

**Information Technology Services
Program Review - Spring 2008
Self Study Report**

Section I. Service Area Description

A. Role

The role of Information Technology Services (ITS) is described by the service area's Vision, Mission and Goals. The ITS Vision is to provide reliable, accessible, high quality information technology services supporting the district's instructional and operational needs.

The ITS Mission is to provide a stable information technology (IT) infrastructure and protect the accessibility, integrity and availability of the district's IT resources for our students, employees, alumni and community members. We apply our technical competence toward effective management and efficient utilization of these resources, while exploring and appropriately developing emerging technologies to meet the challenges of the district's changing instructional and operational IT needs.

ITS Goals (Operational Outcomes)

1. Ensure transparent reliability of IT infrastructure, district IT equipment, information systems and telecommunications resources.
2. Facilitate secure access to district computers, information systems, telecommunications and other information technology resources.
3. Provide quality technical training and assistance to students, employees, alumni and community members.
4. Proactively collaborate with others to implement emerging IT solutions to meet the district's instructional and operational needs.
5. Collaborate with others to encourage appropriate use and comprehensive standardization of IT resources.
6. Respond to district needs by continuously improving the processes and procedures that facilitate effectiveness in all IT services.

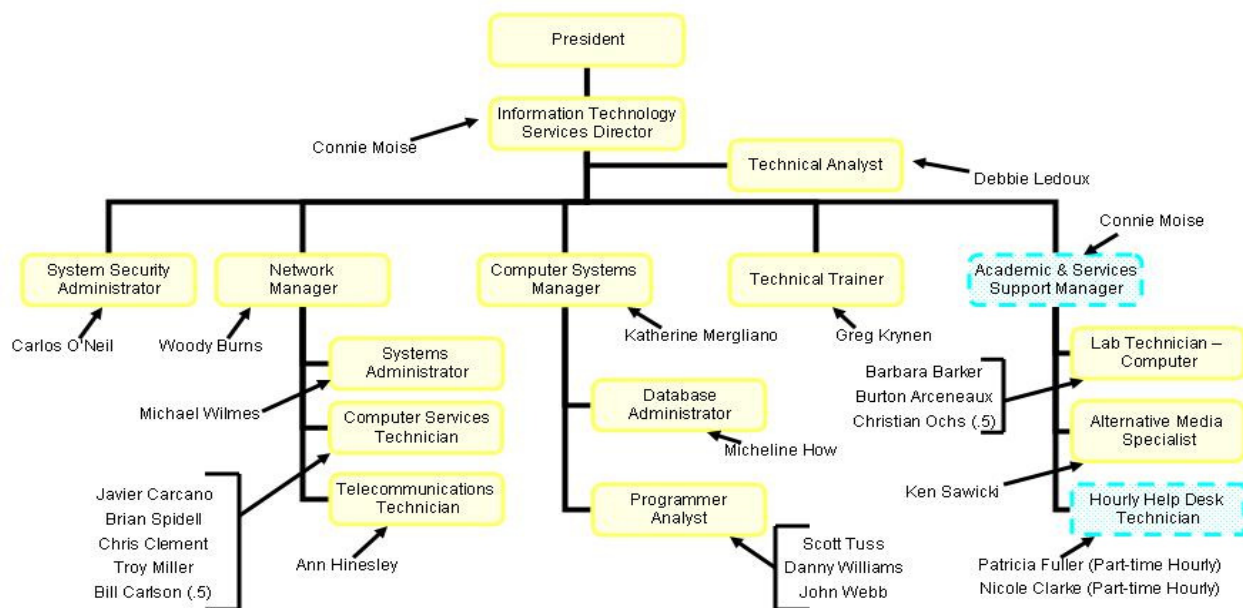
Information Technology Services supports the institutional mission to "place student success and student-centered learning as our number one priority through higher educational standards, innovative programs and services in a professional, team-driven environment" through the operational outcomes identified above. "Information technology is an essential tool for productivity in virtually all career fields, businesses and industries, including higher education. The use of information technology is an essential skill for students in all academic, technical and vocational disciplines. In

addition, information technology can be used to enhance the learning environment and provide students with the widest possible array of learning experiences related to a variety of learning styles. Furthermore, the use of information technology by college employees is fundamental to the support of our educational services.”¹ ITS Operational Outcomes 1, 2 and 3 stress reliability, access and assistance provided for students and other campus community members, and therefore support the institutional mission of student success. ITS Operational Outcomes 4 and 5 emphasize collaboration and underscore the professional means essential to supporting and advancing the institutional mission. ITS Operational Outcome 6 underscores the proactive approach to process improvement required to enable success in the IT operations that support the institution.

