, security administrator lookup, news, training registration, FAQ's, downloads, and other information related to NULook and mynulook.

General Systems Training

Training for users of information technology

Training is available to faculty, staff and students who use information technology. Non-credit workshops open to all faculty and staff are provided each semester through the various computing organizations on the campuses

Training for IT staff who develop and support the information technology systems

Computing departments allocate funding each year from their budgets for appropriate staff training.

Faculty and Staff:

Campuses offer training to departments on a variety of computer programs, such as Blackboard, MS-Office, Lotus Notes email and calendaring, and FrontPage.

Students

Campuses offer training to students through their faculty. Faculty can request training for their students on a variety of software. The training will be completed during normal class time.

Training for IT staff who develop and support the information technology systems

- CBT courses
- Conferences
 - SIS Conference
 - Educause Conference
- Staff taking university credit courses
- Internal cross training with ITS staff
- Cisco Router/Server training.
- Windows 2000 Server course tailored to needs of ITS
- Campus Pipeline Training
- Organizations
 - Great Plains DB2 Forum (Quarterly)

- FUSE – FOCUS Group (Bi-monthly)
Partner with Statehouse on training related to Mainframe, DB2, and CICS

3.D. Security

Please answer the following questions regarding your agency’s efforts to maintain a secure information technology environment. [The questions refer to the Nebraska Information Technology Commission’s Security Policies. These policies are available at <http://www.nitc.state.ne.us/standards/>]

| | YES | NO |
|--|-----|----|
| Has your agency implemented the NITC’s Security Policies? | | X |
| If your answer to the previous question is NO, is your agency in the process of implementing the NITC’s Security Policies? | X | |
| If your answers to the previous two questions are NO, has your agency implemented other security policies? | X | |

Please provide contact information for the person responsible for IT security:

| | |
|--------------|-------------------------|
| Name | Jerry Burkey - (U-Wide) |
| Phone Number | 402-472-7665 |
| E-mail | jburkey@nebraska.edu |

Provide a general description of the agency’s efforts to develop and implement a security program:

The University of Nebraska is designing and implementing a combination of security based policies base on NITC specifications <http://www.nitc.state.ne.us/standards/>, executive memorandum 16 and other guidelines from Internet based security agencies such as CERT. These security features are a combination of hardware, software and network configurations designed to meet the following standards.

- Divide and identify systems and their resources in to distinct security levels.
- Use of proactive detection and prevention of security incidents.
- Positive identification for authorized users.
- Be as transparent as reasonably possible to authorized users.
- Provide a clear course for response and reporting for security incidents.
- Provide users with tools and information to protect their systems and data.

3.E. Disaster Recovery and Business Continuity Planning

| | |
|-----|----|
| YES | NO |
|-----|----|

| | YES | NO |
|---|-----|----|
| Does your agency have a disaster/emergency recovery plan? | X | |
| Does your agency perform regular back-ups of important agency data? | X | |
| Does your agency maintain off-site storage of back-up data? | X | |

Provide a general description of the agency's efforts regarding disaster recovery and business continuity planning:

Increasingly, the campuses are being probed and attacked from viruses, system crackers, and automated agents. Disaster recovery includes employing hot-spares and full-system backups in order to be able to minimize downtime for mission-critical systems, trying as much as possible to build a robust, fault-tolerant infrastructure and recovery process.

3.F. Accessibility (Technology Access for Individuals with Disabilities)

[For more information on accessibility, contact Christy Horn at chorn1@unl.edu.]

| | YES | NO |
|---|-----|----|
| Does your agency include the Nebraska Technology Access Clause in contracts for information technology purchases? [See Neb. Rev. Stat. § 73-205. The Technology Access Clause is available at http://www.nitc.state.ne.us/standards/] | X | |
| Does your agency have procedures in place to identify the information technology related requirements of users with disabilities? | X | |
| Does your agency provide training opportunities for management, procurement, and technical personnel on how to meet the accessibility needs of users with disabilities? | X | |

4. Future Uses of Information Technology

4.A. Strategies and Future Direction

This section should summarize the agency's strategies and future direction for information technology within the agency. Topics should include:

- A summary of future changes in uses of technology, which the agency plans to implement.
- An overview of the agency's activities that promote collaboration.
- A discussion of factors and risks that will impact the success of the agency's information technology strategy.

- An overview of plans to implement e-government services.
- Your agency's efforts to retain IT staff, if applicable.

It is hard for anyone to predict where technology is going. For example, in the 1990's most experts thought that client server computing, would rule the future. Then in 1991, the World Wide Web was developed as a mean to copy files between dissimilar computers. Shortly thereafter, the web browser was developed at the University of Illinois's National Center for Supercomputing Activities. Browsers were quickly developed for all the common types of computers. With the addition of the browser, the World Wide Web easily displays graphical information. The result was that computers with dissimilar architectures could be linked via the web browser to complete a single task. As a result there was no longer the required complex development envisioned for the client server model a year earlier.

Now just ten years later, the combination of web browser and the technology of file transfer between dissimilar computers underlie almost every application we use or develop. While one can probably predict the kinds of things that technology will be used for, it is less likely that anyone can predict exactly the form that enabling technology will take.

The bottom line is that information technology is still rapidly evolving and is more than a little unpredictable. This means that if we are to be effective at deploying technology to support University of Nebraska missions, we must be flexible and indeed opportunistic in how we take advantage of emerging technologies. The result is that we must remain flexible enough to reach relevant technology change to avoid continuation of obsolescent approaches.

All of these advances in technology are leading us towards ubiquitous access to information. Our campus wiring and soon our wireless connections will provide seamless connections anywhere at the University of Nebraska. Home networks connected to the Internet are already breaking the barriers between home and work.

The ubiquitous access now permits people to choose where they work and where they learn. There is ample evidence that this access improves productivity. For several years, technical staffs at the University, for example, have used high-speed data communications from their residences to work on problems during non-working hours. The result is that most problems that occur can be diagnosed remotely and fixed quickly without requiring staff to come on site. This and many other similar examples have had an effect on productivity while at the same time making jobs less onerous.

All of this points to a person centric technology that is acceptable to meet each individual's unique needs. Personal choice and style will be the determinant, not a one size fits all mentality.

Additionally in the last decade, information technology has enabled new forms of collaboration. Email and threaded discussion systems have enabled collaboration and information sharing that is independent of distance and time. Email, for example, is becoming the official form of communication at the University of Colorado. Students are required to check the information sent by the University to their email accounts.

In summary, the last 40 years have seen an explosion in digital technology with concomitant changes in people's lives. There has never been a period where the revolutionary changes wrought by technology have been more rapid or profound. The pace of change is not slowing. Information technology provides tools for the brain. With ubiquitous accessibility and great power, we can now realize the full promise of this technology to radically transform our everyday lives. We are rapidly moving into the full maturity of the information age and organizations that ignore this reality will not thrive. While no one can predict the precise nature of the change in this decade, there are some broad themes. Perhaps we are only limited by our imagination.

Setting the stage

The President's council, made up of the President, campus Chancellors, and system Vice Presidents, undertook an effort to determine the information technology priorities for the campuses of the University of Nebraska. These priorities were both strategic and operational in nature.

The campus technology plans, included in this report, spell out in more detail the various campus priorities.

The themes that were identified are:

- Improved Statewide and campus networking
 - Enhancement of the Student Information Systems
 - SAP financial system improvements
 - Management of Data
 - Security and Middleware development
 - Training
 - Staffing
 - Web Services and the creation of a Virtually Integrated University of Nebraska
-
- **Improved Statewide Networking**

The following identifies needs and areas that will benefit from the development of Statewide High Speed Network.

Enhancing Access and Opportunities for Learning

The University of Nebraska needs to continue to build on its National Leadership in Distance Education. Past resources have enabled the university to establish an infrastructure of technology and networks for distance education delivery that is exemplary in the nation. Unfortunately technology has evolved to such a degree that we have fallen behind in recent years. The network of the 1980's and 1990's is just not sufficient anymore. Students dialing in at 28KBS and 56KBS are entirely too slow and unreliable in today's world. We need increased emphasis on higher bandwidth, improved program development, updated support systems, reliable network structure, and continued faculty development if the university is to successfully continue to capitalize on its existing investments.

Enhanced Video Technology to Support State-of-the-Art Classrooms, Conference Rooms and Video Conferencing and Multipoint Video Conferencing System

Some of the University's video capabilities were state-of-the-art when initially installed 35 years ago. However, advancements in video technology have increased dramatically.

Extensive upgrades are needed to implement new and integrated video and computing technologies capable of supporting upcoming research at the University of Nebraska. Enhancing the video infrastructure will benefit the Universities on-campus education, distance education, telehealth, and public education initiatives, as well as enhance research collaboration on the campuses.

Since the state of Nebraska has adopted the States NITC H.263 standard as one of its primary video standards for distance education and conferencing. The university system has widely adopted H.323 (use of H.263 video over IP networks), but to this point it has been limited to point to point connections. The multipoint video project will analyze multipoint access control units for optimal configuration within the university system to allow multiple simultaneous video connections to any points of the university network, interconnected networks, and via Internet 2.

Enhanced Data Network for Research

Growth in research computing, both on-campus and in collaboration with researchers at all our campuses and other premier world-wide institutions, has placed additional requirements on the campus computer network. As funding permits, implementing network enhancements and upgrading desktop connectivity to meet the increasing needs of the Universities world-class researchers is a priority.

Out-Reach Networking Initiative

The University of Nebraska's vision for the future is that it will be a leader among public universities in meeting the needs of students and all citizens for lifelong learning, health care, and the advancement and sharing of new knowledge. In order to meet both this vision and the supporting objectives in the University's Strategic Framework document, the university must reach out beyond our traditional campus borders. We must expand and build our university network, so that all the citizens of Nebraska can have all have the same learning experience regardless of location.

The ability to collaborate effectively across institutional boundaries is specifically and critically important to researchers in higher education. The National communication networks that are being developed today can provide researchers and students with a fast and effective means of communicating with each other, with industry, and government.

As a prominent research university, the University of Nebraska must take advantage of the opportunities offered by national and statewide networking.

The Internet 2 Initiative

In addition to constructing a statewide network to satisfy the requirements of the University in general, the University of Nebraska is a member of and fully intends to support the design goals of the Internet2 project. The University currently partners with six states, (North Dakota, South Dakota, Kansas, Oklahoma, Arkansas and Nebraska) to connect to and build an Internet2 GIGAPOP in Kansas City. This project, known as the Great Plains Network, (GPN) allows all six states to have supporting connections to the National Science Foundation vBNS and the commodity Internet.

- **Student Information Systems**

The Board of Regents unanimously passed a resolution which calls for the standardization of all administrative computing systems, especially including but not limited to student information systems (SIS), across all campuses of the University of Nebraska.

The intent of this resolution was to address concerns related to the fact that each campus currently operates their own unique version of a student information system.

- UNL and UNO currently operate separate copies of the IBM DB2 (relational data base) version of the SCT SIS+ system which operates on the UNCSN mainframe computer.
- UNK also operates a version of the SCT SIS+ system which runs on a UNK DEC Alpha platform without a relational database.
- UNMC runs an in-house developed student information system which runs on a UNMC RS6000 computer.

The software vendor, SCT, has now announced that it will no longer enhance the SIS+ system but will focus its effort on its Banner program. If Banner is shown to work at the University of Illinois for large campus installations we may be able to migrate to the Banner platform. But planning to deal with this issue on a system-wide basis is now urgent.

As a result a University wide effort to replace the current student information system (SIS) will be underway shortly. The information architecture vision for the institution is based on centralized coordination, distributed applications, local control, graphical user interfaces with a rich set of consistent functions, and information access and reporting capabilities.

- **SAP - Financial and Human Resource System**

The University adopted a charter, signed by the President, which lays out the support organization for SAP, the leadership and the mission. The Chief Information Officer (CIO) and the Assistant Vice President and Director of Finance (AVP-DF) are charged with directing this effort; however the strategic business vision will come from the "University". Therefore, the Council of Business Officers (CBO) together with the Council of Academic Officers (CAO) shall provide the Administrative Systems Group (ASG) with a prioritized list of objectives (upgrades, new modules, increased functionality, etc.) once a year and update the prioritization each succeeding twelve months.

Current expectations of the charter include:

1. **Ongoing System Support** – This portion of the workload represents a significant portion of the work of the team. The Director of the ASG and the Technical Lead will provide coordination and direction for the team. These two individuals will create a process for the ASG team to identify, prioritize and monitor tasks. Currently the Director of the ASG and the Technical Lead continue to work on this project.
2. **Business Process Review** – The charter stated that a recommended plan for reviewing business processes covering at least two fiscal years will be submitted to the CBO's by the Financial Systems Task Force (FSTF), consistent with the prioritization established by the CBO's and based upon input from the ASG. The CBO's adopted a plan (including appropriate timelines, human resource requirements and budget commitments necessary) to accomplish this task. The CBO's will re-evaluate the plan before each July 1 thereafter. To date the FSTF has proposed a pilot project to review the timekeeping systems of the University. The project has a tentative started in November 2001 and was completed on February 28th, 2002.
3. **Workflow** – The charter stated that the ASG will develop a pilot workflow project to be included in the initial business process improvement plan. The

ASG has developed an approach to the workflow project and has identified potential applications for a pilot project. Extensive internal research has been done to familiarize ASG staff with SAP Workflow processes and arrangements are being made to bring in consulting expertise.

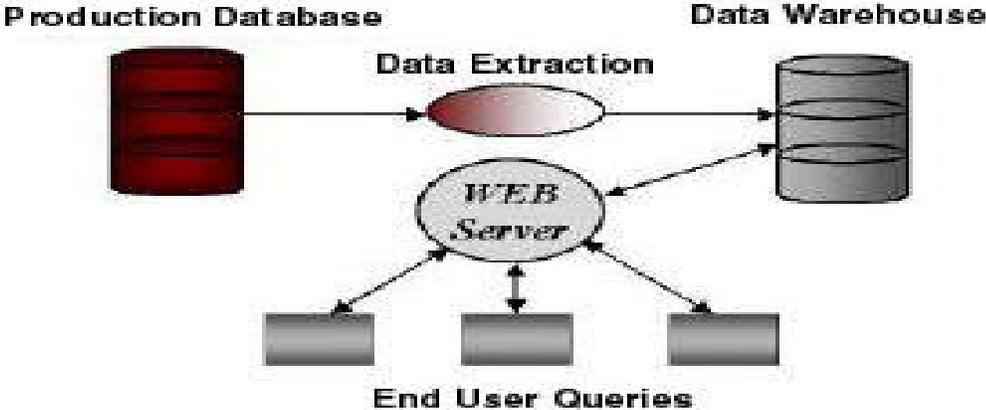
4. **Training** – The charter stated that the training program will be assessed, evaluated and updated at least annually. This task will be a joint effort of the ASG and the campus primary resources including the training coordinators. User input will be the primary driver.
5. **Hardware and software** – The charter recommended a plan be prepared (including appropriate timelines, human resource requirements, and associated budget commitments necessary) to support the SAP upgrade with appropriate hardware will be submitted to the CBO's by the AVP and CIO consistent with the strategic guidance and based upon input from the ASG. This task has been accomplished and new mainframe hardware has been ordered. Additionally the implementation of SAP has progressed to a point where the number of licenses and types of licenses also needs to be increased and reconfigured. In addition, SAP's strategic development direction has shifted since our original contract was put in place in 1997, with enhancements concentrating on web-based access which puts needed information on users desktop. This enhanced user interface is known as MySAP.com©. SAP, in exchange for extending the contract before the end of calendar 2001, SAP has agreed to expand our license to include the MySAP.com functionality. Additionally, concessions on back license fees would be made while future maintenance fees would be locked in for a multi-year period yielding an overall savings to the University versus continuing the current contractual arrangement and its escalating cost. This action was approved by the Board of Regents on December 8, 2001
6. **Virtually Integrated System** - One of the obstacles to our virtual or integrated university vision is the number of disparate systems, each with its own security hierarchy. In order to progress towards B2B and a seamless and paperless system, we need to provide a more coherent approach to security. Currently a working group made up of campus representatives and chaired by the Associate Vice Chancellor for Information Technology at UNL is working on this issue.
7. **Data Archiving** - The Director of ASG and the CSN Technical Lead shall create a plan for data archiving. To date the data archiving software has been successfully installed and an overall plan for daily operation is being developed.
8. **NU Values** – The team recognizes that NU Values is a priority of the University and needs to be included in any administrative plans. The ASG team will coordinate with the Human Resources staff working on NU Values in order to facilitate the best overall solution for the University. The ASG

team has begun to configure the necessary system changes to allow the NU Values test family groups to proceed. Final timing for the project has yet to be determined.

- **Management of Data**

Driven by increasing end-user need for more integrated information and demand for flexible reporting, a capability not present in the core business or existing legacy systems, several years ago the Computing Services Network (CSN) embarked on a project to construct a data warehouse called NULook. The effort, was to undertaken to prove the viability of data warehousing technology, it's applicability at the University of Nebraska, and provide users with more access to data for operational and reporting purposes.

The most important reason we built the Data Warehouse was to respond to the tremendous need of all business units across the University for access to a consistent environment containing integrated data to produce and report on a wide range of tactical and strategic information. Our core business systems are designed to move transactions of data rapidly and efficiently between the data base and end user's screens. Unfortunately, the transactional database is virtually impenetrable, and therefore unusable, for information access purposes. Information requirements for decision support and daily operational functions are increasing almost geometrically reinforcing the need for the data warehouse. A Data Warehouse enables the ordered and periodic extraction of data from the core business systems, and its placement in an environment designed specifically to facilitate reporting and ad hoc querying; i.e., the turning of data into information. Significant reasons for our continued development of our data warehouse include:



Improved access to data: Because of the "stove piping" or "silo effect" of our core business systems, access to data across departments is difficult and cumbersome. Each system requires a new user to obtain authorization, a user ID, password and level of security. Once access is obtained, each of the systems is tuned for the process and not necessarily for providing the information captured during the

process. NULook, on the other hand, was designed to enable the end users all eligible data sources in a common environment with one user ID and access to the information, in a timely and easy way.

Reduced workload on operational systems & personnel: NULook was designed specifically to enable tactical & strategic reporting, reduce the impact on operational systems by moving the information production process to a different platform. Additionally, the operational reports (including current backlog) or flat file extracts can be furnished through NULook providing programmers more time to add or correct system functionality to the core business systems.

Improved data quality and consistency: Software products purchased from various vendors over a period of time, as well as information systems built in-house; do not share the same functional information structures, conventions or even meanings. The data contained in these systems are generally not integrated or consistent. NULook brings data from disparate systems into formal processes to create a single, consistent and clean data set to facilitate improved reporting.

Improved interdepartmental communication: The "freedom" of decentralization can result in inconsistent views of operational data arising from the use of "shadow" systems which may lead to lost effort in reconciliation or duplication of effort. Centralized information obtained from NULook can improve consistent communications.

Improved decision making: The ability to analyze - not just report - data, discern historical trends and forecast strategic directions are a key component of successful leadership. Availability of timely, reliable information can assist users in making the right strategic decisions for the University of Nebraska.

Improved measurement of service levels: Just as better information enables better decision-making, the ability to measure key success factors reliably and continually can improve service levels. For example, the ability to consistently and accurately monitor campus-wide work processes over time can lead to identification of "bottle-necks" in work processes and can ultimately lead to changes which will eliminate those bottle necks.

We will expand our use of NULook by working together to meet the needs of senior administrators, staff and faculty,

- **Security and Middleware development**

Homeland security and bioterrorism.

Recent terrorist incidents have made it clear that information delivered in an effective manner, and in the appropriate venue, can serve to: 1) provide health and safety professionals with guidelines for proper treatment; 2) provide public officials with guidance for policy formation; and 3) facilitate responsible public reactions and actions. Much established clinical and basic science knowledge, as

well as practical advice, is available regarding most of the agents. Clearly, the people of Nebraska, and indeed the nation, are concerned about preparedness for bioterrorism events. They are searching for high quality information and the assurances associated with knowing that responsible institutions, such as the University of Nebraska, are working to confirm or establish the highest possible levels of preparedness for bioterrorism in any form.

We will therefore utilize the University's information technology expertise to help establish the state as a leader in electronic communications and bioterrorism surveillance. Capability provided by the University education and research network, rural medicine outreach program, Peter Kiewit Institute, and academic information sciences programs should be leveraged to accomplish this goal. The University will work closely with State government in this initiative to pursue projects supported by new Homeland Security programs, particularly in the area of information technology.

Middleware and Single Sign

A U-wide task force has been organized to address this issue: The charge to the task force was to research and define what is meant by 'security middleware' and 'single sign-on,' and identify any future collaborative implementation opportunities.

The approach is to:

1. Have each campus will provide an overview of the security requirements on their campus (for networking, hardware/OS platforms, and applications), and discuss how they are currently addressing these issues.
2. The task force members will agree on what 'security middleware' and 'single sign-on' mean.
3. After reviewing the requirements and developing a common definition set, identify what type of shared implementation opportunities there might be.
4. Develop a plan and format for projecting cost/benefit for each opportunity.

This process will address the three middleware layers that make up the Middleware Infrastructure.

1. *Middleware-Based Networking or Networking-Oriented Middleware Services*
Below the core middleware services, at the boundary of the network layer, lie a number of services that can be classified as middleware-based networking or network-oriented middleware. These services include: secure multicast and bandwidth brokering.

2. *Core Middleware Services*

Core middleware services are those that all other middleware services depend on. These services include: identifiers, authentication, directories, authorization, certificates and PKI.

3. *Application-Oriented Middleware Services*

Above the core middleware services are a number of types of application-oriented middleware. A grouping of such middleware for higher education includes services for ubiquitous computing, and support for administrative computing (or, business application middleware).

For our purposes, security middleware will be viewed as the 'core middleware services' and defined as follows.

Identifiers – A set of computer-readable codes that uniquely specify a subject.

Authentication – The process of a subject electronically establishing that it is, in fact, the subject associated with a particular identity.

Directories – Central repositories that hold information and data associated with identities. These repositories are accessed by people and by applications to, for example, get information, customize generic environments to individual preferences, and route mail and documents.

Authorization – Those permissions and workflow engines that drive transaction handling, administrative applications and automation of business processes.

Certificates and PKI – Certificates and PKI are related to the previous four core middleware services.

Single Sign-on – The original definition of single sign-on (as defined by MIT with their Kerberos efforts), stated that you must support authentication, authorization, and authorization aliasing components in order to provide single sign-on capabilities. Authorization aliasing is important because a service may know that the individual making the request is genuine and authorized to make the request, but to perform the request, the service may have to access a database that is secured by an independent system (like SAP or SIS+). The individuals may be identified in this database differently than they way they have been identified to the service.

There continues to be discussion that the University of Nebraska might want to look at identifiers and passwords only (basically, authentication) and not authorization.

- **Training**

The growth of technology innovation and usage on our campuses during the past 10 years has had huge implications for information technology training staff. Computers are firmly established as the keys to today's educational environment. However, levels of computer competency vary considerably from school to school, department to department, and individual to individual. Common information technology training challenges facing our campuses include:

- Developing and offering a variety of training programs that meet the diverse technology needs of students, staff, and faculty.
 - Providing on demand and just-in-time training to increase productivity levels, understanding of software applications, knowledge of the Internet, and web design skills.
 - Keeping current and up-to-date with the multitude of new courseware.
 - Aligning training programs to the needs and work of departments, campus communities and end users.
 - Overcoming hardware/software differences across campuses.
 - Providing high quality, cost-effective information technology training.
- **Staffing**

Over the past several years, our campus and statewide network infrastructure has grown dramatically and a number of new, major applications have been deployed. We have also in some cases doubled the size of our campus networks by wiring residence halls, adding multiple and needed web services, and doubled the number of servers. While some permanent and temporary positions have been added to support this, we have reached a point where the decision to proceed with additional major projects must include a serious discussion of personnel support for the project.

