



☞ **Implementation Summary**

This section provides an overview and time lines for implementing the highest priority activities to be accomplished under *TechPlan 2003*. Where known, required increases in the funding base are shown.

☞ Please direct any questions or comments concerning this document to ☒

**Bill Cannon**  
**Director, Information Technology Services**  
**Humboldt State University**  
**One Harpst Street**  
**Arcata, California 95521**  
**(707) 826-3815**  
**[wcc7001@humboldt.edu](mailto:wcc7001@humboldt.edu)**

***TECHPLAN 2003 UPDATE OF GRIDS TRACKING HUMBOLDT'S VISION/GOALS***

The campus Strategic Plan was adopted in 1996. All of the goals for information technology identified in that plan and in the *Information Technology Position Paper* which supported it already have been realized or will be with the completion of implementation of the Telecommunications Infrastructure Initiative. From this standpoint, the "Information Technology Strategic Plan" incorporated in the *Position Paper* is obsolete, and a new one needs to be developed. The campus will be embarking on a new strategic planning effort, probably within the next year, and a new information technology component will need to be included. However, that does not invalidate the overarching themes that grew out of the 1995/96 strategic planning effort. These themes are strategic and universal in nature and continue to form the basis for annual operational planning and reporting.

The statements of "Theme," "Needs Assessment," and "Vision/Goal" which appear in this section all are from Humboldt's Information Technology Plan adopted on March 16, 2000. The grids from that Plan are updated to identify the accomplishments over the past twelve months and those activities that still must be accomplished in order to meet the objectives from the original *TechPlan 2000*. The update to these grids was developed through meetings with each constituent group on campus hosted by the group's representative(s) on the Standing Committee on Information Technology.

A number of objectives listed in the grids are identified as having been "met." In some cases, these objectives represent on-going activities for which no specific, major new initiatives are planned over the next twelve months. For example, if the objective was to "develop a program" and the program exists, even though there may be continuing activities associated with it, the objective is considered to be met. An objective to "provide opportunities" also is considered to be met if the structure now exists to provide those opportunities. Further, some Humboldt State University objectives have been subsumed under California State University projects. For example, parts of Humboldt's objectives for workflow enhancements will be accomplished through the Common Management System (CMS) project and some of its objectives for communications improvements will be implemented through the Telecommunications Infrastructure Initiative (TII). Also, some objectives for faculty development, advancing the utilization of instructional technology, and supporting the instructional infrastructure will be met by Humboldt being a participant in the CSU's academic technology initiatives. However, even for those objectives identified as having been met, remaining or on-going activities are listed in order to ensure that the campus continues to support and track those services associated with the objective.

A report on the current status of student computing and communications services at Humboldt State University can be found at <http://www.humboldt.edu/~help/guides/status.html>.

<b>Theme:</b> Provide for a comprehensive information competency program.		
<b>Needs Assessment:</b> Humboldt State University takes pride in being a technology-intensive environment. In order to ensure that its investments in technology generate the benefits expected, the users of that technology must be knowledgeable. However, students, faculty, and staff arrive on campus with widely varying levels of computer, information, and networking knowledge and skills.		
<b>Vision/Goal:</b> <i>All students, faculty, and staff at Humboldt State University will possess an appropriate level of information competency.</i>		
Objectives	Accomplishments during Calendar Year 2002	Remaining/On-going Activities
(1) Implement an information competency program for students.  This is an on-going activity. Departments normally review the information technology needs of their students during their program reviews. Incremental improvements will continue in the orientation programs, Library site, etc., but no specific new initiatives are planned at this time. Therefore, this objective is considered to have been met.	<ul style="list-style-type: none"> <li>Library implemented a mobile computing lab using wireless Ethernet and laptop computers to allow multi-purpose use of limited training space in rooms 208, 114, and other multipurpose areas of the Library.</li> <li>Library began pilot program by implementing the information competency pre- and post- test in the BlackBoard environment.</li> <li>Library replaced printed handouts and user guides with printing-on-demand workstations for the majority of the Library's informational handouts.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to track activities.</li> </ul>
(2) Provide development opportunities for faculty.	<ul style="list-style-type: none"> <li>A permanent faculty development office was established on the third floor of the Library next to the Courseware Development Center.</li> <li>Weekly seminars were offered in BlackBoard beginning during Summer and extending into late Fall 2002. 50% of faculty have completed.</li> <li>Weekly seminars in image processing were initiated during Fall 2002. 20% of faculty have completed.</li> <li>A Humboldt team, lead by the Faculty Development Coordinator, participated in the CSU's kick-off seminar on faculty development for academic technology. A strawman plan for Humboldt was developed for that seminar and is included as Attachment 1 to this document.</li> </ul>	<ul style="list-style-type: none"> <li>Develop an orientation/development program specific to supporting online instruction and distance education.</li> <li>Be an active participant in the CSU's academic technology initiatives, which have a major emphasis on faculty development.</li> <li>Perform regular surveys of faculty on their development needs.</li> </ul>
(3) Formalize training programs for staff.	<ul style="list-style-type: none"> <li>Staff training such as BRIO was moved into the training facility designed for the CMS project. That facility is intimate and quiet and more conducive to staff training than other labs used in the past.</li> </ul>	<ul style="list-style-type: none"> <li>Begin functional area training in the use of PeopleSoft administrative information systems.</li> </ul>

<p>(4) Develop a technology currency program for information technology staff.</p>	<ul style="list-style-type: none"> <li>The information technology support providers on campus were identified by a work group within the Information Technology Council. All IT support providers have been added to a list serve to receive announcements of training and development opportunities.</li> <li>The work group developed a model format for IT service providers to prepare their personal "Professional Development Plan."</li> </ul>	<ul style="list-style-type: none"> <li>Establish a library of training materials and a study area in Van Matre Hall for the use of all IT support providers on campus.</li> </ul>
--	---	---

<p><b>Theme:</b> Support the instructional program.</p>		
<p><b>Needs Assessment:</b> Humboldt State University must ensure that the necessary information technology infrastructure is in place to support instruction. It has exceeded its target of one computer available on campus for each ten students, but all of these computers are not at current technology levels, there are restrictions on who can use what equipment and when, and the support available for maintaining these resources is uneven across the campus</p>		
<p><b>Vision/Goal:</b> <i>Students and faculty will have access to both interdisciplinary and discipline-specific computing resources to support their instructional and research computing needs.</i></p>		
Objectives	Accomplishments during Calendar Year 2002	Remaining/On-going Activities
<p>(1) Leverage existing computing resources to expand access.</p>	<ul style="list-style-type: none"> <li>The Help Desk established the position of "roving consultant." In addition to making personal on-site help available across all the Academic Computing labs, the Rover can keep track of available open seats and direct waiting students to them.</li> <li>Began using CMS testing and training lab as a general training lab.</li> <li>Began working on an academic technology plan to address development and support issues.</li> <li>Implemented a joint project (ITS and College of Natural Resources and Sciences) to upgrade the computing laboratory in NHW 244 to be technically capable of supporting computing science work.</li> </ul>	<ul style="list-style-type: none"> <li>Develop academic technology plan. The plan is to address faculty development and the support of computing labs, smart classrooms, asynchronous education (distance education), and courseware.</li> <li>Participate in the re-franchise process for Cox Cable to improve Humboldt's use of cable TV distribution (ITS formed a pilot partnership with Cox to broadcast some home basketball games during 2002).</li> </ul>

<p>(2) Improve courseware development capabilities and courseware support services.</p>	<ul style="list-style-type: none"> <li>• Started Fall 2001 with 29 BlackBoard courses registering 600 students. Started Fall 2002 with 120 BlackBoard courses registering 3,000 students. 200 courses under development during Fall 2002.</li> <li>• Installed new server for BlackBoard, now have test machine and production machine.</li> <li>• Instituted weekly BlackBoard seminars for faculty.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor CSU efforts to develop master agreements with WebCT and BlackBoard and efforts of the various university consortia to develop open source course management systems.</li> <li>• Determine future path for courseware management: commercial products or open source.</li> </ul>
<p>(3) Ensure electronic access to library information resources.</p> <p>This is a continuing activity, but the objective is considered to have been met through the implementation of the Endeavor Voyager library automation system and the Library's continuing participation in a wide range of online information services and subscriptions.</p>	<ul style="list-style-type: none"> <li>• Library initiated pilot with ITS support to allow wireless roaming within the Library.</li> <li>• Library actively continued to implement additional users features in the Voyager System and improved interlibrary loan transactions using the Pharos system and ClioWeb software.</li> <li>• Library implemented direct linking to online fulltext resources from within databases using SFX.</li> <li>• Library began providing ONCORES digital content for course reserve readings offered through BlackBoard.</li> <li>• Library upgraded patron database to improve communications with users.</li> </ul>	<ul style="list-style-type: none"> <li>• Library will continue to implement additional user access, support, and empowerment features as they become available in the Voyager System and Pharos.</li> <li>• Library will be a test site working with ITS on authentication services, including integrating the Remote Patron Authentication software in use with the Pharos Project as well as the authentication services provide through the Library's EZproxy server into the campus middleware infrastructure being implemented as part of the Telecommunications Infrastructure Initiative.</li> </ul>
<p>(4) Design a "classroom of the future" and implement appropriate technology for use in the classrooms.</p>	<ul style="list-style-type: none"> <li>• Three new smart classrooms were constructed and two existing ones were transferred to ITS from the College of Arts, Humanities, and Social Sciences to allow campuswide scheduling. 21 smart classrooms now are available for campuswide scheduling.</li> <li>• An equipment specialist position was converted to an information technology consultant position to provide primary support for smart classrooms.</li> <li>• Provided designs to make all classrooms in the planned BSS building smart classrooms.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish a program to convert all classrooms to smart classrooms.</li> <li>• Secure on-going funding to support smart classrooms.</li> <li>• Include designs for smart classrooms and distance learning facilities in the plans for the upgrade/remodel to the Forbes Complex.</li> </ul>

<p>(5) Enhance ability to support research computing.</p>	<ul style="list-style-type: none"> <li>• Environmental Research Engineering initiated a pilot with ITS support to allow wireless roaming within its research and teaching labs.</li> <li>• Agreement was reached to treat the Forest Research Laboratory as if it were a Humboldt department with full access to the campus backbone and Internet connection.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a plan to phase out <i>redwood</i> as the instructional and research computer and move to a “mini-super computer” environment.</li> </ul>
---	--	--