B. Employees

Information Technology Services is organizationally structured to meet the district’s instructional and operational IT needs in several areas including Network Management, Computer Systems Management, Technical Training, System Security, and Academic and Services Support. Each organizational component is described below along with staffing changes over the life of the ITS Area. Refer to Figure 1, *ITS Area Organization Chart, July 2008*, for a diagram of the current organizational structure. The ITS Area is

Figure 1. ITS Area Organization Chart



July 2008

¹ Excerpt from the Computer and Information Technology Master Plan 2007 – 2010, section III. Computer and Information Technology Vision.

currently managed by the Director of Information Technology Services:

Connie Moise, Director, full-time in this position since 1999.

In addition, a Technical Analyst is assigned to the Area to perform research and analysis of data using a variety of applications, assist technology users, assess user needs, evaluate vendor software, communicate technology systems and solutions, and perform a variety of office tasks. Current technical analysis employees include

Debbie Ledoux, Technical Analyst, full-time in this position since 2001.²

Network Management

Network Management provides the operational infrastructure upon which all information technologies and telecommunications services rely at AVC. Services include telephone and telecommunications infrastructure installation, repair and support; computer and network configuration, installation and support, and enterprise network system configuration, maintenance and administration.

In 1997, when ITS was formed, the only Network Management employee was the Network Manager. As the district's demands for network services have grown exponentially and the network and telecommunications infrastructure have increased accordingly, so has the requirement to provide support for these services. Current Network Management employees include:

Woody Burns, Network Manager, full-time in this position since 1999.

Michael Wilmes, Systems Administrator, full-time in this position since 2007.³

Ann Hinesley, Telecommunications Technician, full-time in this position since 2004.

Javier Carcano, Computer Services Technician, full-time in this position since 2004, supporting computers, network and telecommunications services in the following facilities: APL (except computer labs in rooms 204a & 204b), ME, TE1, TE2, GYM, PE.

Bill Carlson, Computer Services Technician, part-time (50%) in this position since 2002, supporting computers, network and telecommunications services in the following facilities: Auto (all), CDC, Fox Field, TE7, Palmdale, Ag lab.

Bryan Spidell, Computer Services Technician, full-time in this position since 2005, supporting computers, network and telecommunications services in the following facilities: Bookstore, FA1, FA2, FA3, FA4, Library, LC, SSV (except computer labs in rooms 202, 204 & 236), BE (except third floor computer labs).

² Initially this position was classified as a Clerical III position, but was reclassified in 2006 along with several other Clerical III positions in other service areas following a classification review.

³ The Systems Administrator position was originally crafted to implement and support web services and was originally called Web Administrator. The position was never intended to develop or manage web content, so the title was changed to clarify this.

Chris Clement, Computer Services Technician, full-time evening shift in this position since 2007, supporting computers, network and telecommunications services in the following facilities: BE third floor computer labs, APL computer labs in rooms 204a & 204b, SSV computer labs in rooms 202, 204 & 236, plus campus-wide evening support.

Troy Miller, Computer Services Technician, full-time in this position since 2008, supporting computers, network and telecommunications services in the following facilities: Admin, T500s, OF1, OF2, OF3, LH, SC1, SC2, SC3, LS1, LS2, T900s, Facilities, T300s, all classroom media boxes and all PC Blades used by various computer labs.

Computer Systems Management

Computer Systems Management provides the student information system that serves as the foundation for all aspects of enrollment services, institutional communication with students, and student access to the educational programs offered at AVC, as well as the integration of student and employee information with other institutional services and support resources. Computer Systems Management services include administration and maintenance of the Banner student information system database, analysis and programming to support augmentations to and integration with the student and employee data housed within the Banner database, mandated report generation (State MIS, Student Aid Commission, National Student Loan Clearinghouse, and many more required reports), and development of utilities to meet district data analysis, enrollment management initiatives, and reporting requirements.

In 1997, when ITS was formed, Computer Systems Management consisted primarily of contract consultants working with the legacy student information system, POISE, along with a Computer Systems Technician. A Database Administrator was added shortly after forming the ITS Area. To meet the challenge of year 2000 compliance in information systems, a new student information system, Banner, was acquired and the first phase of deployment was in 1999. Successful implementation of this system required extensive contract consulting hours over several years. Gradually, contract consultants have been replaced by permanent full-time positions as the Banner support requirements solidified. Current Computer Systems Management employees include:

Katherine Mergliano, Computer Systems Manager, full-time in this position since 2001.

Micheline How Sou Chong, Database Administrator, full-time in this position since 2001.

Scott Tuss, Programmer Analyst, full-time in this position since 2002.

Danny Williams, Programmer Analyst, full-time in this position since 2003.

John Webb, Programmer Analyst, full-time in this position since 2006.

Technical Training

Although the Board of Trustees approved the Technical Trainer position in 1999, funding was not made available to fill this position until fall 2006. Technical Training offers extensive formal and informal training opportunities for employees to orient them to

information technology services and campus-wide technologies to increase their effectiveness in using the campus resources. Individual appointments and department trainings have become commonplace.

Technical Training has added dozens of Faculty Professional Development presentations including topics such as Learning Management Systems, MyAVC, and Content Management Systems. The Technical Training area was essential to the successful rollout of the new Voice Over IP phone system and developed and implemented training throughout the campus to familiarize employees with the new telephone system features and functions.

In addition to training opportunities, the Technical Training area provides many types of learning resources including online tutorials, reference guides and self-paced materials to enhance employee understanding of the IT and telecommunications resources available at AVC. Technical Training has updated the employee technology orientation program and is currently developing a resource manual for employees. This will particularly assist new employees with orienting themselves to the available technical resources and provide them with baseline skills required to use campus technologies productively.

Technical Training has become an important function of ITS, filling in the gap between providing technology resources and enhancing employee productivity. Future technology rollouts, such as the migration to Microsoft Office 2007, are greatly supported by Technical Training. Technical training is continuously being developed to assist employees with new issues and concerns. Current Technical Training employees include:

Greg Krynen, Technical Trainer, full-time in this position since 2008.

System Security

System Security coordinates IT application, systems, network, internet, and intranet security activities that span all other IT services. The System Security area is responsible for the development and maintenance of AVC IT security standards and implementation, security policies, security education for employees and students, and the development of security awareness initiatives. In addition, System Security coordinates with AVC's Risk Management department on the district's IT-based business continuity and disaster recovery planning. Current System Security employees include:

Carlos O'Neil, System Security Administrator, full-time in this position since 2008.

Academic and Services Support

Academic and Services Support is the area of ITS that provides direct technical assistance to all AVC IT and telecommunications users, and includes assistance with alternative media and assistive technology, computer lab and classroom support, and operation of the Technical Assistance Center (Help Desk), providing technical assistance

to both students and employees. This area serves as the communications and support interface with campus users of IT and telecommunications services at AVC.

Specifically in the area of alternative media and assistive technology, ITS provides specialized support to students with disabilities and ensures that classrooms and computer laboratories are equipped appropriately with resources such as specialized assistive technology software, Kurzweil 3000, for learning disabled students, Kurzweil 1000, for blind students, Zoom Text (screen magnification software for low vision students), JAWS for Windows (screen reading software), Braille books, large print books and electronic books, class handouts in non-traditional media, closed captioned video tapes and DVDs.

Despite the key role of communications and support, Academic and Services Support remains a critical shortcoming of the ITS Area. The role of Academic and Services Support Manager is currently filled by the ITS Area Director on a somewhat limited basis. