

UCCS Information Technology

Strategic Initiatives

March 15, 2007

Short term initiatives – Learning Management System (LMS)

Wireless Networking

Learning Management Systems (LMS)

Recommendation: Develop a robust web-based learning infrastructure capable of supporting every course at University of Colorado at Colorado Springs, and one that adheres to the following principles:

- **Enhances the learning experience for students**
- **Presents a consistent and branded resource for both students and faculty that integrates with centralized web-based student services**

Discussion of the Recommendation

Current Situation

IT currently supports several course management systems including WebCT (Standard Edition used by the Chemistry Department ONLY on a limited license), e-College (both e-Course for fully online courses – at a cost of \$47 per student enrollment per semester and e-Companion for on-campus courses – currently free of charge to the UCCS campus), and CyberClass (used by the Writing program ONLY).

WebCT usage is constrained by the hardware, human and fiscal resources available to support it. IT currently allocates approximately .05 FTE which is sufficient at current usage levels to support the application from a systems administrative perspective. Support for faculty usage of WebCT is insufficient.

e-College's e-Course product provides 24/7 faculty and student support through a Denver telephone number and/or e-mail support with the Teaching and Learning center providing one-on-one Faculty training on an as-needed basis. There is very limited support for the e-Companion product and is provided through 1 of 4 main e-College campus administrators on an as-needed basis without compensation to these individuals; basically being performed on a volunteer basis. The campus pays for the e-Companion "iSupport" which allows the campus administrators to call the 24/7 help desk to resolve issues with e-Companion. As with WebCT, support for faculty usage of e-Companion is insufficient.

Because of the current offerings, some campus faculty members create and deploy their own course web sites and may choose to continue to do so, regardless of the campus solutions offered. Support for these sites is varied. In some cases, departmental staffs provide a high level of support for the department's web presence, as well as system administration for departmental web servers. In other

cases, support is minimal or not available. Concerns about these sites include the lack of available professional support, and the lack of adequate security.

Specific Recommendations Include

- Find a single robust LMS for the UCCS campus to eliminate inefficiencies related to support and faculty training and student use of 3 discreet systems (WebCT, CyberClass, e-College)
- For academic year 2005/06 maintain the current support for WebCT and CyberClass.
- Engage in a system requirements definition process relying upon faculty and student input to delineate functional needs. The end result will be a set of functional specifications that can be used to determine future direction.
- Utilize ITAC to provide counsel and advice for future strategic directions.
- Continue to actively research the various CMS/LMS systems to understand capabilities and determine the appropriate strategic direction for the campus.
- Plan an LMS architecture that supports the teaching and learning objectives of the campus. In addition, the vision for LMS should be effectively communicated to manage expectations of availability, capacity, and reliability.

- Select an LMS direction for the Colorado Springs campus that will take the campus to the desired destination of student web services that enhance learning.

Required Involvement

Governance & Authority

Vice Chancellor of Academic Affairs
IT Leadership Team
IT Advisory Council

Required Departmental Involvement & Responsibilities

- Depending on the chosen platform, IT will provide the application support for the campus LMS.
- UMS and campus IT to provide support for integration with the SIS

Expected Costs

Expected costs cannot be determined until the in-depth analysis is conducted. Estimated cost would be \$30,000 to \$50,000 per year.

Funding

Current IT funding for personnel needs to be augmented by campus resources such as the General Fund.

Networking – Wireless

Recommendation: Expand and coordinate wireless LAN access across campus in order to meet increasing demands for more mobile access to campus and Internet resources.

Discussion of the Recommendation

Current Situation

The currently supported standard for wireless network access is the IEEE 802.11x standard. This supports 10 Mbps wireless Ethernet service over distances generally limited to 150 feet indoors and up to 1000 feet clear line of sight outside. Devices that support this standard have dropped dramatically in price and are readily available from most computer/network outlets. This has made these devices increasingly popular. The campus is instituting a policy that requires that departments coordinate their wireless access point installations with IT.

Rationale

Wireless network access is particularly attractive in facilitating mobility for the campus community. It is often ideal for common areas such as classrooms, conference rooms, team rooms, and libraries. Wireless is not generally an acceptable alternative to wired connectivity in an office, due to the slower speed, shared media, and less secure service than wired.