<b>Theme:</b> Provide technology tools to faculty, staff, and students.		
<b>Needs Assessment:</b> Technology is not just a fact-of-life, it is the “survival” tool of the current age. Unless effective technology services are available, Humboldt State University’s students, faculty, and staff cannot be successful.		
<b>Vision/Goal:</b> <i>All students, faculty, and staff at Humboldt State University will have access to the information technology tools and services each needs to be successful in his or her academic and professional pursuits.</i>		
Objectives	Accomplishments during Calendar Year 2002	Remaining/On-going Activities
<p>(1) Be an aggressive implementor of the <i>Assured Student Access to Computing and the Network Initiative</i>.</p> <p>This is a continuing activity but major new initiatives are not planned. The objective is considered to have been met.</p>	<ul style="list-style-type: none"> <li>• Worked to keep the interdisciplinary computing laboratories current:             <ul style="list-style-type: none"> <li>◦ Completed system upgrades in GH 215, GH 218, HGH 105, Lib 121, and SA 364.</li> <li>◦ Upgraded memory in HGH 229, Lib 310, SH 001, and SH 119</li> <li>◦ Installed new servers in GH 215, HGH 105, JH 212, Lib 121, and SH 118.</li> <li>◦ Installed large, motorized projector screen in GH 215.</li> <li>◦ Installed air conditioning in NHW 244 in partnership with College of Natural Resources and Sciences.</li> <li>◦ Re-commissioned UAX 123 as an open student lab which allows guests (including children) to accompany students in the lab but not use the computers.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Continue maintaining currency in the Academic Computing laboratories through a regular process of upgrades and enhancements.</li> <li>• Develop a laptop lease/purchase program for students, faculty, and staff.</li> <li>• Implement docking stations and wireless access points in interdisciplinary labs so that Disability Resource Center can pre-load accessibility software onto student-owned or campus-loaned laptops for use in the labs.</li> <li>• Implement central server file storage that is accessible from the labs by students and faculty.</li> </ul>

<p>(2) Provide a rich set of classroom management tools for faculty use.</p> <p>This is a continuing activity but major new initiatives are not planned. The objective is considered to have been met.</p>	<ul style="list-style-type: none"> <li>• BlackBoard has become the primary technology tool for classroom management.</li> <li>• Implemented a new four-processor BlackBoard host to provide improved throughput, storage, and reliability. Old host will remain as the prototyping, test, and back-up computer.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to monitor the development of new technologies and implement as appropriate and funding allows.</li> </ul>
<p>(3) Automate, or improve automation of business processes where appropriate.</p>	<ul style="list-style-type: none"> <li>• Made decision to discontinue roll-outs of online forms for purchase orders and work orders because the forms processing client software is not intuitive. Users want a more “Web-like” interface.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify workflow requirements that will not be met under CMS.</li> <li>• Track new forms products, with special emphasis on ease-of-use. Critical products to track include Microsoft’s xDocs and Adobe’s new version (not yet released).</li> </ul>
<p>(4) Provide enhanced support for institutional research.</p>	<ul style="list-style-type: none"> <li>• Humboldt became one of five CSU campuses participating in the design of a data warehousing service which could be operated on campus or provided as an additional service through CMS.</li> </ul>	<ul style="list-style-type: none"> <li>• Include a data warehouse design in Humboldt’s implementation of the CMS Project. At a minimum, the design will include all data elements and relationships used for current management and reporting as defined and supported by the OAA Budget &amp; Institutional Data office.</li> </ul>
<p>(5) Improve general communications capabilities of the campus.</p>	<ul style="list-style-type: none"> <li>• Began connecting temporary buildings to campus backbone switches via long range Ethernet (LRE) technology (up to 15 Mbps to distances of 5,000 feet over Cat3 telephone cable) where cable exists.</li> <li>• Developed a process to evaluate and approve non-standard connections to network backbone, including localized wireless services and firewall protection for specific lab environments.</li> <li>• Successfully tested an on-campus ISP service to provide dial-in support for temporary buildings where insufficient cable exists to install LRE service.</li> <li>• Replaced <i>axe</i> (e-mail server) and <i>sorrel</i> (Web server) with new ES-40 computers implemented as hot back-ups for each other with shared disk.</li> <li>• Implemented the ability for users to choose their own public e-mail address and the ability for students to mark if that address is to appear in the student e-mail directory.</li> </ul>	<ul style="list-style-type: none"> <li>• Complete the connection of temporary buildings that can be supported via LRE.</li> <li>• Roll out on-campus ISP service.</li> <li>• Upon completing wireless pilot in Library, implement wireless services: <ul style="list-style-type: none"> <li>◦ Quad</li> <li>◦ Jolly Giant area</li> <li>◦ University Center</li> <li>◦ Interdisciplinary computing labs (see note on ADA access above)</li> <li>◦ Some area in South Campus where student congregate.</li> </ul> </li> <li>• Implement a true campus portal.</li> </ul>

<p>(6) Improve communications capabilities for “remote” sites.</p>	<ul style="list-style-type: none"> <li>• Successfully tested a charge-based remote (800 number) data network access service for travelers and local users who do not have sufficient need to justify a home-based ISP service.</li> <li>• Initiated review of campus Web-based mail requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Roll out the remote access service.</li> <li>• Implement authenticated SEND MAIL services so Relay Blocking (i.e., using Humboldt as an intermediate jump point from one computer to another) can be disabled for registered remote users.</li> <li>• Replace Web Mail (product being discontinued).</li> </ul>
<p>(7) Improve technology support services across the campus.</p>	<ul style="list-style-type: none"> <li>• Renewed campus licenses for Symantec and Meeting Maker, continued aggregate purchasing of Macromedia through Book Store.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement new CSU-Microsoft agreement.</li> <li>• Develop a sustainable funding approach for desktop/laptop computer refresh.</li> <li>• Establish a formal Level 2 support structure and integrate it with the Level 3 support services which will be implemented for CMS.</li> <li>• Provide a centralized back-up service for departmental servers/micros.</li> </ul>

<p><b>Theme:</b> Work within the California State University.</p>		
<p><b>Needs Assessment:</b> Humboldt State University is part of The California State University. It needs to be an active participant in CSU initiatives in order to take advantage of this relationship while ensuring local needs are met.</p>		
<p><b>Vision/Goal:</b> <i>Humboldt State University will be an active participant in implementing The California State University’s Integrated Technology Strategy.</i></p>		
<p><b>Objectives</b></p>	<p><b>Accomplishments during Calendar Year 2002</b></p>	<p><b>Remaining/On-going Activities</b></p>
<p>(1) Participate in the Technology Infrastructure Initiative.</p>	<ul style="list-style-type: none"> <li>• Completed Working Drawings and Bid Documents, and awarded contracts for General Contractor and for Construction Management.</li> <li>• Implemented Dynamic Host Control Protocol (DHCP) to enhance network management, security, and load balancing as well as enhance Telcom’s ability to manage the cut-over from the legacy network to the new TII network.</li> </ul>	<ul style="list-style-type: none"> <li>• Complete TII project by Summer 2004.</li> <li>• Develop an on-going funding mechanism for the support and refresh of the network.</li> </ul>

<p>(2) Participate in the Identity Management Initiative (new project)</p>	<ul style="list-style-type: none"> <li>• Initiated pilot project to link DHCP, dynamic domain name service (DNS), and Microsoft's Active Directory (AD) to support decentralized units' ability to manage local workstations.</li> <li>• Initiated pilot project to link Lightweight Directory Access Protocol (LDAP), DNS, and AD to support authentication and authorization as the backbone of Humboldt's network and applications security architecture.</li> <li>• Established a committee structure to make policy recommendations on directory, authentication, and authorization services.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement a complete system of directory, authentication, and authorization services to support security, quality of service, and ease of use. This mix of services is sometimes referred to as "Identity Management."</li> </ul>
<p>(3) Participate in the Common Management System Project (formally Collaborative Management Systems).</p>	<ul style="list-style-type: none"> <li>• Completed campus Readiness Assessment and received approval from Chancellor's Office to begin implementation.</li> <li>• Provided training to technical staff on use of development and reporting tools, security staff on securing the system, and the Human Resources Implementation Team on the basic HR modules.</li> <li>• Completed business process charting in Human Resources, Procurement, and Budget and began mapping Faculty Personal Services.</li> <li>• Opened the physical CMS Project Office to provide space for administration, training, and testing.</li> <li>• Implemented a project Web site.</li> <li>• Implemented a replacement for <i>sorrel</i>, the campus Web server, which has sufficient capacity to support portal services for CMS.</li> <li>• Established a committee structure to make policy recommendations on the use of student ID numbers and Social Security Numbers.</li> <li>• Began documenting all "bolt-on" systems that receive data from Humboldt's legacy Student Information System.</li> </ul>	<ul style="list-style-type: none"> <li>• Within the next year <ul style="list-style-type: none"> <li>◦ Provide additional training to the Technical Support and Human Resources Technology Teams.</li> <li>◦ Provide end-user HR training.</li> <li>◦ Go live with HR basic modules by October 2003.</li> <li>◦ Implement the PeopleSoft Portal.</li> <li>◦ Complete the business process charting for Fiscal Affairs and Enrollment Management.</li> <li>◦ Begin implementation of Financials by Fall 2003.</li> <li>◦ Develop a four-year implementation funding plan.</li> </ul> </li> <li>• Document all "bolt-on" systems that receive data from Humboldt's legacy Student Information System and adapt to work in the new PeopleSoft environment.</li> <li>• Go live with Financials mid-year 2004 and Student Administration mid-year 2005.</li> <li>• Implement a data warehouse.</li> </ul>
<p>(4) Become a leader in the CSU in Academic Technology (new objective in TechPlan 2002, re-titled in TechPlan 2003).</p>	<ul style="list-style-type: none"> <li>• Participated in a number of CSU seminars. For example, prepared strawman of Humboldt's academic technology interests and priorities (see Attachment 1).</li> </ul>	<ul style="list-style-type: none"> <li>• Develop an academic technology plan for the campus while coordinating with the development of systemwide CSU initiatives through the CSU Academic Council.</li> </ul>

<p>(5) Pursue grants from within the California State University.</p> <p>This is a continuing activity but no specific initiatives are being planned.</p>	<ul style="list-style-type: none"> <li>• Academic Technology was one area the campus pursued actively during 2002.</li> <li>• Continued to take a leadership role with the annual CSU systemwide Conference for Academic Technology Staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Track and pursue opportunities.</li> </ul>
<p>(6) Continue to support local applications systems until replaced by CSU systems.</p> <p>This is a continuing activity, but no new major initiatives are being planned because of the imminent implementation of the CSU's PeopleSoft software. Therefore, this objective is considered to be completed.</p>	<ul style="list-style-type: none"> <li>• Linked the disk storage systems for <i>willow</i>, the campus database engine, to those for <i>axe</i>, the e-mail server, and <i>sorrel</i>, the Web server, to provide a back-up computing platform.</li> <li>• Implemented a Web site to provide community access to faculty expertise.</li> <li>• Implemented online course evaluations.</li> <li>• Implemented online voting for Associated Students.</li> <li>• Enrollment Management began populating the DARS database.</li> <li>• Enrollment Management implemented SANE (Seat Availability Notification E-mail) that provides notices to students who are waiting for a seat to become available in a fully registered class.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to track major developments. However, modifications to legacy systems are restricted to those projects that can be classified as "mission critical" or "production critical," e.g., incorporating federal financial aid changes and support projects which may increase Humboldt's enrollments are "mission critical," and ensuring bugs in the admissions system are corrected are "production critical."</li> <li>• Make a decision of whether to complete implementation of DARS by populating the data base or suspend work with the intent to implement the PeopleSoft degree audit module as part of CMS.</li> </ul>

## ***OVERVIEW OF NEAR-TERM NEEDS FOR HUMBOLDT'S INFORMATION TECHNOLOGY***

This plan focuses on Humboldt's activities required to support and leverage the implementations of the major initiatives that form the core of the CSU's Integrated Information Strategy: Enhanced Teaching and Learning (Academic Technology), Administrative Productivity (Common Management System), and Baseline Support (Telecommunications Infrastructure Initiative).

### **ACADEMIC TECHNOLOGY**

During Fall 2001, the Chancellor's Office and the CSU systemwide Academic Technology Advisory Committee (ATAC) developed a proposal for a new initiative, Faculty Professional Development for Academic Technology (FPDAT). The underlying assumption for the proposal was that, with the Telecommunications Infrastructure Initiative (TII) and Common Management System (CMS) projects well underway, the CSU was implementing the baseline technologies and administrative tools necessary to allow it to turn its focus more fully on enhancing teaching and learning. The proposal identified the need for an on-going allocation of new funding in the amount of \$20 million/year to support the initiative. Although the CSU was not able to secure this funding in the economic climate in which the 2002/03 budget was built, all of the campuses endorsed moving forward with planning.

To bring specificity to the proposal, a systemwide conference was held in San Jose during Spring 2002 attended by representatives of the faculty, staff, and administrators from each campus lead by the campuses' faculty development coordinators. Each campus brought an overview of its academic technology faculty development focus to the conference to serve as a strawman academic technology plan. Humboldt's strawman proposal is included as Attachment 1.

The CO now has charged the Academic Council (the Provosts and Vice Presidents for Academic Affairs from all of the campuses) with identifying a set of initiatives that can be leveraged across the system. The CSU Academic Council will begin reviewing planning documents prepared by a project group during Spring 2003. Humboldt has identified its highest priority items that it believes should be addressed on a systemwide basis:

- Software Licenses. A working group of Humboldt's Information Technology Council develops recommendations for supported software at Humboldt. During 2001/02, it recommended the continued use of MeetingMaker as the campus calendaring system (there are about 600 users) and Symantec as the provider of anti-virus software. On a systemwide basis, the CSU has a program for negotiating favorable pricing for software licenses. The licenses of most interest to Humboldt are Microsoft operating systems and office products (the CSU entered a new three-year agreement with Microsoft effective January 1, 2003), BlackBoard (WebCT is no longer used at Humboldt), Macromedia, and Acrobat. The CSU license agreements ideally should cover all campus-owned computers and the personal computers of faculty, staff, and students. Humboldt also is interested in the CSU negotiating metered software licenses. For example, certain software tools to assist the disabled should be available for use from any workstation on campus, but possibly no more than a few copies might be in use at any given time.
- Microcomputers. The CSU should continue negotiating purchase contracts for desktop and laptop computers for both the campuses and personal purchases by faculty, staff, and students. Past contracts did not include incentives for aggregating campus purchases and were difficult to use for personal purchases (i.e., purchase orders had to be placed from campus computers). Apple should be added to the contractor list.
- Course Modules. The CSU, through the Center for Distance Learning (CDL) has developed a number of online course modules which any faculty member may utilize as part of his or her course materials. These modules along with others produced by other higher education partners are available "copyright clear." There now are more than 8,000 multimedia learning objects in thirteen subject areas available in the Multimedia Educational Repository for Learning and On-line Teaching (MERLOT). This program should continue to be expanded. A systemwide marketing program also is needed to encourage the use of these modules by faculty.
- 24x7 Help Desk. Few CSU campuses can afford to staff their Help Desks 24 hours/day, seven days/week. However, the system could develop such a service with the campuses sharing the cost. One high priority

support area is BlackBoard – students need a number to call when they are having access problems or do not understand the navigation structure of BlackBoard and it is 2:00 a.m. on a Sunday morning. There are many software products for which the vast majority of user questions can be answered with no specific knowledge of the user's home campus implementation. A central Help Desk should be available toll-free for those periods when the campus Help Desk is closed.

- Intellectual Property. Policy guidance is needed from the CO to promote faculty participation in courseware development. For example, there should be a policy framework in place that facilitates rewarding a faculty member for allowing other faculty to use courseware developed by that faculty member. Humboldt has been working on gathering best practices on intellectual property policies, copyright policy, and faculty award programs, but these really are issues that need to be addressed at the system level.

The Faculty Advisory Committee (FAC) to the Center for the Support of Instructional Technology (CSIT), led by the Faculty Development Coordinator, will lead a campus effort beginning in Fall 2002 to develop a specific plan for the support of academic technology at Humboldt State University. This plan will expand on the academic technology initiatives that have been explicated in *TechPlan 2000 – TechPlan 2002* and must complement the plans for new initiatives to be developed by the Academic Council. Therefore, Humboldt's plan cannot be considered whole until those CSU initiatives are developed more fully, probably in late Spring 2003. However, some of the high-priority local components of that plan will be:

- Expanded Course Management Support. BlackBoard was installed during Summer 2001 as the second supported course management system on campus. WebCT already had been available for several years. By the start of Fall 2001, 29 courses had been implemented on BlackBoard. By the end of Spring 2002, approximately 120 courses had been implemented on BlackBoard, and all faculty who had been using WebCT had migrated to BlackBoard. With the opening of the Faculty Development Office on the third floor of the Library next to the Courseware Development Center, the campus had an effective venue for small group workshops to introduce additional faculty to BlackBoard, and at the start of Fall 2002 there were 100 additional courses under development.

The current BlackBoard license is a "Basic" license that does not include any automated administrative support. For example, all BlackBoard course sessions and student accounts must be created/entered manually. The cost of the license was \$3,000/year a year ago, went to \$7,500 this year, and now BlackBoard will charge \$2,500 for each release of the software in addition to the basic license fee (prices for all course management system software has been increasing exponentially). It also spent \$16,500 during Fall 2002 to upgrade the BlackBoard server platform. If Humboldt wished to implement the automated administrative support, which soon may be a critical need because of the growth in usage, the annual license fee for the "Learning System" license which provides that support is \$40,000/year. In addition, there are first year implementation charges from the company of about \$20,000. This \$60,000 total will provide Humboldt with only the minimal set of capabilities available through the Learning System (this level of license cost about \$15,000/year two years ago). A license for the full set of features available under the Learning System, including load balancing, fail-over, and implementation support, could cost as much as \$150,000. The software would need to run on its own, non-shared server platform at a further first-year cost of about \$48,000. Humboldt should wait on upgrading its license for two reasons:

- Implementation at this time would tie BlackBoard to the campus' Banner Student Information System. Within several years the campus would need to spend at least another \$20,000 to tie BlackBoard to the PeopleSoft Student Administration module.
- The CSU is negotiating with BlackBoard to develop a systemwide relationship and contract. The terms and costs under that contract should be much more favorable than Humboldt could negotiate on its own.

In the meantime, Instructional Media Services and University Computing Services will work closely together to identify and possibly implement local interfaces among systems that may reduce some of the administrative workload. IMS also will track closely the several public sector (e.g., university consortia) projects to develop a public-domain course management system. IMS has established a dialog with other CSU campuses to pursue the possibility of one of these "open source" solutions.

- *Smart Classrooms.* Information Technology Services (ITS) constructed ten new smart classrooms during Academic Year 2000/01, constructed two more during AY 2001/02, and accepted the transfer of an additional two from the College of Arts, Humanities, and Social Sciences (CAHSS) during Summer 2002. ITS now is responsible for the maintenance and refresh of 21 smart classrooms on the campus, but has never received a base-budget increase to cover the costs. All construction, maintenance, and refresh has been funded from one-time excess Lottery Funds released by the Chancellor's Office for instructional equipment and from a very limited amount of funds that was available in previous years in the Office of Academic Affairs for classroom improvements. No excess Lottery Funds are expected this year and Academic Affairs, along with the rest of the campus, must contend with budget reductions. All of the equipment in the two rooms transferred from CAHSS needs to be replaced at a cost of about \$20,000. A sustaining budget for the support of a smart classroom would be about \$2,500/year each. This would allow a four-year refresh cycle.

There are about 60 general lecture rooms on the Humboldt campus, so there are about 40 more rooms which should be upgraded to smart classrooms. Part of the planning to be done this year by the FAC/CSIT will identify how quickly Humboldt should upgrade these rooms and what the priority for this upgrade should be in an environment where the faculty also need additional development opportunities, release time, travel support, equipment, etc. as well as non-information-technology support. A five-year plan to upgrade all the remaining lecture rooms would result in a cost of \$80,000/year in one-time costs each of those five years and an on-going support budget expense of \$100,000/year for equipment and \$50,000/year in personnel cost. The process for determining the order in which classrooms will be equipped is expected to remain as it is currently: ITS prepares a recommendation to the Joint Council of Deans and Faculty Leaders that pulls together the recommendations of the Deans; the list of classrooms for which portable equipment is checked out most often; the goals of the Schedule25 policy to have an appropriate mix small, medium, and large classrooms; and the recommendations of the Faculty Advisory Committee to the Center for the Support of Instructional Technology (FAC/CSIT).

- *Distance/Asynchronous Education.* Humboldt's primary goal for academic technology is to use it to enhance teaching and learning in the classroom. However, opportunities to serve the distant or asynchronous learner should not be overlooked. As described in Attachment 1, FAC/CSIT will be paying special attention in its planning efforts to identifying initiatives for supporting the region's underserved populations, such as its Native American populations; life-long learners in specific disciplines, such as nurses and K12 teachers. and owners of small businesses.

At the current state of planning, it is difficult to estimate costs for distance education initiatives. However, it is reasonable to expect that none of these initiatives can be successful unless it includes release time for the faculty. The current expectation is that FAC/CSIT will develop a funding proposal during Spring 2003 for consideration for inclusion in the Academic Year 2003/04 budget. However, if excess Lottery Funds become available during AY 2002/03, FAC/CSIT will request some amount as seed money.

## **COMMON MANAGEMENT SYSTEM**

The Common Management System (CMS) is a CSU-wide initiative to implement a standard suite of administrative software for all CSU campuses to address their needs for Human Resource, Financial, and Student Administration processing. Although the same software will be used by all campuses, CMS is being implemented in a manner that allows each campus to use the software in the manner that best suits its local business needs.

The campus CMS effort is led by the CMS Project Director in the Office of Development & Administrative Services. During AY 2001/02, efforts were directed toward providing initial technical and functional area training, equipping a training and testing laboratory in Gist Hall, developing process maps for Human Resources, and increasing the detail of the project plan and budget. During AY 2002/03, the primary efforts will be directed toward implementing the Administer Workforce capabilities of the Human Resource module and completing the process charts and gap/fit analysis for the campus' financial operations. The target for cut-over to the Human Resources and Financials modules is Summer 2004. The target for cut-over to the Student Administration module is Summer 2005. Detail project plan information is available at <http://www.humboldt.edu/~cms>.

There are a number of projects which must be undertaken in conjunction with the CMS project.

- Campus Portal. The campus was required to license the PeopleSoft Portal as part of the CMS project during 2001/02. The Portal is necessary to provide the user interface for accessing the Human Resources and Student Administration modules and therefore must be implemented no later than Summer 2004.

In addition to being the navigation tool, the PeopleSoft Portal also serves as one of the security points for the PeopleSoft suite. PeopleSoft requires authentication for access to each of the modules and uses password ageing. This process is overly complex and error-prone for most users. The only practical way to implement security is via a Lightweight Directory Access Protocol (LDAP) server. The PeopleSoft Portal is designed to work with LDAP and provide authentication and single sign-on to all PeopleSoft modules. However, the design of the PeopleSoft product makes it difficult to use as a portal to other non-PeopleSoft applications: it can be used to link to other applications and pass authentication information but not sign-on information. Further, experience in the CSU indicates that the implementation of LDAP within the portal that maximizes efficiency for the purposes of CMS access addresses only a subset of the requirements for campuswide access to secured servers. Therefore, the PeopleSoft Portal will provide only a partial solution if Humboldt wishes to implement a true student-centered portal.

What might appear to be an obvious option would be to implement the BlackBoard Portal to serve as the student portal in addition to implementing the PeopleSoft Portal. However, the license would be \$20,000/year over and above the BlackBoard costs identified earlier in this document. Further, BlackBoard is not currently LDAP compatible and could not be used as an authentication entry point to other applications. BlackBoard itself does not recommend implementing its product if a campus is implementing the PeopleSoft product because a link does exist from the PeopleSoft portal to the BlackBoard Learning System and the two companies have plans to improve the integration.

Based on current information, the only practical alternative appears is to be to implement the Oracle Portal in addition to the PeopleSoft Portal. This product already is licensed by Humboldt as part of the package of Oracle products it receives through a CSU contract with Oracle, and ITS staff are reviewing the interfacing capabilities built into the product for connecting to other, non-Oracle applications. ITS also initiated an LDAP project during Summer 2002 using the Oracle LDAP server to develop staff skills with LDAP to ensure the implementation will serve all campus needs.

Responsibility for Humboldt's Web presence and content is distributed in a number of offices, and the design of a campus portal will require input from all segments of the campus. Although some preliminary discussions occurred during Fall 2001 on the advisory structure for supporting Humboldt's Web presence, serious discussion must begin no later than Spring 2003 to minimize the risk that work that must be done starting now to implement the PeopleSoft Portal will not have to be redone as the University moves toward a campus portal implementation.

- Local Bolt-ons. Humboldt has developed a number of student services applications which are integrated or interfaced with its current Banner Student Information System. Areas which use these "bolt on" applications include Development, Alumni, Enrollment Management, the Educational Opportunity Program, etc. The PeopleSoft Student Administration module will not replace these bolt-ons, so they must be converted to work with the new system.

During Fall 2002, ITS began working with campus offices to identify and document all bolt-ons. Process charts will be developed beginning in calendar year 2003 to ensure these programs are understood fully before implementation of the Student Administration module begins. One complicating factor is that Humboldt's implementation of the Banner Student Information System uses Social Security Number as the student number, and therefore a number of the bolt-ons have been implemented using SSNs as an index. Part of the exploration and documentation effort underway will identify all uses of SSNs in Humboldt's programs. Knowing the scale of local programming required to effect a change will help inform campus decisions on switching from using SSNs to using generated student ID numbers. Actual conversion of the programs will be scheduled as part of the CMS effort.

- Calendaring/Appointments System and E-mail Integration. The centrally supported calendaring/appointments system is MeetingMaker. A new version which provided improved support for Palm OS compatible personal digital assistants (PDAs) was implemented during Fall 2002, but support for Windows compatible PDAs still

is problematic. If the campus implements a true campuswide portal, the calendaring system should be accessible through it. An initial goal might be to have a link from the user's portal page to the user's calendar. The ultimate goal would be to have appointment reminders and selected campus events appear on each user's personalized portal page. It will not be possible to determine if MeetingMaker can be integrated with the campus portal until more is known about Humboldt's portal implementation. The campus is licensed for 650 copies of MeetingMaker, so it is not available to students. Although MeetingMaker does have a Web interface, making it easy to use remotely, most faculty and staff use it in the client mode.

Humboldt implemented *Web Mail* several years ago to provide students with a more user-friendly e-mail package than *pine*, allow remote access to their mail over the Internet, and provide encrypted communications. *Web Mail*, because it is a minimally featured package, has at least two short-comings:

- Its folder management system is difficult to use. This is the Number One complaint received by the Help Desk from students about *Web Mail*.
- It may be extremely difficult to link it to a portal product. Ideally, a window should appear on the student's personalized portal page with the contents of his or her In Box.

During Fall 2002, the Help Desk began gathering student comments on what they would like to see in a *Web Mail* replacement, if any. This effort may result in a more formal survey of user requirements during Spring 2003.

*Web Mail* is not a "POP" mail service. A POP (Post Office Protocol) mail service, such as Eudora, allows downloading and uploading e-mails from the mail server to the user's microcomputer. That is, the user can work on e-mail offline, connecting only for the up or download. A second benefit is that a POP mail service minimizes connection time, which may be being charged by the minute. Students have not indicated that this is a significant problem for them, but it is a problem for faculty and staff when they are traveling. And, although some faculty find it easier to use *Web Mail* from home, most use a POP mail service on their office computers, typically Eudora Lite which is free, and would like to use the same product from both locations. During Fall 2002, the Information Technology Council was asked for recommendations on a standard POP e-mail service for use by faculty and staff.

It is hoped that both efforts, a Web mail service for students and a POP mail service for faculty and staff, can be brought together during Spring 2003 with a minimum goal of supporting no more than two e-mail packages on the campus. The number needs to be kept to a minimum because, as with the calendaring system, e-mail will need to be integrated or interfaced with the campus portal. Although this list is not meant to be limiting, there are several products that should be examined as candidates to be part or all of a solution:

- *Web Mail*, Eudora (Lite and Pro), and MeetingMaker are the most commonly used products of their type in use on campus and must be considered options, but there are a number of offices that use Microsoft's Outlook/Express. Although Express may not offer students a viable solution, Outlook should be examined as a possible solution for faculty and staff.
- PeopleSoft is integrating a Web-based mail service into its Portal. However, it will not be a POP mail service and therefore will not meet the needs of those who work off-line. Design specifications are not available yet so it is not possible to determine how well the product might meet general student needs. The PeopleSoft Portal supports only a weak link to Outlook and does not provide support for MeetingMaker
- Oracle offers Collaboration Suite, which includes POP mail service, a Web mail service, a calendaring system, a shared folder system, and other features. Collaboration Suite works off the same Oracle LDAP service (see below) as the Oracle Portal, with which it is integrated. Further, it provides full support for both Mac and Wintel platforms and is fully compatible with both Palm OS and PocketPC PDAs. Collaboration Suite is relatively expensive, but its costs, after volume discounts, may not be significantly higher than what the campus currently is spending centrally on MeetingMaker and *Web Mail* and decentrally on Eudora Pro and Outlook.

- Data Warehouse/Institutional Research Support. Humboldt is one of five campuses participating in a CSU project to determine the value and shape of a data warehousing project/service. With the availability of massive amounts of online data resulting from the CMS project, it is unclear if it will be the more effective way to generate management reports. The participants are working to determine if it will be most effective to provide data warehousing as a for-charge service from the CMS service center or if the data warehouse should reside on the campus. Recommendations are expected in Spring 2003.

## TELECOMMUNICATIONS INFRASTRUCTURE INITIATIVE

TII is a systemwide initiative to install new telecommunications infrastructure on all the campuses that is the equal of any corporate campus in America. For Humboldt, the project includes the complete replacement of all its voice, data, and video distribution systems, construction of equipment rooms that are secure and environmentally protected, installation of all new electronics, and the implementation of a state-of-the-art network operations center with all of the network management, monitoring, and diagnostic capabilities necessary to ensure the reliability of such a mission-critical resource.

Bid documents were released in October 2002. It is expected that construction of the build-out will begin early in January 2003 with the first electronics being installed around the end of February 2003. The project is expected to be completed during Summer 2004. A detailed project description, schedule, and budget is available at the project Web site, <http://www.humboldt.edu/~tii>.

There is a great deal of work which must be done to utilize effectively the facilities that are being built under TII. Some of the activities will be funded through the project, but many will not. Project funding provided through the Chancellor's Office is being provided to cover the costs associated with the build-out and provisioning of state-owned, permanent buildings only. The most critical service that is not being funded through the project is providing connectivity to temporary and non-state buildings on the campus, and other funds must be found to pay for this connectivity. Further, the project does not address campus support for dial-up services, wireless communications, or regional distribution of network content. These items must be addressed through local activities.

- Temporary and Non-state Buildings. The TII provides funding for the connection of state-owned, permanent buildings only; temporary and non-state-owned buildings are not included in the funding. Major non-state buildings are being included in the project because those non-state operations have funded their participation. These include Housing, which already has wired the Residence Halls under its "port per pillow" project; and University Center, which has included the build-out of its telecommunications infrastructure in the TII bid documents. A major tenant of the University, the Forest Research Laboratory, also has agreed to include a telecommunications infrastructure build-out consistent with the CSU's *Minimum Baseline Standards* in its funding request for a building remodel. That leaves a number of state-owned but temporary buildings (about 25% of Humboldt's total assignable square footage) uncovered by the project.

During 2001/02, Telecommunications & Network Services began upgrading services to the state-owned but temporary buildings on campus using some funds from TNS and some from the served units. In the past, most such connections were implemented using either Ethernet extenders or fixed wireless connections. Beginning during Summer 2002, TNS began installing Long Range Ethernet (LRE), a technology that allows for a maximum performance of 15 Mbps out to 5,000 feet over Category 3 wire (Cat3 is obsolete telephone wiring). LRE equipment became available under the cisco contract that the CSU signed as part of the TII during Fall 2002. The equipment is fully compatible with cisco management and diagnostic systems, so it can be supported through the Network Operations Center that will be implemented as part of the TII. In most locations, performance levels will not meet these maximums, but service is being improved significantly. TNS will continue working with the affected offices to design and implement LRE solutions where appropriate over the coming year.

Funding will be provided by the CSU system for the periodic refresh of the electronics purchased under the TII. This will not provide funds to cover the refresh of electronics serving non-state operations or the temporary buildings. Humboldt has begun identifying possible approaches for funding the on-going operation of the network, running from an "off the top" models to charge-back models for the non-TII facilities to shared charge-back models to mitigate inequities that may result from the accidents of location (i.e., being assigned to a temporary building rather than a permanent one). The CSU systemwide Network Technology Alliance

(NTA) committee is working on guidelines, the completion of which will be necessary before the campus can have a fully informed discussion about its cost-recovery or allocation options. It is expected that this discussion can be initiated during Spring 2003.

- Dial-up Services. Some temporary buildings on the Humboldt campus do not have even enough old telephone line running into them to support connection to the campus backbone via the LRE drivers. Users in these locations currently must subscribe to a commercial Internet Service Provider for data access to the campus. During Spring 2002, Telecommunications & Network Services installed a 24-port server and began testing an in-house ISP service for these locations. In order for this service to be put into production during Spring 2003, at least a portion of the authentication and authorization security features will need to be in place.

During Fall 2002, TNS also installed 800-number access to the 24-port server to allow remote access for faculty and staff who are traveling. Although the service was placed in limited, restricted use during the Fall, full availability required that the 800 provider support and pass through to the University a pin number and that TNS implement an accounting system to authorize, track, and bill for usage. The new service will be rolled out during Spring 2003.

- Wireless. During 2001/02, several units on campus installed wireless access points in accordance with TNS security requirements. TNS now has adopted a standard for access point equipment from cisco that provides enhanced security and can be managed through the Network Operations Center being installed as part of TII. During Fall 2002, the Library and TNS initiated a wireless project to install four access points in the Library using the new equipment and under TNS' management. If this project is successful, wireless access will be extended into the Quad. Additional target areas include Jolly Giant and University Center and discussions have been initiated with the administrators of those areas.

A specific application area that is a high priority is to add wireless access points in existing computer laboratories. This would allow the Disability Resource Center to install accessibility software specific to a student's need onto the student's laptop computer (either the student's own or a lab-top loaned by the Center) for use in the laboratories.

More widely available wireless access also would encourage greater student ownership of laptop computers. Approximately 80% of Humboldt's students arrive on campus with their own computer, but desktop units still are more popular than laptops. Wireless access should provide the "value added" that could result in students making more effective use of computing throughout their university experience.

- COX Cable Relationship. During 2001/02, the University reached an interim agreement with COX Cable Television to broadcast Humboldt's home basketball games. The University is working to extend and formalize this agreement. Also, the University has been working with COX to extend cable television services to the Redwood Manor apartments and appears close to a final agreement. The University has begun conversations with COX to explore how the two organizations can leverage the investments they have and are making in their communications infrastructure. For example, COX has extended digital connectivity into the K12 classrooms in its service area. With the proper interfaces installed between the COX digital network and the network being installed at Humboldt under TII, it would be possible for COX to distribute cable TV signal to all Humboldt classrooms and Humboldt to deliver content (live and canned) to all connected K12 classrooms. The COX franchise agreement is up for renewal during 2002/03 and Humboldt will participate in those discussions involving local education, government, and public access needs.

## **IDENTITY MANAGEMENT INITIATIVE (new)**

The CSU libraries have established an authentication process to support inter-library loan. CMS also requires a security infrastructure. The TII will result in a systemwide network that, without the appropriate security infrastructure, will be impossible to manage and use safely. Further, Humboldt has needs for authentication and authorization for projects of its own which are not part of the CSU's Information Technology Strategy . They include remote access, wireless, and log-in controls in the disciplinary and interdisciplinary laboratories. The major pieces of the security infrastructure that Humboldt must implement are as follows:

- Dynamic Host Control Protocol (DHCP) dynamically assigns Internet Protocol (IP) addresses to network-attached appliances (microcomputers, printers, servers). DHCP increases security by limiting the “discoverability” of device addresses on the network, improves security and performance by allowing the subnetting of the network, and improves security and management because devices must identify themselves to the network management system in order to receive services. Humboldt implemented DHCP during late Spring 2002.
- Active Directory (AD) is a directory service developed by Microsoft that is required for systems administrators to provide domain management under the Microsoft 2000 Server operating system or later. Modifications to the Domain Name Server and/or DHCP will be required to support AD.
- Domain Name Service (DNS) provides translation from human readable names to IP addresses or to account names on servers. Telecommunications & Network Services and the Information Technology Council began working on a plan for linking DHCP, AD, and DNS at Humboldt to provide the type of dynamic, secure environment necessary during Fall 2002. Implementation may not be totally achievable until the completion of the TII project in Summer 2004.

Two additional changes have long been desired on the campus. The first would allow users to select their own e-mail address names. Current address names are manually generated in some special cases but automatically generated in most cases and conform to limitations that are carry-overs from naming conventions that date back to early UNIX days. University Computing Services began studying methods for allowing all users to establish their own alias, not subject to the old UNIX restrictions, to the generated address names. Second, the process for not including student e-mail addresses in the campus directory for those students who do not wish to be listed is manual and cumbersome. UCS also began studying a self-registration system for students so that if the student does not register his or herself, his or her address will not appear in the Student Directory. These projects are targeted for completion by Spring 2003.

- Lightweight Directory Access Protocol (LDAP) is a protocol for communicating directory information among servers. It can be used to provide improved services to users, such as providing a single sign-on service for the CMS suite of modules, and as the gatekeeper for authentication and authorization. In particular, LDAP can be used to identify to each application server what type of user is requesting service. Knowing the type of user, the server can then grant, deny, or restrict service. For example, Academic Computing could configure the microcomputers in the interdisciplinary computing laboratories so that only holders of a Humboldt ID card could gain access; the Mathematics Department could configure the microcomputers in the Qualitative Analysis Laboratory so that only students registered in certain classes could gain access to the software; and the Library could configure its server so that only faculty and students could have access to those electronic databases that can be licensed only for faculty and student but not staff access. University Computing Services initiated a project to implement a pilot LDAP server during Fall 2002 that will meet the needs for access to CMS as well as some of the identified authorization requirements described in the examples above. The project environment includes linking LDAP with AD and DNS and testing Kerberos as the authentication agent. The LDAP server is being built using the EduPERSON directory model developed by EduCAUSE and adopted by the CSU.

There are two projects being run in parallel: a DHCP/AD/DNS project focused primarily on supporting the telecommunications environment and a LDAP/AD/DNS project focused primarily on supporting the applications environment. Although there is overlap in the staffing of the two projects and the work is being coordinated, everybody involved accepts that the LDAP design may need modifications when the results of the two projects are combined. Initially, both projects are learning experiences for the ITS staff and the individual campus units' information technology consultants. Further, modifications may be necessary to comply with standards imposed systemwide for a metaDirectory (systemwide directory) service. However, all the data collected should be reusable in the final middleware architecture.

- Virtual Local Area Networks (VLANs) will be used to provide the final tier in Humboldt's security architecture. VLANs are software-defined in the network's electronic switches and define the ability of a network-attached device in one VLAN to access another network-attached device in a different VLAN. VLAN definitions will be controllable from the Network Operations Center implemented as part of the TII project, so full implementation will not be available until Summer 2004.

As mentioned, a number of pilot projects are underway. The purpose of these projects is to allow staff to develop a better understanding of “middleware.” “Middleware” is a term that has been much used, misused, and abused in information technology but, as used here, refers to a set of software, servers, and services which provide the directory, authentication, and authorization services necessary to provide security in our developing environment. The CSU is starting to use a new term, “Identity Management,” to refer to this set of services. Implementation of a program of identity management is more than a technical problem: there are a myriad of policy issues that must be addressed having to do with who has access to what and who is responsible for ensuring for each “what” who the “who” is. The campus Information Security Officer began convening meetings of the major “data owners” as that term is defined in the appropriate use policy as well as those with major responsibilities for applications systems during Fall 2002 to address these policy issues. Recommendations to the campus are expected during Spring 2003.

During Fall 2002, the CSU established a planning and implementation structure for a systemwide Identity Management Initiative (IMI). The CSU will develop systemwide policies and test architectures and products to ensure appropriate security will be available across all the campuses. This will include a unique identifier for each person associated with the CSU, allowing a systemwide “White Pages” to be used to allow each person appropriate access from wherever that person may connect to any part of the telecommunications infrastructure. The target for the CSU is to have all campuses implemented on a baseline identity management infrastructure by Spring of 2004. Humboldt will participate actively in IMI and closely coordinate its own identity management initiative with that of the CSU.

## **ORGANIZING FOR SUCCESS**

At Humboldt State University, some services are centrally managed, others are cooperatively coordinated. This is an outgrowth of many historical factors, the most important being that the majority of services have not been implemented as enterprise systems but rather as specific systems for specific using offices or as stand-alone systems for the entire campus. For example, although telephone services always have been centrally managed, major units have enjoyed significant autonomy in implementing and operating local area networks. This structure will no longer be effective under TII. As a second example, the “silo” server applications currently supported (e.g., MeetingMaker, electronic mail, forms, signatures) must be managed in an integrated structure under CMS.

- *Telecommunications Management Structure.* Historically, the management of networks at Humboldt has been a mix of centralized and decentralized. The voice network was managed by Telecommunications & Network Services, the video network was managed by Instructional Media Services, and about half of the data network was managed by TNS and half by the colleges with the most decentralized networks being managed by the College of Natural Resources and Sciences. Under the TII, the entire network is one integrated whole and all management now is the responsibility of TNS. There are other actions that have been or will be taken to complete this process:
  - The telephone switch in Siemens Hall and the telephone interface units in Natural Resources Building have long been protected with gas-powered electrical generators to protect the campus’ telephone communications. However, the central network data switches and central computing services in Van Matre Hall have been protected with only a 20-minute battery back-up system. During Fall 2002, a gas-powered generator was installed with the capacity to support all of the equipment in the computer room in Van Matre as well as the air conditioners. This will improve significantly the availability of the University’s computing and communications services.
  - The Network Operations Center that will be installed as part of the TII will allow the recording of all service outages. This will allow TNS for the first time to track its responsiveness automatically. TNS will develop service level agreements (SLAs) that define its commitments on response time and provide reports on its performance. Although these SLAs cannot be implemented before implementation of the TII, the campus discussions on target performance levels will be initiated during calendar year 2003.
  - No matter what approach ultimately is chosen to fund the on-going operation and expansion of the network, an accounting system must be developed and implemented to budget for, allocate for, track, and report expenditures as well as collect for charged services. This work already is underway and must be completed at the latest by the end of the TII project in Summer 2004. This task is complicated somewhat by a study initiated systemwide in the Network Technology Alliance (NTA) during Spring

2002 to define “What is the network.” On some campuses there are state-funded operations in non-state buildings and non-state operations in state-owned buildings. Part of what NTA is trying to do is develop clear definitions of what can be supported using General Fund dollars provided for the refresh of the TII network, and Humboldt’s network accounting system will need to be able to track and report expenditures to reflect those definitions.

All of this results in a much more complex environment for Telecommunications & Network Services. TNS is attempting to implement a complete build-out of the telecommunications infrastructure, take responsibility for a large portion of the Identity Management program, implement wireless, and provide a flexible structure to allow creative uses of the network, all at the same time. The second most critical staffing need in ITS to to add a network analyst position to act as the Network Architect. Annual salary costs plus benefits would be about \$65,000.

- Hardware/Operating System Architecture. In 1994/95, Humboldt purchased four Digital Equipment (later Compaq, now Hewlett Packard) Alpha 2100 UNIX-based computers to provide central computing services: *laurel* supported the Banner Student Information and Financial Aid Systems, *axe* provided e-mail services, *sorrel* provided Web services, and *redwood* provided classroom (instructional) support. Those computers still are in service providing essentially the same services with the following significant changes:
  - In late Spring 2001, the campus purchased a Compaq (now HP) ES-40 UNIX-based computer, *willow*, to serve as the database engine. Funding was provided through the University Resource Planning and Budget Committee. This machine supports six times the through-put supported on *laurel*, which now acts only as the applications server front-end to the database engine (*laurel* previously was both the applications server and database engine). The purchase was necessary to meet the increases in demand that have resulted from Humboldt implementing Web for Students, Web for Faculty and Advisors, online fee payment, and other service enhancements since *laurel* originally was sized and installed.
  - In late Spring 2002, the campus purchased a Compaq ES-40 UNIX-based computer, currently called *newWeb*, to replace *sorrel*, which had become unstable apparently due to heat stress earlier in the year. Funding was provided jointly by Information Technology Services and the Common Management System Project. Although it was not possible to have the machine in production to support the July 2002 Humboldt Orientation Program, it was available for the August HOP session and performed very well. *NewWeb* was configured to support eight times the through-put as *sorrel*, sufficient to meet expected demands over the next several years for current Web services, CMS, and at least an initial portal project.
  - During early Summer 2002, *axe*, the campus e-mail server, also became unstable, also apparently due to heat stress. A new ES-40 was purchased during Fall 2002 using funding provided by the President’s Office. It is configured to support five times the through-put as *axe*. It is expected that *newAxe* will be in service for the start of Spring 2003.

When Humboldt purchased *willow*, it configured the machine with a Storage Area Network Switch (SANS). The SANS will support multiple pathways between each processor cluster (*willow* has a four-CPU cluster) and the bank of disk controllers. A SANS also was included in the configuration ordered for *newWeb* (also a four-CPU cluster). University Computing Services began technical studies during Fall 2002 on how best to cross-connect the CPU clusters so that each cluster will have access to all of the disk drives as well as to add a third cluster as a hot back-up for the mission-critical systems. *NewAxe* will be that third cluster. *NewAxe* (a two-CPU cluster) and *newWeb* will be configured so that each system can support all the services of both. Because they share the same disk bank, recovery from failures should take minimal time. Because the two disk banks will be cross-connected, it will be possible also to use *newAxe* and *newWeb* to replace *willow* in case *willow* suffers extended down-time due to failure. ITS believes this configuration will provide sufficient redundancy and fall-back capability to protect the campus from loss of its mission-critical applications. The cost of upgrading the three systems to automatic load-balancing and fail-over would be at least an additional \$45,000 and is not recommended because extended failures are not expected during the early years of these systems’ life cycles.

Over the last eight years, under Humboldt's continuous process improvement (CPI) program, a number of additional servers have been added to the equipment being supported by various units in ITS. Under the CPI program each ITS unit was given the goal of rolling out two new services per year with the restrictions that both implementation and on-going support had to be funded from the existing ITS budget. The result is that Humboldt has a large number of "silo" servers (e.g., a server for forms, one for signatures, one for Web Mail, one for MeetingMaker, etc.). The problems with silo servers are when a server is lost, so is the service; each server is a potential point of security breach; each server must be administered separately, thereby increasing the workload; and it becomes too easy to implement upgrades to the service on a given server without considering the potential impacts on other services hosted on different servers.

Further, there remain two eight year old Digital Alpha 2100 servers providing critical processing, *laurel* providing applications serving and *redwood* providing instructional support, as well as a number of Alphas providing non-time-critical services (e.g., *oak* is the prototyping platform). The Alphas originally were produced by Digital Equipment Corporation. When DEC was purchased by Compaq, Compaq replaced the Alphas in its product line with the fully compatible ES-40 line. Now that HP has purchased Compaq, this line of computers supporting the Digital UNIX operating system probably will be phased out. Implementation of *newWeb* and *newAxe* will free parts to help keep the remaining Alphas running, but not forever.

It is time to begin addressing both of these problems: consolidating the current mix of silo servers into a super server cluster; and building an architecture which will serve the campus' needs for enterprise computing when the CMS project is completed and the Alphas and ES-40s have reached the end of their useful lives. During Spring 2002, University Computing Services staff began meeting with representatives of vendors that provide managed server farms to explore options and began asking those representatives for proposals during Fall 2002. Three of the design goals for the proposals are to become vendor-independent on the operating system (i.e., implement some version of Linux); be able to share disk space across most of the applications; and provide redundancy, spare capacity, incremental growth, and "mainframe-type" systems administration (e.g., security, load leveling, and fail-over). If funding is available, the priority order would be as follows:

1. Implement the "backbone" infrastructure of the super server cluster. This backbone would include vendor-independent SAN switches, load leveling and fail-over hardware and software, a terabyte of data storage (initially), and a current technology tape back-up system (the existing tape back-up system can only back up one half of the e-mail files at a time). The cost would be about \$220,000 to purchase, but multi-year financing might be available. On-going cost would be about \$10,000/year which would cover support as well as a supply of tapes. No on-going costs for disk storage are included as in this part of the project; on-going costs for storage growth will be included when estimating the cost of each server to be added to the cluster.
2. Add servers to the cluster as necessary to replace the silo servers and ultimately, also host the services from the Alphas and ES-40s. As an example of how incremental capacity can be added in this environment, a three-server system would provide 50% more capacity than *axe*. This would provide reliable service because only two servers would need to be operational in order to meet demand. In addition to supporting the e-mail services currently on *axe*, the list services currently hosted on *redwood* also could be moved. Purchase cost would be about \$75,000 for the three servers (i.e., \$25,000 each). Each server would consist of two 2.8 Ghz CPUs, 4 GB of memory, two 78 GB local disks for system loading, and the specialized software required for servers to share a common disk bank. On-going costs could range from \$10,000 to \$20,000/year depending on the amount of storage growth anticipated.
3. Support instructional and research computing. As work is moved from the Alphas to the super server cluster, freed-up Alpha components can be used to extend the life of *redwood*. Also, initially some, and eventually all, of the *redwood* instructional support services could be moved onto the server cluster. There is add-on software available that runs on top of Linux that will allow the processors in a server cluster to be assigned dynamically as components of a multi-processor computing system. This could allow Humboldt to implement its own "mini super-computer." For example, it would be possible for units that currently support their own server installations to contract with ITS to provide the server capacity through the central farm. This would relieve the units of systems administration and data back-up responsibilities and provide protection from server failure and processing load

spikes. These servers typically are not used for office support at night and could be reassigned as part of the mini super-computer.

4. Support departmental computing. Departments could purchase their own servers to locate in the super server cluster or pay a prorated share of servers in that cluster to support their local office functions. The advantage to the department would be that the department no longer would be responsible for systems administration and back-up. The advantage to the campus would be that these resources could be leveraged to support other services, such as part time being a component of the mini super-computer that supports instructional and research computing.

ITS will produce a migration plan during Spring 2003 and a funding request for 2003/04 to move forward into this environment.

Even if UCS is able to implement the above architecture, it still will be significantly understaffed in the systems administration area. There is only one systems administrator and one part-time back-up administrator to support all of the centrally managed systems. There is a critical need to expand the staff by adding an additional, full-time systems administrator who also would serve as the Systems Architect. For example, reviewing and installing security patches now consumes so much time that there is insufficient time to document system changes and tune the systems properly. This is the most critical staffing need in all of ITS. Salary and benefits costs would be about \$85,000/year.

- Operations/Applications Software Architecture. University Computing Services documents all of the application software packages its supports. However, this documentation is built on the original documentation provided by the vendors of the application packages and is not in any common format. This makes it difficult for anyone other than the systems analyst with primary responsibility for the package to resolve complex failures in the package if the primary responsible analyst is not available (e.g., vacationing in a dead zone). In a sense, Humboldt's local applications are supported and maintained in a "silo" environment, somewhat similar to the hardware environment described above, even where there is a significant level of integration among the applications in the way they actually are implemented.