- **Web Services and the creation of a Virtually Integrated University of Nebraska**

Based upon the Board of Regents desire to standardize systems, the University is in the process of developing a Virtually Integrated University. The virtually integrated enterprise (VIE) model is a logical linking of somewhat independent systems, such as SAP, SIS and the Data Warehouse. Our effort will create a virtually integrated administrative environment designed to fulfill our user's needs via one web site. It is a logically – not physically — defined environment.

The concept we are extolling is closely aligned with the notion of enterprise portals — windows into our University information, applications and processes. They have the same basic attributes of Internet portals, but they have some very important differences and additional features. More powerful than internal home pages, enterprise portals will become a key component of unified application access, information management and knowledge management within the University of Nebraska and also between their trading partners.

We will have to classify our enterprise portal efforts to accommodate the kind of data we are searching either structured or unstructured. Structured data (data warehouses, data marts, application databases) come primarily from the business and (ERP) markets. Unstructured data (office documents, Web documents) are emerging from document management, knowledge management, Web publishing and content management disciplines.

Aggregation of University information, creation of taxonomy, data warehouse functionality and personalization all depends on a common language defining data attributes. Systems providing high levels of portal functionality recognize that a metadata repository, or dictionary, is required. In the absence of a dictionary, items will be categorized incorrectly or under multiple identities, reducing the effectiveness of searching and personalization. We must thoroughly understand the dictionary architecture of potential portal vendors

As a result of this ongoing effort the University of Nebraska recently won the Best Practices Award for their Virtually Integrated University effort from the Center for Digital Government. The Center for Digital Government is a national research and advisory institute providing government and industry leaders with decision support, research and education services to help them effectively incorporate new technologies in the 21st century.

The Center for Digital Government presented their 2001 Best of Breed Programs comprising case studies excerpted from the 2001 Digital State Survey. Their purpose in developing this report is to share these technology applications and best practices with others who are engaged in, or are contemplating, similar projects.

The University of Nebraska System was selected for a best practices award due to their vision and partnership with software supplier Blackboard Corp. This partnership was the cornerstone of its computing architecture: the Virtually Integrated University. This new model applies a portal strategy to create an environment that links somewhat independent administrative systems, such as SAP, student information systems and the data warehouse. It also gives students and faculty the ability through technology to have university information all on one website. The process was launched in fall 1999 at the cost of \$240,000; the project is in various stages of development, with each campus using some form of the portal's services. In the near future, it will add an array of features, including a distance education catalog and student information, such as class registration capabilities, and the ability to check the status of financial aid, grades and bills.

4.B. Future IT Projects

List significant information technology projects which are expected to be undertaken by the agency during the next two years.

| PROJECT | STATUS (start date, etc.) |
|---|---------------------------|
| Statewide Networking | On Going |
| SAP 4.6c upgrade | Summer 02 |
| Blackboard Academic Portal | On Going |
| SIS 24/7 operational ready | Summer 02 |
| SAP Grants | Summer 02 |
| SAP Enhancements | On Going |
| SIS Enhancement | On Going |
| Web Enhancement and Virtually Integrated Univ | On Going |
| Training | Summer 02 |
| Middleware and security | On Going |
| Mainframe upgrade | May 02 |
| LINUX research | On Going |

Agency Comprehensive Information Technology Plan

Agency: University of Nebraska at Kearney

Date of last revision to this plan: 02/19/02

1. Agency Contact Information

Person responsible for Information Technology in this agency:

Debbie Schroeder
308-865-8950
schroederd@unk.edu

2. Agency Mission, Goals and Objectives

The University of Nebraska at Kearney is located in the heart of the Platte River valley, 140 miles west of Lincoln. Kearney is Nebraska's fifth largest city and is an agricultural, commercial, medical and cultural center of a large mid-state region. The institution was Kearney State College until July 1991, when it became a part of the University of Nebraska system. The campus is situated on 253 acres.

Approximately 6,500 students are served by UNK through its colleges of Business and Technology, Education, Fine Arts and Humanities, and Natural and Social Sciences. In addition, the University of Nebraska Medical Center offers Nursing on the UNK campus. Undergraduate degrees offered by UNK are: Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Arts in Education, Bachelor of Science, Bachelor of Science in Education, and Bachelor of General Studies. UNK maintains a faculty of approximately 360 full-time equivalent members.

A wide variety of pre-professional programs also is available, as are Master's degrees in multiple disciplines.

The University of Nebraska at Kearney strategic plan, including the role and mission statement, is located at aaunk.unk.edu/strategicplan/I.htm

3. Current Use of Information Technology

3.A. Existing IT Environment

3.A.1. Applications

Off-the-shelf Applications

Number of users

Productivity Suite (word processing, spreadsheet, etc.)

| | |
|--------------------------|-----|
| Microsoft Office | 825 |
| Corel WordPerfect Office | 15 |
| Other (Specify): | 0 |

Internet Browser

| | |
|-----------------------------|-------|
| Microsoft Internet Explorer | 1,300 |
| Netscape Navigator | 900 |
| Other (Specify): | 0 |

Document Viewer

| | |
|------------------|-------|
| Adobe Acrobat | 1,300 |
| Other (Specify): | 0 |

Anti-Virus Software

| | |
|------------------|-------|
| Norton | 0 |
| McAfee | 1,300 |
| Other (Specify): | 0 |

Other off-the-shelf applications:

| | |
|---|--------------------------------|
| AdobePagemaker, Photoshop, Illustrator, AfterEffects, Premier | |
| ArcView | AutoCAD |
| Benchtop | Cadenza |
| CEO Scheduler | ClarisWorks |
| CONNX | Digital Pathworks, VT320 |
| Dreamweaver | EasySync |
| Filemaker Pro | FoxPro |
| Freehand | FrontPage |
| Gateway Web Tests | Geometric Sketchpad |
| GWI Helpdesk software | InDesign |
| Innovative Interfaces | Jaws |
| Jolly Giant GWS3270 | Lotus 1-2-3 |
| Lotus Notes | Macromedia Director |
| Maple | Mathematica |
| Microsoft IIS, Works, Project, Visual Studio, Visio | |
| Naturally Speaking | Netscape Communicator |
| Norton Utilities | Oracle |
| Paradox | PC Anywhere |
| PowerLaboratory | QuickBooks |
| SAS | Scientific Notebook, Workplace |
| SCT SIS Plus | SQL Server |
| Solidbuilder | Sorenson Broadcaster |
| SPSS | Sun StartOffice |
| Symantec Ghost | Timberline |
| Turbo Pascal | Uniprint |

White Pin 5pm, WebTerm

WordStart

Custom Applications:

Cash Receipting
Event Calendar
Internal budget tracking
Athletics student status query
Motor Pool tracking/billing

3.A.2. Collaboration and Workflow

E-mail

| | Number of users |
|--------------------|-----------------|
| Lotus Notes | 815 |
| Microsoft Exchange | 0 |
| POP3 Application | 140 |
| Office Vision | 0 |
| Other-Web Browser | 7,000 |

Calendaring and Scheduling:

Lotus Notes/Domino

Document Management and Imaging

PaperVision/PaperFlow

Work Flow

Lotus Notes/Domino

3.A.3. Data

Databases:

Library—card catalog, patron data
Student—Financial Aid, Admissions, Student Records, Student Accounts, Housing
Public Safety data-permits and tickets
Subject index to Kearney Hub and Omaha World Herald
Index of collection of company annual reports
Subject index to uncataloged items in UNK archives
Diebold ID card system
Blackboard

CBT project

Data Exchange:

Under the Department of Education, we exchange data for NSLDS, CPS, NSLP, and VA.

Other universities-student transcripts

Student directory data for publisher

ACT

University of Nebraska Central Administration-various SAP files

NSSE Student Sample

University of Nebraska Data Warehouse

3.A.4. Electronic Government -External

3.A.5. Electronic Government -Internal

3.A.6. Hardware, Operating Systems, and Networks

| | | | |
|----------|----------------|---|--|
| Dell | PowerEdge 2300 | Windows NT Server 4.0 | Web services for computer based training |
| Dell | PowerEdge 6300 | RedHat Linux 6.2 | CourseInfo |
| Dell | PowerEdge 2300 | RedHat Linux 7.1 | DNS |
| Dell | PowerEdge 2300 | Windows NT Server | Backup DNS |
| Dell | PowerEdge 2300 | Windows NT Server 4.0 (Terminal Server Edition) | Windows-based terminal services for Finance Office |
| Dell | PowerEdge 2300 | Windows NT Server 4.0 (Terminal Server Edition) | Windows-based terminal services for Otto Olsen lab |
| Dell | PowerEdge 2300 | Windows NT Server 4.0 (Terminal Server Edition) | Windows-based terminal services for Otto Olsen lab |
| PowerMac | G3Server | MacOS X Server | Macintosh-based network boot and software management services for Otto Olsen lab |
| Dell | PowerEdge 2300 | RedHat Linux 5.2 | Internet e-mail gateway |
| Dell | PowerEdge 2300 | Windows NT Server 4.0 | Lotus Notes/Domino application server |
| Dell | PowerEdge 2300 | Windows NT Server 4.0 | Touchnet transaction server for web-based SIS |

| | | | |
|----------------|--------------------|-----------------------|---|
| | | | applications |
| Touchnet Built | Server | Windows NT Server 4.0 | Touchnet Payment Gateway |
| Dell | PowerEdge 4300 | Windows NT Server 4.0 | File/Print sharing, DHCP services, WINS services, backup domain controller for NT network |
| Dell | PowerEdge 4100 | Windows NT Server 4.0 | Student print services |
| Dell | PowerEdge 2100 | Windows NT Server 4.0 | Primary Domain Controller for NT network |
| Macintosh | PowerMac G3 Server | MacOS 8.1 | Macintosh file and web services |
| Compaq | Proliant 6400R | Windows NT Server 4.0 | Domino server for faculty/staff |
| Compaq | Proliant 6400R | Windows NT Server 4.0 | Domino server for students |
| Dell | PowerEdge 2300 | RedHat Linux 6.1 | Campus list server |
| Dell | PowerEdge 2300 | Windows NT Server 4.0 | Database server for Public Safety ticketing system |
| Compaq | Alphaserver DS10 | OpenVMS | Administrative System support |
| Compaq | Alphaserver DS10 | OpenVMS | SMTP gateway to Internet |
| Digital | AlphaStation 200 | OpenVMS | Administrative System support |
| Digital | AlphaStation 255 | Unix | Library database/software |
| Periphonics | VPS 7500 | Proprietary | Interactive Voice Response |
| Diebold | Pentium class | OS/2 | ID card system |
| Diebold | Pentium class | OS/2 | ID card database |
| Dell | Optiplex GX400 | NT 4.0 | Academic Affairs web server |
| Dell | PowerEdge 2200 | NT 4.0 | Chemistry Department |
| Dell | PowerEdge 2400 | NT 4.0 | IIS applications |
| Dell | PowerEdge 2550 | NT 4.0 | Document Imaging |
| Dell | PowerEdge 2450 | RedHat Linux 7.1 | Eprint |
| Dell | PowerEdge 2550 | Windows 2000 | CBT Database |
| Dell | PowerEdge 2400 | Windows 2000 | Blackboard test |

| | | | |
|---------|-------------------------------|---------------------|-------------------------------------|
| | | | database |
| Dell | PowerEdge 2400 | Windows 2000 | Blackboard test application |
| Dell | PowerEdge 6400 | Windows 2000 | Blackboard production database |
| Dell | PowerEdge 6400 | Windows 2000 | Blackboard production application |
| Dell | PowerEdge 6400 | Windows 2000 | Facilities file and terminal server |
| Dell | PowerEdge 2300 | NT 4.0 | WebEASI/ WebSMART |
| Dell | Optiplex | Windows 95,98,NT | Desktops |
| Apple | Powermacs | Mac OS | Desktops |
| Digital | Starion | Windows 95 | Desktops |
| Dell | PowerEdge 2300 | NT 4.0 | Paris |
| Dell | PowerEdge 2300 | Linux Red Hat 6.1 | QMaster |
| Archer | Pentium II | NT 4.0 | Paris Development |
| Apple | Mac Server G3 | Mac 8.6 | Web Server |
| Apple | Mac Server G3 | Mac 8.6 | Web Server |
| Apple | Mac Workgroup Server 8150/110 | Mac 7.6 | Web Server |
| Apple | Mac Workgroup Server 8550/200 | LinuxPPC 1999 | Web Server |
| Apple | Mac 7100/80 | MkLinux | Web Server |
| Apple | Powermac G3 | Mac 8.5 | Backup Server |
| Apple | Mac G4 Server | Mac OS 9.1 | Web Server |
| Apple | Mac G4 Server | Mac OS 9.1 | Web Server |
| Apple | Mac G3 | Mandrake Linux 8.0 | Web Server |
| Apple | Powermac G3 | Mac OS 9.1 | Web-CGI Server |
| Apple | Mac G4 Server | Mac OS X Server 1.0 | QT Streaming Server |

Desktop Operating Systems:

Number of Users

| | |
|-----------------------|-----|
| Windows 3.1 | 10 |
| Windows 95, 98, or ME | 675 |
| Windows NT | 55 |
| Windows 2000 | 375 |
| Windows XP | 5 |
| OS/2 | 0 |
| Linux | 15 |
| Mac OS | 325 |

Networks – LANs and WANs

UNK's campus network is based on 10 and 100 MHz Ethernet technology. Since its inception, the campus network was based on a star arrangement implementing a router-centric collapsed backbone topology. Every building on campus, including the residence halls, is connected to Information Technology Services in the Otto Olsen building via multi-mode and single-mode fiber. Most academic and administrative buildings are wired with enhanced Level 5 Lucent Technologies (AT&T) 100+ Mbps High-5 Systemax Premises Distribution System. The residence halls and renovated areas of West Center have Lucent's GigaSPEED copper cabling offering over 1000 Mbps of bandwidth. The recent residence hall and West Center upgrades funded switched networking equipment in those facilities. The central core of the network places each building in its own routed VLAN(s) attached to a central switch fabric. The core is capable of layer 3, layer 4, multicast and Quality of Service (QOS) decisions, and hence, is well suited to supporting future multimedia and distance learning applications.

Internet access is provided via a dedicated 45Mbps DS3 circuit to Lincoln providing access to the general Internet, Internet-2, and the Great Plains Network.

UNK's central servers and major labs moved from shared segment equipment to switched network technologies, substantially increasing throughput to the servers and labs. ISDN access is supported by an ASCEND MAX 4000 WAN access unit with 24 ports. ISDN is utilized by the Museum of Nebraska Art, the Safety Center, the Airway Science program at the Kearney Municipal Airport, and various faculty and staff. DSL service is new to Kearney, so we are in the early stages of its deployment. The Alumni House moved from an ISDN to DSL connection during the summer, 2001.

Networks – Operating Systems

| | |
|---------------------------------|-------------|
| Novell Netware | 10 users |
| Windows for Workgroups | 10 users |
| Windows 9x Peer Networks | 15 users |
| Windows NT | 1,325 users |
| Windows 2000 | 25 users |
| OS/2 LAN Server and Warp Server | 2 users |
| Other – Pathworks | 20 users |

3.A.7. Staffing

Information Technology Services has 21 permanent staff, 5 part-time student workers, 7 part-time TECH Assistants, and 12 part-time lab monitors. The responsibilities of the permanent staff include network services; application development; client services, including helpdesk and training; hardware and software purchasing; Web design and support services; systems management and desktop support; and multimedia services. Part-time student workers assist with networking, purchasing, helpdesk and lab support.

TECH Assistants provide technical support to students living in the residence halls who wish to connect a personally-owned computer to the campus network. Lab monitors are employed in the general-purpose computer lab located in the Otto Olsen building.

The College of Business and Technology, the College of Education, the College of Fine Arts and Humanities, the College of Natural and Social Sciences, and the Ryan Library have each hired a Technology Coordinator to provide hardware and software support for faculty and staff desktops as well as for student labs and to supervise part-time student workers who serve as lab monitors and technology assistants.

The Center for Distance Learning has a director and two technicians to provide support for distance education classes.

Within Academic Affairs, a Coordinator for Assessment provides web page support for the division. Many divisions, departments, and offices hire part-time student workers to assist with hardware and software support and to create and maintain Web pages.

An Assistant Director of Financial Aid and an Assistant Director of Registration and Records provide technical support for their respective offices.

There is no contract staffing.

3.B. Value

On the UNK campus, Information Technology Services supports both the administrative and academic functions of the campus. It is difficult, if not impossible, to separate administrative from academic functions; administrative capabilities are critical resources for academic users and academic capabilities are needed by administrative users. The institutional databases record the enrollment, progress, transcripts, and graduation of students, and the financial databases record financial transactions. Student enrollment in courses generates billing statements and student payments update both student accounts in the Student Information System and ledger accounts in the SAP financial system. This integration greatly reduces the amount of work necessary for administrative processes.

Since every classroom is wired for network access, the academic servers and resources can be used to directly support instruction. Multimedia classrooms are available and provide high-quality display from a variety of video and audio sources. Blackboard Enterprise Edition is available for the development of Web-based courses and Web-based components for traditional courses. Software applications used by students and faculty and communication with the network are critical components of a high quality learning environment. Modernized library and information access capabilities on the network are equally important.

The deployment of Lotus Notes across the campus has improved the efficiency of computing use. The upgrading of student computer labs and the standardization of software in the labs has improved the service available to students. Network access

within the residence halls allows widespread use of network resources by students living on campus.

The value to UNK of these facilities and capabilities is fundamental. There is no way to quantify it, except to say that UNK could not operate without these systems, and the people who install, maintain, and modify them.

3.C. Information Technology Training

Training for users of Information Technology is available for faculty, staff and students.

Student training is offered on a regular basis for technology resources that are available to students and may involve hands-on sessions or demonstrations. Sessions include desktop operating systems, Microsoft applications, Web-based training, and e-mail. IT staff offer two-hours sessions throughout the semester as well as training to academic classes as requested by the faculty.

Staff training is mandatory for administrative systems, including the financial system (SAP), and Student Information System (SIS).

Faculty training needs vary greatly and training consists of hands-on sessions, demonstrations, and one-on-one opportunities. Faculty training includes:

- Use and maintenance of electronic communications (e-mail, discussion boards and chat rooms)
- Web-based training (Blackboard, web page design, creation and maintenance - both raw html and page editors; and SiteEdit software)
- Microsoft products (Word, PowerPoint, Excel, Publisher, and Access)
- Use of multimedia hardware (projection systems, digital cameras, digital video, laptops, Ethernet or modem cards)
- Adobe products (Acrobat, Photoshop, PageMaker)
- Student Information System for advising purposes

The following attendance statistics are available for the period beginning July 1, 2000 and ending June 30, 2001:

| | |
|----------------------|------|
| SAP training | 90 |
| SIS training | 53 |
| Computer Software | 256 |
| E-mail | 39 |
| Web-based training | 1354 |
| Multimedia Equipment | 53 |

The cost of training for IT staff and the small number of staff available to support technology at UNK limit the training that the campus can afford to provide for IT staff. Half of the Information Technology Services staff members receive some training on an

annual basis, but given the projected budget cuts, training opportunities will be extremely limited. Training focuses on each staff member's area of responsibility, their technical strengths, and the anticipated needs of the institution.

3.D. Security

Has your agency implemented the NITC's Security Policies? No.

If your answer to the previous question is NO, is your agency in the process of implementing the NITC's Security Policies? No.

If your answers to the previous two questions are NO, has your agency implemented other security policies? Yes.

Please provide contact information for the person responsible for IT security:

Name: Debbie Schroeder
Phone Number: 308-865-8950
E-mail: schroederd@unk.edu

Beginning with the days of punched cards, our campus has had security measures in place related to access to hardware, software, and data. Security has evolved as technology as evolved. Our rules and regulations have been designed to work for our campus using our limited fiscal and staffing resources, yet fulfilling regulatory obligations.

Following recent events in the U.S., we are addressing security issues from a different perspective. At the top of our list of security priorities is assuring that our "house is in order." Patches for flaws in network software and in operating systems and the elimination of default settings for hardware and software installations are basic first steps. Securing physical access to machine room servers and network equipment in campus buildings requires cooperation between Facilities and IT. A university-wide task force has been organized to address security issues and share information, ideas, and solutions among the campuses.

3.E. Disaster Recovery and Business Continuity Planning

Does your agency have a disaster/emergency recovery plan? Yes.

Does your agency perform regular back-ups of important agency data? Yes.

Does your agency maintain off-site storage of backup-data? Yes.

Information Technology Services at UNK has a disaster recovery plan focusing on administrative functionality that is updated annually. A new plan is in the development

stages that will incorporate a broader view of a disaster (due to the events of September 11, 2001) and include mission-critical academic services.

3.F. Accessibility (Technology Access for Individuals with Disabilities)

Does your agency include the Nebraska Technology Access Clause in contracts for information technology purchases? No.

Does your agency have procedures in place to identify the information technology related requirements of users with disabilities? No.

Does your agency provide training opportunities for management, procurement, and technical personnel on how to meet the accessibility needs of users with disabilities? No.

4. Future Uses of Information Technology

4.A. Strategies and Future Direction

An Information Technology Strategic Plan for the University of Nebraska at Kearney was approved by Chancellor Gladys Styles Johnston in January, 1999. This document was developed to identify, based on campus-wide input and advice, the principles, long-term objectives, and priorities that should govern our near-term action plans and resource allocation. The plan was revised in 2001. The IT Strategic Plan provides a succinct, consolidated vision of what we intend to accomplish over the next several years as we deploy technology in light of our mission and aspirations as a teaching university. It continues to be a “living document” that is reviewed continuously and adjusted from time to time to take account of changing circumstances and new opportunities.

To support the strategic initiatives recommended in our plan, a number of issues are addressed:

- Student computer labs are updated on a three-year schedule.
- Printing capabilities are continually improved.
- Software licensing options are reviewed to provide appropriate software for faculty, staff, and students at the best pricing.
- Port-per-pillow network access is provided in all residence halls.
- Student services, such as application for admission, registration, billing, etc. are available via the Web. Additional services continue to be offered and existing services continue to be enhanced.
- Functionality and services via the Web are continually evaluated and added, including administrative services for faculty and staff, course components for students, and streaming audio and video.
- Technology resources for students with disabilities are addressed annually.
- Student assistants are hired to help faculty, staff, and fellow students with technology-related issues.

- One teaching classroom per year equipped with 20-24 individual workstations is constructed for faculty use.
- A minimum of six classrooms per year are equipped with computers, projectors, vcr's and screens, creating Smart Classrooms. In early 2002, 40% of the campus classrooms have this capability.
- Additional administrative functionality is provided to improve the efficiency of business operations.
- Network infrastructure is expanded and improved with the construction of new buildings and the renovation of existing buildings. New technologies are evaluated and deployed as needed and funded.
- Distance education capabilities are evaluated. Video-conferencing over IP is available between Kearney and Omaha.
- Security is an important topic to network and system administrators. Firewalls, intrusion detection, and single sign-on are under consideration.
- A disaster/recovery plan is being revised.
- Assessment of our IT situation occurs on a regular schedule and is used to continually revise our strategic plan.

Principles outlined in the University of Nebraska Strategic Framework document provide a basis for our plan. The University of Nebraska has committed to be a national leader in using information technology to enhance teaching and to expand learning, particularly at the undergraduate level. Specific strategies include integrating new methods of using technology into the curriculum; using technology to make academic programs accessible to learners everywhere; enhancing connectivity among University units; making library resources accessible throughout the State; developing strategic partnerships with other institutions and businesses; and using technology to achieve operating efficiencies.

The Statewide Technology Plan is a dynamic document, as is the UNK Information Technology Strategic Plan, and its purpose is "to promote effective planning and coordination of information technology within Nebraska." The UNK Information Technology Strategic Plan, with the University of Nebraska Strategic Framework document as a basis, is fully supportive of the Statewide Technology Plan, its priorities, and its standards and guidelines.

UNK collaborates extensively with the other campuses of the University of Nebraska in technology development. The following list outlines collaborative efforts that are both ongoing and critical to the UNK campus.

- Lotus Notes has been deployed for e-mail and calendaring functionalities on the University of Nebraska campuses. The project is managed by a team comprised of representatives from the four campuses and Central Administration.
- A network between the University of Nebraska campuses is managed by the network managers from the campuses and Central Administration.
- UNK shares costs with UNL for network connectivity to College Park in Grand Island.
- UNK hosts the UNMC College of Nursing on the Kearney campus.

- UNK shares UNL's high-capacity Internet connection to provide service to the campus.
- UNK has a joint venture with UNMC in managing the Rural Health Education Distance Learning Research Center on the UNK campus.
- UNCSN provides access to MVS for students in Beginning and Advanced COBOL classes and in Assembler language classes offered by the department of Computer Science and Information Systems.
- UNK is collaborating with the other University of Nebraska campuses to negotiate maintenance and purchase contracts that allow us to capitalize on higher discounts offered according to volume of business.
- Since the SAP software provides financial system and human resource system support for all the campuses, we work collaboratively with Central Administration and the other campuses to provide support and interfaces between SAP and campus-specific applications.
- UNK provides Student Information System data for NUlook, the University-wide data warehouse.
- In an effort to provide coordination and communication among Student Information Systems on the four campuses, we participate in user meetings and technical meetings to share information and functionality.
- IP-based video-conferencing between the UNO and UNK campuses allows sharing of classes between the two campuses.
- All four campuses work collaboratively and share experience with the Blackboard Enterprise Edition implementation.
- All campuses participate in a task force to discuss and share security issues.
- The creation of a statewide IP network involves Central Administration and all four NU campuses.

Our four principal remote sites involve cooperation with Community Colleges and other entities at Grand Island, North Platte, Columbus, and McCook. We have the ability to deliver distance education courses over a fiber network through the Tri-Valley Distance Education Consortium, reaching many ESU's and K-12's, as well as College Park.

The biggest threat to the success of our Information Technology plan is complacency. Technology is continually changing and higher education must be able to respond more quickly than in the past. This requires financial resources, but it also requires flexibility, a market-driven orientation, and the desire to address the issues.

Other specific risks include:

- The \$5 per credit hour Student Technology Fee that has been paid by all students since the Fall 1998 provides a consistent flow of funding for technology initiatives that impact students. Both Student Technology Fee income and tuition income are dependent on enrollment, and recruiting new students has become a competitive endeavor. The risk of declining enrollments and, hence, reduced revenue, is ever present.

- To remain competitive in higher education, it is necessary to put technology and associated resources in the hands of students and faculty. Some of the costs related to technology are beyond the control of the campus, primarily those related to networking. For example, the costs for Internet access and high speed connections between campuses are escalating at an extremely rapid rate.

Staff must increase to support the expected increased demands for service and support and allow time for training. More network personnel, more helpdesk support, more direct workstation support personnel, and additional application development staff are imperative if the use of technology is to grow to support the initiatives outlined in our Strategic Plan for Information Technology.

The campus has been fortunate that turnover among the IT staff members is low. Salaries paid to IT workers are below market averages and are not competitive for the region. Although money is the number one reason that people leave one company for another, it ranks number four as the reason that people stay in their current jobs. According to a survey by Career Systems International and The Jordan Evans Group, professional challenge matters most, followed by career development opportunities and working with good people. UNK offers all three to its IT workers.

Important to technical staff are tools, toys, and training. They need appropriate equipment to do their jobs. They need to be trained well. And they want to have fun while doing their jobs. Budget cuts increase the probability that funds for tools, toys and training will not be available. Neither will funds for improving the salary situation. The loss of experienced technical staff members presents a serious risk to UNK.

4.B. Future IT Projects

The communications/information revolution is challenging our methods for doing business in higher education. Some aspects of the revolution will benefit our students and make us more effective and more accessible as an institution of higher learning. Our priorities focus on using technology to manage our institution, to expand our business and to transform our organization.

Managing the Institution

- Bandwidth Scalability

During the academic year when students live in ten residence halls, we see Internet traffic increasing each semester. Our available bandwidth to the Internet is 45 Mbps, and although it may increase to 100 Mbps, the bandwidth is not unlimited. Regulating the use of bandwidth saves dollars that can be channeled to projects that focus on academics.

- Security

While the threat of hackers disrupting services to the campus has existed for years, this issue is addressed in a more serious manner since September 11. Although we have had no disastrous experiences, we have been victims. We have confidential data and mission critical systems that need both electronic and physical security, including firewall and intrusion detection capabilities.

- Data

Many administrators, faculty and staff have identified the need for changes in data collection and for additional data and reports compiled in new ways for management purposes. Requests include:

- Additional financial system reports
- Streamlining of HR time and attendance
- Expanded admissions reporting, including comparative historical data
- Additional data regarding student retention
- Timely faculty workload reporting

- Staffing

Over the past five years, the campus network infrastructure has grown dramatically and a number of new, major applications have been deployed at UNK. Permanent positions were added for technology support in the College of Natural and Social Sciences and in the College of Fine Arts and Humanities, but we have reached a point where the decision to proceed with a major project must include a discussion of support for the project. We doubled the size of our campus network by wiring our residence halls, yet added no new staff to support the network. We added Web For Students and Web For Faculty, replaced CourseInfo with the Blackboard portal, and doubled the number of servers in our machine room, but we did not add staff to support additional applications and hardware.

Our Information Technology strategic plan identifies staffing as an on-going challenge: “Staff support for computer services and information technology support is stretched, and will be challenged to meet the ever-increasing demands for their services.” Although it may be possible to reallocate some existing staff, additional people are needed to support priorities for running the business and to address day-to-day technology needs in a prompt and timely manner.

Expanding the Business

- Statewide network

For distance education, a statewide digital network with bandwidth up to 100 Mbps or more utilizing the TCP/IP protocol will provide the necessary infrastructure to improve delivery of courses. The events of September 11 make video-conferencing and online collaboration more important. With the increase in the use of video-

conferencing, the number of hardware options that provide acceptable quality at low cost is growing. This opportunity should not be ignored.

- **Training and Support**

Although Information Technology Services offers training on basic technology topics such as operating systems and Microsoft applications and colleges and departments provide some training for faculty and staff, additional opportunities are needed to expand the technology expertise of campus users. Particularly, faculty need instructional design assistance and technology support to develop on-line courses and to integrate technology into the curriculum. Instructional Technologists/Designers can provide direct assistance to faculty, serve as technical liaisons to academic departments and evaluate and recommend technology tools and applications to address curricular needs.

The expanding use of Blackboard for on-line courses and for on-line components in traditional courses demands more Helpdesk support for students. Students often encounter difficulties on weekends, when the Helpdesk is closed. When students are unable to resolve technical issues, they are inclined to withdraw from classes. Additional staff for the Helpdesk and a plan to compensate technical support staff for on-call hours are needed.

Very simply, to expand the business, we will need support for technology.

Transforming the Organization

- **Single sign-on**

We have a number of applications that require user logins, including Lotus Notes, WebEASI, Blackboard, SmartForce computer-based training, and SAP. To integrate these applications, one login should allow access to all of them. The Blackboard portal provides a gateway to campus services. Single sign-on would make the gateway useful.

- **Network upgrades**

Our campus network was initially constructed in the early 1990's. Networking technology has changed in ten years and fortunately, renovations and new construction have allowed us to build state-of-the-art infrastructure in some buildings. Other buildings are not capable of supporting connection speeds greater than 10 Mbps, and 100 Mbps and gigabit connections are needed. As funds allow, we upgrade network equipment, but in some buildings, new cabling will be necessary as well as new network hardware.

- **Internet 2**

The Internet was created as a vehicle for exchanging research data and knowledge by academic institutions. Now, with millions of users on-line, academia no longer has adequate Internet resources available to them. In late 1996, 34 research universities (NU was one) began the development of Internet 2. New Internet 2 initiatives allow K-12 schools to participate. UNK has not yet utilized Internet 2, but to maintain a reputation as a technology leader and to stay ahead of the K-12's, UNK needs to commit to participation.

Agency Comprehensive Information Technology Plan

Agency: University of Nebraska-Lincoln
Plan Revision Dates: 2/22/2002, 6/26/2000

1. Agency Contact Information

Person responsible for Information Technology for this agency:

| |
|--|
| Kent Hendrickson, Associate Vice Chancellor for Information Services |
| (402) 472-2311 |
| khendric@unlnotes.unl.edu |

Person to contact for additional information about the agency Comprehensive Information Technology Plan:

| | |
|--|--|
| Kent Hendrickson, Associate Vice Chancellor for Information Services | Dan Cotton, Director, IANR Communications and Information Technology |
| (402) 472-2311 | (402) 472-2821 |
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2. Agency Mission, Goals and Objectives

STRATEGIC GOALS FOR UNL INFORMATION SERVICES 3/15/02

“The core mission of our AAU/Land Grant University is to discover, create, and disseminate knowledge. Because knowledge has been increasingly represented on computers and across networks, strategies that promote the use of technology to enable the free flow of information directly support the core mission of the university.”
(*Strategic Directions for Development of Information Technology*, UNL, August 30, 1999)

The mission of Information Services (IS), in accordance with the institutional mission expressed above, is to provide a leadership role in the application of information technology to research, outreach and teaching and learning; to provide expertise in the development and use of information technology for the administration of the institution; to actively engage and support all members of the UNL community in the use of information technology in support of their daily work; to create and maintain partnerships between IS and other organizations for the development of new and enhanced technologies and services; and to maintain a high-quality, customer-focused information technology organization that provides professional fulfillment and growth for its employees.

The strategies below, taken together, describe how IS contributes to the institution's success. The first two strategies are broad and generate IS-wide goals while the remaining six are more specific and generate unit-specific goals.

Information Services is organized in \sim to three functional units, each encompassing one or more projects (as defined by project accounting) as follows:

| <u>Unit and function</u> | <u>Projects</u> |
|---|--|
| <p>Communications and Operations (C&O) Provides UNL and its state-wide interests with an advanced, reliable, high-performance network; monitors and manages systems; provides Internet services; and serves the telecommunications needs of the university.</p> | <p>Networking Systems and Operations Telecommunications</p> |
| <p>Information Technology Support (ITS) Assists individuals using IT as a tool for teaching, learning, research and outreach by providing user support, training and consulting services as well as sales and management of desktop computing resources. Services</p> | <p>Academic Support Customer Support Computer Sales and Repair Student Technology</p> |
| <p>Information Systems (ISIS) Provide support for the planning, design, analysis and development of information systems and applications; manages campus-wide data integrity efforts; provides project management services; and coordinates the IT architecture.</p> | <p>Information Systems</p> |

In addition, there is a ninth budget project category for IS administration.

Multiple initiatives will clearly be needed to fulfill the goals outlined below. Some will be business-driven, some will be administrative, and some will be technical. This document is not intended to be a full-fledged strategic plan, but rather will highlight the key directions that will position IS to effectively support the institutional mission.

Strategy 1. Provide Technology Leadership

Provide guidance in the adoption of new technologies, the productive use of existing technologies, and the phasing out of outmoded technologies.

IS Goals:

- Advise and collaborate with UNL administrators and campus committees regarding IT planning, best practices and costs.
- Assist the campus community in keeping current with technology, including migration to new systems.
- Evaluate new technologies, involving appropriate stakeholders. Identify the implications of, and plan for, deployment to the University.

Strategy 2. Build an Effective and Accountable IT Organization

Ensure that Information Services facilitates communication, shares expertise, and develops partnerships internal and external to the University.

IS Goals:

- Recruit, develop and retain a quality, customer-focused staff.
- Create and maintain strategic partnerships with vendors to bring new technologies to the University.

- Continue to utilize project-based budgeting and accounting to clearly communicate IS financial information.
- Maintain effective procedures for reporting and tracking problems and for communicating problem resolution status to customers.
- Empower customers to enhance computing skills and resolve technical problems independently by providing them with clear, readily accessible self-help materials.
- Enhance project management and utilize appropriate measurement tools and techniques.
- Continue to foster partnerships within the University community.

Strategy 3. Provide On-Line Information Systems Accessible Anytime, Anywhere

Create, implement and improve systems that enable the effective use of the institution's electronic information resources.

Communications & Operations Goals:

- Web-enable campus information systems as self-service applications whenever possible.
- Promote the use of the university web site to make electronic information generally available, searchable, and retrievable.
- Promote electronic publication of all public documents.

Information Technology Support Goals:

- Assist information providers in making their web-based on-line information accessible, searchable and retrievable.
- Provide assistance as needed to those attempting to access information on line.
- Maximize availability of information delivery systems.
- Whenever ITS information is published to the campus community, ensure that it is also make available on- line.

Information Systems Goals:

- Web-enable campus information systems as self-service applications whenever possible.
- Promote the use of the university web site to make electronic information generally available, searchable, and retrievable.
- Build, enhance, and maintain institutional information systems using industry-leading best practices.
- Support the campus web servers that electronically store all public university documents.

Strategy 4. Deliver a Reliable State of the Art Infrastructure

Develop, deploy, & maintain a dynamic IT infrastructure that meets UNL needs.

Communications & Operations Goals:

- Deliver a robust, reliable and secure environment, capable of supporting critical production services that require 7x24 coverage.
- Proactively ensure that the digital and analog networks always have sufficient capacity before constraints occur.
- Provide users with connections appropriate to their needs (10Mb, 100Mb, gigabit ethernet, wireless, cellular, etc.).
- Enhance reliability and efficiency through the use of "smarter" equipment, redundant connections, proactive monitoring, and by collecting and analyzing usage statistics.
- Where appropriate, strive to combine voice, video, and data on a single network.
- Provide a robust and reliable electronic mail infrastructure.

- Improve access to University of Nebraska resources throughout the state, including IANR's Research Centers and all University/County extension areas.
- Develop redundant operation centers and network distribution points to allow the infrastructure to continue to operate after a calamity.

Information Technology Support Goals:

- Deploy, administer and maintain robust, reliable and secure servers, capable of supporting critical production services that require 7x24 coverage.
- Design, install, and maintain reliable, user-friendly technology-enhanced classrooms that make current instructional tools available for use by all faculty at UNL.
- Deploy Active Directory to improve administration and sharing of Windows-based computing resources.
- Provide centrally-managed, cost-efficient and reliable file and print services to meet unit-level needs.

Information Systems Goals:

- Build a robust application development and deployment infrastructure within the framework of a comprehensive IT architecture.
- Develop a cohesive summary of infrastructure services available for the campus.
- Deliver a robust, reliable and secure environment, capable of supporting critical production services that require 7x24 coverage.
- Enhance reliability and efficiency by incorporating all production services into the Operations Center support schedule.

Strategy 5. Apply IT to Enhance Teaching & Learning

Partner with faculty to incorporate the use of instructional technologies to enhance teaching and learning on campus and at a distance.

Communications & Operations Goals:

- Investigate and deploy appropriate networking technologies to enable computing mobility in the learning environment.
- Provide faculty and students with technologies to facilitate communication regarding course activities.
- Ensure that instructional systems have timely and appropriate access to administrative system data.

Technology Support Goals:

- Help faculty, staff and students develop their skills and support them in utilizing IT tools for teaching and learning.
- Enable the electronic delivery of course content through support for instructional applications and delivery systems.
- Provide technical support to teachers and learners in technology-enhanced learning environments.
- Utilize technology to minimize differences between traditional and distance courses.
- Provide faculty and students with technologies to facilitate communication regarding course activities.
- Investigate and deploy appropriate technologies to enable computing mobility in the learning environment
- Maximize opportunities for widespread use of instructional materials and templates through archiving, re-purposing, sharing and rights management

Information Systems Goals:

- Enhance instructional technology systems with institutional data necessary to support the Integrated Learning Environment (ILE).

Strategy 6. Apply IT to Advance Research

Partner with the research community to use information technologies to advance the University's research mission.

Communications & Operations Goals:

- Support and maintain a general purpose research computing server capable of meeting the needs of the general research community.
- Partner with the Research Computing Facility to enhance high performance computing for University researchers.
- Ensure that networking support is available in all areas where actual research is conducted, including research in the field.
- Facilitate access by UNL researchers to national and international high-performance research and education networks.
- Connect researchers to technological and technology support resources that may be useful in their research activities.

Information Technology Support Goals:

- Partner with the Research Computing Facility to enhance high-performance computing for University researchers.
- Facilitate access by UNL researchers to national and international high-performance research and education networks.
- Connect researchers to technological and technology support resources that may be useful in their research activities.
- Provide researchers with technologies to facilitate communication regarding research activities.
- Assist researchers in describing central IT facilities and services for grant proposals on request.

Strategy 7. Promote, Recommend, Adopt, Implement and Support Common IT Solutions

Provide standard IT solutions that enhance collaboration, communication, and interoperability within the University community and beyond

Communications & Operations Goals:

- Encourage common hardware and software solutions through IS policies and procedures.
- Where multiple tools exist to achieve the same basic results, support the adoption of a single standard tool, and when that is not possible, lead the effort to install the needed infrastructure to ensure that the different tools operate well together.

Information Technology Support Goals:

- Encourage common hardware and software solutions through IS policies and procedures.
- Implement institutional directory services that can be integrated with campus-wide applications such as e-mail and electronic course delivery.
- Base desktop integration with other University applications and services on web browser technology.
- Research and recommend a suite of appropriate solutions that support secure access to restricted electronic information.

Information Systems Goals:

- Ensure that all applications developed by IS conform to UNL's IT architecture.
- Ensure easy and consistent access to data warehouses and data repositories.
- Implement a new LDAP-compliant faculty/staff/student directory capable of handling other shared resources.

- Ensure access to all university applications and data is possible using web browsers.
- Research and implement information security systems that support authentication, authorization, and encryption/decryption solutions.
- Develop a library of application programming interfaces that can be used to share data with business systems (such as SAP), access data from administrative systems, and allow web forms to access, and interact with, institutional data.

Strategy 8. Apply IT to Optimize Individual Work Environments

Support the day-to-day work of faculty, staff and students by providing services to enhance work performance.

Communications & Operations Goals:

- Tailor technology solutions to departmental or individual needs within the framework of the University's IT architecture, recovering costs as appropriate.
- Improve networking and telecommunication services; identify new ways to market them to the campus.
- Investigate and deploy appropriate networking technologies to enable mobile computing.
- Provide faculty, staff and students with technology tools to facilitate workplace communication.
- Support faculty, staff and students in developing their skills in utilizing IT tools for enhanced productivity.

Information Technology Support Goals:

- Help faculty, staff and students develop their skills and support them in utilizing IT tools for enhanced productivity
- Provide technology solutions tailored to departmental or individual needs, recovering costs as appropriate
- Provide faculty, staff and students with technology tools to facilitate workplace communication.
- Provide technical direction and support for the evolution of a UNL web portal.

3. Current Use of Information Technology

3.A. Existing IT Environment

3.A.1. Applications

Off-the-shelf Applications

Provide the number of users, or estimated number of users, for each of the following applications:

| | |
|--|-------------------------------|
| Productivity Suite (word processing, spreadsheets, etc) | Percentage of Machines |
| Microsoft Office | Site license for all machines |
| Corel WordPerfect Office | 115 users |
| Other: EasySync | 200 users |
| Internet Browser | Percentage of Machines |
| Microsoft Internet Explorer | Site license for all machines |
| Netscape Navigator | 50% |
| Other: | |
| Document Viewer | Percentage of Machines |
| Adobe Acrobat | 98% |

| | |
|----------------------------|-------------------------------|
| Other: | |
| Anti-Virus Software | Percentage of Machines |
| Symantec Norton AntiVirus | 500 users |
| McAfee NAI VirusScan | Site license for all machines |
| Other: | |

List any other significant off-the-shelf applications utilized by the agency:

| | |
|---|-------------------------------|
| Web/Publishing Tools: | Percentage of Machines |
| Adobe FreeHand | 5% |
| Adobe Persuasion | 5% |
| Adobe Photoshop | 30% |
| Adobe Premier | 5% |
| Apple QuickTime/QTVR | 5% |
| Microsoft Publisher | 200 users |
| OmniPage | 250 users |
| PageMaker | 5% |
| PageMill | 1% |
| RealAudio/Real Video/RealPlayer | 4000 users |
| Zoom Text | 12 users |
| Geographical Information Systems | Percentage of Machines |
| ESRI (Geographical Info Software) | 198 users |
| ERP Client Software | Percentage of Machines |
| SAP | 700 users |
| Data Managers | Percentage of Machines |
| FileMaker and FileMakerPro | 64 users |
| Microsoft Access | Site license for all machines |
| Network Access | Percentage of Machines |
| FTP and Fetch | 30% |
| Telnet | 100% |
| Statistical Packages | Percentage of Machines |
| SAS | 80 users |
| SPSS | 527 users |

There are also some larger off-the-shelf applications that have been purchased for specialized use. These include, but may not be limited to, the following.

- Athletic Ticket Management System
- Library Information System
- Health Management System (for the Student Health Center)
- Food Services System
- Lied Center Box Office Management System
- Career Services System
- Customer Relationship Management System (for Student Recruiting)
- Inktomi Search Engine (for campus web servers)
- Network Management Systems for DHCP and network routing
- Blackboard 5 (course management system)
- WebCT (course management system)
- WebFOCUS (ad-hoc reporting system)
- ACEWARE (conference registration system)

Custom Applications

List any significant custom applications developed for the agency:

- There are several systems that were purchased from vendors and have been customized to fit the needs of UNL. These systems include:
 - ✓ SCT SIS+ student information systems
 - ✓ SAP financial and human resource systems
 - ✓ DARS (Degree Audit and Records System)
 - ✓ Action Request System (Help Desk System)
 - ✓ Housing System
 - ✓ CRIMP System for Telecommunications (port management and billing)
- Significant applications developed and supported by UNL include:
 - ✓ Scholarship System
 - ✓ Financial Aid Imaging System
 - ✓ BottomLine Income/Expense Tracking System
 - ✓ Comprehensive Online Class Schedule
 - ✓ Centralized Receivables System
 - ✓ Undergraduate/Graduate Admissions System
 - ✓ Short-Term Loan System
 - ✓ Research Tracking Systems (for patents, grant proposals, and experimental data)
 - ✓ NRoll Voice Response Systems
 - ✓ Student Advising System
 - ✓ Union Management System
 - ✓ Cash Receipting
 - ✓ Parking
 - ✓ Energy Management System (including the imbedded systems)
 - ✓ Print Services System
 - ✓ University Police
 - ✓ Student Information System for High School and Independent Study
 - ✓ Transportation Services System
 - ✓ Student ID Card System
 - ✓ Student Billing Archive System
 - ✓ Tuition Remission System
 - ✓ E-Commerce Application Infrastructure (four systems now accept online credit card payments via the web, and this is growing)

3.A.2. Collaboration and Workflow

E-Mail

| Email Applications | Number of Users |
|--|------------------------|
| Lotus Notes | 5200 |
| Microsoft Exchange | 200 |
| POP3 Applications (e.g. Microsoft Outlook, Eudora, Etc.) | 1200 |
| Office Vision | 0 |
| Other: | |

Calendaring and Scheduling

If utilized by the agency, please list the common calendaring and scheduling product(s) used:

Typically, the Lotus Notes calendar software is used by those staff who share calendar information. Access to the Lotus Notes calendar is through the Lotus Notes client, the web, or through handheld devices (some handheld devices are synchronized to the Lotus Notes calendar information).

Document Management and Imaging

List any document management or imaging system(s) used by the agency

Imaging Systems

- ✓ Financial Aid Imaging System (developed in-house)
- ✓ Mark-Sense applications for grade and test reporting (developed in-house)
- ✓ Student Billing Archive System (developed in-house)

Document Management Systems

✓ Inktomi Software – For storing, cataloging, and retrieving web documents (from Inktomi Corporation).

Workflow

List any other workflow application(s) utilized by the agency:

- ✓ Action Request System (from Peregrin Corporation) – Used for Help Desk management as well as departmental workflow applications. (Piloting a UNL Leave workflow application.)
- ✓ Lotus Notes Domino Software (from IBM) – Used for a variety of workflow applications developed for departmental uses. (Deployed a workflow application for the Office of Human Resources.)

3.A.3. Data

Databases

List major databases maintained by the agency and the general purpose of each:

- DB2 (AIX and MVS) - Used as the data store for the SAP Financial and HR systems, the SCT student systems, various augmentations to the student system application, and web services that access student data.
- Oracle (Solaris, WinNT, OpenVMS) - Used as the data store for Facilities Management, graduate and undergraduate recruiting and admissions data, Parking System, various web databases, and the Blackboard software.
- Sybase Adaptive Server - Used as the data store for the Action Request System, the networking DHCP server, and the UNL Student Information System data warehouse.
- Rbase - Used as the data store for BottomLine (a departmental expense and income tracking system). Support for this database is being phased out with the implementation of SAP.
- MySQL – Used as the data store for the Extension Accomplishments Reporting System/Pioneering the Future (Research), Publications database, American Distance Education Consortium Program & Degree Database, various web content databases, and the online university class schedule.

- Microsoft SQL Server – Used as the data store for the Customer Relationship Management System, WebFOCUS, NUGrant System, and the ID Card System. The Energy Management and Parking systems are being migrated to this database as well.
- CSO - Used as the data store for the UNL enterprise directory service software and email routing system. (This database software will be replaced over the next year)
- Lotus Notes Domino Software - Used as the data store for email and calendaring.
- Innovative Interfaces Information System - Online library information system and card catalog.
- Digital Databases - There are many digital databases available to support the research and teaching processes. Significant examples include:
 - ✓ Electronic encyclopedias
 - ✓ More than 190 articles and full-text indexes of scientific, social sciences and humanities journals.
 - ✓ Full-text digitized version of more than 5,000 professional journals.
 - ✓ Unique editions from the University Special Collections customized in full-text for the web.
 - ✓ Digitized collections of international, federal, and state government documents.
 - ✓ University of Nebraska Willa Cather Archive.

Data Exchange

List the significant electronic data exchanges your agency has with other entities:

- Federal Government - for Direct Lending, Financial Aid data transfer, and other federal reporting requirements (such as data exchange with the Clearinghouse).
- Boise Cascade Corp. - Used for purchasing office supplies.
- Office Depot Corp. - Used for purchasing office supplies.
- State of Nebraska - Exchange of financial data.
- AACRAO - Transcript Exchange with other universities (using the EDISmart software).

In addition, UNL is currently deploying an XML-compliant environment, as many of these electronic data exchange systems will be moving to XML systems (the federal government will soon only send and receive via XML).

3.A.4. Electronic Government External (Customers/users are outside the agency)

3.A.5 Electronic Government – Internal (Customers/users are agency staff)

[Leave blank. Electronic government information from agencies will be collected as part of the Governor’s Business Portal project and by the E-Government Architecture Work Group.]

3.A.6. Hardware, Operating Systems, and Networks

Hardware

Provide a general description of the elements of the computing environment (mainframe, midrange, PC workstations, etc.).

Computing resources are highly distributed throughout the University of Nebraska-Lincoln. Most departments have a mix of Windows and Mac based personal computers, with a lesser number of UNIX based servers and workstations scattered around the campus. Centrally, general purpose research computing servers are provided by Information Services for anyone

within UNL, while the Research Computing Facility provides access to state-of-the-art parallel processing servers for specialized research applications.

| Centrally Managed Servers | Number of Systems |
|--|------------------------------------|
| DEC Alpha (OpenVMS) | 4 |
| Sun Servers (Solaris) | 21 |
| Intel-Based Servers (WinNT/2000) | 37 |
| CRAY Supercomputer (Proprietary OS) | 1 |
| Silicon Graphics Servers (Unix) | 3 |
| RS/6000 Servers (AIX) | 6 |
| Intel-Based Servers (Linux) | 26 |
| Intel-Based Servers (ScoUnix) | 1 (phasing out) |
| Intel-Based Servers (Novell) | 5 |
| Macintosh Servers (MacOS) | 2 |
| Intel-Based Servers (Linux) – Lied | 256 (node cluster) |
| Important Departmental Systems | Number of Systems |
| RS/6000 (AIX) – Athletics | 2 |
| DEC Alpha (Digital Unix) – Library | 3 |
| Intel-Based Servers (WinNT/2000) - Housing, Food Services, Unions, Bookstore, Student Health, Student ID Card, Cash Receipting, Career Services, Parking, Energy Management, Library, Print Services | Total fluctuates between 20 and 40 |
| Data General MV/7900 (Unix) – Lied | 1 |

In addition to the support provided for the above systems, the University supports a variety of other hardware including communication controllers and systems, departmental file servers, uninterruptible power supply systems, cartridge tape drives and a real-time backup service (TSM), and a central RAID facility with over 900 gigabytes of data.

Desktop Operating System(s)

| Operating System | Percentage of Users |
|-------------------------|----------------------------|
| Windows 3.1 | 0% |
| Windows 9x | 55% |
| Windows NT | 5% |
| Windows 2X | 10% |
| Windows XP | 5% |
| OS/2 | 0% |
| Linux | 4% |
| Mac OS | 18% |
| Other: | |
| Various UNIX | 3% |
| Handheld OS: | |
| Palm OS | 80% |
| Win CE | 20% |

Networks – LANs and WANs

Provide a general description of the agency's network environment, including type of network (e.g. Token Ring):

UNL's statewide computing network consists of over 16,000 computers connected to a high-speed backbone. The vast majority of computers are connected to this network through either dedicated 10Mb or 100Mb ethernet connections (dedicated means that the network capacity given to each computer is not shared by other computers).

Networks – Operating System

Indicate the network operating system(s) utilized (indicate the estimated number of workstations for each, if known.):

| Network Operating System | Percentage of Users |
|---------------------------------|----------------------------|
| Novell Netware | 5% |
| Windows for Workgroups | 0% |
| Windows 9x Peer Networks | 30% |
| Windows NT | 30% |
| Windows 2000 | 5% |
| OS/2 LAN Server | 0% |
| Other: | |
| Various TCP/IP Services | 95% |

Note: Many NT/2000 systems also user peer networking, and almost everyone uses TCP/IP based services.

3.A.7. Staffing

Identify, in general terms, the agency personnel resources currently devoted to supporting the items listed in this section (3.A.). This should include both personnel whose job titles and description are clearly related to technology, other personnel whose responsibilities relate significantly to technology support regardless of job title, and contract staffing provided to the agency.

Information Services

| | |
|-------------------------------|--------|
| Administrative Support | 7 FTE |
| User Support | 51 FTE |
| Administrative Computing | 16 FTE |
| Communications and Operations | 55 FTE |

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| | |
|--------------------|----------|
| User Support | 10.5 FTE |
| Academic Computing | 6.5 FTE |

3.A.8. Other

Please list any other issues relating to your current IT environment

Middleware

The need for specialized software to deploy applications has been steadily increasing over the past several years. This software is routinely defined as middleware, and some of the most common components used at UNL include the following.

- Web Servers (Microsoft IIS, Apache and iPlanet, with SSL enhancements provided through the Raven software)
- Web Application Servers (J-Serve, Compuware's Web Application Server, and Tomcat)
- E-Commerce Transaction Systems (CyberCash and Verisign)
- Screen-Scraping Utilities (CLEO and Write-1)
- Proxy Software (SQUID software)
- Database Access Engines (Polyserver for DB2 and UDB/DB2)

3.B. Value

Describe and document the tangible and intangible benefits of the agency's investment in information technology.

Administrative Systems Project. Information Services was very involved in the evaluation, selection and testing of the Financial and Human Resources software, as well as in the campus implementation of the purchased SAP software. IS is responsible for the desktop support of this software, as well as the technical issues related to campus delivery of the software. Tracking questions/issues/problems is done through the IS help desk.

Admissions system. A new web-based Undergraduate Admissions system has been developed to allow broader access to not only the University community, but for students inquiring about their admission status as well. Graduate admissions is scheduled to go online in July, 2002.

Campus-Wide Information System. Over 90% of all UNL departments (with 100% of academic departments) have information available on the web. Over 448 web servers are linked together to form the campus-wide information system, and the centrally managed web server supports over 550 providers. The main university web server (www.unl.edu) receives over 30,000,000 hits each month during the academic year, and this continues to increase.

The new IANR web site focuses on providing users with the latest information including news, publications, educational programs, extended education, information about IANR and its programs and links to key IANR units and content-related data. The web site has been developed within a content-management framework and an information delivery system. It uses the latest in the web publishing technologies including open source systems and applications.

Computer backup service. Information Services has successfully developed a service allowing Faculty, Staff, and Students the ability to effortlessly backup their critical data files to a professionally managed backup server. This service successfully addresses a shortcoming of the personal computer revolution - the inability to protect information critical to the institution.

Computing mobility. Through the installation of new networking services like DHCP and wireless, faculty, staff, and students now enjoy the ability to take their notebooks into any building on campus and effortlessly reconnect to the computer network. This mobility will greatly foster the teaching and learning opportunities for faculty and students at UNL. During the Spring semester 2000, IS began implementing wireless technology in the Student Unions, Libraries, etc.

Computing network backbone enhancements. Major enhancements have been made to UNL's data network backbone, increasing speed, capacity, and reliability to the point where it has become a critical resource to the campus. Efforts are currently underway to increase the backbone speed four-fold, and to provide fully redundant connections to all major concentration centers.

Contract customer services. The IS Custom Support group provides on-site desktop support and has steadily added support contracts (now numbering 20). The group now provides regular support for 700 faculty/staff, and provides incident-based support for additional faculty and staff. In response to client needs, a "Partnership Program" was created that locates a support specialist on site.

Course management system. Information Services supports Blackboard, a course management system and portal. Taking data from the student information and human resource systems, every student, staff, and faculty member have an account which gives them access to courses and organizations they are a part of.

Data warehouses. IS staff implemented three decision support systems in a data warehouse that provides colleges with the ability to access student data using common desktop tools (such as Excel, WordPerfect, etc.), and pull the data into common environments for further processing.

DEAL lab. The Distributed Environments for Active Learning (DEAL) laboratory became fully operational and has provided faculty with the opportunity to develop and deliver courses and enhance traditional learning via the internet. It is a 'value added' resource including multimedia designers and software developers who help IANR faculty and staff use the internet to communicate, educate and conduct research using the latest in internet technology. The lab has/is responsible for the development of over 100 projects related to teaching and learning, and many of these projects are being used and shared with other land-grant institutions and industry partners. Many of these newly developed applications assist faculty in the delivery of integrated instruction. The applications empower instructors to package, deliver and manage multimedia content and opportunities for interaction with resident and non-resident students. The applications enable faculty to engineer new models for teaching while being resource efficient and allowing faculty to teach from their offices.

Degree audit. Using the online degree audit system (accessed via the web), faculty are able to run a real-time audit showing a student's progress toward their degree. There are currently four colleges live on this system, with another four expected to be online in the summer of 2002. The online audit system takes care of much of the overhead associated with monitoring degree progress, allowing a more meaningful advising experience between faculty and students.

Directory services. Both the faculty/staff and student online directories were implemented. These directories serve as part of the middleware foundation needed for implementing electronic security. UNL is also implementing Microsoft's Active Directory Service, with the intent of building a single active directory domain. All faculty, staff and student accounts are generated from the active directory, and these accounts can be activated via the web.

Electronic distribution lists. Early in its history, Information Services deployed a tool that for the first time allowed electronic distribution lists to be easily created and managed. Such distribution lists have enhanced the electronic distribution of information within UNL, and have fostered the communications between students and their professors.

Electronic mail for faculty, staff, and students. In early 1996, the student email machine BIGRED was implemented offering free email accounts to any UNL student. Approximately 10,000 students have

accounts on BIGRED. In October of 1998, UNL began migrating faculty and staff to the new Lotus Notes email system. As of January 2002, there are over 5,200 accounts on Lotus Notes, with approximately 1,200 more to be migrated before July, 2002.

Electronic security and middleware. A secure web server (that supports SSL) was implemented to support many of the student self-service activities. This service can be used by anyone on campus, and is the basis for the eBusiness infrastructure at UNL. A proxy service was also implemented that manages access to certain electronic resources.

Event management system. The Peregrin Action Request System was implemented in Information Services with the objective that no request would 'drop through the cracks.' There is now one single system where all requests/problems/questions are logged.

Financial aid imaging system. This system stores and retrieves all financial aid documents for a particular student. This system allows the Financial Aid Office to be 100% paperless.

"Hardening" of the IS Data Center. Recognizing that the Information Services Data Center is the life blood of the electronic university, backup power and redundant cooling systems have been installed to insure that the Data Center is able to function through a wide variety of calamities. We are currently looking for additional disaster recovery sites in the area.

Instructional use of Internet 2. IS staff partnered in the fall of 1999 with Nebraska Educational Telecommunications and two other universities to conduct the first three-way class delivered using DVD-quality live interactive videoconferencing across Internet 2. This method has since been used repeatedly for instructional purposes.

Internet 1 connection improvements. Since 1998, UNL's Internet connection has increased from 5Mb/second to 90Mb/second, facilitating a tremendous growth in distance education opportunities, electronic correspondence, data distribution, digital libraries, and web based information distribution. UNL has been able to share this connection with the rest of the University system, providing increased services to them, and cost savings to us.

Internet 2 and high-performance networking. A "High-Performance Connections" grant awarded by NSF in 1998 enabled the University to connect at high bandwidth to other Internet 2 institutions, a regional research and educational network (Great Plains Network), the NSF Supercomputing Centers and a number of national research laboratories. Since the grant has expired, IS has maintained Internet 2 connectivity.

Museum collections online. Several museum collections are now completely available over the web, allowing this information to be searched and shared by institutions all across the world.

Network Operations Center. Information Services has created a 7x24 Network Operations Center for UNL, allowing us to take proactive actions to prevent or resolve networking issues before they develop into major service disruptions for all or a portion of the campus. This NOC has been so successful that we now provide these same services to the Great Plains Network.

One Bill. This system supports the entire centralized receivables process. Data from many campus offices is sent to this system, processed, and a single bill for each student is produced. All of the reconciliation processes are handled by this system.

Online schedule of classes. The entire schedule of classes was made available over the web, and is searchable using over 15 different parameters.

Prospective student recruiting system. A new recruiting system was purchased to support the campaign management needs of the undergraduate, graduate, and college recruiting offices. This Customer Relationship Management System will help students find their answers immediately, and allows the institution to electronically communicate directly with students.

Replacement cycle for desktop computers. Prime vendor agreements have been put in place with the major microcomputer vendors, resulting in savings that have helped departments keep their desktop computer hardware current.

Research compliance. Several systems have been implemented to assist the institution in meeting its research compliance requirements. These include the animal care system, patent tracking, proposal tracking, the DNA tracking system, and the human subjects system.

Research computing facility. Computer Science/Engineering and IS partnered in a second 3-year, NSF/EPSCoR funded project to implement the Research Computing Facility. The Facility provides a high-performance, multi-processor machine for research applications that require large numbers of computations per second as well as large amounts of memory and high data-transfer rates. A new 256-processor computer named "Prairie Fire," estimated to be the world's 100th most powerful supercomputer, is now being configured for research use.

Residence Hall network. This network provides a high-speed computer connection to each student, greatly enhancing the electronic learning opportunities available to them. All residence hall rooms at UNL have high speed network access. Currently, 80-90% of residents take advantage of this service. Most are installed during the first week of classes.

Scholarship system. This module supports all of the tracking and selection processes for the Scholarship Office. Students are able to apply for all scholarships at UNL by simply filling out a web form indicating they want to be considered for all appropriate scholarships.

Short-Term loan system. A short-term loan system was developed to allow Student Accounts and Financial Aid to more quickly respond to (and track) student loan requests. Students can also use the web to apply for a short-term loan.

Software licenses On September 1, 2001 the Board of Regents approved a University-wide Microsoft Campus 2.0 Agreement. This agreement assures complete legal compliance of the most widely used Microsoft software at the lowest possible cost. Additionally, UNL maintains site license agreements with Adobe, ESRI (Geographical Information Software), SPSS, SAS, as well as others.

Student Information System (SIS+). This integrated system includes modules that support Records, Registration, Student Accounts, and Financial Aid. This integration provides a more complete picture of a student's history, as well as tools to more easily manage course offerings. Several other ancillary systems have subsequently been developed to 'hook on' to this integrated database – maximizing the use of the data already collected. Systems developed to take advantage of the SIS data include: short-term loans, admissions (graduate and undergraduate), touch-tone registration, college advising system, and scholarships. Also, because the student data is aggregated in a common location, web access has been opened up so that faculty, staff, and students can easily access this data as well. Faculty and staff can use the web for online course rosters and for running degree audits. Students can use the web to apply for admission, check their grades, register for courses, review their personal information and course

schedules, review their financial aid history and awards, apply for scholarships and short-term loans, view their bill, and pay for tuition. UNL is planning to communicate with students online as much as possible, this will not only increase the ability to respond to students' needs, but will reduce some administrative costs associated with more traditional methods of communication.

Student Technology Assistant Program Working with the Teaching, Learning and Technology Roundtable, IS launched a program that trains students to collaborate with faculty in the design and production work needed to develop courses using instructional technology, including distance courses. Approximately a dozen students participate in the program at any given time.

Student technology fee. IS initiated the technology fee proposal approved by the Board of Regents in 1997. IS also bears major responsibility for drafting and implementing yearly spending plans for the fee, working closely with the ASUN advisory committee established to provide input. The fee has funded a three-year replacement cycle for all public computer stations, enhanced technical support for students, and fostered collaborative relationships with organizations such as Housing and the Unions.

Support for technology-enhanced classrooms. The IS Instructional Technology Group is charged with supporting technology-enhanced general-purpose classrooms. As additional classrooms are equipped with technology, the scope of this charge continues to increase.

Teaching, Learning and Technology Roundtable. IS staff participated in planning for the Roundtable from the beginning, including co-authoring the original planning document, attending summer TLTR Institutes, participating in the TLTR Steering Committee, drafting the first budget proposal, and so on. The Roundtable serves as a forum and working group, bringing together faculty, staff and administrators. Through a grant program, the TLTR fosters innovation and development at the level of individual courses.

Telemanagement system. Information Services maintains a record of all cable installations. The numbers of pairs, specific location of outlet (room & outlet number), the "punch-down" location of the wire pair in the wiring closet, and the rack number are all recorded in our database. From this database, a map of the rooms, buildings, and wiring closets can be produced, showing the locations of all outlets.

UNL's statewide network. UNL's computing network has been extended to over 30 of UNL's Research, Learning, and Outreach centers across the state. Plans have been developed which, if funded, will greatly increase the capacity and usability of this network and enhance the University's outreach potential. The plan includes upgrading up to 20 county offices to frame relay T-1 services (768K), while the goal is to begin upgrading research and extension areas to 100Mb service. Centers to upgrade first include the South Central Research and Extension Center, College Park and the West Central Research and Extension Center in North Platte. This planned improvement will equal the network speeds found between buildings on the UNL campus.

Video enhancements.

Satellite - Video conference services via satellite are increasing due to the need to reach more audiences at their place of work. Programs focus on agriculture, natural resources, rural development, and family and consumer sciences content. These programs are produced and directed by CIT involving IANR faculty and staff, and IANR partnering agencies and groups.

H.323 Interactive Video – H.323 interactive video equipment has been distributed to Research & Extension Centers. This new IP-centric technology required broadband service to support quality interaction among participants. The technology fosters collaboration among faculty and staff internally, and with other land-grant institutions and business/industry organizations with like technology capabilities.

Virtual classroom initiative. IS received reallocated funds to establish a virtual classroom with ongoing resources for media/Web serving and exploring new technologies. Services including a web server for instruction, audio and video streaming, administration of an online testing server, and live videoconferencing are supported through this initiative.

Webcasting. The web is being used to webcast many programs including Backyard Farmer, MarketJournal, and various other events and conferences such as The Nebraska Rural Institute, Ag at the Crossroads, the Nebraska Biotechnology Conference, and others. The analog radio facilities are also being reconfigured to facilitate live and archived webcast programming. UNL is also working with state and federal agencies to develop a new weekly web audio/video program intended to provide farmers and ranchers throughout Nebraska and the Great Plains region with access to production, risk management and marketing and research information. CIT will produce the program in cooperation with agency communication staff.

Web search capabilities. The Inktomi full-text search engine has been implemented at UNL. Over 449 campus web servers are indexed using this software, providing UNL with the functionality to search all web servers with a single request. This search engine software will also allow UNL to define data collections for more meaningful search results.

Wireless.

IP-Based Technologies - IANR is working on a three-year, \$4.3 million project involving installing wireless satellite-based internet services throughout the land-grant system and testing related educational effectiveness. Five Tachyon TAPS (Tachyon Access Points) have been installed in Nebraska, and all of these sites are enjoying a minimum of 400K (forward channel) / 256K (return channel) service. A similar wireless IP technology has been installed using DirecWay, and this technology will be installed in a few other counties yet this year. Many counties throughout the state are taking advantage of local IP technologies to increase office connectivity (these technologies include access to DSL and fixed wireless technologies).

Audio/Video Microwave Link – A wireless audio/video microwave link has been installed to allow live productions to be routed to ETV satellite uplink equipment from most east campus buildings.

Workflow systems. The UNL campus has made a decision to try and reduce the hardcopy needed for many processes, and is changing many of these processes to electronic methods. Workflow applications for the UNL Leave system and Human Resource Applicant Tracking system are currently being used as models for how we might deploy workflow systems. Migrating to electronic systems should increase efficiency and timeliness for many processes.

3.C. Information Technology Training

Summarize the agency's effort to address training needs relating to information technology. This should include:

Training for users of information technology

Training is available to UNL faculty, staff and students who use information technology. Non-credit workshops open to all UNL faculty and staff are provided each semester through Information Services and through Communications and Information Technology for a nominal fee. Information Services also provides free short courses to students to get them started using information technology. In addition, most UNL colleges require students to take Library 110, a one-credit course designed to familiarize them with how to use online library resources.

Training is available for IANR faculty and staff in a variety of formats including: EXCITE (Extending your Communications and Information Technology Experience), a satellite-based series of monthly educational programs addressing various in-service educational needs; information technology updates are held statewide which focus on emerging issues and general training needs; special workshops are held on- and off-campus to address priority training needs; desktop application training classes are held on campus throughout the year; training sessions are offered at Cooperative Extension's annual conference; special teaching/learning workshops provide faculty and staff the opportunity to transition information and educational delivery to the Web.

The IANR computer labs and classrooms have all been upgraded or enhanced as well. Over 125 desktop systems were replaced, and all systems are now using Microsoft Active Directory and Citrix technology. These classrooms support courses taught by faculty, as well as in-service training, 4-H youth development and other cooperative extension and outreach activities.

Training for IT staff who develop and support the information technology systems

Information Services (IS) allocates funding each year from its budget for appropriate staff training. Departments that contract with IS through the Custom Support program also commit to paying for training needed by staff assigned to provide technical support to their units.

3.D. Security

| | |
|--|--|
| Has your agency implemented the NITC's Security Policies? | No |
| If your answer to the previous question is NO, is your agency in the process of implementing the NITC's Security Policies? | No |
| If your answers to the previous two questions are NO, has your agency implemented other security policies? | ** Policy change recommendations currently in review |

Please provide contact information for the person responsible for IT security:

Name: Kent Hendrickson

Phone: (402) 472-2311

Email: kenth@unl.edu

3.E. Disaster Recovery and Business Continuity Planning

| | |
|---|--|
| Does your agency have a disaster/emergency recovery plan? | Yes (critical systems) |
| Does your agency perform regular back-ups of important agency data? | Yes |
| Does your agency maintain off-site storage of back-up data? | Yes (for targeted data from centrally managed systems) |

3.F. Accessibility (Technology Access for Individuals with Disabilities)

[To be added. This section will be based on the Accessibility Architecture document.]

UNL must adhere to Federal Regulation 508 regarding the design and deployment of web pages. We are currently working on a plan to identify, and bring into compliance, the relevant web pages.

4. Future Uses of Information Technology

4.A. Strategies and Future Direction

Highest Priorities in Priority Order

| Priority | UNMC Support | Project Title | Description |
|----------|--------------|---|--|
| 1 | | Provide 24/7 On-Line Processing for Recruitment, Admissions, Registration, Financial Aid, Student Accounts, and Other Direct Student Services | <p>Currently SIS+ requires nightly downtime as batch processing is accomplished. UNL, hopefully in concert with UNK and UNO, desires to implement the software modifications and associated production processing changes required to effect 24/7 web processing for students.</p> <p>In addition to SIS+ architecture modifications, other supporting student service applications must be updated as well (including the need for additional tools and training for technical staff). At the same time, CSN must coordinate with the campuses to plan better and more efficient ways of handling the projected growth in on-line student services.</p> |
| 2 | Yes | Grants Management Pre- and Post-Award Application | With the growth of UNL's research enterprise, UNL requires software applications to manage its pre- and post-award grants and contracts. |

| | | | |
|---|-----|---|--|
| 3 | | Academic Management Information System | To support academic decision-making and support of UNL's quality indicators, several currently existing databases must be linked. Those databases include: (1) courses, course instructors, course enrollments, rooms; (2) faculty information (e.g., tenured, tenure-track, other status; rank; apportionment of assignment); (3) research information (proposals, awards, spending; (4) unit budget and financial data; and (5) student data (majors, credit hours completed). |
| 4 | Yes | SAP-Support and Data Security for Above Priorities | Priorities 1, 2, and 3 are dependent on continued enhancement of SAP functions and associated infrastructure including implementation of web-based financial and business processes and reporting. These priorities also will require assured methods of data security. |
| 5 | Yes | State Network Connectivity planning | Support delivery of University services on a statewide basis. Continued planning for increased connectivity to UN Learning Centers, IANR Research and Extension Centers, additional broadband infrastructure and equipment and personnel support. |
| 6 | | Replacement of Current Student Information system Software Platform | Although the SCT SIS+ software platform is currently meeting our needs, SCT has announced that it will no longer enhance the SIS+ system but will focus its effort on its Banner program. If Banner is shown to work at the University of Illinois for large campus installations we may be able to migrate to Banner. But planning, on a system-wide basis is now urgent. |

On-Deck Priorities

| Priorit y | Project Title | Description |
|----------------------|---------------------------------------|--|
| 1 | Enhanced Data Network | Support research- implement network enhancements and upgrade desktop connectivity to meet increasing needs of research. Develop research-computing grids to facilitate research in bioinformatics, proteomics, and other high priority fields. |
| 2 | Enhance Access to Wireless Technology | The demands for wireless access continue to build across the UNL campus and at the fringes of our service areas across the state. For example, approximately 30 campus buildings have wireless hubs installed today, most of our other buildings should be similarly equipped with three years. |
| 3 | Voice over IP | In an effort to reduce costs and provide a seamless integration of voice, digital and video services “Voice over IP” will become campus requirements over the next two to five years. The integration process has already started at many higher ed. Institutions as they respond to users who are comfortable with new devices that service both e-mail and voice mail – the telephony of the future. |
| 4 | SAP continuing enhancements | Within the context of these higher priorities, SAP should continue to be enhanced to the following areas: a project tracking field, travel management, HR & Payroll Accounting and Reporting Student Social Security exemptions, combining reports to better support campus users. |

On-going Activities

In conjunction with the other campuses, UNL continues to express support for ongoing enhancements to SAP such as: position control/salary commitments, carry forward balances on revenue/expense summaries, and time and attendance automation. The SAP team should focus its priorities to those areas of SAP necessary to support the highest priorities noted above.

The campus believes that the high priorities are critical to the functioning of the University And are far more important at this stage of our development than refining the “one-university” Look and feel, such as in common portals and common applications or the extension of

Lotus Notes.

4.B. Future IT Projects

- Convergence of voice, data, and video 2002
- Access to On-Line information anytime, anywhere, 2003
- Security enhancements 2002

Agency Comprehensive Information Technology Plan

1. Agency Contact Information

| | |
|---------------|---------------------------------------|
| Agency Name | University of Nebraska Medical Center |
| Agency Number | |

Person responsible for Information Technology in the agency:

| | |
|----------------|--|
| Name | Yvette Holly |
| Phone Number | 402-559-7253 |
| E-mail Address | Yholly@unmc.edu |

Person to contact for additional information about the agency Comprehensive Information Technology Plan:

| | |
|--------------|--|
| Name | Yvette Holly |
| Phone Number | 402-559-7253 |
| E-mail | Yholly@unmc.edu |

If this document is posted on your agency's Web site, please provide the URL for this document:

| |
|-------------------------------|
| http:// |
|-------------------------------|

2. Agency Mission, Goals and Objectives

Describe the mission of the agency. This is a statement of why the agency exists and its fundamental purpose. Describe the primary business goals and objectives for the next five years (or for that timeframe for which they are formally established).

Explain the primary programs or service areas of the agency and whom they impact. This should include primary beneficiaries, partners, and other organizations that have an interest in the agency's activities. Please identify how the organization interacts with these other agencies, local governments, the public, businesses, and other entities. How does the agency promote a customer focus and collaboration with these groups?

Please include the URL, if a fuller explanation of this topic is available on the agency's web site.

| |
|--|
| <p>The mission of the University of Nebraska Medical Center (UNMC) is to improve the health of Nebraska through premier educational programs, innovative research, the highest quality patient care, and outreach to underserved populations.</p> |
|--|

UNMC values quality, excellence, and diversity and expects faculty, staff and students of UNMC to:

- Emphasize quality and have high expectations for performance.
- Pursue excellence in an ethical manner.
- Foster an environment of learning and communication.
- Respect individuals for their cultures, contributions and points of view.
- Support the mission and vision of UNMC in the best interest of our customers.
- Promote individual accountability for organizational success.

UNMC's Vision is that the partnership of UNMC/NHS will be a world-renowned health sciences center that:

- Delivers state-of-the-art health care through academic and private practice.
- Prepares the best-educated health professionals and scientists.
- Ranks among the leading research centers.
- Advances our historic commitment to community health.
- Embraces the richness of diversity.

<http://www.unmc.edu>

3. Current Use of Information Technology

3.A. Existing IT Environment

3.A.1. Applications

Off-the-shelf Applications

List significant software applications (e.g. word processing, spreadsheet, database applications) utilized by the agency, include vendor and product name:

| Vendor | Product Name |
|---------------|--|
| Apple | MacIntosh Operating system |
| Apple | Quicktime |
| Blackboard | CourseInfo |
| Corel | WordPerfect all versions (5.2 through 9) |
| Lotus | 1-2-3 |
| Lotus | Notes |
| Microsoft | FrontPage 98 and 2000 |
| Microsoft | Powerpoint 95-2000 |
| Microsoft | Access 2.0-2000 |
| Microsoft | Excel 95-2000 |
| Microsoft | Internet Explorer – all versions |

| | |
|----------------------|------------------------------------|
| Microsoft | Netshow |
| Microsoft | Windows 3.1, 95, 98, 2000, NT, DOS |
| Microsoft | Word 95-2000 |
| Misc. Un-zip Vendors | Un-zip utilities |
| NAI | McAfee Virus scan |
| Netscape | all versions |
| Novell | Lan WorkPlace |
| --- | Linux |

LIMITED SUPPORT

| Vendor | Product Name |
|---------------|--------------------------------|
| Adobe | Acrobat |
| Adobe | Photoshop |
| Adobe | Premier |
| Asymetrix | Toolbook |
| Borland | dBase |
| Corel | Draw |
| Corel | Presentations |
| Corel | Quattro Pro |
| Jandel | SigmaPlot |
| Lotus | Freelance |
| Lotus | Learning Space |
| Lotus | Smartsuite |
| Macromedia | Dreamweaver |
| Macromedia | Fireworks |
| Macromedia | Freehand |
| Macromedia | Shockwave |
| Microsoft | Photodraw |
| Microsoft | Works all versions |
| Norton | Norton Utilities and AntiVirus |
| RealNetwork | Real Producer |
| RealNetwork | Realplayer |
| SAS | SAS-PC |
| Sonic Foundry | SoundForge |
| SPSS | SPSS-PC |

Custom Applications

List any significant custom applications developed for the agency:

UNMC Health Professions Tracking System
 UNMC/UNO Telephone Billing System
 UNMC Campus Business Applications
 UNMC Center for Continuing Education Course Management System
 UNMC Academic Affairs Applications
 UNMC Faculty Database
 UNMC Tracking System

| | |
|--|--|
| 3.A.2. Collaborati on and Workflow | |
| E-mail | |
| Application(s) used by the agency (indicate the number of users, if known): | |
| Lotus Notes | Yes (3,383 faculty/staff & 2,779 students) |
| Microsoft Exchange | No |
| Internet (POP3) | Minimal |
| OfficeVision | No |
| Other (Specify:) | None |
| Calendaring and Scheduling | |
| If a common application is used by the agency, please list the product name: | |
| Lotus Notes | |
| Document Management and Imaging | |
| List any document management or imaging system(s) used by the agency: | |
| None | |
| Work Flow | |
| List any other work flow application(s) utilized by the agency: | |
| None | |
| 3.A.3. Data | |
| Databases | |
| List major databases maintained by the agency and the general purpose of each: | |
| <p>UNMC Health Professions Tracking System In collaboration with the State Department of Health, UNMC provides tracking information regarding physicians, dentists, physician assistants, nurse practitioners, and pharmacists throughout the region.</p> <p>UNMC/UNO Telephone Billing Database Tracks work orders, billings, and phone related data for the UNMC and UNO telephone systems.</p> <p>UNMC Campus Business Databases Tracks work orders, billings, and other data for Printing and Duplicating, Mail Services, Physical Plant, BioMedical Communications, ITS, and Cell Phone Billing.</p> <p>UNMC Center for Continuing Education Course Management System Manages courses and related activities for the UNMC Center for Continuing Education</p> | |

UNMC Academic Affairs Databases

Grants Administration Database - tracks pending / active grants and contracts. IRB - Tracks protocols for the Institution Review Board
IACUC - Tracks protocols for the Animal Care Committee

UNMC Faculty Database

Provides a data repository and source of evaluation data for faculty within the College of Medicine.

UNMC Tracking System

Provides data regarding cashiering stations, parking privileges, and key assignments for staff, students, and NHS employees.

Data Exchange

List the significant electronic data exchanges your agency has with other entities:

AMCAS - feeds information regarding Medicine Applicants to our Tracking System.

GRE - feeds information regarding Graduate examinations into our Tracking System.

TOEFL - feeds information regarding test scores into our Tracking System.

Student Loan Clearinghouse - sends information regarding students from the UNMC Tracking System to the Student Loan Clearinghouse.

Outbound Financial Interfaces from UNMC Systems to University of Nebraska SAP - feeds financial information from departments including Printing and Duplicating, Mail Services, Physical Plant, Center for Continuing Education, BioMedical Communications, ITS, Cashiering, Parking, Telephone Billing, and Cell Phone Billing into SAP.

Inbound Interfaces from SAP to UNMC Systems - feeds updates for new cost centers and accounts for account validation, and daily HR information for use by various UNMC Systems.

3.A.4. Electronic Government – External (Customers/users are outside the

| |
|---|
| agency) |
| <p>Static Information on the Web</p> <p>List static information available on your agency Web site which allows your customers to interact with your agency on-line (e.g. forms which may be downloaded, but not filed on-line.):</p> <p>UNMC's Internet site can be found at http://www.unmc.edu and contains a wide variety of information for:</p> <ul style="list-style-type: none"> • Patients • Prospective students • Health Professionals • Visitors • Alumni • Colleges/Universities • Research • International Studies • Campus News • Job Opportunities <p>Links to Nebraska Health System's web presence, UNMC's partner, are also provided from the main UNMC Internet page.</p> |
| <p>Web-based Services</p> <p>List the services and transactions available on your agency Web site which can be completed on-line (e.g. Completing the necessary forms and paying for a license.):</p> <p>None available at this time on the UNMC Internet site.</p> |
| <p>Electronic Payments</p> <p>If your agency has financial transactions with your customers, does your agency accept electronic payments? If so, by what means.</p> <p>None</p> |
| <p>Other</p> <p>Please list any other relevant electronic government activities performed by your agency, including non-Web based services:</p> <p>None</p> |
| 3.A.5. Electronic Government – Internal (Customers/users are agency staff.) |
| <p>Static Information</p> <p>List static information available on your agency Web site (or Intranet) which allows staff to better interact with your agency (e.g. Forms which may be</p> |

downloaded, but not filed on-line.):

UNMC's Intranet site includes a variety of information for faculty, staff and students. A sampling of information includes:

- UNMC Today – A daily publication of UNMC's events and announcements
- Strategic Plan
- Policies and Procedures
- Phone Directory
- Education and Research Information
- Links to UNMC's Colleges and Departments.
- Online Courses
- Request for IDs & Passwords

Web-based Services

List the services and transactions available on your agency Web site (or Intranet) which can be completed on-line:

UNMC takes no revenue online but does offer several online applications and forms for events and completion of work including:

- Online courses including online quizzes
- Pharmacy Renewal Requests to Hospital Pharmacy
- Registration for campus events such a Mini-Med School
- ID and Password requests and updates
- Information Databases such as Medline are proxied for faculty, staff and students.
- Faculty lectures and grand round presentations

Other

Please list any other relevant electronic government activities performed internally by your agency:

None

3.A.6. Hardware, Operating Systems, and Networks

Hardware

Provide a general description of the elements the computing environment (mainframe, midrange, PC workstations, etc.). Details such as the number of PC, brand names, etc. are not necessary.

- **IBM 520 (NT):** Lotus Notes Learning Space, Exchange Gateway UNMC
- **IBM 704 (NT):** Lotus Notes (Faculty, Staff) UNMC
- **Dell 6100 (NT):** Lotus Notes (Students) UNMC
- **Dell 2300 (NT):** Lotus Notes Database Server
- **Dell 2300 (NT):** Lotus Notes Development Server

- **Dell 4300 (NT):** Resumix (Human Resource Applicant Tracking System)
- **HP Netserver (Novell):** Consolidated File & Print Server I
- **HP Netserver (Novell):** Consolidated File & Print Server II
- **Dell 4300 (Novell):** Consolidated File & Print Server III
- **Dell 2300, 1300 Dimensions (Linux):** Qmaster (Xerox printing), Sendmail (E-mail gateway), IBM/VM Archive, Primary and Secondary DNS servers
- **SUN Sparc 450, Sparc 10, Sparc 5 (Solaris):** Firewall, SercureID, DHCP Server, Netserv, Backup proxy server
- **Dec Alpha (Unix)** Innovative Systems (library information system)
- **Sun Ultra 1 (Solaris):** Primary Internet Server
- **Sun Sparc 10 (Solaris):** Backup Proxy Server
- **Dell 6100 (NT):** Web Development Server
- **Dell 6100 (NT):** Intranet Web Server
- **Dell 6350 (NT):** Web Media Server
- **Dell 6100 (NT):** UNMC Proxy Server
- **IBM RS/6000 (AIX):** Netview, Sybase Databases, SAS Statistics
- **24 centralized Novell servers (Novell Netware):** File/Print Sharing
- **36 NT servers (NT):** Departmental Applications

335 Macs

1,760 PCs (486 & pentiums)

2,095 Total

Desktop Operating System(s) (Indicate the estimated number of users, if known):

| | |
|-------------------|------------------------------|
| Windows 3.1 | 10 |
| Windows 9x | 1560 |
| Windows NT | 156 |
| Windows 2000 | 20 |
| OS/2 | 5 |
| Linux | 5 |
| Mac OS | 335 |
| Other (Specify:) | 4 (R3, MS DOS, or PC DOS) |

Networks - LANs and WANs

Provide a general description of the agency's network environment, including type of network (e.g. Token Ring):

UNMC's network is primarily 10 MB and 100MB Ethernet topology, with a Gig-Ethernet backbone. Some Token Ring topology exists however is being phased out as funding permits.

UNMC 's Information Technology Services provides network design, management and monitoring for UNMC and its partner organization, Nebraska Health System.

UNMC Networked Devices (workstations and printers)

335 Macs
1,760 PCs/workstations
 2,095 Total

105 Printers

Connections to Remote Locations

- Lincoln, Omaha, Kearney and Scottsbluff Campuses
- St. Joseph Hospital-Radiology
- Veterans Administration Hospital
- State House
- Lab InterLink

Indicate the network operating system(s) utilized (indicate the estimated number workstations for each, if known):

| | |
|---------------------------------|------|
| Novell Netware | 3900 |
| Windows for Workgroups | No |
| Windows 9x Peer Networks | No |
| Windows NT | 200 |
| Windows 2000 | 80 |
| OS/2 LAN Server and Warp Server | No |
| Other (Specify _____) | |

3.A.7. Staffing

Identify, in general terms, the agency personnel resources currently devoted to supporting the items listed in this section (3.A). This should include both personnel whose job titles and description are clearly related to technology, other personnel whose responsibilities relate significantly to technology support regardless of job title, and contract staffing provided to the agency.

UNMC ITS has 48.5 centralized IT staff who support the UNMC campus computing activities. This only includes Computing Services and does not include Biomedical Communications, nor telecommunications which

are also a part of UNMC's Information Technology Services

Please note that UNMC also provides a number of these services to Nebraska Health System, its partner organization. The FTE required to support NHS are not included in these numbers.

3.A.8 Other

Please list any other issues relating to your current IT environment:

Today's unit of Information Technology Services (ITS) is responsible for computing services, video systems, voice communications systems, and instructional media throughout the UNMC campus, as well as for links of those systems with institutions and agencies beyond the Medical Center. The primary focus of ITS is to provide the resources to help faculty, staff and students fulfill UNMC's mission of health professions education, research, health care and outreach to the underserved. Information technology can be seen throughout the campuses as new technologies are continually incorporated to assist in achieving that mission.

In July 1998, the Board of Regents of the University of Nebraska entered into a Master Services Agreement with Nebraska Health System (NHS) whereby UNMC's Information Technology Services provides a number of IT services to NHS. These include computer data center operations, network infrastructure planning, management and monitoring, telecommunications services, Help Desk, web technology support, Novell Netware file server and Biomedical Communications services. By providing these IT services in a consolidated manner, both UNMC and NHS can realize a cost savings through economies of scale.

Providing IT services to NHS is a major part of UNMC's IT operation and it is important to note the size of the NHS organization. As an example NHS is a 685-bed licensed medical/surgical facility with over 23,000 inpatient admissions and approximately 400,000 outpatient visits in fiscal year 1998-99. NHS employs over 5,000 people and 750 volunteers

As the University System reviews the IT activities, plans and future directions of each of the campuses, it must keep at the forefront this partnership that UNMC has with NHS and recognize the economies of scale that are afforded through this operational agreement.

For purposes of this report, the campus computing support were the only numbers included. The following ITS services were excluded: Biomedical Communications, Telecommunications and IT services provided to NHS.

3.B Value

Describe and document the tangible and intangible benefits of the agency's investment in information technology.

3.C Information Technology Training

Summarize the agency's efforts to address training needs relating to information technology. This should include:

- Training for users of information technology
- Training for IT staff who develop and support the information technology systems

Training for Users of Information Technology

During the 1999 Calendar Year UNMC's Information Technology Services provided a wide variety of desktop applications training to UNMC faculty staff and students. Classes included Internet Web Browser, Intro to PC, Microsoft Suite of Products, Windows 95, and Lotus Notes. A total of 224 desktop application classes were held with 1,488 UNMC participants.

IT Related Educational Opportunities for Faculty

- College of Pharmacy Lunch and Learn series was presented to show COP faculty the available educational technology, and have some hands on participation (Attending: 23)
- Lunch and Learn series was presented to UNMC faculty demonstrating cart-based educational technology (Attending: 20)
- Established a working group of 35 faculty and administrators to examine the issues surrounding the implementation of a media database (coordinating with the software developer at UNL)
- IT personnel have consulted approximately 80 UNMC faculty with educational technology projects since June 1999.
- Faculty Development Institute.

Training for ITS Staff

CISCO Network

NT

Notes Application Development

PowerBuilder

Various certifications such as Dell, Novell, HP, MACs, etc.

ITS Staff attended the 2000 InfoTec which provides a variety of technical and managerial training/educational opportunities.

3.D Security and Disaster Recovery Planning

| | |
|--|---|
| Does your agency have a plan for maintaining a secure IT environment? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Does your agency have a disaster recovery plan? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Does your agency perform regular back-ups of important agency data? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Does your agency maintain off-site storage of back-up data? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Estimated percentage of networked computers which are protected by anti-virus software? (Software used:) | 90% - Enterprise-wide software is available. |

4. Future Uses of Information Technology

4.A. Strategies and Future Direction

This section should summarize the agency's information technology strategies that support its mission, goals, and objectives. Topics should include:

- An explanation of how the agency uses information technology to achieve its mission, goals, and objectives, including any specific strategies utilized;
- A description of the agency's efforts to support and implement the Statewide Technology Plan, including priorities, standards, and guidelines;
- An overview of the agency's activities that promote collaboration;
- A discussion of factors and risks that will impact the success of the agency's information technology strategy;
- Your agency's efforts to retain IT staff, if applicable;
- A summary of future changes in uses of technology, which the agency plans to implement.

Refer to UNMC Campus Plan

4.B Electronic Government / Education Implementation Plan

The Governor and the State Government Council have established e-government as a priority. The Education Council's priorities include the goal of "permit(ing) all citizens of Nebraska to have access to the same educational experiences, regardless of location."

Summarize your agency's current efforts and future plans to provide information and services electronically. The narrative should include the following topics:

- Creating a customer focus
- Providing public access to the agency's policy making process, such as developing rules and regulations
- Providing public access to information
- Providing direct access to services
- Implementing electronic transactions with other entities
- Applying e-government tools to transactions with the private sector, including procurement and regulatory procedures
- Cooperating with other entities
- Identify opportunities for collaboration with other agencies or entities

Refer to the UNMC Campus Plan

Information Technology Services Strategic Plan

June 2002
Through
June 2004

2. Information Technology Services Mission, Vision and Values

Mission

Information Technology Services provides technology leadership by facilitating UNOmaha community access to networked resources that enhance academic excellence. ITS establishes complementary campus technology partnerships, and seeks innovative applications through continuous collaborative efforts.