Customers often need significant technical support when installing wireless access cards and access points. Wireless network access technology is evolving, and easily within the timeframe of this plan, the campus will see substantial changes in the technology as it moves to higher speeds and coverage that is more restricted. In addition, the campus must work toward offering suitable security that is easy to use.

Specific Recommendations Include

- Implement wireless network access capability across campus, both in public, common places and in dedicated departmental spaces in a coordinated fashion in order to insure that the service is secure and reliable.
- Institute and enforce the wireless policy to ensure that departments that wish to implement network access capability should do so only after consulting with IT.
- Ensure all wireless access to campus network is authenticated and secure.

Steps

Implementation

- The campus, with technical support from IT, is already deploying wireless network access in common areas across campus on a limited basis as funds become available.
- IT already is working with departments to coordinate and even manage their private

wireless network access installations.

Communication

- The campus wireless policy must be communicated broadly to the campus
- Implementation plans and schedule must be communicated to the campus through regular website updates, campus bulletins on major milestones.

Policy & Standards

The IT Advisory Council is establishing a policy that requires any 802.11x wireless network installation be coordinated by IT to insure non-interfering use of the available frequency spectrum and to be sure that departmental wireless activities do not compromise broader campus uses of wireless.

Required Involvement

Governance & Authority

Wireless access implementations on campus fall under the authority of the Office of the Chancellor. This responsibility and authority have been delegated to the IT Director for implementing the policy.

Required Departmental Involvement & Responsibilities

- The IT Director and IT Advisory Council will continue to provide guidance and direction.
- Campus departments must coordinate wireless installations with IT.
- Departments will be asked to provide input on the developing demands for wireless network access. Departments may be asked to help fund implementation of campus wide wireless infrastructure.

Expected Costs

Annual IT Infrastructure Investment

Broad campus coverage would require at least \$450,000 - \$600,000 initial outlay. Less than one third of that amount is equipment costs with most of the balance devoted to construction. The campus should expect to replace or add wireless technology each year over the next five years. This requires budgeting estimated at \$100,000 per year for maintenance and replacement contracts.

Personnel

Continuing support for campus-wide wireless access would require at least one additional FTE.

Funding

Initial funding for an initial, broad wireless deployment is currently included in the IT Budget. Funding was made available using student technology fees. This does not include the additional positions and the \$100,000 ongoing support required to maintain the campus wireless network.

Midterm Strategies – Web Based Services Infrastructure Strategy,

Web-Based Student Services

IT Security

Integrated Web-based Services

University of Colorado at Colorado Springs is in the position to take full advantage of new and emerging web technologies to provide a virtual, one-stop shop for university services, from registration and online ticketing, to calendaring and procurement.

Data from and surveys indicate that the campus should move toward a portal strategy that will facilitate student, faculty, and staff access to the academic content and the academic and administrative services they need.

The primary challenges of providing web-based services for the campus are less technical in nature than cultural. Although there is broad conceptual support for creating a cohesive interface for accessing discrete services provided by multiple unit, the campus will need to provide leadership and support to facilitate cooperation by unit that have worked independently in the past.

Security and privacy drive the technical basis necessary for successful web-based services initiatives.

Recommendations for web-based services that are common to both sections of this chapter include:

- Academic, student, and administrative services should be accessible through the web and tailored to users
- To accomplish this, a standard portal framework should be implemented
- Steering committees should provide strategic direction and tactical buy-in for web-based services

Due to demand, the campus is implementing a student portal first, followed by a faculty and staff portal as resources permit. Strong collaborative leadership from the Vice Chancellor for Student Success and from the Vice Chancellor for Academic Affairs will be required for a successful implementation of both.

Web-based Services Infrastructure Strategy

Recommendation: Provide a high-performance, centralized web infrastructure for hosting and managing campus web-based content and services.

University of Colorado at Colorado Springs should provide a robust, highly available, fault tolerant, central infrastructure to serve present and future web-based operations and develop solutions for web content management for campus departments, students, faculty, and staff using best practices for security, usability, functionality and design.

Discussion of the Recommendation

Current Situation

University of Colorado at Colorado Springs web-based infrastructure has grown without attention to comprehensive planning and strategic goals. There is limited campus-wide coordination of development and hosting of web projects. IT currently provides hardware, software and staffing for hosting institutional, student, faculty, and staff web pages and some departmental web applications. However, a significant number of campus web-based applications and static pages are developed and hosted within individual departments on an ad hoc basis without oversight or coordination. With the proliferation of web content and web-enabled applications, the campus is facing policy-level and technology-related challenges to optimize web-based services. Increased variety and complexity of content, such as animation, sound, and streaming video in addition to current text files are increasing demands for more advanced website functionality.

Rationale

A consistent, comprehensive campus web infrastructure is a prerequisite for further development and deployment of campus web-based applications. As the primary source for campus information, web services must be reliable, robust, and always available. As an institutional asset, campus web content should be managed and controlled in a manner that ensures the integrity of the content creation process. A central web infrastructure, utilizing content management and available campus-wide, provides a secure and efficient operating environment for developing and supporting campus web-based applications. Adopting a web content management strategy and common security processes improves consistency and currency of campus web-based information, reduce web development costs, enable the implementation of campus-wide security services.

Specific Recommendations Include

- Restructure the current central web-based infrastructure to improve performance, improve fail-over capability, improve manageability of content, and enhance security.
- Fund the development and maintenance of central web-based services to provide robust production level capabilities and staffing to meet necessary service levels for current and future campus needs.
- Implement web content management hardware and software for a phased implementation of campus-wide access and distributed administration of central web-based content.
- Develop a program of operational excellence for supporting web-based services to meet campus departmental business needs, ensure customer satisfaction, and achieve the results required for mission-critical web sites.

Steps

Implementation

- Review and analyze components of the current web-based services infrastructure to determine approaches for rationalizing and stabilizing the current hardware and software platforms, addressing security issues and web content issues, implementing web site monitoring, adopting management tools, and developing and implementing policies and procedures.
- Develop a forecast of web-based access demand for a central infrastructure including known and pending web application deployments, departmental web sites, opportunities for consolidation of web infrastructure, and growth in demand for higher bandwidth web services such as multimedia content.

Communication

Create a plan to communicate to the campus regarding the deployment of campus-wide web-based services. Solicit feedback from campus departmental web administrators from early planning through implementation.

Policy and Standards

Establish and implement policy and technical standards for web-based services encompassing mandatory and recommended practices, technical services, and content management. Policies and standards should reflect differing business needs and privacy and security requirements presented by separate web spaces such as public, student, departmental, and intercampus.

Required Involvement

Governance and Authority

IT Leadership Team
Information Technology Department

Required Departmental Involvement & Responsibility

- IT to design, implement, maintain, operate, and manage the central web-based services infrastructure
- Web Communications to collaborate on web policy, best practices, selection, and deployment of web content management software and infrastructure design issues
- Campus departments to collaborate on design, support requirements, web site monitoring and distributed content management
- IT Council to provide guidance and programmatic direction

Expected Costs

Annual IT infrastructure Investment

New costs

Infrastructure costs necessary to deploy a fully fault tolerant operating environment to ensure business continuity in the event of a disaster include web server hardware and software, application server hardware and software, database hardware and software, network hardware and software and redundant power supplies. These costs are estimated to be \$50,000 with annual costs

estimated to be \$15,000 per year.

Infrastructure costs necessary to create a production level central web service, provide the necessary content management capability and development platform include web content management hardware and software, content development and staging hardware, and web site monitoring tools. These costs are estimated to be \$50,000 with annual costs estimated to be \$10,000 per year.

Personnel New costs

Personnel for deploying, maintaining and supporting a production level central web service needs to be increased by two full-time employees (FTE), which will cost approximately \$100,000

Funding

Funding for creating a fully fault tolerant operating environment should be provided by general fund with re-allocation within IT budget as necessary.

Web-Based Student Services

Recommendation: Provide excellent, unified web-based student services at the University of Colorado at Colorado Springs in the form of a campus student portal.