During Fall 2002, UCS reassigned a staff member from the Help Desk, who already had the appropriate skills, to be its Quality Control Analyst. The QCA will develop a common format and, for each application, will

- Develop a high-level process chart and inventory of modules and file locations and names consistent with the processing mapping format being used for the CMS project; and
- Develop a change-management documentation system which includes user testing sign-offs and production sign-offs.

This initiative is important not just for managing Humboldt's local application software. The central Software and Operations Support Services staff for CMS must provide change management for all 23 campuses and the Chancellor's Office for modifications and enhancements to the PeopleSoft suite. SOSS is developing highly structured change management procedures and forms to reduce risk in this environment, and Humboldt must have complementary procedures and forms for its bolt-ons and requested modifications and enhancements to CMS.

- Web Site Development. The Courseware Development Center was established to support faculty in their endeavors to enhance teaching and learning using technology. Faculty are not charged for services to support FTES-generating courses; they are charged only consumables. A charge-back schedule was developed to recover costs of services for non-FTES-generating activities. Initially, this was envisioned as providing support for Extended Education classes. In the past year, significant support also has been extended to support grant work, including to non-University agencies such as the U.S. Forest Service. The charge-backs are full cost recovery and, in addition to covering equipment and facilities costs, allow hiring additional students to ensure that this work does not reduce the availability of services to faculty.

There always has been a problem on campus with providing Web design and implementation services for administrative offices. During 2001/02, ITS attempted to provide no-charge services through its University

Computing Services division to support the Office of Research and Graduate Studies. That pilot clearly indicated that existing resources would not be sufficient to support such a service for all the units on campus that might request such support. During Fall 2002, the Courseware Development Center began a pilot to develop the Web presence for Physical Services. The pilot is being performed on a charge-back basis, initially using student employees. As part of the pilot, ITS will test using intermittent hourly workers to determine if this approach can be effective. If the pilot is a success, ITS expects to roll out a general Web design, development, and support service in time for Fall 2003.

- Help Desk Services. Humboldt established its first Level One (triage) Help Desk for students about three years ago. A year ago, it extended Level One service from the Help Desk to all faculty and staff. This relieved the colleges' and other administrative units' information technology consultants of the burden of providing Level One support and allowed them to concentrate more on providing Level Two (on-site) support. For the past year, ITS, in partnership with the Desktop Support Working Group of the Information Technology Council, has been working on identifying the full range of end-user needs with the goal of making recommendations to improve the coordination and delivery of services. This work will continue over the next year and will need to begin incorporating the Level Three (application specific) support requirements for CMS.

All CMS trouble ticketing is done via Remedy, and Humboldt is licensed to report problems and request services from SOSS via Remedy. However, Humboldt is not licensed to use Remedy as its in-house trouble ticketing system, and Remedy is very expensive both in licensing costs and in implementation and support effort. Options for the use of other trouble ticketing systems are being reviewed.

### ***IMPLEMENTATION SUMMARY***

The highest priority activities for calendar year 2003 are listed in the tables below with a target completion term ("By Fall" means "By the beginning of Fall semester;" "During Fall" means "Before the end of Fall semester"). Under the cost categories, "unknown" means that final costs will not be known until planning is complete, and "in base" means the project can be funded from an existing budget (including its charge-back budgets) already established for that purpose without special supplement. If a dollar amount is shown for costs, the costs are estimated and the funds currently are not budgeted.

It is expected that staff will work on all of these projects simultaneously, so their order within the tables does not imply any relative priority.

- General Projects. Information Technology Services has long supported a Continuous Process Improvement (CPI) program which has been used to identify and implement initiatives and projects to improve the teaching, learning, and administration at Humboldt State University, primarily through funding within the ITS base budget. With the advent of calendar year 2002, the redirection of ITS resources to the support of the Common Management System (CMS) and Telecommunications Infrastructure Initiative (TII) projects meant that ITS had to concentrate its efforts on those projects and not accept new CPI projects. Existing programs will continue to be supported, so there will be incremental changes and improvements to the support of student information competency, information technology staff professional development, support for courseware development, etc.

Completion	One-time Costs	On-going Costs	Project
During Spring 2003	in base	in base	<p><b>General Support.</b> Create file space and directories for students, faculty, and staff in the central, shared disk bank. Students will be able to access these files from their own computers and from any lab computer, providing them a way to transport files without carrying diskettes around. Also, the files will be backed-up off-site like any other central file.</p>

<p>During Spring 2003 Projected Items</p> <ul style="list-style-type: none"> <li>• Smart Rooms</li> <li>• Smart Room ITC/F</li> <li>• Enterprise Black-Board software</li> <li>• Enterprise Black-Board hardware</li> <li>• BlackBoard ITC/F</li> <li>• Media digital conv.</li> </ul>	<p>\$400,000</p> <p>\$150,000</p> <p>\$48,000</p> <p>\$35,000</p>	<p>\$150,000</p> <p>\$54,000</p> <p>\$60,000</p> <p>\$5,000</p> <p>\$54,000</p> <p>\$15,000</p>	<p><b>Academic Technology.</b> Develop an academic technology plan and proposed budget. The academic technology plan will address needs and priorities for the support of faculty development, course management systems, smart classrooms, the continuing conversion of Media Production to a digital environment, computing laboratory standards, distance learning, and other topics. The costs shown for Smart Classrooms is the cost to upgrade the remaining 40 lecture rooms to smart classrooms and then to maintain a four-year refresh cycle on all 60 rooms. These numbers are placeholders, and the priorities, costs, and schedule will be determined during the Spring 2003 planning effort.</p>
<p>During Spring 2003</p>	<p>unknown</p>	<p>unknown</p>	<p><b>Instructional Support.</b> Develop a plan for implementing a lease/purchase laptop program for students, faculty, and staff.</p>
<p>During Spring 2003</p>	<p>in base</p>	<p>in base</p>	<p><b>Wireless Access.</b> Complete pilot in Library. Begin implementing in other areas of campus, including</p> <ul style="list-style-type: none"> <li>• Quad</li> <li>• Jolly Giant</li> <li>• University Center</li> </ul>
<p>During Spring 2003</p>	<p>in base</p>	<p>in base</p>	<p><b>Remote Access.</b> Roll out</p> <ul style="list-style-type: none"> <li>• 800 number access to the data network</li> <li>• on-campus ISP services</li> <li>• SEND MAIL authentication</li> </ul>
<p>During Spring 2003</p>	<p>\$20,000</p>	<p>\$5,000</p>	<p><b>Smart Classrooms.</b> Bring TA 10 and TA 11 smart classrooms up to current standards. Funding might come from excess Lottery funds if any become available.</p>
<p>By Summer 2003</p>	<p>in base</p>	<p>in base</p>	<p><b>Web Policy.</b> Establish a new consultation structure for campus Web issues and begin/complete revision to the campus Web policy.</p>
<p>By Summer 2003</p>	<p>in base</p>	<p>in base</p>	<p><b>Desktop Support.</b> Develop a plan for better coordinating end-user support on the campus, including implementing service level agreements (SLAs) to ensure performance.</p>

By Fall 2003	in base	in base	<p><b>Lab Refresh.</b> Continue maintaining currency in the Academic Computing laboratories by</p> <ul style="list-style-type: none"> <li>• Replacing 200 older monitors (carry-over from last year)</li> <li>• Remodeling FH 202, GH 215, and SA 364 to address ADA issues (carry-over)</li> <li>• Replacing chairs in GH 215, SA 364, and SH 118 (carry-over)</li> <li>• Initiating the next round of lab upgrades in somewhat rank order: SA 364, SH 001, Lib 310, FH 202, JH 212, SH 118.</li> </ul> <p>Note that there is only \$150,000 available for the above activities, so all projects cannot be completed within the planning period.</p>
By Fall 2003	in base	in base	<p><b>Telecommunications and Network Charges.</b> Develop a proposal to bring equity to the charging for and controllability to the costs for</p> <ul style="list-style-type: none"> <li>• Data network connect charges;</li> <li>• Long distance calling;</li> <li>• Credit card usage, and</li> <li>• Operator-assisted dialing.</li> </ul>
By Fall 2003	unknown	unknown	<p><b>Web Mail.</b> Implement a replacement for the current Web Mail product.</p>
By Fall 2003	unknown	unknown	<p><b>Portal.</b> Make a decision on what the campus will do about a campuswide or student portal.</p>
Unscheduled	\$40,000	in base	<p><b>Universal Messaging System.</b> Implement a UMS that includes integrated communications support, calendaring, shared folders, and document management. Note that on-going costs should not be any higher than the current on-going costs for Meeting Maker.</p>

- Local Administrative Projects. It was necessary to place a freeze to the extent possible on the support of existing administrative systems beginning in 2002. This means the campus must restrict modifications to legacy systems to those projects that can be classified as “mission critical” or “production critical” (e.g., incorporating federal financial aid changes is “mission critical,” ensuring bugs in the admissions system are corrected is “production critical”) and also avoid investments in new administrative support applications that will be superseded by the Common Management System.

Completion	One-time Costs	On-going Costs	Project
On-going	in base	in base	<b>Applications Support.</b> Provide analyst support for mission critical and production critical modifications to legacy systems, These include mandated accounting and student records changes, financial aid processing updates, meeting Athletics' compliance and reporting requirements. Other projects will be accepted only if they can be implemented by student interns with minimal oversight by the analysts, and then only on a charge-back basis for the intern time.
During Fall 2003	unknown	in base	<b>DARS.</b> Made a decision if Humboldt will complete population of data base. Cost for completion is dependent on the need for temporary staff in Enrollment Management.
By Summer 2003	see below	see below	<b>Infrastructure.</b> Develop a migration plan and budget request for server consolidation. The plan will include a funding request for the three unscheduled activities listed below.
Unscheduled		\$85,000	<b>Infrastructure.</b> Hire a systems administrator to act as the Systems Architect (highest priority staffing need in ITS).
Unscheduled	\$220,000	\$10,000	<b>Infrastructure.</b> Implement the "backbone" infrastructure for a super server cluster to be Humboldt's central computing platform for the future, to include SAN switches, load leveling, fail-over, a disk farm, and a tape back-up system.
Unscheduled	\$25,000	\$5,000	<b>Server Consolidation.</b> Begin moving services supported on the silo servers onto the super server cluster. The costs shown are for one server in the cluster consisting of two 2.8 Ghz CPUs, 4 GB memory, two 78 GB disks for local storage, and shared disk management software..

