

SOUTHWESTERN COMMUNITY COLLEGE

College Technology Plan Update

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Division of Information Technology and Telecommunications
Institutional Research & Planning Office

College Technology Plan Update

Introduction

A variety of telecommunications initiatives with external partners dominated much of the technology related activities at the college during the 2004-05 year. In addition, these initiatives are expected to be key elements of technology related enterprises at the college during the next couple of years (2005-2007). Consequently, these telecommunication initiatives dominate this edition of the college's Technology Plan. For more specific information on these partnerships and their corresponding initiatives, refer to Attachment One of the Technology Plan.

There are four components to this year's plan: (1) major accomplishments related to information technology related programs, resources and services at the college during 2004-05, (2) short-term (one to two years) information technology initiatives planned for Southwestern, (3) long-term information technology initiatives (two to five years) and (4) an assessment of information technology resources and services at the college. This plan does not focus on highly specific technical details. The college has come to the realization that technology is changing so rapidly that some of the technical details contained in previous plans were obsolete almost as soon as the plans were published. Instead, this plan provides a more general portrait of the direction of technology at the college. The end result of this approach is a document which accurately and effectively addresses technology planning at the college.

Major Accomplishments During 2004-05

- In the past year, SCC has worked shoulder-to-shoulder with Drake Enterprises and the Eastern Band of Cherokee to continue the deployment of a high-performance fiber-optic network which will traverse the six North Carolina counties west of the Balsam Mountains, several counties in north Georgia, and a portion of eastern Tennessee. This 240 mile network consists of a minimum of 144 fiber strands. Some of the strands are retained by Drake and the Eastern Band, some will be given to SCC, and some have been used to create a new company, BalsamWest FiberNET. The mission of BalsamWest is to ensure that the region has the tools to participate fully in a global economy by providing open and affordable access to state-of-the-art telecommunications infrastructure. SCC has been selected to serve on the BalsamWest board of directors as the Community Interest Partner.

SCC worked collaboratively with many regional partners to develop a plan to utilize this fiber to create a private telecommunications wide area network for all of the educational institutions in the far-western region of the State. This plan calls for the utilization of 4 strands of fiber along the new 240-mile high performance fiber-optic network. Fiber laterals are being extended from the regional network to individual school sites, and county-based HUB sites. Once fully operational, this network will enable students and teachers to electronically connect with one another and anywhere in the world—and bring never-before-imagined resources into the classroom—all at the speed of light. The first schools to benefit from this “education common marketplace” include a total of 53 educational entities within the public schools in Jackson, Macon, Swain, Cherokee, Clay and Graham counties—and the Cherokee Reservation—as well as Western Carolina University, Tri-

County Community College, and Southwestern Community College. The work of SCC prompted The Golden LEAF Foundation to commit a minimum of \$2 million to implement a regional educational network.

- Nearly all of the CommunityLink interactive television sites have been converted to the digital platform selected last year (H.323). A “transition-year” equipment plan has been implemented for all existing sites for the 2005-06 academic year—utilizing Tandberg equipment that will ultimately be deployed to new CommunityLink sites in the 2006-07 academic year.
- The college continued to expand its distance learning course offerings during the 2004-05 year. As was the case during the last several years, much of the growth was in Web-centered and Web-enhanced offerings. To help support faculty (both veteran distance learning instructors and those new to this instructional delivery method), the college established and filled the new Distance Learning Specialist position during 2004-05. This individual will provide training to faculty on effective strategies for incorporating distance learning and other technologies into instructional delivery.
- The college continues to upgrade all campus phones to Voice IP phones. This is part of the gradual transition by the entire institution to Voice IP phones. This transition will result in lower telecommunication costs for the college and will also increase overall productivity.
- The college continues to expand the width and breadth of information available for students on the college webpage, as well as for faculty and staff.
- The college continued to upgrade its videoconferencing capability. Work is underway to convert all ITV classrooms to the Tandberg units.
- Upgraded computers at the Cashiers Center, installed new servers at all but one of the off-campus centers, and upgraded all computer labs with new personal computers.
- Continued the deployment of the ZenWorks software program, which assists Information and Telecommunications staff in troubleshooting problems at the user desktop level. In 2004-05 this feature was deployed at the off-campus centers.
- The college continued the conversion to the NCCCS Information System of the Future computing system. During 2004-05 both the financial and human resources components converted from the Unix system to the System of the Future.
- The college obtained a site license for all Novelle software and now has the capability to upgrade all college servers with new Novelle operations at any point. The college installed new computer virus protection software (Symantec) and also enhanced its back-up equipment with Veritas.