To achieve this recommendation, four components are required:

- 1. Cross department collaboration**
- 2. Student involvement**
- 3. Selection of appropriate technology**
- 4. Allocation of sufficient funding**

Discussion of the Recommendation

Rationale

Personal Look-Up Services (the Student Online Center) are now used by the majority of University of Colorado at Colorado Springs undergraduate students on a regular basis. While the Student Online Center as a student service is highly successful, it is based on outdated technology, proprietary programming language, and it can no longer be expanded to include the new services that students want and need. In addition, the campus must develop better security, reliability, and scalability through new software for IT web-based services.

The Student Online Center and web-based services provide convenience by providing answers to routine and simple student service questions. While a web-based environment augments and enhances the student service experience, it does not take the place of meaningful, in-depth interactions between faculty and students, and staff and students. Developing a robust, unified, online student portal would allow more time for substantive interactions between students and the university. Ideally, a web-based student service infrastructure would be matched by an actual physical, centrally located service center.

Current funding of the campus's centralized student web services is inadequate. Although there is a modest general fund allocation for web-based student services, There may be opportunities through consolidation of multiple services to create a financially efficient service model.

Specific Recommendations Include

1. Build on the success of the Student Online Center by strengthening and strategically expanding the services available on a single, student-centered web site. The Student Online Center currently allows numerous separate transactions from the Bursar, Financial Aid, the Registrar, Student Health Center, and IT. Other services from departments such as Housing, Orientation, Libraries and Advising are vital to student success at UCCS and should be considered for the new, unified service site as it is developed. New services requested by students, including personal calendaring, online ticket purchases, announcements and academic alerts, would be appropriate additions to a portal. Other services, important to smaller populations, should be expected to meet campus-wide programming standards in order to be available to students on the central site. These other services might include Parking Management permit purchases, Student Academic Services Center workshops or tutoring information, study abroad applications or information, and telecommunications checkout processes.
2. The campus also needs to keep in mind that some faculty and staff need to be able to see the same view of academic and financial records that the student sees. As new student web services are developed, the campus should keep faculty/advisor access to information in the student portal as a goal. To support the development of this next generation of Student Online Center, a collaborative, interdepartmental structure is required to set policies, identify criteria and develop processes, priorities, and designate responsibilities by which services are added to and maintained in this new web site. This structure must work with other systems and system owners to ensure success.
3. Web development of services requires input from many different sectors: content providers, both service and academic departments, technology specialists from IT and UMS, and web specialists and designers. These offices are in different divisions, yet need to work together closely to create the best service for students.
4. Develop a standard portal framework and infrastructure utilizing open, non-proprietary, component-based, reusable standard modules to support unified student services on the web.
5. Review and reassess the current levels and distribution of student fees and general and auxiliary funds in support of campus and university technology to assure adequate funding of all aspects of the development and maintenance of web-based student services.

Required Involvement

Governance & Authority

Leadership and guidance need to be provided by the appropriate authority, specifically in the Office of the Vice Chancellor of Student Success, and the Office of the Executive Director of University Relations. Their leadership would acknowledge and encompass student services and communications provided by all departments on campus, not just those in student affairs.

Required Departmental Involvement & Responsibilities

A shared commitment to a unified student web services site by all service providers is required. The collaborative effort between student information providers, IT, and Web Communications.

The following is a partial list of departments, divisions, and existing committees, which have interest in, or control over, some aspect of student services on the web:

- Student Affairs, Enrollment Management and the departments within this division
- Academic Affairs, College and School Dean's offices, advising, and libraries
- Administration, particularly Parking Management
- Budget and Finance, particularly the Bursar's Office

- Extended Studies
- UCCS Student Government Association
- Information Technology
- UMS and System Administration
- University Relations, particularly Web Communications
- UCCS Campus SIS Working Group
- IT Advisory Council

Expected Costs

Annual IT Infrastructure Investment

These total cost are yet to be determined, cost will vary depending on the level of implementation. Hardware infrastructure needs to be robust, redundant, fault-tolerant, and capable of supporting the entire Colorado Springs campus student population during the heaviest usage period of fall enrollment. The hardware should be on a three-year replacement cycle.

A recent Gartner study states, “Although many enterprises think that the major costs of the portal go into the product acquisition and initial release, those that have done their homework recognize that the long-term TCO of the portal is driven more by the subsequent customization work.”

Personnel

Commitment to open, platform-neutral, standards-based computing helps lessen the up-front costs, but increases the campus’s reliance and dependency on well-trained IT professionals who understand leading-edge technologies. In addition to technological upkeep, web sites need updating, revising, and retirement in the same way as paper publications.

- An ongoing training budget is to be determined
- Cost of site maintenance of content (new or reallocated) to be determined
- 1 FTE for portal technical administration
- 2 FTE for presentation programming
- 1 FTE for content continuance, project management, and planning (portal manager)

Funding

Creating a central, unified area for services to the campus requires a stable source of centralized funding. This funding should be allocated from a number of areas.

Current general funds in involved and responsible departments should be reviewed for appropriate allocation toward the goal of unified web services. Funding for web-based student services has not kept pace with volume of student usage and the number of student services that have been shifted to the web. If a web process replaces an in-person or paper process the funding should be reallocated to support the web process costs.

The distribution of student technology fees should be reassessed to assure adequate funding of the development and maintenance of web-based student services. The campus should investigate the need for an increase in student fees to support web-based student services.

IT Security

Discussion of the Recommendation

Current Situation

The campus is well underway in the effort to develop security-related policies, best practices, and guidelines. However, much of the campus lacks awareness of and understanding of these policies and guidelines. Consequently, system administrators and users often make uninformed decisions that have a detrimental impact on the security and integrity of the campus IT infrastructure and other IT systems.

The University of Colorado at Colorado Springs has recognized the need for an IT risk assessment process to ensure the security and continuity of the University's IT resources. The results of the risk assessment process will help to mitigate vulnerabilities of campus mission critical, IT-dependent services. In addition, data collected and lessons learned from the risk assessment will provide the foundation for setting the future directions for campus IT security. The early stages of the current risk assessment cycle have shown that business continuity planning is lacking at the University of Colorado at Colorado Springs.

Rationale

The increased reliance on IT as part of the university business and academic communications infrastructure requires technical solutions to ensure the integrity and authenticity of electronic communication. Maximum benefit from these solutions can only be achieved if they are implemented under an overall campus strategy.

The reasons to provide secure means for electronic communication are many. While there is no question that e-mail as a delivery mechanism has proven to be easy, economical, and fast regardless of the message content, there are risks in sending sensitive or critical data via e-mail. It is relatively easy for an attacker to capture e-mail thus gaining access to private or sensitive information. Additionally an increasing number of attacks involve social engineering that deceives users by falsified "official" university communications. A campus-wide mechanism to protect both the privacy and integrity of the data is needed.

While desktop anti-virus scanning is still an integral part of worm, virus, and trojan-horse defense, experience has shown scanning to be less effective than necessary for a number of reasons. Foremost, the software is only as effective as the user or administrator configuring the product. All too often, software is installed but not updated, or users just do not understand the need to use such defensive software. Anti-virus software is increasingly both hard to understand and to manage.

Without the basic IT security infrastructure, it is impossible to have effective IT security.

Specific Recommendations include:

- Continuing efforts to improve security awareness and practices through establishment, communication, and enforcement of policies, best practices, and guidelines
- Providing campus risk assessment processes and business continuity planning guidance to mitigate vulnerabilities in critical systems and to provide data to determine future campus security needs
- Providing effective campus solutions for worm, virus, and Trojan-horse defense
- Implementing solutions providing integrity and verification of electronic communication and communicating secure and effective uses for electronic communication
- Proactively improving security through campus intrusion detection and vulnerability assessment.
- Improving the campus incident response process and formalizing the IT incident response team

Steps

Implementation

- Continue with the existing risk assessment process
- Provide IT business continuity & disaster recovery templates for campus departments. Provide an anti-virus licensing option or a campus site license, build supporting infrastructure, implement a campus anti-virus policy, publicize best practices, and offer training for desktop protection strategies
- Develop and implement a secure e-mail environment that enables non-repudiation of sender and recipient identities and guarantees integrity of electronic communication
- A campus intrusion detection solution is in place

Policy & Standards

- Continued best practices and standards for existing and new technologies.
- Implement new system and campus network security policies.