- CSU Integrated Technology Strategy Projects. This document will not provide detailed information on the Common Management System (CMS) and Telecommunications Infrastructure Initiative (TII) projects because that information is better provided through the project Web sites. See:

Common Management System: <http://www.humboldt.edu/~cms>

Technology Infrastructure Initiative: <http://www.humboldt.edu/~tii>

<b>Completion</b>	<b>One-time Costs</b>	<b>On-going Costs</b>	<b>Project</b>
On-going	unknown	unknown	<b>Academic Technology.</b> Actively participate in the CSU planning process to identify and participate in systemwide initiatives in academic technology.
By Summer 2003	unknown	unknown	<b>CMS.</b> Develop a four-year implementation funding plan.
By Fall 2003	in base	in base	<b>CMS.</b> Implement the PeopleSoft Portal for access to the Human Resource module and later to the Student Administration module.
By Fall 2003	in base	in base	<b>CMS.</b> Make a determination as to what will be Humboldt's approach to data warehousing.
During Fall 2003	in base	in base	<b>CMS.</b> Go live with basic Human Resources modules.
During Fall 2003	in base	in base	<b>CMS.</b> Complete business process charting for Fiscal Affairs and Enrollment Management.
During Fall 2003	in base	in base	<b>CMS.</b> Begin implementation of Financials.
During Spring 2003	in base	in base	<b>TII.</b> Bring all back-up generating systems up to full reliability.
During 2003	in base	in base	<b>TII.</b> Install new emergency telephones. Actual schedule depends on TII Contractor.
During 2003	in base	in base	<b>TII.</b> Complete connection of temporary buildings with Long Range Ethernet (LRE) wherever feasible.
During 2003	in base	in base	<b>TII.</b> Work with the TII Contractor on the build-out and the TII Systems Integrator to install the electronics. The Student Health Center and University Center will be full participants in the project. Project completion is scheduled for Summer 2004.
Unscheduled		\$65,000	<b>TII.</b> Hire a network analyst to act as the Network Architect (second highest priority staffing need in ITS).
During Spring 2003	in base	in base	<b>IMI.</b> Identify all bolt-ons to the legacy student information system and how they are indexed, particularly how SSNs are used. Develop a plan for incorporating interfacing the bolt-ons to the CMS software. Make a decision on how student ID numbers will be managed in the new system.
During Spring 2003	in base	in base	<b>IMI.</b> Complete middleware pilots and begin production implementation. Implement CSU baseline during Spring 2004. Complete full implementation by Summer 2004.

☛ Please direct any questions or comments concerning this document to ☒

**Bill Cannon**  
**Director, Information Technology Services**  
**Humboldt State University**  
**One Harpst Street**  
**Arcata, California 95521**

**(707) 826-3815**  
**[wcc7001@humboldt.edu](mailto:wcc7001@humboldt.edu)**

## ATTACHMENT 1

### HUMBOLDT STATE UNIVERSITY FACULTY SUPPORT WITH ACADEMIC TECHNOLOGY Strawman for ATAC<sup>1</sup> Conference, March 2002

#### BACKGROUND

Humboldt State University's over-arching strategic direction for the use of information technology was expressed in the University's Strategic Plan published in 1996: Humboldt will move purposefully toward the integration of technology mediated instruction with the curriculum. Information technology will be used to enhance teaching and learning and not to supplant the humanistic qualities of our community of scholars and learners.

- The strategic vision specifically focused on the use of instructional technologies to enhance the teaching and learning experience *in the classroom*. Technology was and is not seen as a replacement for the direct, supportive contact that traditionally exists between teacher and learner both in one-on-one settings and in the classroom
- However, the strategic vision recognized that these same technologies can support the distance and the self-directed learner, and these opportunities should not be ignored.

Humboldt, during the period while the Strategic Plan was being developed, implemented several initiatives to advance this vision. Some high-lights are:

1. It established the position of Faculty Development Coordinator and developed a plan for faculty development in instructional technology as part of its participation as a CSU pilot school in the *Assured Student Access to a Computer and the Network* initiative.
2. It established the Courseware Development Center for direct, no-charge support of the faculty.

#### GOALS, OBJECTIVES, AND PROGRESS

Humboldt published its Information Technology Plan in 2000. An annual update is published each year. The annual plan advances the strategic vision. Some relevant entries include

- A goal is that all students, faculty, and staff at Humboldt State University will possess an appropriate level of information competency. The specific, relevant objective is
  - Provide development opportunities for faculty.
- A goal is that students and faculty will have access to both interdisciplinary and discipline-specific computing resources to support their instructional and research computing needs. Specific, relevant objectives are
  - Improve courseware development capabilities and courseware support services.
  - Ensure electronic access to library information resources.
  - Design a "classroom of the future" and implement appropriate technology for use in the classrooms.
- A goal is that all students, faculty, and staff at Humboldt State University will have access to the information technology tools and services each needs to be successful in his or her academic and professional pursuits. Specific, relevant objectives are
  - Provide a rich set of classroom management tools for faculty use.

---

<sup>1</sup>Academic Technology Advisory Committee, a CSU-wide committee that advises the Senior Vice Chancellor for Academic Affairs

- Improve technology support services across the campus.

Humboldt, during the period while the Information Technology Plan was being developed and since then, implemented several initiatives to advance its goals. Some high-lights are:

1. It integrated the Courseware Development Center into Media Services, and formed Instructional Media Services.
2. It established the Center for the Support of Instructional Technology along with a Faculty Advisory Committee to address faculty concerns in the area and bring coordination to the activities of Instructional Media Services and Academic Computing.
3. It established a permanent location for the Faculty Development Office next to the Courseware Development Center to improve faculty support.
4. It implemented a new library automation system.
5. It sponsored a number of faculty development opportunities, including technology fairs; one-on-one training opportunities; and a formal, week-long *Scholar's Workshop* program.
6. It implemented WebCT and BlackBoard (although faculty since have migrated to BlackBoard exclusively) and established a full-time position for a course management systems specialist.
7. It implemented a Help Desk for Level One support.
8. It equipped nineteen lecture rooms<sup>2</sup> as “smart classrooms” available for general course scheduling.
9. It more than doubled the number of microcomputers available for student access to ensure students can get access to technology-mediated course materials.

## NEW EMPHASIS

Humboldt State University recognizes the need to move faculty technology support beyond the classroom to serve the distance learner and the greater community. To that end, it has begun a planning process, sponsored by the Center for the Support of Instructional Technology, that brings together the faculty expertise of the Faculty Development Committee, the Distance Learning Committee, and the Faculty Advisory Committee to the Center for the Support of Instructional Technology. Although only in the early stages of developing new vision and a plan, some general topic areas have been identified.

- ***Process Topics***

Humboldt must determine what it should do and how best to do it. The considerations are:

- *Focus and Market.* Humboldt cannot be all things to all people. It must match the needs it can identify to the resources it can bring to bear. While in no way intended to be exclusive or definitive but only illustrative, several areas of specific need and market have been identified:
  - The population of Native Americans in our region is relatively large but faces a number of economic and physical (e.g., mud slides that close the region’s roads during the rainy season) obstacles to attending classes on campus. Humboldt has a successful Native American Studies program, a Native American community development program, and student support programs in Engineering and Education.

---

<sup>2</sup>Two more smart classrooms have been completed since this strawman was written.

- The economy of the North Coast historically has been based on resource extraction industries (e.g., dairy, lumber, fish, mining). Faculty, the administration, and the local community have expressed interest in Humboldt presenting programs in small business start-up and operation as well as providing community access to faculty expertise.
- There are continuing needs for life-long learning in areas where Humboldt has expertise (e.g., Nursing, Education) which faculty already are addressing but possibly without taking full advantage of available technologies.
- Technologies. The lack of technological infrastructure on the North Coast has limited Humboldt’s ability to offer distance education or frustrated those who wish to utilize it. However, technological opportunities are emerging and being examined.
  - Fiber communications links to the outside world should become available finally in the next few months.<sup>3</sup>
  - Telephone company infrastructure, including the availability of T-1 lines, is improving in our rural areas (although it is necessary to point out that some communities still are served with a single, solar- or battery-powered telephone).
  - The local cable television company has completed a major digital upgrade to its infrastructure, including extending services to all local schools, while Humboldt prepares to implement the Technology Infrastructure Initiative over the next eighteen months. The company’s franchise agreements are up for renewal. The campus and the company have good relations and are committed to exploring opportunities of mutual benefit.
  - The relationship with College of the Redwoods continues to evolve, with the College now offering some of its courses on the Humboldt campus. The College has branch campuses in Fort Bragg and Crescent City, providing connectivity to major (for the North Coast) population centers across three counties.
- Faculty Incentives. Many faculty have expressed an interest in distance learning, but an incentive program may be necessary to make their participation worthwhile considering the technological hurdles and frustrations that must be overcome in this rural area. A major survey of faculty needs has just been completed but not fully evaluated. Evaluation should identify potential incentives that should be explored in the planning process. However, it is safe to say that several items will need to be addressed:
  - A wide range of faculty development opportunities must be available, from one-on-one instruction through formal educational opportunities.
  - There should be a program of “department development” (i.e., are there sequences of courses that should be offered by a department as opposed to being “owned” by a particular faculty member).
- Support. On-going support always will be an issue. At least two areas need study:
  - Faculty need Help Desk support for technology-mediated instruction. By this, we mean that Level One support should be available for these technologies (advanced support already is available through the Courseware Development Center).

---

<sup>3</sup>This project now is on indefinite delay due to disagreements between the carrier and the state. This is a serious concern because there is insufficient communications capacity into this area to support all of Humboldt’s needs.

- Students need Help Desk support, particularly off-hours support with Level One problems but also higher level assistance when problems with course management software, such as BlackBoard, or online testing problems arise.

- ***Environmental Topics***

Two environmental topics must be addressed. While some work on these topics can be done in parallel with planning for increasing the emphasis on distance learning, some of that effort must lag the development of the plan because the plan itself will inform the campus on the specifics of the environmental topics that must be addressed.

- *Policy*. Humboldt’s distance learner initiative must operate within a policy framework that addresses a myriad of issues, including faculty compensation, intellectual property, copyright, etc.
- *Assessment*. Assessment topics include both curricular issues (what constitutes a “good” distance learning course) and learning outcomes (is all of this worth the effort).

Fortunately, Humboldt has the WASC guidelines and the experience of many other institutions to help us on our way.

Note that a new emphasis on support for distance learning will not result in any reduction in Humboldt’s commitment to serving its on-campus students. Humboldt’s primary emphasis remains using instructional technology to enhance teaching and learning in the classroom.