Short-Term Information Technology Initiatives

Initiatives addressed in this section are those which the college plans to implement within the next one to two years. This includes those projects which will be fully underway/completed within this time frame as well as those which will be initiated but not completed as well.

- The regional education wide area network will be implemented. Gigabit Ethernet connectivity will be available to all of the educational institutions in the region to permanently eliminate recurring transport costs, increase capacity and reliability, and to deliver many educational applications.
- All existing CommunityLink interactive television sites will be upfitted with Tandberg comprehensive distance learning studio equipment. Equipment from these sites will be transitioned to new CommunityLink sites—middle schools, elementary schools, and libraries.
- Drake Enterprises and the Eastern Band of Cherokee Indians will make a gift to SCC of approximately 20 strands of fiber on their completed 240+ mile high-performance network. SCC will utilize this gift as an additional resource to connect its campus sites for educational purposes.
- SCC will continue serving in its capacity of Community Interest Partner for BalsamWest FiberNET, the fiber-optic telecommunications company created by Drake Enterprises and the Eastern Band. In that role, SCC will pay particular attention to the strands of fiber reserved for philanthropic community and economic development in western North Carolina.
- Complete the upgrade of all phones at the college to Voice IP Phones.
- Continue the process of migrating the college's administrative computing system to the Information System for the Future. The next phase of the project will be the migration of the student record component of this system.
- Pursue the necessary funding to enable the implementation of the document imaging capability at the college. Part of the cost is associated with the need to install an archive server. The hardware and software utilized for this initiative will facilitate the storage of many of the college's key reports and documents.
- During the next one to two years, the college will be developing its Quality Enhancement Plan (QEP) as part of its reaffirmation effort with the Southern Association of Colleges and Schools. The topic of the QEP is Improving Distance and Technology-Enhanced Learning from a Learning College Perspective.

Long-Term Information Technology Initiatives

Initiatives addressed in this section are those which the college plans to implement within the next two to five years.

- The schools served by the regional education wide area network will be focusing on the deployment of various applications to improve the learning opportunities for students throughout the region. Some examples of applications that the schools may choose to deploy include:
 - Access to Internet2 and HDTV
 - Basis for Supporting NCWISE System
 - Real-Time Course Sharing via Interactive Television Systems
 - Virtual Field Trips
 - Imported Teacher Training
 - Public School Teacher Intern Monitoring/Coaching
 - Wider Distribution of Educational Resources such as the Adventures of the American Mind, NovaNet, etc.
 - Access to Educational Activities for Homebound Students
 - On-line Mentoring and Tutoring
 - Shared Software Applications
 - Digital Literacy Training
 - Basic Skills, GED, ESL via Technology
 - Public Access Spaces
 - Shared Computing, Printing, and Other Electronic Devices
 - Increased Security

The Schools will also begin to explore the development of their own unique applications that could be beta-tested and shared with other regions of the State and across the Nation. In addition, the schools will begin “telling their story” across the State and Nation—as a best practice.

- SCC will continue serving in its capacity of Community Interest Partner for BalsamWest FiberNET. In that role, SCC will continue pay particular attention to the strands of fiber reserved for philanthropic community and economic development in western North Carolina. SCC will also seek to share this model with other communities across North Carolina and the Nation.
- Another long-term priority at the college is the development of a web portal for students. The intent of this concept is to facilitate the ability of students to access any of their personal records or to acquire any information they may need concerning the college via a single springboard with only one log-in requirement. For example, students would access their student e-mail, access their student record, access any on-line course they may be taking, etc. through this portal. In addition to the benefits this offers to students, it also has benefits to the college due to the security features it provides.

- Although listed under short-term initiatives, the conversion of the college administrative computing system to the Information System for the Future, also has long-term implications as well. This conversion is currently being implemented at institutions within the North Carolina Community College System. The final phase of this project will be the conversion of all student records to this new system. This will be a very time consuming transition, as a result it will likely be several more years before all phases of this project are operational.
- The development of a new campus in Macon County will result in a number of challenges and opportunities in the area of information technology. The necessary information technology infrastructure for the new campus must be installed. In addition, it is projected that at least one and possibly two new full-time technicians will be required to support the technology at the new campus.
- It is anticipated that the regional telecommunication initiative will result in the availability of greater Internet bandwidth at more affordable prices. This project will enhance communication with public schools and other users (more video-conferencing, file sharing, etc.). In addition, this will enable the college to remove servers from the off-campus centers and centralize them at a location on the Sylva Campus.
- Another priority which will also enable the college to centralize its servers is the planned integration of terminal services. This concept involves storing multiple applications on a file server. Users would access these applications via a browser, thereby enabling the user to access the software without having to purchase it individually. This will be especially beneficial for students taking on-line classes.
- The college anticipates further growth of its on-line course offerings (with increases in both the number of students enrolled and the number of faculty teaching via this instructional method).
- During the next two to five years the college will be in the application, integration and assessment phase of its Quality Enhancement Plan (QEP). As noted earlier, this plan is Improving Distance and Technology-Enhanced Learning from a Learning College Perspective.
- The college recognizes that the expected increase in the number of servers, users and applications will require additional technology support personnel in the future. It is projected that at least two new support staff will be required over the next two to three years in order to meet the increased demands on the college's information technology system.

Assessment of Information Technology Resources and Services at the College

The college acknowledges that a critical component of technology planning is an assessment of the effectiveness of that technology. Southwestern conducts several surveys which include questions designed to assess the overall level of satisfaction (by both students and faculty/staff) with those resources and services related to information technology. These surveys include the Faculty/Staff Evaluation of College Services and the Student Climate Survey. Both of these are administered annually. In addition, the college has developed the Distance Learning Survey which is designed to assess the level of satisfaction of those students who are enrolled in classes utilizing the various distance learning mediums employed by the college. This survey is administered each semester (except for Summer Semester). Tables 1 - 3 provide the results from the most recent surveys for those questions relating to information technology. As the tables indicate, students as well as faculty and staff are highly satisfied with most aspects of information technology at the college.

Table1. Results of Faculty/Staff Evaluation of College Services Survey, 2002 - 2005

		% Don't Know	% Strongly Disagreeing	% Disagreeing	% Agreeing	% Strongly Agreeing	Mean
The e-mail system is effective and enables better communication.	2002	2.7%	2.7%	1.8%	48.2%	44.5%	3.38
	2003	5.7%	1.0%	2.9%	48.6%	41.9%	3.39
	2004	6.1%	1.7%	5.2%	56.5%	30.4%	3.23
	2005	0.0%	3.0%	8.9%	47.5%	40.6%	3.26
The speed of accessing external networks such as the Internet is adequate.	2002	5.5%	1.8%	12.7%	45.5%	34.5%	3.19
	2003	2.9%	1.9%	13.3%	47.6%	34.3%	3.18
	2004	7.8%	6.1%	24.3%	44.3%	17.4%	2.79
	2005	1.0%	7.9%	14.9%	48.5%	27.7%	2.97
The college's internal data network is sufficiently reliable.	2002	7.4%	1.9%	10.2%	47.2%	33.3%	3.21
	2003	10.5%	1.0%	9.5%	48.6%	30.5%	3.21
	2004	11.3%	2.6%	12.2%	53.9%	20.0%	3.03
	2005	5.9%	1.0%	10.9%	53.5%	28.7%	3.17
I am aware of procedures for requesting technological support/reporting problems.	2002	8.2%	0.9%	3.6%	50.9%	36.4%	3.34
	2003	4.8%	1.0%	4.8%	52.9%	36.5%	3.31
	2004	8.0%	1.8%	6.2%	60.2%	23.9%	3.15
	2005	4.0%	0.0%	2.0%	55.4%	38.6%	3.38
The Sun (UNIX) system meets my needs for accessing student records and other college information.	2002	30.0%	4.5%	13.6%	28.2%	23.6%	3.01
	2003	31.7%	3.8%	14.4%	30.8%	19.2%	2.96
	2004	31.3%	3.5%	14.8%	38.3%	12.2%	2.86
	2005	19.0%	7.0%	16.0%	39.0%	19.0%	2.86
The college webpage is a convenient resource for accessing student records and other college information.	2002	NA	NA	NA	NA	NA	NA
	2003	4.8%	0.0%	5.7%	47.6%	41.9%	3.38
	2004	7.0%	0.9%	9.6%	47.8%	34.8%	3.25
	2005	3.0%	2.0%	5.0%	44.0%	46.0%	3.38
Computer/technology support staff respond to my requests for help in a timely, professional and courteous manner.	2002	6.4%	3.6%	7.3%	46.4%	36.4%	3.23
	2003	6.7%	6.7%	6.7%	41.9%	38.1%	3.19
	2004	7.9%	3.5%	7.0%	44.7%	36.8%	3.25
	2005	4.0%	1.0%	7.0%	52.0%	36.0%	3.28
Overall, I am satisfied with Information Technology resources.	2002	4.6%	0.9%	5.5%	54.1%	34.9%	3.29
	2003	3.8%	1.9%	8.6%	49.5%	36.2%	3.25
	2004	6.0%	0.9%	6.9%	62.9%	23.3%	3.16
	2005	3.0%	1.0%	5.9%	55.4%	34.7%	3.28

Table 1. (Cont.)

		% Don't Know	% Strongly Disagreeing	% Disagreeing	% Agreeing	% Strongly Agreeing	Mean
Distance Learning facilities are adequate.	2002	NA	NA	NA	NA	NA	NA
	2003	39.0%	1.9%	3.8%	36.2%	19.0%	3.19
	2004	46.1%	0.0%	7.8%	33.9%	12.2%	3.08
	2005	30.6%	3.1%	4.1%	38.8%	23.5%	3.19
Distance Learning resources are adequate.	2002	NA	NA	NA	NA	NA	NA
	2003	39.4%	3.8%	2.9%	36.5%	17.3%	3.11
	2004	46.1%	0.0%	10.4%	31.3%	12.2%	3.03
	2005	30.6%	2.0%	9.2%	37.8%	20.4%	3.10
Distance Learning staff respond to requests promptly.	2002	NA	NA	NA	NA	NA	NA
	2003	38.1%	2.9%	1.0%	27.6%	30.5%	3.38
	2004	40.0%	0.0%	4.3%	33.0%	22.6%	3.30
	2005	31.3%	3.0%	4.0%	33.3%	28.3%	3.26
Distance Learning staff are helpful and knowledgeable.	2002	NA	NA	NA	NA	NA	NA
	2003	32.4%	2.9%	1.9%	31.4%	31.4%	3.35
	2004	39.1%	3.5%	3.5%	30.4%	23.5%	3.21
	2005	30.0%	8.0%	2.0%	33.0%	27.0%	3.13
The Distance Learning program is effective in meeting the educational needs of students who take distance learning courses.	2002	NA	NA	NA	NA	NA	NA
	2003	37.1%	4.8%	7.6%	32.4%	18.1%	3.02
	2004	43.1%	0.9%	6.0%	32.8%	17.2%	3.17
	2005	32.0%	6.0%	8.0%	34.0%	20.0%	3.00

