

Standard III C: Technology Resources

III C. *Technology resources are used to support student learning programs and services and to improve institutional effectiveness. Technology planning is integrated with institutional planning.*

III C.1 *The institution assures that any technology support it provides is designed to meet the needs of learning, teaching, college wide communications, research, and operational systems.*

Descriptive Summary

Technology oversight and planning comes from both the district and the college. District technology planning is based on the strategic plan and the technology plan that was developed by the technology coordination committee and presented to and approved by the board of trustees.

The technology coordination committee (TCC) is co-chaired by the vice chancellor of educational services and planning and the director of information systems (IS). The committee is comprised of representatives from the colleges and centers of the district and represents all the various constituents. Fresno City College is well represented by faculty and administrators from several divisions, counselors, and lead classified professionals from the technology support area (III C.1,7,10).

Technology oversight and planning at Fresno City College is done by a committee that has been known as the technology advisory committee (TAC) or Theme Team 6. Membership of that committee includes faculty, classified professionals, and administrators interested in technology. The

committee membership specifically includes the associate dean of instruction responsible for technology (currently the interim associate dean of instruction, learning resources), the network coordinator, the coordinator of academic computing, and the microcomputer specialist responsible for the technology component of a Title V Grant (III C.2).

The college has created an intranet that includes the various LANs throughout the campus. The college has provided personal computers for faculty, classified professionals, and administrators in all offices. There are computer labs and classrooms equipped with computers in every instructional division. Funding has been provided through instructional equipment, noninstructional equipment, and grant funds. Bond Measure E, approved by the voters in 2002, provided funds to complete the infrastructure of the campus (III C.9).

Assessment

The membership of both the district and college technology committees is stable, and there is a high level of consistency between the two committees. As a result, there seems to be a commonly-held vision of where both organizations need to go in their technology; however, that vision is not clearly stated in writing. For both committees, the planning process has often been assumed by several individuals, in addition to their regular duties. The planning calendar has been defined and controlled by the committees.

At the college, planning is currently more reactive than proactive. The last written plan for technology for the campus is over five years old and generally obsolete (III C.7). However, many new projects have been

implemented and easily embraced by the campus community without being part of any existing technology plan. The current budget line item system does not determine how much money is spent on technology, and this in turn makes it difficult to plan future funding needs.

Surveys conducted over the last five years have shown that almost all employees believe they have adequate equipment and that they are sufficiently computer literate to do their job well (IIIC.11). There is ongoing training available for faculty and staff to increase their level of computer competencies (IIIC.12).

IIIC.1a Technology services, professional support, facilities, hardware, and software are designed to enhance the operation and effectiveness of the institution.

Descriptive Summary

A number of committees play an integral role in guiding the planning, acquisition, and support of technology for the institution. On the district level, the technology coordination committee is responsible for envisioning the course that technology should follow within the district. The TCC technology plan sets forth the general plans and goals for the district and the colleges. Most hardware standardization has been district driven. The information systems (IS) priority committee is a districtwide committee responsible for prioritizing work to be done by the district IS department (IIIC.18).

At Fresno City College, Theme Team 6 of the institutional planning and budget committee has had primary responsibility for envisioning the future of technology on the campus. The theme team was involved in an update of the

1999 Fresno City College technology use plan when activities were interrupted to work on this accreditation study. While the update has not yet been completed, many of the ideas have been implemented (IIIC.2).

The instructional technology subcommittee of the academic senate has been instrumental in developing and recommending new policies and procedures to the college president for technology and distance education utilizing technology (IIIC.13).

Campus administrative software is determined by the district to ensure compatibility and a standard districtwide interface. Instructional software is primarily determined by the faculty and is curriculum driven. Advisory committees for the occupational/vocational areas are instrumental in assisting faculty in determining the most appropriate software.

Fresno City College, in conjunction with Reedley College, was recently awarded a Title V Cooperative Grant (IIIC.14). A major objective of the grant is to further distance education. As a result of the grant, the college will upgrade to the Enterprise version of Blackboard for Internet-based classes. This means that Blackboard will own the server and be responsible for maintaining it and ensuring access to class sites. It also means that the Blackboard help desk will be available 24/7 for technical questions. Unfortunately, this help desk is not yet available to students.

Assessment

Technology planning, although lacking in formal structure, is effective. The staff survey and student survey indicate that the hardware, software, infrastructure, and support services are adequately meeting both staff and student

needs (IIIC.11,19). However, the college still faces a challenge in ensuring that student questions about online courses are answered quickly.

Policies and procedures related to software integration and acquisition, network security, computer replacement, and wireless network use are among the issues that need to be addressed. The entire college community needs to have input into the technology planning process and determine the general direction that technology is going to take on campus.

IIIC.1b The institution provides quality training in the effective application of its information technology to students and personnel.

Descriptive Summary

Technology training for faculty, staff, and students is addressed at many levels. Faculty receive training primarily through workshops, seminars, and institutes offered by the coordinator of academic computing. The coordinator of academic computing is a full-time faculty member who directly provides for the technology training needs of the faculty. A districtwide committee coordinates the offering of various training workshops throughout the year for classified professionals. Technology support staff are trained by outside, industry professionals brought to campus for specific and intensive computer and network training. Students are trained in academic and occupational/vocational programs offered at the college. They also are given support and training through the computer labs that are open for walk-in usage. The student computer lab in the learning resources center provides most of the support for students because it is open

to any student regardless of what class he or she is enrolled in. Additionally, the computer lab located in the library is open for student use, and library personnel are available to answer questions and provide technical support. Students receive further training from their instructors, even if the class is not a technology-based class: using computers in the classroom for Internet research, navigating Blackboard, and preparing PowerPoint presentations.

One of the most notable accomplishments during the last five years for the college in providing training for faculty and staff is the creation of the teaching and learning center (TLC). The TLC is a hub of training and learning for faculty, staff, and administrators. It acts as the resource room where faculty and staff go to learn how to create high tech, multimedia projects that support the integration of technology into the curriculum. The TLC is committed to advancing the purposeful use of new media and digital technologies in all of Fresno City College's educational programs. The TLC provides teachers and staff with a broad range of training opportunities such as workshops, forums, flex-day activities, teleconferences, and technology institutes. The lab has state-of-the-art hardware and software available to help keep faculty, staff, and administrators' technology skills current. The center is available not only for formalized group instruction but also for walk-in, individualized consultations in the use of available equipment. Many part-time faculty also use the center to access technology on campus such as MicroGrade, WebAdvisor, and Blackboard. Faculty and staff use the equipment available, such as digital camcorders, printers, scanners, CD and

DVD burners, closed captioning machines, and video editing hardware and software that enhance classroom presentations. The TLC is also a place where faculty and staff can explore innovative instructional models, build learning communities, and establish best practices by implementing practical and educational uses of technology.

The TLC is also a focal point for all facets of distance education. Student services personnel receive training for supporting classes online; teachers learn the pedagogy of distance learning and technology mediated instruction; administrators learn the technical skills necessary to carry out the expanded mission of the college; and faculty and staff are able to use the TLC as a resource room.

One of the future goals of the college is to expand student technical support, particularly when the campus implements a wireless technology infrastructure. The college will also continue to develop an online degree program. Issues such as enrollment procedures, student email accounts, training standards for instructors, compensation, technical support, and financial impact to the general fund will need to be addressed. These issues need to be articulated, debated, and resolved through policy decisions that will require campuswide participation.

The coordinator of academic computing was hired in 2000 as a result of recommendations in the last campus technology use plan (IIC.7). Since then, the college has been able to provide training for faculty in a variety of ways. The main training event each year is the Summer Institute. The institutes have been co-sponsored by the college and in various years, CVC4, @ONE, Title V Learning Communities grant, and NC⁵. Most have been

conducted during the summer and have been well attended (60 to 120 at each institute). They are always evaluated by the participants and the results are used for planning purposes (IIC.15).

Workshops are offered throughout the semester. Faculty can choose from a variety of classes, including MicroGrade, WebAdvisor, Blackboard, FrontPage, PowerPoint, Digital Video Editing, Camtasia, Scanning Basics, Word, Excel, Access, Outlook, Exchange, NetMeeting, Producer, Adobe Acrobat, Premiere, File Management for the PC, Internet Basics, Online Teaching Pedagogy, Turn-it-in, Smarthinking, I-Stream, Quick Time, Windows XP, and Snag It. These classes are offered at various times throughout the semester. A monthly calendar is distributed to all staff (IIC.12).

In addition to semester workshops and summer institutes, faculty are offered training classes on flex day at the beginning of each semester. Flex day training consists of a series of workshops that concentrate on the most critical software used by instructors, namely MicroGrade and Blackboard. Innovative technology sessions and distance learning special interest group meetings are also held on this date. For the Spring 2005 flex day, the innovative technology session was offered by Tegrity, the digital media technology used to stream faculty lectures and presentations. The average total attendance for flex day sessions is 80 faculty and the average semester total for semester workshops is 30 faculty (IIC.16).

Faculty and staff are further supported by the coordinator of academic computing and the distance education/information technology support technician (DEITST). The coordinator receives an average of 175

phone calls, 400 emails, and 60 walk-in sessions per semester. The phone calls and emails encompass requests for technical support, software, tutorial assistance, and project development. The DEITST receives an average of 20 calls per day regarding technical support and requests for software/server assistance. Student requests for support are also met by the coordinator and DEITST positions.

Classified professional technology staff development needs are coordinated by a districtwide staff development committee. Technology training is scheduled every third Thursday of the month to address such training needs as management information system Excel spreadsheets, database integration with Access, budgeting, scheduling, Outlook, Exchange, Time Resource Management, file storage, Internet basics, and digital photography (IIIC.17). Staff are also invited to attend any training offered to faculty.

Technical support staff on campus receive training by industry professionals. Technical training that staff have attended in the last five years include Pro Venue, SQL, Cisco Networks, Exchange 2003, Window MCSE, Windows 2003, and Altiris. Technical support staff also attend offsite training by attending conferences and participating in intensive one-week training workshops.

Students receive technology training primarily through the courses offered at Fresno City College. There are over 135 classes with technology components and 43 student computer labs on campus. Aside from the actual technology-oriented courses, students receive technology instruction from teachers in other disciplines to facilitate learning. For example, a speech teacher has all of her students make one PowerPoint presentation

with their speeches. She reserves time in one of the computer labs on campus to teach her students the fundamentals of PowerPoint. A geography teacher conducts his class in the computer lab so that his students can progress at their own pace through a series of CD modules he created using PowerPoint, mapping software, and digital video. A chemistry teacher teaches his students how to use computer probes to conduct experiments for their lab assignments. Many faculty are now wearing two hats: one that requires them to be content specialists, the other to train students how to use technology. Therefore, students are getting technology training through formalized classes and through applied sessions with their instructors.

Students can also sign up for either the computer skills lab or the Internet lab offered by the business division, which allows students to complete coursework received in other classes. Students receive computer assistance from lab aides.

Finally, students receive training and support from the student computer lab in LI-118 and from the computer lab located in the library. LI-118 has 69 available computers and they are filled to capacity on a daily basis. The greatest amount of technical assistance they provide is for Blackboard (how to logon and how to attach documents), Excel, Word, and PowerPoint. In the library computer lab, library personnel provide assistance in all library supported services and Blackboard.

Assessment

The college would like to improve in providing technology training for faculty, staff, and students by offering a variety of workshops at times more convenient to faculty and staff, such as Saturdays and evening sessions. To increase the functionality of the

teaching and learning center, the coordinator of academic computing needs a trained part-time lab technician. This would allow faculty and staff to come into the center during the afternoon and evening and receive assistance in developing projects.

Although the number of faculty who use technology in the classroom continues to increase, the campus has yet to develop a process for the designation of smart classrooms in the different instructional areas and the equipment standards for the these classrooms.

IIIC.1c The institution systematically plans, acquires, maintains, and upgrades or replaces technology infrastructure and equipment to meet institutional needs.

Descriptive Summary

The network infrastructure at Fresno City College is maintained by the technology support staff housed in the learning resources center (LRC). The technology support staff, along with district IS staff and consultants, configure and maintain the network equipment to ensure the security and integrity of the network. The network infrastructure is viewed as part of the districtwide network system. Thus, equipment is purchased and configured from a holistic systems approach (IIIC.3).

With the recent passage of Proposition 45 and the district's Measure E bond measure in 2002, the latest network technologies, system management, and network architecture are in various stages of implementation. This acquisition of new equipment should provide for future growth and expansion of service for the next five to seven years. Video conferencing, voice over IP, gigabit to the desktop, wireless technologies, etc., are

now within reach. The structure to support these technologies should be completed by Spring 2005 with the addition of emerging technologies being implemented over the next few years as the infrastructure is completed and hardware is acquired.

Day-to-day campus support is provided by the learning resources center technology support staff. Staffing levels related to technical positions has grown significantly since 2000. In 2000, the college had 5 full-time technical positions; there are now 13. Technology on campus is supported by a network coordinator, a distance education instructional technology specialist, an alternative media specialist, three microcomputer resource technicians, and seven microcomputer specialists. The technology support staff meet weekly to coordinate support efforts to meet the needs of the college (IIIC.4). The microcomputer specialists are assigned campus divisions where they work to maintain computer labs and provide faculty/staff desktop support.

Technology at the college has changed significantly. Five years ago, the infrastructure was predominantly based on category three wiring, 10Mb hubs, and switches with a FDDI fiber backbone. Each division was composed of two "domains" for a total of 25+ separate domains on campus. All of this has changed.

In November 2002, SCCCD constituents supported a bond measure which, along with numerous important improvements throughout the district, drastically changed the network infrastructure for the district in general and Fresno City College in particular. Since the passage of the bond measure, the college has moved to Windows Active Directory, has purchased and begun implementing layer

three switching technologies throughout campus, has rewired the entire campus with category 6e copper wiring in every building, has installed hybrid fiber-optic cable pulled to every building connecting back to the main cross connect, thus creating a fully meshed, redundant topology for campus computing, and has purchased equipment to implement a campuswide wireless network to be completed in Fall 2005 (IIC.3).

The network and related technologies are directed by the LRC. Almost every division on campus is supported by one full-time microcomputer specialist. Divisions with smaller numbers of computers and less technology have shared technology support staff. The microcomputer specialists are supported by microcomputer resource technicians, who provide assistance through research and development of new applications, and installation of software.

The microcomputer resource technicians and the network coordinator have lead responsibilities and are responsible for the weekly backup of the campus servers and maintenance of the network electronics (IIC.5). The college needs a reliable method for backup and disaster recovery. A more robust backup strategy is needed which will include at a minimum backup software with required database and mail agents. Determination may be made that backup hardware may be needed.

The acquisition of computer equipment falls to each division or organizational unit on campus. Acquisitions are coordinated through the LRC to make sure campus standards are met and maintained. The divisions communicate their needs, and the LRC assists in defining the equipment

necessary to meet those needs. Though it is the goal of the campus to replace computers on a three-year cycle, this has been difficult to fully implement. In 2000, the campus implemented a technology request form (TRF) that is used by the campus divisions to purchase new equipment or upgrade existing equipment on campus (IIC.6). The TRF form also provides for the disposition of old equipment. Older computers are rolled down to replace even older computers on campus. This process ensures that all technology is used to its fullest potential on campus and provides a mechanism to review technology purchases and make sure they follow guidelines and standards set forth by the campus technology advisory committee and the district technology coordination committee.

The campus has been fortunate to receive Carl Perkins funds and various federal grants to replace computers in student computer labs every three years. Additional funds through state lottery and instructional equipment funds have been used to replace faculty and staff computers on campus.