Required Involvement

Governance & Authority

- The IT Leadership Team
- IT Advisory Council to provide guidance and programmatic direction

Required Departmental Involvement & Responsibilities

- IT to provide core leadership in the design, maintenance, operation and management of the IT security infrastructure
- Colorado Springs Campus Risk Management as well as the University Internal Audit to provide input into Business Continuity and Disaster Recovery templates
- Legal Counsel to provide clarification of liability and other legal concerns regarding aspects of IT security

Expected Costs

Annual IT Infrastructure Investment

Cost will vary based on short term decisions made in response to changing IT industry issues.

Operating and Maintenance

- \$60,000 hardware maintenance
- \$10,000 hardware maintenance for intrusion detection systems

Personnel

1 FTE in Fiscal Year 2007-2008

1 FTE in Fiscal Year 2006-2009

Funding

A combination of institutional funding and cost recovery should be identified to fund IT Security initiatives.

Timing

Specific timing will vary based on funding and tactical level decisions. The timing listed represents implementation priorities for the objectives in this plan.

- Security Awareness: in progress and an ongoing effort
- Risk assessment process: in progress and an ongoing effort
- Provide business continuity & disaster recovery templates for campus departments: March 2006.
- Anti-virus solutions: in place
- Network vulnerability assessment: Review quarterly
- Incident response process: In progress

Long Term Strategies – Instructional Facilities

Instructional Facilities

To provide reliable, widely available technologies that can be adapted to a variety of teaching and learning situations, the campus should enhance support for technology-enhanced facilities by locating support in proximity to the facilities, and by tailoring the support to the needs of faculty users. The campus also should continue IT efforts to identify, plan for, and fund the renewal and replacement needs of technology-enhanced instructional facilities.

Discussion of the Recommendation

Current Situation

The campus has 50 centrally scheduled classrooms. 34 of these are “Smart Classrooms” that include at least a computer and projection system. Several more such instructional facilities are “owned” and maintained by individual departments. The recommendations in this section concern centrally scheduled classrooms only.

Demand for technology enhanced teaching facilities is growing, and little funding exists to convert traditional classrooms into “smart” classrooms (that is, technology-enhanced instructional facilities that have Internet connections, projection, and other media capabilities). Maintenance and support for smart classrooms are funded with one-time budget requests and from IT’ classroom renovation account.

The campus also has 9 IT operated computer labs that are funded, in large part, through student technology fees. Although there is a high level of student computer ownership, the need for these labs may remain constant in the coming years. Student computer labs are used because of their convenience and specialized software. Some are used on an ad hoc basis as instructional facilities. The campus has not increased the number of student labs in the past several years, and there are no plans to do so in the coming years.

Support for computer labs and computer classrooms is mainly provided by IT. Support for centrally scheduled smart classrooms is primarily provided by IT. In a limited number of instances, that support is provided by IT staff located in proximity to the facilities (e.g., in Columbine Hall); otherwise, little support is provided in proximity to technology-enhanced facilities. Training for faculty to learn to use smart classrooms, labs, and computer classrooms is provided formally only in Columbine Hall, Dwire Hall and University Hall. Other training for these purposes is ad hoc.

IT has completed a detailed analysis of the facilities it maintains, and has begun to assess renewal and replacement needs and costs for them.

The campus’ continued funding for the renewal and replacement of technology enhanced instructional facilities is inadequate, and there is no reliable, ongoing source of support for this need. While renewal and replacement for labs is funded from student technology fees, that of classrooms is not. Faculty are generally not involved with strategic decisions about the technologies that are needed in instructional facilities, or about moveable technologies that might enhance the capabilities of bare-bones classrooms (those with no technology enhancements).

Rationale

The demand for technology-enhanced instructional facilities is growing and will likely continue to grow. Faculty at University of Colorado at Colorado Springs increasingly rely on laptops, projection and sound systems, VHS and DVD players, and other technologies to bring media content into the classroom. A smaller and growing group of faculty are teaching classes in computer labs or classrooms and devoting class time to individual student or group work at computer workstations. Anecdotal evidence and some survey data suggest that, while technology-enhanced teaching facilities are in high demand, campus use of them is not efficient. Faculty who need the technology in instructional facilities have no priority over those who do not; therefore, the technology in such facilities is seldom used to its full potential. Furthermore, faculty who need the technology for only a small percentage of their class meeting times must reserve a technology-enhanced facility for the entire semester.

Some faculty members use student computer labs for teaching purposes. However, this use is not formalized and the standard configuration of the labs does not lend itself to instructional purposes.

Anecdotal evidence indicates that support for technology-enhanced instructional facilities needs to be physically proximate to the location of the facilities for ease of maintenance and technical stability and reliability. This is currently the case in only a few instructional facilities on campus.

To ensure that there is a close fit between technologies needed and technologies provided, faculty must be involved with strategic decisions about what technologies will be included in which instructional facilities, and about what moveable technologies the campus should invest in.

The campus' continued funding for the renewal and replacement of technology-enhanced instructional facilities is inadequate, and there is no reliable, ongoing source of support for this need.

Specific Recommendations Include

Effective Scheduling of Technology-Enhanced Instructional Facilities

IT and the Registrar will collaborate to establish a thoughtful, effective, and equitable scheduling process for technology-enhanced and computer classrooms, in part by adding the need for technology enhancements to the Registrar's list of priorities for classroom scheduling.

Use of Student Computer Labs for Instructional Purposes

IT and the Office of AVCAA will work with appropriate student groups and student fee committees to develop guidelines and procedures for the instructional use of student computer labs that are equitable and sustainable, recognizing both faculty and student needs and expectations. These guidelines will formalize the use of some computer labs as instructional facilities for a limited number of class meeting times per week.

Effective Support of Technology-Enhanced Instructional Facilities

IT will work with schools and colleges to determine the most effective model for providing support for technology-enhanced instructional facilities. This model will locate support in proximity to the instructional facility wherever feasible.

Renewal and Replacement of Technology-Enhanced Instructional Facilities

IT will continue IT work on the renewal and replacement of centrally-scheduled,

technology-enhanced instructional facilities and will continue to search for ongoing funding for the maintenance, renewal, and replacement of those facilities.

Steps

Implementation

Effective Support of Technology-Enhanced Instructional Facilities

- IT will work with schools and colleges to determine the most effective model for providing support for technology enhanced instructional facilities.

Renewal and Replacement of Technology-Enhanced Instructional Facilities

- IT will work with ITAC to evaluate the nature, quantity, and quality of campus instructional facilities and the emerging technologies installed in them. Moveable technologies (e.g., laptop carts and portable projectors) will be considered at this time.
- IT will complete IT renewal and replacement schedule for technology-enhanced instructional facilities and develop a cost model that recognizes the true costs associated with providing and maintaining computer labs that are used for teaching.
- IT will continue to fund staff to support basic instructional use of smart classrooms, labs, and computer classrooms.

Communication

Effective Support of Technology-Enhanced Instructional Facilities

- IT will develop a communication plan for informing faculty, schools, and colleges about the support available for technology-enhanced instructional facilities.

Required Involvement

Governance & Authority

- The IT Leadership Team, in consultation with IT and UCCS Student Government Association (SGA)
- Decisions about technology enhanced teaching facilities will be made with input from ITAC.

Required Departmental Involvement & Responsibilities

- Associate Vice Chancellor for Academic Affairs
- IT Management and Departments, specifically
- Representatives from the faculty
- Registrar and departmental scheduling liaisons
- Deans of the schools and colleges
- SGA student representatives
- IT Advisory Council (ITAC)

Expected Costs

Annual IT Infrastructure Investment

- To be determined after analysis of facilities and cost of support

- Renewal and replacement for classroom facilities is \$500,000 over a three year period.

Operating and Maintenance

- To be determined after analysis of facilities and support costs

Personnel

- To be determined after analysis of facilities and support costs

Funding

The campus should think strategically about diverse funding sources, including central general fund accounts, student technology fees, schools and colleges, the state legislature, and corporate funding for the renewal and replacement of technology enhanced instructional facilities.