Table 2. Results of Student Climate Survey, 2003-2005

		% Strongly Disagreeing	% Disagreeing	% Agreeing	% Strongly Agreeing	Mean
I am satisfied with the quality of computer hardware and software at SCC.	2003	6.0%	12.4%	54.2%	27.5%	3.03
	2004	6.6%	11.2%	53.9%	28.4%	3.04
	2005	6.0%	10.7%	50.0%	33.3%	3.11
Appropriate technology is effectively incorporated into classroom instruction.	2003	3.7%	8.6%	59.7%	28.0%	3.12
	2004	3.3%	9.1%	63.4%	24.2%	3.09
	2005	1.5%	6.5%	62.8%	29.1%	3.20
I am satisfied with my ability to access my course grades on-line.	2003	NA	NA	NA	NA	NA
	2004	6.2%	6.8%	56.8%	30.2%	3.11
	2005	1.2%	7.4%	49.2%	42.2%	3.32
I am satisfied with the access to computer laboratories after class hours.	2003	5.2%	11.3%	58.0%	25.5%	3.04
	2004	5.7%	6.3%	62.5%	25.4%	3.08
	2005	2.6%	6.6%	59.4%	31.4%	3.20
I am satisfied with the performance of the Internet on the campus.	2003	NA	NA	NA	NA	NA
	2004	NA	NA	NA	NA	NA
	2005	4.1%	7.0%	57.0%	32.0%	3.17
I am satisfied with the variety of distance learning course offerings.	2003	NA	NA	NA	NA	NA
	2004	NA	NA	NA	NA	NA
	2005	5.9%	17.1%	52.4%	24.6%	2.96
I am satisfied with my ability to enroll in distance learning classes.	2003	NA	NA	NA	NA	NA
	2004	NA	NA	NA	NA	NA
	2005	4.2%	5.3%	60.3%	30.2%	3.16
I am satisfied with the on-line student orientation process at SCC.	2003	NA	NA	NA	NA	NA
	2004	NA	NA	NA	NA	NA
	2005	4.7%	7.6%	57.1%	30.6%	3.14
The quality of my distance learning classes is equal to that of my traditional classes.	2003	NA	NA	NA	NA	NA
	2004	NA	NA	NA	NA	NA
	2005	7.6%	11.0%	51.7%	29.7%	3.03

Table 3. Results of Distance Learning Survey- Spring 2003 - Spring 2005

		% Strongly Disagree	% Somewhat Disagree	% Neither Agree or Disagree	% Somewhat Agree	% Strongly Agree	Mean
Adequate Internet access was available to me on campus.	2003	0.4%	0.0%	33.5%	14.8%	51.3%	4.17
	2004	0.0%	0.0%	48.3%	6.9%	44.8%	3.97
	2005	0.0%	0.0%	41.4%	10.0%	48.6%	4.07
I would take another distance education class in the future.	2003	2.5%	5.0%	5.9%	20.9%	65.7%	4.42
	2004	0.0%	3.4%	6.9%	20.7%	69.0%	4.56
	2005	4.3%	4.3%	5.7%	8.6%	77.1%	4.50
The orientation prepared me to use the technology associated with this class.	2003	0.0%	4.2%	32.6%	29.3%	33.9%	3.93
	2004	3.4%	20.7%	34.5%	20.7%	20.7%	3.35
	2005	2.9%	0.0%	34.3%	30.0%	32.9%	3.90
The instructor was comfortable with the technology used in this class.	2003	0.4%	2.1%	15.9%	23.8%	57.7%	4.36
	2004	3.4%	10.3%	20.7%	24.1%	41.4%	3.91
	2005	5.7%	14.3%	12.9%	21.4%	45.7%	3.87
The technology worked well most of the time.	2003	0.8%	3.0%	8.0%	35.4%	52.7%	4.36
	2004	3.4%	10.3%	20.7%	24.1%	41.4%	3.91
	2005	0.0%	8.6%	0.0%	40.0%	51.4%	4.34
The technology enabled me to take courses otherwise unavailable to me.	2003	1.3%	3.3%	15.1%	23.0%	57.3%	4.32
	2004	0.0%	3.4%	24.1%	6.9%	65.5%	4.35
	2005	1.4%	2.9%	15.9%	15.9%	63.8%	4.39
The technology used in this class contributed to a positive learning experience.	2003	1.7%	2.9%	10.0%	27.2%	58.2%	4.37
	2004	0.0%	6.9%	17.2%	27.6%	48.3%	4.17
	2005	4.3%	2.9%	12.9%	31.4%	48.6%	4.17