Assessment

Computing technology on campus, along with the networking infrastructure, has significantly progressed in the last five years. With the support received by college administration, the direction set by the board of trustees, and the generous support of the voters, Fresno City College is in great shape to provide the tools necessary to support, educate, and sustain a positive educational environment for every student.

Research and development in coordination with curriculum development for technology-based courses would ensure that curriculum

is not held back due to campus infrastructure impediments or configurations. Training issues will also need to be addressed to ensure that staff and faculty have the knowledge needed to use emerging technologies.

Policies and procedures for maintaining technology need to be addressed. Computer policies, though mentioned in various technology plans and strategic documents, have not identified specific funding sources to support a three-year replacement model or a TCO model for all technology on campus. As the campus relies more on technology, and as grant funds sunset and leave the campus responsible for institutionalizing programs and services, the development of a funding prioritization process has become more important.

IIIC.1d The distribution and utilization of technology resources support the development, maintenance, and enhancement of its programs and services.

Descriptive Summary

Administrative computing issues, including student services and business activities, are decided upon and managed by the dean of students and the respective department managers. They set and implement their priorities based on their identified needs. Most funds spent on administrative computing are through federal grants, federal funds through financial aid allotments, and general fund dollars. Due to the categorical nature of the funding sources and the limitations placed on this funding, administrative employees in areas not associated with funding sources (i.e., financial aid, counseling, etc.) typically end up with roll-down equipment.

The academic computing function on campus is fairly self-supporting for technology related areas (i.e., business education, applied technology). Through Carl Perkins funds, technology inventories are regularly rotated and the most current technologies tend to be found in these instructional areas. Math, science, and engineering would be the only exception. The rolled-down computers from these divisions provide other academic areas with computers that meet other campus needs.

All computers on campus, new and rolled-down alike, are processed through the LRC. Divisions and departments prepare technology request forms, and these forms identify needs across campus, which are filled through the purchase of new computers or the roll down of older ones. The campus uses the same principle for its network infrastructure. As newer network electronic equipment is available, the newest is deployed closer to the core, with older models pushed out to the edge. Some equipment is kept for emergency purposes, and the rest is offered to other locations in the district.

As part of the Measure E Bond, \$19 million was identified for technology upgrades. These funds are being used for, and continue to be used for, infrastructure improvements campuswide, the purchase of network electronics, and matching funds for the complete renovation of the applied technology division classrooms and offices. In response, the campus has made provisions for the installation and maintenance of a robust and secure network infrastructure.

Distance learning programs at Fresno City College have evolved over the past five years. Current distance learning programs

include an online learning implementation using Blackboard course management software, learning communities with a laptop checkout program, radiology courses through video conferencing with another community college, etc. The campus also provides a web server for faculty to support traditional classroom education and to supplement online learning courses. A Title V Cooperative Grant will expand our current distance education implementation. By 2009, SCCCD will provide an online AA degree. In addition, new technology will be offered through the use of Tegrity computer carts that will assist and enhance online course offerings by including streaming media.

Currently, distance education technology equipment acquisition is discussed and defined in various district level committees. These committees are represented by faculty, staff, and administrators from all campuses in the district. (IIC.8,18) Funds to acquire technology come from the Title V grants and other campus-defined budget line items.

Assessment

Support for technology on campus is mostly a reaction to a need rather than an outcome of a planning process. Currently, the distribution and utilization of technology resources on campus are not coordinated through any one specific group or committee. The campus has been fortunate to have made good decisions in the past, but it is imperative that future decisions have more input from constituents throughout the campus.

The TRF implemented on campus has done a fairly good job of directing technology through a single location and effectively

rolling down equipment. However, there is not a roll-down program in place for Apple computers. Apples need to be recognized as having a life cycle similar to a PC and need a specified replacement plan.