Vision

Information Technology Services strives to bring the knowledge assets of the world to the campus via high speed computer networks, and to facilitate our academic discovery process that contributes to the world-wide academic community.

ITS strives to achieve an appropriate balance in partnership with the colleges and administrative units, and student organizations to provide needed technology coordination, infrastructure, and complementary services. These partnerships simultaneously address the principles of economies of scale *and* customized services to students, faculty, and staff, through coordination of centralized and distributed IT professional staff in a network organization.

Our application of technology is driven by three levels of implementation, which contribute to a stimulating educational culture for the academic community. Our goal is innovation, but work is done simultaneously at all three levels to build the necessary infrastructure as a foundation for innovation.

- **Automation:** creating efficient methods of handling routine tasks that allow greater effort to be focused on our primary academic mission.
- **Integration:** re-engineering to effectively integrate shared functions into streamlined processes that fulfill multiple purposes and reduce redundant efforts.
- **Innovation:** using technology to allow us to do things we could not previously do.

Values

Information Technology Services shares the values of the UNOmaha Division of Academic Affairs and extends the following values relevant to its specific function.

Information Technology Services:

- Measures success through the achievements of students, faculty and staff.
- Values flexible partnerships with campus units to achieve the appropriate balance of complimentary centralized and de-centralized functions and services.
- Values the principles of shared governance and shared accomplishments.
- Values the welfare, talents and futures of our employees, and commits to expanding their professional development.

- Encourages involvement in professional IT associations in education and industry consistent with staff development plans.
- Values good stewardship through efficient utilization of resources.
- Values good judgment through effective applications of technology.
- Encourages meaningful partnerships in our community to enhance learning through the appropriate use of technology.
- Proactively leads in the use of technology to solve problems.
- Encourages the use of technology as a communications tool.
- Encourages the use of technology in support of lifelong learning.
- Embraces diversity as an effective model of the university's working environment.
- Aligns its policies, procedures and behaviors with the highest professional ideals of ethics and legality.

3. Current Use of Information Technology

3.A. Existing IT Environment

3.A.1. Applications

Desktop Operating Systems - Off-the-shelf Applications

Italicized text are the instructions for each section.

Provide the number of users, or estimated number of users, for each of the following applications:

| | Number of users |
|--|------------------------|
| Productivity Suite (word processing, spreadsheet, etc.) | |
| Microsoft Office | 4607 |
| Corel WordPerfect Office | 90 |
| Other (Specify:) Lotus Smart Suite | 30 |
| Internet Browser | |
| Microsoft Internet Explorer | 4300 |
| Netscape Navigator | 307 |
| Other (Specify:) | |
| Document Viewer | |
| Adobe Acrobat Reader | 3500 |
| Adobe Acrobat Utility | 75 |
| Other (Specify:) | |
| Anti-Virus Software | |
| Norton | 307 |
| McAfee | 4300 |
| Multimedia/Graphic/Web | |
| Adobe (Photoshop, Premiere, PageMaker, Go Live, Illustrator) | 211 |
| Macromedia (Dreamweaver, Shockwave, Fireworks, Flash) | 165 |
| PaintShop Pro | 67 |
| Finale | 30 |
| Soundforge | 30 |
| Miscellaneous Multimedia (Real Player, QuickTime, MediaPlayer) | 4607 |
| Media 100 I along with Boris, Grafiti and After Affects | 10 |
| Statistical/Math Software | |
| Maple 7 | 275 |
| Minitab | 347 |
| SAS | 391 |
| SPSS | 539 |

List any other significant off-the-shelf applications utilized by the agency:

| Miscellaneous | |
|---|-----|
| Microsoft (Visio, Project, Publisher, Picture It) | 93 |
| Norton Utilities | 75 |
| Scanning/OCR software (HP, Omnipage) | 101 |
| QWS3270 | 892 |
| SAP GUI 4.5b & above | 299 |
| AutoCAD, 3d Max | 534 |
| Altiris | 356 |

Custom Applications

List any significant custom applications developed for the agency:

Academic Custom Applications

Most of the applications developed within Academic computing are utilized in an unaltered manner. There are several notable exceptions where the applications needed "middleware" to interact with existing systems. These custom developed (in house) applications include:

Blackboard 5.0/SIS

Blackboard 5.0 was implemented for the fall 2001 semester. This version brought us a higher level of integration with the SIS system. This integration has allowed for many tasks within Blackboard to be automated. These tasks include:

Creation of all Blackboard courses taught by faculty

Handles enrollments of faculty and students into courses

Automates the following features: creation, password reset and enrollment of visitor accounts, merging of courses, and copying course content between courses.

A Linux front end drives this web interface, with a Windows 2000 Server connection to the main SIS database. Additionally, it uses SSL (Secure Socket Layer) connectivity for the transactions.

Administrative Custom Applications

SCT - Student Information System (SISPLUS)

SAP - Interfaces

Informed Decisions - Cashiering Point of Sale

Missouri Book Systems - AS400 Point of Sale System

EBRUNO Web application (See Work Flow on page 6.)

3.A.2. Collaboration and Workflow

| E-mail | E-mail Application | Number of users |
|---|--------------------|-------------------------------|
| Lotus Notes | | 25,400 |
| Microsoft Exchange | | 400 |
| POP3 Application (e.g. Microsoft Outlook, Eudora, etc.) | | none |
| OfficeVision | | none |
| Other (Specify:) | | 100 Email relay for web forms |

Calendaring and Scheduling

The University of Nebraska has standardized on Lotus Notes as the official email and calendar management software. The University of Nebraska at Omaha has the largest base of Lotus Notes users with 2400 faculty and staff accounts and 23,000 student accounts which provide full group calendaring and campus wide address book functions that enable individuals to find and communicate with any other UNO faculty, staff or student and includes full Internet email abilities.

Future project plans include virus scanning of messages and implementation of an enhanced version of the Lotus Notes web interface called iNotes.

Document Management and Imaging

List any document management or imaging system(s) used by the agency:

The University of Nebraska System went live with the SAP system in July of 1999. To assist with the documentation of this system SLUGO (SAP Learning and User Guide Online) was created. SLUGO can be accessed from Lotus Notes or the web (<http://slugo.uneb.edu>). This system contains thousands of documents to assist the users of SAP in doing their job. SLUGO allows for one document to be accessed by hundreds of SAP users. This on-line system gives the user up-to-date documentation on all aspects of SAP. SLUGO has eliminated the need to print forms that the university uses related to Business and Finance and Human Resources.

Work Flow

List any other work flow application(s) utilized by the agency:

E-BRUNO

E-BRUNO is UNOmaha's web-based enrollment services system. With E-BRUNO, students can use their student ID# and PIN to log in and obtain grades, current class schedules, register for classes, pay tuition via credit card and much more. E-BRUNO provides student access to the UNOmaha Student Information System (SIS) via the World Wide Web. (<https://ebruno.unomaha.edu/login.htm>)

3.A.3. Data

Databases

List major databases maintained by the agency and the general purpose of each:

| | |
|----------|---|
| DB2 | SISPLUS and SAP applications |
| VSAM | SISPLUS |
| Informix | Student Accounts - CashNet and Short Term Loan applications |
| SQL | Blackboard |

Data Exchange

List the significant electronic data exchanges your agency has with other entities:

| | |
|-----|---|
| EDI | Clearing House |
| | Transcript Exchange |
| EFT | Financial Aid Loans |
| EDE | Express Federal Student Aid Application |
| | ISIR Institutional Student Information Record |

3.A.4. Electronic Government – External

Static Information on the Web

ITS has several web systems that are static in nature. The systems are used by the campus community to sign-up for accounts.

| |
|---|
| http://accountrequest.unomaha.edu |
| Lotus Notes Account Request Form |
| Apollo Account Request Form |
| CID Internet Server Account Request Form |

Student Enrollment Services (SES) has static information accessible on the web which includes the Undergraduate and Graduate catalogs, class schedules, and other information.

The CID web server in Operations is used by the campus community to provide information concerning various campus activities and organizations. Maintenance of the information is the responsibility of each area. University Affairs also maintains the UNOmaha home page on the CID webserver.

Information provided includes:

| |
|-------------------------|
| FAFSA On the Web |
| Academic Calendar |
| Admission requirements |
| UNOmaha Campus Map |
| University catalogs |
| Class Schedule listings |
| FERPA Guidelines |

Other

| |
|--|
| Career Connections |
| SLUGO has many forms for Business and Finance and the Human Resources business processes. SLUGO also has complete documentation on all business processes used with SAP. |

Web-based Services

- Multimedia Technology Service
Multimedia Technology Services allows clients to schedule media requests through an on-line form on the web. (e.g. Order a video camera, computer and projector for class or meeting.)
- E-BRUNO Online Registration
<http://www.ses.unomaha.edu/>
- Financial Aid award letters online
<http://www.ses.unomaha.edu/>
- Cashiering and Students Accounts
<http://www.ses.unomaha.edu/cash>

3.A.5. Electronic Government - Internal

[Leave blank. Electronic government information from agencies will be collected as part of the Governor's Business Portal project and by the E-Government Architecture Work Group.]

3.A.6. Hardware, Operating Systems, and Networks

Hardware

Provide a general description of the elements of the computing environment (mainframe, midrange, PC workstations, etc.).

Desktop Operating System(s)

| Operating System | Number of users |
|-----------------------|-----------------|
| Windows 95, 98, or ME | 2218 |
| Windows NT | 204 |
| Windows 2000 | 952 |
| Windows XP | 308 |
| OS/2 | 0 |
| Linux | 175 |
| Mac OS | 685 |
| Other (Specify:) | 65 |
| Total | 4607 |

Networks - LANs and WANs

Provide a general description of the agency's network environment, including type of network (e.g. Token Ring):

The University of Nebraska at Omaha has a state of the art backbone network consisting of core routers with gigabit (one billion bits per second) connections to all major buildings on campus and 100 megabit (one hundred million bits per second) connections to smaller buildings on campus. The UNO has the only campus network in Nebraska that has implemented Quality Of Service (QOS) and multicast services throughout the primary network cores. These services provide a base for building IP based video and audio streaming media services.

Networks – Operating System

Indicate the network operating system(s) utilized (indicate the estimated number workstations for each, if known):

| Network Operating System | Number of users |
|---------------------------------|------------------------|
| Novell Netware | 250 |
| Windows for Workgroups | 25 |
| Windows 9x Peer Networks | 50 |
| Windows NT | 500 |
| Windows 2000 | 2000 |
| OS/2 LAN Server | 0 |
| Other (Linux) | 15000 |

UNOmaha ITS Server Information - See Appendix 1

3.A.7. Staffing

Identify, in general terms, the agency personnel resources currently devoted to supporting the items listed in this section (3.A). This should include both personnel whose job titles and description are clearly related to technology, other personnel whose responsibilities relate significantly to technology support regardless of job title, and contract staffing provided to the agency.

Information Technology Services

Derek Hodgson – Vice Chancellor Academic Affairs

John Fiene – Associate Vice Chancellor for Technology

Ken Aasen – Director, Administrative Computing

Charles Wing – Senior Systems Analyst

Leah Cross – Senior Systems Analyst

Dan Kenny – Senior Systems Analyst

Don Robinson – Programmer/ Analyst II

David Taft – Programmer/ Analyst II

Seokwon Kang – Programmer/ Analyst II

Pat White – Programmer/ Analyst I

Stephen McIntyre – Manager, Operations

Pedro Okoruwa – Lead Operator III

Bob Day – Operator II

Katherine Pierce – Operator II

Hieu Nguyen – Operator II

Tung Nguyen – Operator II

Steven Lendt – Director, Information Technology Infrastructure

TBA – Systems Administrator III

George Blessing – Systems Administrator II

Mi Un Criffield – Systems Administrator II

Aaron Murray - Systems Administrator II

Rachmad Suwondo – Systems Administrator II

Michael Zimmerman – Systems Administrator II

Mendota Kelly – Systems Administrator I

Joyce Crockett – Director, Academic Information Services

Pat Dargantes – Coordinator, Education & Communication

Jon Peterson – Multimedia Technical Coordinator

Craig Chytil – Multimedia Events Coordinator

Robert Hromek – Computer Hardware Technician III

Ted Turgeon – Multimedia Support Coordinator

Lisa Conway – Multimedia Technology Assistants

Kirby Vaughn – Multimedia Technology Assistants

Michael Munson – Multimedia Operator

Bill Schwertley – Multimedia Operator

Robert Souder – Multimedia Operator

Daniel Stoyrich – Multimedia Operator

Scott Blankenship – Multimedia Support Specialist

Matthew Galardi – Manager, Client Services

Dean Hayes – Call Center Supervisor

Bob Kelly – Desktop Services Supervisor

Erin King – Technical Support Specialist

John Adams – Computer User Room Supervisor

TBA – Technical Support Specialist

Lanyce Keel – Asst. Planning Director, Distance Education

Shelley Schafer – Manager, Distance Education

Alice Villone – Business Manager

Sybil Sanders – Technical Support Specialist

Mildred Cole – Administrative Technician

3.A.8. Other

Please list any other issues relating to your current IT environment:

There are two applications used in Academic computing for the purposes of allowing customers to interact with the University on-line:

Instructional Technologies

Multimedia Technology Services (MTS) foremost goal is to increase the support side of using technology to assist faculty in teaching and learning. Currently MTS provides support for a wide range of media formats in the classroom. The various media types include a networked computer system either IBM compatible or Macintosh, connected to a high lumen overhead projection and sound system. Visual presenters are available in several of these rooms. Currently there are 53 classrooms available for faculty to conduct their classes using technology. Also provided are fourteen mobile support services for the locations that do not have a permanent installation at this time. MTS is adding support for digital video on PC and Mac platforms including authoring to CD, MPEG formats for use with PowerPoint, and various streaming rates depending on the instructors planned use. These services are in place, staff is being trained and production work will start in the 2002-2003 school year. MTS staff provides technical assistance for any distance learning classes held in the five distance learning rooms across campus. This assistance is used when classes use NEBSAT to offer distance classes. See the Distance Education section for more details on Distance Learning.

Distance Education

UNO DE Courses

| | Fall 2000 | Spring 2001 | Summer 2001 | Total |
|-----------------|-----------|-------------|-------------|-------|
| Arts & Sciences | 0 | 2 | 7 | 9 |
| CPACS | 21 | 27 | 15 | 63 |
| IS&T | 4 | 8 | 5 | 17 |
| CBA | 0 | 0 | 0 | 0 |
| Fine Arts | 0 | 0 | 1 | 1 |
| College of Ed | 3 | 6 | 4 | 13 |
| Total | 28 | 43 | 32 | 103 |

Over the last year, technical and financial support for Distance Education by Information Technology Services and by colleges has been informally based on requests' alignment with campus Strategic Goals and Statewide Mandates. In the spring of 2001, Academic Priorities was added as a criterion. While significant progress has been made, a comprehensive campus wide Distance Education Strategic Plan is being developed to assure progress toward UNO's three strategic goals, its Academic Priorities and to address a Board of Regents request. The UNO plan, which will be presented to the Board in the summer of 2002, will outline:

- priority educational needs;
- development and implementation of organizational infrastructure;
- provision of virtual support teams to assist faculty in the development of on-line priority programs/courses; and

- organization/streamlining of processes and development of a website that support the services (admission, class registration, library resources) Distance Education students' need.

3.B. Value

Describe and document the tangible and intangible benefits of the agency's investment in information technology.

The value of UNOmaha investment in information technology is substantial and critical to the daily operations of the organization. Technology is thoroughly integrated into every function of the university in support of our mission. It is critically important to accomplish the university vision.

Physical assets include a 6000+ port on-campus network with wide area network connections to the other university campuses and central administration, as well as the Peter Kiewit Conference Center, Offutt Air Force Base, Metro Community College, the Southeast K-12 Distance Learning Consortium, and both Internet 1 and Internet 2. The university connects more than 4000 desktop computer systems and servers to its network. The combination of computer systems and networks are intended to bring the information and knowledge assets of the world to university desktops for the use of students, faculty and staff.

The most valuable assets are the knowledge and social capital that are developed in our information technology professionals and users of information technology that allow the university to work together to perform our mission.

3.C. Information Technology Training

Summarize the agency's efforts to address training needs relating to information technology. This should include:

- *Training for users of information technology*

Faculty and Staff:

ITS Training offers training to departments on a variety of computer programs, such as Blackboard, MS Office, Lotus Notes email and calendaring, and FrontPage. We require minimum of five people to set up training.

Blackboard Training: Throughout the academic year ITS Training offers a series of ten courses on using the Blackboard system. Blackboard allows instructors to place courses online via the world-wide-web to seamlessly incorporate learning materials derived from word processing, audio, video, spreadsheet and presentation files. It allows for extensive assessment tools, database reporting, grade books, student tracking, real-time chat, file exchange, content rendering and a powerful search engine. Each faculty member can select the features they want to use

Staff and Faculty also have the ability to take training off campus. NBDC offers discounts to UNOmaha personnel. Visit their website for the class offerings. <http://nbdc.unomaha.edu/>

Students

ITS Training offers training to students through their faculty. Faculty can request training for their students on a variety of software. The training will be completed during normal class time.

During the fall 2001 semester ITS Training did a series of courses (eight weeks) with Project Achieve students. Project Achieve students are students who qualify as First Generation, Low Income, and/or Disabled college students (based on federal guidelines). The series covered: General Web information, Web searches, Lotus Notes, Word, Excel, PowerPoint, and working between programs. A total of 15 students attended the classes each week.

ASK? Course is offered four times a month allowing students, faculty and staff to stop by and ask a computer question. A knowledgeable staff person is available to answer these questions.

ITS Training offered:

Faculty/Staff

| Course Title | Number of Times Offered |
|--------------------------------|--|
| Ask? | 41 |
| Blackboard Training | 10 different classes 5 times a year. Plus an additional 20 training sessions based on department requests. |
| Lotus Notes Email and Calendar | 14 |
| Office Products | 8 |
| FrontPage | 3 |
| WordPerfect to Word | 1 |

Students

| | |
|-------------------------|----|
| CourseInfo / Blackboard | 22 |
| Lotus Notes | 14 |
| Office Products | 10 |

These courses were evaluated and the participants all were positive about the training.

Training for IT staff who develop and support the information technology systems

Training for IT staff who develop and support the information technology systems

- CBT courses
- Conferences
 - SIS Conference
 - Educause Conference
- Staff taking university credit courses
- Internal cross training with ITS staff
- Cisco Router/Server training.
- Windows 2000 Server course tailored to needs of ITS
- Campus Pipeline Training

- Organizations
 - Great Plains DB2 Forum (Quarterly)
 - FUSE – FOCUS Group (Bi-monthly)
- Partner with Statehouse on training related to Mainframe, DB2, and CICS

3.D. Security

Please answer the following questions regarding your agency's efforts to maintain a secure information technology environment. [The questions refer to the Nebraska Information Technology Commission's Security Policies. These policies are available at <http://www.nitc.state.ne.us/standards/>]

| | YES | NO |
|--|-----|----|
| Has your agency implemented the NITC's Security Policies? | | X |
| If your answer to the previous question is NO, is your agency in the process of implementing the NITC's Security Policies? | X | |
| If your answers to the previous two questions are NO, has your agency implemented other security policies? | X | |

Please provide contact information for the person responsible for IT security:

| | |
|--------------|-------------------------|
| Name | Steven Lendt |
| Phone Number | 402-554-2468 |
| E-mail | slendt@mail.unomaha.edu |

Provide a general description of the agency's efforts to develop and implement a security program:

The University of Nebraska at Omaha is designing and implementing a combination of security policies based on NITC specifications <http://www.nitc.state.ne.us/standards/>, executive memorandum 16 and other guidelines from Internet based security agencies such as CERT. These security features are a combination of hardware, software and network configurations designed to meet the following standards.

- Divide and identify systems and their resources in to distinct security levels.
- Use of proactive detection and prevention of security incidents.
- Positive identification for authorized users.
- Be as transparent as reasonably possible to authorized users.
- Provide a clear course for response and reporting for security incidents.
- Provide users with tools and information to protect their systems and data.

3.E. Disaster Recovery and Business Continuity Planning

| | YES | NO |
|---|-----|----|
| Does your agency have a disaster/emergency recovery plan? | X | |
| Does your agency perform regular back-ups of important agency data? | X | |
| Does your agency maintain off-site storage of back-up data? | X | |

Provide a general description of the agency's efforts regarding disaster recovery and business continuity planning:

Increasingly, the campus is being probed and attacked from viruses, system crackers, and automated agents. Disaster recovery includes employing hot-spares and full-system backups in order to be able to minimize downtime for mission-critical systems, trying as much as possible to build a robust, fault-tolerant infrastructure and recovery process. UNOmaha will be utilizing UNCSN's Disaster Recovery software to update the ITS Computer Operations Disaster Recover Plan.

3.F. Accessibility (Technology Access for Individuals with Disabilities)

[For more information on accessibility, contact Christy Horn at chorn1@unl.edu.]

| | YES | NO |
|--|-----|----|
| Does your agency include the Nebraska Technology Access Clause in contracts for information technology purchases? [See Neb. Rev. Stat. § 73-205. The Technology Access Clause is available at http://www.nitc.state.ne.us/standards/] | | X |
| Does your agency have procedures in place to identify the information technology related requirements of users with disabilities? | X | |
| Does your agency provide training opportunities for management, procurement, and technical personnel on how to meet the accessibility needs of users with disabilities? | X | |

4. Future Uses of Information Technology

4. A. Strategies and Future Direction

This section should summarize the agency's strategies and future direction for information technology within the agency. Topics should include:

- *A summary of future changes in uses of technology, which the agency plans to implement.*
- *An overview of the agency's activities that promote collaboration.*
- *A discussion of factors and risks that will impact the success of the agency's information technology strategy.*
- *An overview of plans to implement e-government services.*
- *Your agency's efforts to retain IT staff, if applicable.*

Foundational to the department's current and future success are strategic efforts in the areas of technical architecture, collaboration, project management and continued retention of a highly qualified staff.

Technical Architecture (Draft)

Future Direction. The Information Technology Services at the University of Nebraska at Omaha is creating a variety of services providing an increase in access to individual, class, organization and public data. Many of these services have common and integrated new technologies. The intent of these new technologies and services is to replace key services and data that previously required special software, and to web enable them. Making these services web enabled allows an individual to access the information from almost any Internet connected computer. Another important component is creating a combination of automated and real-time access methods for users with a single account name and password wherever possible. The third component is to provide high speed secure access to services and information. The goal of this new service model is to provide individuals a comprehensive and nearly seamless 24 hour access to technology services and data.

Intent

Develop strategies that will result in standardization or unified direction where possible in documenting existing and determining future technical architectures, resulting in greater economies, stability, security, convenience and service to the user community.

Where is ITS headed?

Information availability whenever and wherever (24x7 access, ubiquitous/pervasive). Open standards wherever possible for increased access to a variety of systems and their users. This table is technical in nature and explains the technical architecture ITS will be following over the next two years. This table will be updated based on technology advances and research.