Analysis of the survey results indicate a relatively high level of satisfaction in technology resources and services at the college by both students and employees. That being said, the survey results do indicate some areas which need to be monitored. For a couple of years, the college has been monitoring the response of faculty and staff to the question of “the Sun (UNIX) system meets my needs for accessing student records and other college information” (Table 1). The mean for this question on the 2002 Survey was 3.01, with just over 18 percent of respondents expressing dissatisfaction with the UNIX system. In 2003, the mean for this question declined to 2.96, with again just over 18 percent of respondents expressing dissatisfaction. In 2004, the mean for this question declined further, to 2.86. The percentage of respondents expressing dissatisfaction remained steady at just over 18 percent. It appears the satisfaction level on this topic is stabilizing, as the mean was 2.86 in 2005 as well. The level of dissatisfaction is not a major surprise, as the college acknowledges the shortcomings of this system. However, no action has been taken on this issue, as the college is in the process of converting from the current Unix system to the new Information System of the Future. This conversion will occur over a multi-year period- at this point, both the financial and human resources areas at Southwestern have converted to the new system. All 58 institutions in the North Carolina Community College System are currently converting to this new system.

Another issue which emerged from the Student Climate Survey (Table 2) in 2003 and 2004 concerns students’ satisfaction with the quality of computer hardware and software at SCC. The level of satisfaction on this question improved slightly in 2005 (although almost 17 percent of respondents still expressed some degree of dissatisfaction. A possible explanation for this level of dissatisfaction is the high degree of computer and technological competence within the SCC student body. Many of these students possess the latest in computer hardware and software at home. Certainly the college strives to equip its computer labs with current hardware and software. However, it is a financial challenge to always provide the very latest in computer hardware. The college will continue to monitor the results to this question to ensure the college is meeting the expectations of its students in this regard.

The results of the survey administered each semester to those students taking distance learning classes is included in Table 3. The results of this survey for Spring 2003, 2004 and 2005 indicate a generally high degree of satisfaction with all aspects of the college’s distance learning effort. One issue which will bear continued monitoring is the question concerning “the instructor was comfortable with the technology used in this class.” The percentage of respondents disagreeing with this statement increased from 2.5 percent in Spring Semester 2003 to almost 14 percent in Spring Semester 2004 to 20 percent in Spring Semester 2005. One factor contributing to the declining scores on this topic is the increase in the number of new faculty teaching distance learning classes. Like a number of institutions, Southwestern has made every effort to meet the rapidly growing demand by students for distance learning offerings. As a result, the number of distance learning offerings and consequently, the number of faculty who are new to this teaching method have increased accordingly. The college has taken an important step which will assist faculty with using distance learning technology by adding a new Distance Learning Specialist position. The person in this capacity is now working with faculty to enhance their ability to utilize the various technologies associated with the college’s distance learning courses. This should result in higher scores on this topic in future surveys. The college will continue to monitor the results of this survey to ensure student satisfaction with this issue.