The campus infrastructure (data lines, fiber-optic, and network equipment) continues to be updated. Once completed, the network will incorporate the newest technologies implemented by Cisco Systems. The LRC will have replacement switches on site in the event of switch failure and will have a fully redundant network core which will provide almost 100 percent uptime. An emergency power generator for the core cross-connect will further enhance the network with emergency power in the event of power loss. The generator will protect servers and core switches from power loss, which typically results in hardware failure. These features will provide student, staff, and faculty with a reliable and sustained network infrastructure.

Policies and procedures to refresh network equipment and computing technologies need to be better identified and defined. Though some have been identified in technology and strategic plans, a more codified approach is needed. Processes need to be put in place that will allow for the smooth implementation of technology.

Distance education technology has been predominantly implemented by early adopters of technology on campus. The number of faculty willing to teach online will need to increase to accomplish Title V Cooperative Grant objectives, and student support services (i.e., counseling, tutorial services, etc.) will also need to be expanded to provide a full-service online experience.

IIIC.2 Technology planning is integrated with institutional planning. The institution systematically assesses the effective use of technology resources and uses the results of evaluation as the basis for improvement.

Descriptive Summary

The entire district and college network infrastructure is being updated with a multimillion dollar LAN/WAN project partially funded with Measure E funds (IIIC.3,9). Cross connect rooms have been established on each floor of every building on campus. Emergency generators and redundant paths for fiber optic connections to the district office and outlying buildings are scheduled for the next phase of phase four of the project.

All requests for technology acquisition follow a procedure that ensures the request is considered and will fulfill an already identified need. A technology request form is submitted to the immediate supervisor. If approved, the form is sent to the learning resources center for a technology quote. The quote/purchase is approved by the associate dean of learning resources after consultation with the campus network administrator and then returned to the originator. The request is then forwarded to either the dean of instruction or the dean of student services. The only additional paperwork required is a budget printout or a decision package request. Decision packages are analyzed and prioritized based on need and whether or not the technology requested is supported with data.

The college conducted a needs survey in 1999 and again in 2002. Based on these surveys, it was determined which software faculty and staff use and need training on (IIIC.11).

Assessment

The college has a procedure for hardware and software acquisition that works effectively. Unfortunately, due to budget restrictions it is not possible to meet all documented technology needs. Additionally, the college lacks a reliable method for backup and disaster recovery.

As has been noted in other sections of this standard, the college has been able to respond to the majority of the campus technology needs in an efficient and effective manner, although it does not have a current technology plan that fully integrates technology into a campuswide planning process.

Planning Agenda for Standard IIIC

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| <p>1. Restructure the technology advisory committee with representation of all campus constituencies to update and implement</p> | <p>the existing Campus Technology Use Plan that aligns with a campuswide planning process.</p> |
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Resource Documents

IIIC.1	Technology Coordinating Committee Technology Plan	IIIC.12	Calendar of Technology Training
IIIC.2	Theme Team 6/Technology Advisory Committee Meeting Notes	IIIC.13	Instructional Technology Subcommittee of the Academic Senate
IIIC.3	LAN/WAN Configurations and Drawings	IIIC.14	Fresno City College and Reedley College Title V Cooperative Grant
IIIC.4	Technology Support Staff Meeting Agenda and Minutes	IIIC.15	Technology Institute Schedules and Evaluations
IIIC.5	Learning Resources Center Organizational Chart	IIIC.16	Flex Day Technology Training Schedules
IIIC.6	Technology Request Form	IIIC.17	Classified Professionals Technology Training Workshop Schedules
IIIC.7	Campus Technology Use Plan	IIIC.18	Information Systems Priority Committee Membership and Meeting Notes
IIIC.8	Technology Coordinating Committee Meeting Notes	IIIC.19	ACT College Student Outcomes Graphics Report ACT College Student Outcomes Survey Data Summary
IIIC.9	Measure E Web Site: http://measuree.sccd.com/		
IIIC.10	Technology Coordinating Committee Membership List		
IIIC.11	Accreditation Faculty and Staff Survey Results Accreditation Faculty and Staff Survey: Executive Summary		