This website will assist in defining terms listed in this table. <http://webopedia.com/>

| | Legacy | Current | Future | Currently in Research |
|---|--------|---------|---------|-----------------------|
| Hardware/Servers | | | | |
| Intel Based (PC) | | X | X | |
| Compaq/Digital Alpha servers | X | | | |
| IBM S/390 Mainframe – Based | | X | X | |
| Gigabit network backbone | | X | X | |
| Wireless networking | | X | X | |
| Data Bases | | | | |
| IBM DB2/UDB (DataBase 2/Universal DataBase) | | X | X | |
| Microsoft SQL (Structured Query Language) server | | X | X | |
| Open source DB (Postgres, MYSQL) | | X | X | |
| LDAP (Lightweight Directory Access Protocol) | | X | X | |
| Microsoft Active Directory | | | X | X |
| Lotus Notes document and tracking database | | X | X | |
| Microsoft Access | X | X | Limited | |
| Oracle | | | | X |
| Informix | | Limited | Limited | |
| IBM VSAM (Virtual Storage Access Method) | | Limited | Limited | |
| Server Software | | | | |
| Apache web server | | X | X | |
| Microsoft IIS server for web enabled applications | | X | X | |
| PHP(Php: Hypertext Preprocessor) for web enabled applications | | X | X | |
| WebFOCUS web enabled reporting | | X | X | |
| Apache Jakarta/Tomcat JSP (Java Server Pages) | | | X | X |

| | Legacy | Current | Future | Currently in Research |
|--|--------|---------|---------|-----------------------|
| Microsoft Web Folders/Web DAV (Distributed Authoring And Versioning) | | | X | X |
| WebSphere web application server | | | | X |
| IPLANET web application server | | | | X |
| JBOSS web application server | | | X | X |
| Server Operating Systems | | | | |
| Linux on Intel | | X | X | |
| Microsoft 2000 server | | X | X | |
| IBM OS/390 | | X | X | |
| Novell Netware | X | X | | |
| Cisco router language IOS | | X | X | |
| Linux on IBM VM/S390 | | | | X |
| Apple OS X | | | | X |
| Languages | | | | |
| COBOL (Common Business-Oriented Language) | X | X | Limited | |
| JCL (Job Control Language) | | X | X | |
| FOCUS/WebFOCUS | | X | X | |
| JavaScript | | X | X | |
| PHP(Php: Hypertext Preprocessor) Web-scripting language | | X | X | |
| JAVA including JSP (Java Server Pages), J2EE (Java 2 Platform, Enterprise Edition) | | | X | X |
| XML (EXtensible Markup Language) | | | X | X |
| HLLAPI (High Level Language Application Program Interface) screen scraping | X | X | Limited | |
| C/CGI (Computer Graphics Interface) | X | X | Limited | |
| Perl (Practical Extraction Report Language) | | X | Limited | |
| UNIX Shell | | X | X | |
| HTML (HyperText Markup Language) | | X | X | |
| Visual Basic | X | Limited | | |
| Application Development Methodologies and Toolsets | | | | |
| WebFOCUS web enabled reporting | | X | X | |
| UML (Unified Modeling Language) | | | X | X |
| Workflow | | | X | X |
| Extreme Programming | | | | X |
| Secure Programming | | | X | X |
| JUNIT unit testing | | | X | X |

| | Legacy | Current | Future | Currently in Research |
|--|--------|---------|---------|-----------------------|
| HTTPunit unit testing | | | X | X |
| Jmeter load testing | | | X | X |
| TogetherSoft J2EE development | | | | X |
| Rational Rose J2EE development | | | | X |
| WebSphere web application server | | | | X |
| IPLANET web application server | | | | X |
| Application Delivery Methodologies/Protocols | | | | |
| IBM DB2 (Data Base 2) Connect | | X | X | |
| ODBC (Open DataBase Connectivity) | | X | X | |
| JDBC (Java DataBase Connectivity) | | | X | X |
| XML (EXtensible Markup Language) | | | X | X |
| LDAP (Lightweight Directory Access Protocol) | | | X | X |
| Microsoft Active Directory | | | X | X |
| WAP (Wireless Application Protocol) /WML (Wireless Markup Language) | | | X | X |
| SOAP (Simple Object Access Protocol) | | | | X |
| UDDI (Universal Description, Discovery and Integration) | | | | X |
| WSDL (Web Services Description Language) | | | | X |
| Rich Content Protocols (Video/Audio) | | | | |
| Windows Media Player RealPlayer Quicktime | | X | X | X |
| H.323 | | X | X | |
| Direct Analog and Digital Video over fiber | | X | X | |
| NEB*SAT H.261 | | Limited | Limited | |
| MPEG2 over ATM (Asynchronous Transfer Mode) | | Limited | Limited | |
| MPEG2 over IP | | | Limited | |
| ISDN (Integrated Services Digital Network) H.320 | | Limited | Limited | |
| Project Management tools | | | | |
| Microsoft Project | | X | X | |
| CVS (Concurrent Version System) | | | X | X |
| ANT Build Tool for Java | | | X | X |
| c.support | | | | X |
| Blackboard | | | | X |
| Microsoft Excel | | X | | |

| | Legacy | Current | Future | Currently in Research |
|---|--------|---------|---------|-----------------------|
| Authentication and Security | | | | |
| LDAP with Unique Username | | X | X | |
| PIN (Personal Identification Number) | | X | X | |
| IDS (Intrusion Detection System) | | | X | |
| SSL/TLS Secure Socket Layer | | X | X | |
| SSH Secure SHell | | X | X | |
| VPN Virtual Private Network | | | X | |
| Alternate ID | | X | X | |
| SIS (Student Information System) ID/SSN | | X | Limited | |
| SAP Personnel Number | | X | X | |

Collaboration. The projects listed in 4B represent a variety of internal and system wide collaborative efforts. Collaboration is our philosophy as stated in the Mission, Vision, and Values.

Staff Retention. The Information Technology Services staff retention philosophy begins with hiring principles that include assessment for the ability to:

1. Demonstrate working well with others in a project team setting. This includes good communication skills for working with our constituencies and understanding the value of shared accomplishments.
2. Self-initiate and accomplish creative groundbreaking ability in past positions.
3. Demonstrate aptitude in the area for which they are being considered (current skills are important, but the ability and personal desire to learn new skills is more important).
4. Articulate the desire for association with higher education due to its operating culture, a desire to teach, or a desire to further their formal education.

These hiring principles are rigorously applied when evaluating job candidates. These employee attributes are the most difficult and time consuming to accomplish through staff development efforts. Employees who possess these characteristics tend to develop a positive and enthusiastic work culture that is both synergistically effective and enjoyable; in other words, one which they value and want to continue to be a part of.

Efforts are made within the constraints of public human resource practices to keep salaries within reasonable margins of the open market job equivalents, with stipends judiciously used in circumstances where significant responsibilities are added for a finite period of time. A reward program provides additional personal development opportunities for those who demonstrate any of the following:

1. Over the top efforts in creating client successes where they clearly would not have occurred otherwise.
2. Extraordinary groundbreaking initiatives in project assignments.

3. Have on their own initiative achieved a degree, certification, or educational award which demonstrates their understanding of the necessary role of life long learning in the profession.

The ITS organization is intentionally flat and fosters a culture whereby any staff member can comfortably discuss any issue or concern with any other member of the staff at any level without fear of reprisal. Matrix project teams are assigned in such a fashion that employee roles may differ on particular projects. An employee may be a member of several project teams with specific role assignments, yet also be assigned as project manager of other projects where those somewhat higher in the organization are assigned as team members. Project assignments are based on skill sets, developmental opportunities, and wherever possible personal objectives and areas of interest are matched with departmental objectives.

Finally, the mission, vision, and values expressed in this plan guide the implementation of specific business practices with the express purpose of developing a collaborative team-oriented working culture. While current technologies are important, those who effectively implement them are even more important.

4. B. Future IT Projects

List significant information technology projects which are expected to be undertaken by the agency during the next two years.

Information Technology Services' projects listed in this section have been integrated into the university strategic plan to indicate the primary goal they support for the direction of the organization. The three UNOmaha strategic goals are:

GOAL 1: UNOmaha Places Students At The Center Of The Educational Enterprise

Students are the focus of our work as an institution of higher learning. As we strive to achieve our vision, students are always the key constituency of our institution. UNOmaha is cognizant of and committed to serving the very diverse student body representative of a metropolitan campus. For this reason, UNOmaha embodies the ideals of the urban intercultural and international community it serves and values.

GOAL 2: UNOmaha Strives To Achieve Academic Excellence Consistent With Its Vision.

UNOmaha strives for academic excellence by focusing on elements that support teaching, learning and scholarship consistent with its metropolitan mission. Excellence is demonstrated in programs and areas of distinction, high quality undergraduate programs, and strong graduate research/professional programs consistent with the mission.

GOAL 3: UNOmaha Will Actively Engage With the Community

UNOmaha is located within a large metropolitan area and therefore its focus will ensure that attention and resources are devoted to issues confronting all urban and regional environments. Faculty and staff investigate, build bridges, and form partnerships to address these issues.

ITS Project List 2002-2004

AIS: Academic Information Systems

ITI: Information Technology Infrastructure

AC: Administrative Computing

DE: Distance Education

| Projects | Page | Partnership | Top 10 Campus Initiatives | Top 10 CSN Initiatives | Project Management |
|--|------|--|---------------------------|------------------------|--------------------|
| Accreditation Support | 43 | Colleges | | | AC, AIS |
| Altiris Computer Image Partnerships | 42 | Colleges | | | AIS, ITI |
| Application Development/Training | 40 | University Wide | * | | AC |
| Automated virus scanning of email | 35 | CSN | * | | ITI |
| Blackboard upgrade | 29 | Colleges | * | | AC, AIS, DE, ITI |
| Campus web server upgrade | 35 | University Affairs Colleges | * | | ITI |
| Centralization of all production databases | 36 | Business and Finance SES | * | | AC, ITI |
| Community Based Labs | 44 | University Affairs IS&T | | | AIS, ITI |
| Community Organization Involvement | 44 | | | | AIS, DE |
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| Electronic Document Storage/Retrieval | 40 | CSN Graduate Office | | * | AC, ITI |
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GOAL 1: UNOmaha Places Students At The Center Of The Educational Enterprise

Sub-goal A: UNOmaha develops and maintains academic and support programs and services designed for the varying academic, career, and personal goals of traditional and nontraditional students.

ITS Strategy 1 - Enhance students' understanding of the way information technology assists them in meeting the demands, requirements, and commitments associated with academic success in a major university setting.

- a. **On-Line Orientation.** Current orientation for distance students is ineffective. This project will create a method for distant students to conduct orientation from a web site. This site will be helpful for both the distance student and the busy on-campus student. Use of audio/video, text and graphics will be incorporated into this web site. On-line training of Lotus Notes and Blackboard will be started in January 2002.
Assemble team and have a working plan by March 2002.
Timeline: First Phase January 18, 2002 through August, 2002 (on-going maintenance)
Cost: 1000 hours of team work (First Phase)
300 hours of team work (Maintenance for a year)
Possible drive space for CID server (\$200.00)
- b. **Electronic Portfolio for Students.** Students will create this electronic portfolio starting with their first semester at UNOmaha. Incorporating text, video, audio, and graphics (still and motion) into this portfolio will go hand in hand with the student instructional training. Planning will be completed by Fall 2002. To assist with this project enrolled students from the Multimedia Technology program will be involved. This portfolio could include a student's courses, grades, and comments from professor's, major reports, team projects and school related activities. This project will be done in stages. The first stage will be to investigate the current Electronic Portfolio in College of Education and see how this model can be expanded to another college with the idea of scalability across the whole campus. The timeline below is for this first phase.
Assemble team and having a working plan by April 2002
Timeline: January 14, 2002 through August, 2002
Cost: 1200 hours of team work (First Phase)
300 hours of team work (Maintenance for a year)
Equipment/Software costs to be determined
- c. **Student Instructional Technology Training.** Students come to UNOmaha with different levels of technology skills. Students who need help in using technology must have different options to receive technology training. Develop on-line course modules that can be used in standalone training sessions or incorporated into other "for credit" service courses. Schedule regular student training during off-hours and

provide substantial anywhere/anytime training courses. Research with Academic Affairs and colleges on the best way to offer technology training to students.

Timeline: May 2002 – January 2003

Cost: 600 hours of team work

- d. **Web Portal.** A one-stop web site allowing students and prospective students to have easy access to many services including online applications, financial aid, email, E-BRUNO, Blackboard and many more services offered at UNOmaha. A unique view for undergraduates/graduate students, faculty and staff will be incorporated into this Web Portal.

Timeline: January 2002 and is on-going

Cost: 600 hours of team work every year

\$40,000 server upgrade and expansion

- e. **Computer Based Training.** Investigate and recommend a vendor for campus wide computer based training. Due to increasing cost and decreasing use, ITS has not renewed the computer based training contract with Smartforce. Selection of a new vendor will consider not only cost, but ease of interaction and administration.

Timeline: January 2002 – July 2002

Cost: 200 hours of team work

ITS Strategy 2 - Increase student access to technology in all aspects of the academic experience on and off campus, including distance education.

- a. **Blackboard upgrade.** The Blackboard system has become an integral part of an active learning environment for on-campus class augmentation and in support of the distance education strategic plan. Newer versions of Blackboard will offer increased integration with university courses and an enhanced feature set. Keeping this system current is core to the campus educational system. Target updates are scheduled for fall of 2002 based on software release dates by vendor.

Timeline: Once a year major updates based on software releases by vendor

Cost: \$60,000 server hardware and operating system costs

- b. **Web-based folder storage.** Creation of web enabled servers with accounts for all active UNO faculty, staff, students and departments with one location storage with secure access via any Internet connected computer with a web browser. Services to include 24 hour dynamic account password services, automatic user controlled file recovery and recovery of previous versions of documents and files. This project is dependent on funding through the student technology fees and other funding sources and the employment of one additional staff person. Current project status in testing for appropriate operating system.

Timeline: Fall of 2002 for initial test implementation

Cost: \$200,000 server and storage costs

\$50,000 each year for maintenance and software upgrades

- c. **Wireless networking.** The proliferation and standardization of the 802.11b wireless networking technology allows for dynamic access to multiple network and Internet based services from any laptop computer, handheld personal data

assistants (PDA) and mobile cart computer systems. The University of Nebraska at Omaha has implemented a campus wide wireless network plan. The current implementation has wireless network access in many student dense areas on campus and areas where traditional wired network connections are not possible. The next phase of this project is the integration of additional wireless services for classrooms and other areas where standard wired connections are not available. Implementation will be based on collaborative funding sources and specific location and application requirements. For additional information on the UNO campus wireless project, visit the web site <http://wireless.unomaha.edu>

Timeline: expansion over next 2 years to requested coverage areas

Cost: \$50,000

- d. **Cyber Kiosks.** Provide technology support to draw students to spaces and facilities throughout the campus designed for individual and small group interaction and study with workstations and wireless network access. Part of this project places standup workstations with web-enabled applications such as email, Blackboard, E-BRUNO, and other web-based services at convenient locations across the campus starting with the student center. This increases the number of workstations for student use with convenient access across campus. This is an active funded project with implementation beginning in the Spring 2002 semester.

Timeline: January 2002 and is on-going

Cost: 600 hours of team work every year

- e. **Mobil Computing Initiative.** In conjunction with pilot projects in the college of education, information sciences, public affairs, and UNCSN, determine "state of the art" of handhelds and their viability as access devices to academic and administrative systems. Determine server system requirements to allow seamless access to Notes, Blackboard, E-BRUNO, Streaming Media, etc. Make recommendation and implement.

Timeline: February 2002 and is on-going

Cost: 2000 hours of team work first year

- f. **Expanded Web-based Services.** There is a great potential for building web-based delivery of information and streamlining processes. Potential projects include:

- Payment of registration stops (library, parking) over the web in real-time, with automated real-time clearing of holds
- Web-based integration with the bookstore so that books could be purchased online at the time of registration in each course
- Download information via E-BRUNO or Web FOCUS anytime/anywhere including PDA support

Timeline: Spring and summer 2002.

Cost: To be determined

- g. **E-BRUNO Version 2.** UNOmaha E-BRUNO is a locally developed web-based enrollment services system allowing students to access their grades, current class schedules, register for classes, pay tuition via credit card and much more. Faculty and advisors use this system to enter grades, get class lists and see current teaching schedule

EBRUNO 2.0 Enhancements:

- To better support advising new modules for faculty will include permits/authorizations and degree audit for advisors.
Timeline: January 7, 2002 through April 15, 2002
Cost: 100 hours programming
 - Allow students and faculty the ability to access E-BRUNO 24x7 on read only functionality such as displaying grades and class lists. This will require a rewrite in areas of E-BRUNO system.
Timeline: February 4, 2002 through July 1, 2002
Cost: 300 hours programming
 - Allow students, faculty and staff the ability to download and print a full schedule. This will require a rewrite of the E-BRUNO online published schedule.
Timeline: January 7, 2002 through March 15, 2002.
Cost: 100 hours programming
- h. **Office Space Analysis.** To provide more convenient on-campus access to ITS services, an analysis of the location of functions with high client interaction will be performed with the intent of moving these functions to first floor access or to locate them as conveniently as possible.
Timeline: February 4, 2002 through July 1, 2002
Cost: 300 hours of team work
\$25,000 for estimated construction work
- i. **Web Conferencing Software.** Investigate web video conferencing software to be utilized with in both synchronous and asynchronous distance education courses and corresponding student services.
Timeline: November 1, 2001 through November 1, 2002
Cost: 300 hours of team work

ITS Strategy 3 - Enhance student learning through the use of multimedia and other rich content instructional technologies.

- a. **Streaming Media Services.** The University of Nebraska at Omaha has a vested interest in providing real time and on demand delivery of multimedia services. The University of Nebraska ITS group has implemented key upgrade and configuration changes to the campus network to enable support for streaming media services. ITS is working on collaborative projects with other campus organizations including the UNO Radio and Television group and the college of Information Service and Technology (IS&T) to provide high quality streaming media based distance education services. Campus core network upgrades are 75% complete with core upgrade pending for the south campus pending funding.
Cost: Approximate cost \$100,000
- b. **Multimedia Technology Production Service.** During 2002-2003 Multimedia Technology Services will continue implementation of a video editing project begun in 2001. MTS will be able to assist in the production of digital audio/video with final

production in a variety of media. The major projects will be based on Distance Learning priorities. Training of staff, major projects and miscellaneous smaller projects during timeline.

Timeline: January 2002 through December 2003

Cost: 4000 hours of team work

- c. **Core Skills and TIP Projects.** ITS will institute a core set of computer, networking, and audio/visual skills required for work in ITS. At the same time, a "Technology Instruction Program (TIP)" will be implemented to assist all ITS staff in acquiring this set of core skills. Instruction will be provided through classroom training and via a mentor based project oriented program. Assigned projects are intended to provide the ITS techs with the tools to provide technical support for the technology and multimedia needs of the UNOmaha community.

Timeline: January 2002 through March 2003

Cost: 1000 hours of team work

ITS Strategy 4 - Build Student Communities.

- a. **UNO What's Up.** Provide technical support for University Affairs web and email based electronic event newsletter for students.
- b. **Group Spaces.** Create group work spaces in two of the campus open access computer labs. These spaces will be designed for small group interaction and study. Technology in these spaces may include workstations with some set for multimedia access, PDA syncs, and wireless network access.

Timeline: January 2002 through March 2003

Cost: 1000 hours of team work

- c. **Develop the ITS student worker community.** Mentoring the ITS student population will assist ITS in a variety of ways. Currently many of the ITS came from the student worker ranks and this needs to continue. Assist with the many projects based on their studies at UNO. Provide regular social events for ITS student workers to build their sense of community within ITS and the university.

Timeline: January 2002 and is on-going

Cost: 1200 hours of team work a year

Sub-goal B: UNO graduates are prepared for leadership, participation and employment in diverse environments throughout the nation and the world.

ITS Strategy 1 - Increase students' awareness of the value of diversity of culture.

- a. **Model Diversity.** Model sustaining an inclusive work environment by implementing appropriate hiring and work practices and staff policies that demonstrate, where possible, respect for cultural preferences.

Sub-goal C: UNOmaha will expand the educational opportunities for students from under-represented populations.

ITS Strategy 1 - Promote the recruitment of qualified minority and underrepresented students from Omaha and the metropolitan region.

- a. **Technical Support for Multicultural Affairs, Diversity and Special Needs .** Provide technical support for minority student groups, multi-cultural affairs, and Services for Students with Disabilities.
- b. **Expand Laptop Loan Program.** Continue to expand the number and quality of equipment available via the Laptop Loan Program for students who do not own a computer. Add free Internet access.
Timeline: January 2002 and is on-going
Cost: 1200 hours of team work a year

Sub-goal D: UNOmaha will be a higher education institution of first choice for qualified students desiring a metropolitan university experience.

ITS Strategy 1 - Promote the UNOmaha technology rich environment as a competitive advantage for qualified students desiring a metropolitan university experience.

- a. **Promotion of ITS Services.** Develop and implement a marketing plan to heighten awareness of ITS services during 2002/2003.
Timeline: March 2002 and is on-going
Cost: 700 hours of team work a year
- b. **Counselor Web Resource Page.** Collaborate with Student Enrollment Services to create a web page resource for high school counselors.
- c. **Promote K-12 Resources.** Promote access to UNOmaha developed curricular resources or K-12 teachers and administrators.

ITS Strategy 2 - Support academic and extracurricular activities that nurture and enhance student leadership, professional skills, and academic achievement.

- a. **Sound System Support.** Provide sound systems and technical support for extracurricular events. Encourage the participation of our student workers and staff in such activities. Events like the Malcolm X conference, UNO Athletic Women's Walk, Regents Meetings, Chancellor's Convocation, Honors Programs, PKI Institute events all require some form of support from ITS.
Timeline: On-going
Cost: 300 hours of team work a year

ITS Strategy 3 - Professional Ethics. ITS aligns its policies, procedures and behaviors with the highest professional ideals of ethics and legality. ITS models these behaviors for our student worker population and the students we serve and hold them accountable to the same standard.

**GOAL 2: UNOmaha Strives To Achieve Academic Excellence
Consistent With Its Vision.**

Sub-goal C: UNOmaha's teaching is designed to meet the multiple needs and highest aspirations of students drawn to the metropolitan campus.

ITS Strategy 1 – Create stable, secure, high speed network access to academic technology resources.

- a. **Campus web server upgrade.** The current UNO campus primary web server hardware and file organization is based on 6 year old technology. The web server is one of the primary university contact and information dissemination services. This project would use a combination of new hardware, operating system and software to create a high reliability web server with the ability for dynamic content update, scalable account management and additional web enabled features including secure information transfers. This project is pending on results of the web folder and account management service projects.

Timeline: Initial server setup spring 2003, completion by summer 2004

Cost: \$50,000

- b. **Intrusion Detection and Blocking.** The University of Nebraska at Omaha is part of a growing trend of Internet based attacks targeting university systems. On an average day over 10,000 probes for vulnerabilities are directed at systems on the UNO campus. An intrusion detection system (IDS) is a network appliance that looks for digital signatures of hostile probes and dynamically blocks those attacks. As an additional service, the UNO ITS network and systems group is implementing a network based open inbound general computer service protection blocking. This inbound protection blocks Internet based probes and attacks on desktop and laptop computers that would otherwise present operating and application security risks. Campus wide deployment of inbound general computer service protection is schedule for 90% completion by the summer of 2002. Initial tests of an IDS system are currently underway, with a planned implementation by summer of 2002.

Timeline: Initial tests in progress, completion by summer 2002

Cost: \$40,000

- c. **Automated virus scanning of email.** The proliferation of computer viruses and worms via email continues to rise. This project would provide automated scanning of all inbound and outbound Lotus Notes email messages, thereby greatly reducing the number of systems infected by email borne viruses. Project status is in initial testing of virus scanning software options. Implementation of this service is scheduled for summer of 2002.

Timeline: Summer 2002

Cost: \$15,000

- d. **Disaster Recovery/Security.** Disaster recovery will employ hot-spares and full-system backups in order to minimize downtime for mission-critical systems and as much as possible, build a robust, fault-tolerant infrastructure and recovery process in partnership with the University of Nebraska Medical Center. UNOmaha will be utilizing UNCSN's Disaster Recovery software to augment the ITS Computer Operations Disaster Recovery Plan.
- Timeline: Currently in process – Installing access to UNCSN's Disaster Recovery software. 350 hours of team work required to develop UNOmaha Disaster Recovery plan.
- Cost: \$500,000
- e. **Redundant failover server and services (via network and auto-IP switching).** There are multiple core services that are critical to the function of the university system. Redundant systems allow for a failover option, but only after the fatal outage has been identified on the primary system. A network based auto-IP switching system creates an intelligent and fully automated failover process for these systems. This service would also provide load balancing features to provide improved services at a reduced cost to system hardware.
- Timeline: Project is pending funding
- Cost: \$75,000
- f. **Monitoring of services.** There are over 250 server systems and network devices on the University of Nebraska at Omaha campus. Current monitoring systems check less than 50% of these systems for basic activity. This project would place an intelligent monitoring system able to evaluate the health of systems and provide proactive reporting of potential problems before the system goes critical. This project is dependent on funding and a 0.5 FTE staff member. Initial test implementation is scheduled for spring of 2002.
- Timeline: Initial test implementation spring of 2002
- Cost: \$20,000
- g. **Centralization of all production databases.** Data will be stored on a MS SQL 7.0 server. Currently, all production databases are located on a server that is becoming marginal to provide stable transaction processing. All current databases on this server will be migrated to a new server. Ease in maintaining and manipulating multiple databases while providing for stable transactions processing.
- Timeline: February 1, 2002 through February 15, 2002
- Cost: 40 hours setup of server and transfer of data
Equipment/Software costs to be determined
- h. **Inter-campus network architecture upgrade.** The University of Nebraska at Omaha and the University of Nebraska Medical Center Internet connections are high speed but limited to multiple devices and lines that are each a potential single point of failure. This project would provide a dual Internet path for the Omaha based campus networks.
- Timeline: Pending funding
- Cost: \$100,000

- i. **Security for Technology Classrooms.** With continued increase of Hi-Tech classrooms the need for securing these classrooms using technology grows. This project expands to all corners of the campus. Assemble a team to create a working plan that can be expanded across campus and utilize a standard method of access.
Timeline: March 2002 through September 2002
Cost: 600 hours of team work
Costs to be determined

ITS Strategy 2 – Facilitate an increase in faculty use of technology in all aspects of the academic experience both on and off campus and via distance education.

- a. **Electronic Presentation Rooms.** The long-term goal is to place technology in all classrooms on campus. To date UNOmaha has 53 of 120 classrooms equipped. Fourteen mobile smartcarts are in high demand. The need for adding DVD and CD-R drives is on the increase. Add 10 new rooms, upgrade 9 older rooms and update 8 Smartcarts. Funding is being sought by grants and partnerships with colleges.
Timeline: January 2002 through fall 2002
Cost: 300 hours of team work
Equipment costs \$147,000
- b. **Video/IP Usage from electronic presentation rooms.** Continue to research and test video over IP technology. This is a natural progression for the technology classroom to next have the ability to do video over IP. Assemble team to create working plan, which will include budget, implementation dates and training requirements for ITS staff.
Timeline: October 2002 through March 2003
Cost: 800 hours of team work
Equipment/Software costs to be determined
- c. **Web-based Survey System.** Reviewing web survey software packages. This service will give instructors and various departments the ability to easily develop surveys and analyze the data with statistical packages such as SPSS and SAS.
Timeline: December 2001 through June 2002
Cost: 300 hours of team work
Software costs to be determined
- d. **Instructional Design.** As part of a multidisciplinary team assigned to support creation of new Distance Education offerings, faculty will be provided with pedagogical consultation for high demand and/or high priority projects. Included in the design will be research methodology.

ITS Strategy 3 – Develop efficient integrated administrative technology solutions in conjunction with the University of Nebraska Computing Services Network which minimize time spent on administration to maximize our academic focus.

- a. **Student Information System Task Force.** To protect the university's investment in SCT's software product UNOmaha anticipates working closely with SCT product development teams to define and prioritize product requirements. SCT has informed the University of Nebraska that they have abandoned the RLS development project which will have an impact on SIS PLUS.

Timeline: Ongoing

Cost: 300 hours of team work – phase I impact analysis.
Additional phases to be determined

- b. **SCT SIS PLUS Maintenance/Enhancement Support.** Provide support for the ongoing maintenance requirements of student records including pre-admission/recruiting, admissions, registration, scheduling, academic records/grades, advising, financial aid, student accounts in an on-line environment. SCT issues over 100 modifications each year of varying magnitude and complexity. (e.g., winter and spring Financial Aid Management regulation updates, yearly Tax Relief Act upgrades, and major modifications to existing components) Priority enhancements that have been identified include; Returned Check, Foundation Billing, UPF Workshop fees, Short Term Loan Purge, On Course enhancements, EDT Transcript processing, and enhanced PELL processes. Note that E-BRUNO version 2 enhancements are included in Goal 1, ITS Strategy 2, item g.

Timeline: Ongoing

Cost: 5000 hours of team work required annually

- c. **Global E Learning Student Information System.** UNO is negotiating with Fudan University International Institute for Information Science and Technology (IS&T) in Shanghai, China, to provide student instruction as part of the UNOmaha Global eLearning Project. The goal is to offer the students a structured course set culminating in a degree of Bachelor of General Studies in Computer Science from UNO.

Timeline: Pending approval

Cost: Initial start up - \$50,160, ongoing - \$203,350

- d. **Financial System Task Force (FSTF)/SAP Support.** The FSTF is the SAP steering committee responsible for regular oversight of the SAP project providing tactical, not day-to-day, direction for the Administrative Systems Group (ASG). The FSTF members are from all campuses, ASG and UNCSN. This group views the business processes of the University and provides a communication channel to and from the campuses. The Director for Administrative Computing attends FSTF meetings on a regular basis and acts in an advisory capacity representing Student Information Systems and UNOmaha issues. SAP support consists of ongoing administrative technical support for the SAP system. This includes development and enhancement of interfaces between the Student Information System and the SAP

Financial and Human Resource applications. It is anticipated that additional administrative technical support will be required in the future.

Timeline: Project is ongoing

Cost: 700 hours of team work annually

- e. **Expansion of account automated management services.** The UNO Blackboard and Lotus Notes systems have automatic account creation and 24 hour dynamic account password services. Expansion of this service to additional systems will allow faculty, staff and students to have full time and immediate control of the account information and access. Project is in design stage. Estimated implementation: Summer of 2002

Timeline: Fall 2002

Cost: \$20,000

- f. **Single account logon and authentication.** Students, faculty and staff have an increasing number of university systems to be accessed in their daily class work and job functions. This project would expand on the concept of a single (to the degree possible) login name for an individual across multiple systems and with one shared password for these systems. This enhanced service will be coordinated with a university wide directory services and authentication method investigate effort and also performed within the context of similar efforts across higher education. Initial tests of this system are targeting summer of 2002 for initial security and integration tests.

Timeline: Initial testing of new systems summer of 2002, then on-going

Cost: \$15,000

- g. **Web FOCUS.** WebFocus, is a reporting and analysis solution for building Web intranets, extranets or internet eBusiness applications, dynamically generating Web reports, and provides drill-down, and OLAP (Online Analytical Processing) capability. WebFOCUS allows UNOmaha to leverage existing FOCUS expertise. This product has the potential to expand beyond the existing SIS-only application base. Using WebFOCUS can have a significant reduction in mainframe resource utilization and an increase in performance and potential life extension of current mainframe. Also see Goal 1: Sub Goal A, ITS Goal 2 - SIS.

Timeline: April 30, 2001 through April 30, 2002 and is ongoing

Cost: 2100 hours of team work

\$6000 for hardware/software requirements

- h. **On-line University Address book.** Create an online University Address Book with current updated information so faculty and staff personnel will be able to update their address information via a web browser. This will provide up-to-date information with easy search and update capabilities.

Timeline: March 1, 2002 through May 1, 2002

Cost: 50 hours programming

- i. **Datamart.** Analyze and develop processes to enhance UNOmaha specific data (Student and Human Resources) on the Data Warehouse by building a UNOmaha datamart with the goal of making UNOmaha data more user friendly and accessible.
 Timeline: October 2002 through summer 2003
 Cost: 200 hours of team work for Initial Design Phase I.
 Other phases to be determined
- j. **On-line resources for advising.** Develop self-service-reporting applications under WebFocus and E-BRUNO to assist student advising utilizing real time information.
 Timeline: October 2002 begin analysis
 Cost: 250 hours of team work for feasibility study. Other phases to be determined
- k. **Electronic Document Storage/Retrieval.** Determine feasibility for converting data in either paper or electronic form into a uniform electronic package. Pilot this project with the Graduate Office. Initial parts of this project include:
- New web forms to enable quick processing and storage of new data
 - Purchase of new equipment (CDs, CD-burner, computer software, scanner, etc.)
 - Determine type of media
 - Creation of a variety of reports and ability to retrieve adhoc data
 - The hiring of staff to scan old data
 - In-house development of software for easy retrieval of data
 - Training and documentation on how to use software.
- Timeline: October 2002 begin analysis – 250 hours of team work
 Cost: To be determined
- l. **Smart Cards Security/University Affairs.** The objective of the photo id/student ID system has expanded to accommodate more features (debit, electronic access, etc.). Work with University Affairs in developing smart card interfaces that eliminate the requirement for manual validation/verification. Utilize LDAP Authentication technologies in verification of student Id's. Remove the dependence on the use of Social Security numbers. Work with other UN organizations for general access card support.
 Timeline: Project dates – Began October 13, 2001, end date – open
 Cost: 350 hours of team work to support project. Networking interfaces
 Costs to be determined
- m. **Application Development/Training.** In addition to normal on going training requirements, there are two primary areas where Administrative Computing needs to incorporate new skill sets. The Student Information System (SIS PLUS) is moving from a legacy COBOL development environment to a Web-based platform. This technology change will occur within the next 2-4 years. Secondly, there are many systems throughout the campus that should be web intranet/internet applications. A comprehensive training plan is continually being updated to meet these requirements.
 Cost: 1700 hours of team work for training annually.
 \$25,000 for course offerings onsite and offsite

Sub-goal C: UNOmaha will nurture and develop programs of excellence.

ITS Strategy 4 – Develop strategic campus partnerships with the colleges and support units to determine the best way of delivering specific technology services between departmental IT staff and Information Technology Services.

- a. **Distance Education (DE) Coordination.** Building on current strengths, UNO will create a networked campus initiative that balances centralization and prioritization of student services at the campus level with academic innovation and decision making at the department/college level. In response to a request by the Vice Chancellor of Academic Affairs, ITS will assume responsibility for the coordination of this networked initiative which functions at strategic and tactical levels.

Strategic Structure: The proposed structure will retain decision making about academic distance education projects and programs at the department/college level.

Coordination will include developing methods to regularly evaluate campus progress of the DE Strategic Plan (SP), facilitating a DE SP Advisory Council, review and make recommendations on DE structure and policy. Additional responsibilities include creation and assignment of multidisciplinary teams to support development of new DE offerings (see below), grant-writing for campus wide DE initiatives as well as the annual review of proposals and recommendation for new DE public education/community partnership opportunities that will require support from the networked organization.

Tactical Structure: In areas where generalized student service need occurs or where new academic content is being developed, teams with multimedia technicians and instructional design skills will be assigned to develop and maintain the new programs/services. Membership of the teams will vary depending on the content and technical expertise needed. The types of programs/services these teams will address include:

| Service | Departments to be involved |
|--|---|
| Development and Maintenance of a Campus DE Website for students & faculty. | ITS, University Affairs (See UNO Goal 1, Subgoal A, ITS Strategy 1,d) |
| On-line student orientation | (See UNO Goal 1, Subgoal A, ITS Strategy 1,a) |
| On-line faculty DE Resources | (See Goal 2,) |
| On-line support for academic advising | (See UNO Goal2, ITS Strategy3,j) |

- b. **Department Training Partnerships.** Faculty and staff need basic as well as more advanced technology training. Staff needs to use technology more efficiently in the office. Department training allows classes to be tailored and provides faculty and staff a time together to discuss and share ideas. Continue to increase our departmental training by 10% during the 2002-2003 fiscal year. Higher percentage if more staff is assigned to training.

Timeline: January 2001 and is on-going

Cost: 600 hours of team work to increase training by 10%

- c. **Altiris Computer Image Partnerships.** Altiris allows an image to be created of standard software placed on a microcomputer. This image can be reused to restore a computer to a working state. In student labs this is very beneficial to have an image that can be reused to restore a system to a working state. ITS will be developing partnerships with colleges and departments to set up Altiris images not only for current equipment, but for new equipment being shipped to campus.

ITS Strategy 5 Develop basic technology standards to facilitate campus wide acquisition of state of the art technology resources.

- a. **Server Hardware Task Force.** A server hardware task force composed of selected members of the ITS staff and other campus IT professionals will keep a current inventory of server hardware and develop a short-term and long-term purchasing plan to achieve the highest possible utilization of server resources.

- b. **UNOTECH Partnerships.** ITS values the work all technical staff achieve within the colleges and departments. ITS wants to partner with this group for many reasons. The guiding principle for these partnerships will be to foster communication and to allow for partnerships where it makes sense. The current projects this group is working on include:

- Coordinating timeframes to purchase hardware and software
- Agreements on hardware configurations
- Negotiating special pricing program for the personal use by students, faculty and staff
- Advertising
- Printer purchases for student labs
- Creating software images for computers being purchased. Two images will be created one for faculty and staff and one for computer labs.

Timeline: February 2002 through August 2002 (for current projects)

Cost: 300 hours of team work

Equipment/Software costs to be determined

- c. **Mainframe 390/Linux project.** Port E-BRUNO to Linux on the IBM 390 mainframe. This is a research project as a proof-of-concept. This will give E-BRUNO high reliability and scalability, as mean-time-to-failure for mainframes is measured in DECADES.

Timeline: March 1, 2002 through July 1, 2002

Cost: 100 hours programming

Sub-goal C: UNOmaha will expand its stature as an institution of scholarly excellence.

ITS Strategy 1 - Support appropriate professional accreditation and similar forms of review.

- a. **Accreditation Support.** Support the deployment of technology required for accreditation.
See Goal 1, ITS Strategy 1 (Electronic Portfolio for Students)
- b. **Professional Memberships and Certifications.** Encourage membership in professional organizations relating to information technology and professional certifications consistent with staff development plans.

ITS Strategy 2 - Strengthen faculty and students' ability to compete successfully for federal and other external funding for research and scholarship.

- a. **Grant partnerships.** Actively seek opportunities to partner with faculty in obtaining grants where technology is a key and such collaboration enhances the possibility of funding. Identify potential funding sources for such purposes with the express purpose of expanding rather than redirecting resources.
Timeline: February 2002 and is on-going
Cost: 100 hours programming per grant

ITS Strategy 3 - Foster opportunities to attract distinguished speakers, alumnus, scholars, artists, and executives in technology fields to campus and promote scholarly technology related conferences at UNOmaha.

GOAL 3: UNOmaha Will Actively Engage With the Community

ITS Strategy 1 - Strengthen relationships with all metropolitan area and state educational institutions.

- a. **Expansion of University of Nebraska Network, create a Nebraska state-wide education network.** This is a university-wide project to design, create and maintain a high speed state educational network for bringing distance education, multimedia services, and shared resources including Internet 2 to state educational institutions.
Timeline: Pending
Cost: Additional staffing for planning, implementation and support
- b. **Multipoint Video Conferencing System.** The state of Nebraska has adopted H.263 as one of its primary video standards for distance education and conferencing. The second standard is MPEG II. The university system has widely adopted H.323 (use of H.263 video over IP networks), but to this point it has been limited to point to point connections. This project will analyze multipoint access control units for optimal configuration within the university system to allow multiple simultaneous video connections to any points of the university network, interconnected networks, and via Internet 2. This is a joint project between ITS and UNO TV, and is also a collaborative project with the other university campuses and UNCSN.
Timeline: Initial server setup spring 2003, completion by summer 2004
Cost: \$120,000
- c. **Increase collaboration with the University of Nebraska Medical Center.** Develop formal projects which foster sharing of technical expertise in meeting the needs and requirements of students, faculty and staff at both campuses. This includes shared services and disaster recovery systems.
- d. **NEHEIT Leadership.** Provide leadership to the Nebraska Higher Education Information Technology Forum (NEHEIT), a state-wide group of IT professionals and administrators in higher education.

ITS Strategy 2 – Create partnerships with public, non-profit, and private sector organizations to enhance the quality of life for all citizens, with particular emphasis on youth and the disadvantaged.

- a. **Community Based Labs.** Create selective partnerships with external organizations to operate UNOmaha community based computer labs with current hardware, software, and Internet access to address issues of urban equity of access to technology.
Cost: \$15,000 startup, \$8,000 on-going plus support for community and the private sector
- b. **Community Organization Involvement.** Continue community engagement in appropriate community organizations representing education, government, non-profit, and industry, as well Information Technology groups.

ITS Strategy 3 - Bring together faculty, staff, and students to focus on collaborative projects that benefit community, educational, cultural, and economic development.

- a. **Technology in Service and Service Learning.** Create partnerships with the university community involved in service to the community and service-learning projects to determine how technology can be incorporated into projects. Many times these service-learning projects are created for the area of our population that is considered part of the urban "Digital Divide."
- b. **Video Events.** Broadcast or produce streaming video on demand of relevant of national, international and campus events of wide community interest via "on air," cable, Internet, or educational data inter-networks.

UNOmaha ITS Server Information -- Appendix 1

| <u>System Name</u> | <u>Brand & Model</u> | <u>Primary Function</u> | <u>Processor(s)</u> | <u>Current O/S</u> |
|--------------------|---------------------------|-----------------------------|---------------------|---------------------|
| ACS | Gateway 4200 | Network Access Ctrl | P3: 550MHz | Win 2000 Adv Server |
| Apollo | Digital Alpha Server 1200 | Programming/Stats | Alpha 533 MHz | Compaq Tru64 Unix |
| BBQ1 | DELL PowerEdge 6350 | BlackBoard beta test apps | 4: Intel Xeon 550 | Win 2000 server |
| BBT2 | DELL PowerEdge 6350 | BlackBoard beta test db | 4: Intel Xeon 550 | Win 2000 server |
| BBtest1 | Dell OptiPlex GX115 | BlackBoard config test apps | Pentium | Win 2000 server |
| BBtest2 | Dell OptiPlex GX115 | BlackBoard config test db | Pentium | Win 2000 server |
| CashNet Test | IBM RS6000 model 380 | CashNet test server | Power PC | AIX Unix |
| CID | Digital Alpha Server 1000 | Campus Webserver | Alpha 266 MHz | Digital Tru64 Unix |
| DNS-1 | Compaq ProLiant 1600R | DNS/DHCP/TIME Srv | 2x Intel P2/400 | Win NT server |
| DNS-2 | Compaq ProLiant 1600R | DNS/DHCP/TIME Srv | 2x Intel P2/400 | Win NT server |
| E-BRUNO | Dell PowerEdge 2550 | Web Registration/Grading | P3 1.0 GHz | RedHat Linux |
| Enforcer | Dell 2450 | Network Policy Manager | 866 | Win NT server |
| Install | Compaq ProLiant 1600R | Web software delivery | 2x Intel P2/450 | Win 2000 server |
| ITS-WMENC | Generic | WinMedia Encoder | 1: P3 933MHz | Windows 98 |
| ITS-WMSRV | Compaq DeskPro 6350EN | WinMedia Server | 1: P2/400 | Win 2000 server |
| IUNO | Dell PowerEdge 2550 | Admin. Intranet server | P3 1.0 GHz | RedHat Linux |
| NIDO1 | Dell PowerEdge 2450 | Mailrouting/Mailing Lists | P3 733 MHz | RedHat Linux |
| NIDO2 | Dell PowerEdge 2450 | Mailrouting/Mailing Lists | P3 733 MHz | RedHat Linux |
| Paris (designer) | Dell Workstation | Forms Designer | P3 700 MHz | Win 98 |
| Paris (spooler) | Dell Workstation | Forms Layout | P3 1.0 GHz | Win 2000 Pro |
| Phoenix (Apollo2) | Dell PowerEdge 2550 | Programming/Stats | P3 1.0 GHz | Linux |
| Ping | Gateway desktop | Ping/Traceroute via web | P2 166 MHz | Red Hat Linux |
| Qmaster1 | Dell PowerEdge 2550 | Print Server | P3 1.0 GHz | RedHat Linux |

UNOmaha ITS Server Information -- Appendix 1

| <u>System Name</u> | <u>Brand & Model</u> | <u>Primary Function</u> | <u>Processor(s)</u> | <u>Current O/S</u> |
|--------------------|--------------------------|-----------------------------|---------------------|----------------------|
| Qmaster2(Backup) | Dell PowerEdge 2550 | Backup Print Server | P3 1.0 GHz | RedHat Linux |
| UNOBackup | Dell 2450 | Central Servers Backup | P3 666 MHz | Win 2000 Server |
| UNOBB1 | Dell 6450 | BlackBoard Web/Apps | 4XP3 700 MHz | Win 2000 Server |
| UNOBB2 | Dell 6450 | BlackBoard Database | 4XP3 700 MHz | Win 2000 Server |
| UNOLABS1 | Dell 2550 | Lab imaging/printing | P4 1.0 GHz | Win 2000 Server |
| UNOLABS2 | Dell 2550 | Lab imaging/printing | P4 1.0 GHz | Win 2000 Server |
| UNOMail1 | Dell PowerEdge 6450 | Student E-mail/calendaring | 4X-Xeon 800 MHz | Win 2000 Adv. Server |
| UNOMail2 | Dell PowerEdge 6450 | Facstaff E-mail/calendaring | 4X-Xeon 800 MHz | Win 2000 Adv. Server |
| UNOFusion | Compaq 3000 | File Sharing and Printing | 2XP3 400 MHz | Novell Netware |
| UNODominoTest | Dell 2450 | Lotus Notes testing | P3 866 MHz | Win 2000 server |
| UVW-DHCP | Gateway E3100 | Univ Village DHCP Srv | P2 366 MHz | Win 2000 Server |
| WHATSUP | Dell Optiplex GX100 | Network Monitor / Alerter | P2 400 MHz | Win 2000 Prof |
| Xerox | Sun Sparc Ultra 2 | Print Processing | P2 296 MHz | Sun OS |

UNOmaha ITS Server Information -- Appendix 1

| <u>System Name</u> | <u>Brand & Model</u> | <u>Primary Function</u> | <u>Processor(s)</u> | <u>Current O/S</u> |
|--------------------|--------------------------|--|----------------------|--------------------|
| OTHER | | | | |
| Cashiering | IBM | Cashiering Point of Sale, Short Term Loan, Informix Development Tools, Application Development UNOmaha | RS/6000 – Model 7012 | AIX |
| Bookstore | IBM | Text Book Exchange UNOmaha | AS/400 – Model 600 | RISC OS/400 |
| SES | | | | |
| ENROLL | Gateway | Internet group e-mail server | P5-120 | Linux |
| Wrigley | Gateway | SES PPP server | PII 233 | W2K |
| Sledgehammer | Gateway | SES Webserver | PIII 450 | W2K |
| SES Fax | Gateway | SES fax server | PII400 | W2K |
| Chief | Gateway | MSSQL DB server, Astra Schedule | PIII 733 | W2K |
| Arrowhead | DELL | SES Primary Domain controller, file and print server, application server | PIII 1GHZ- | W2K |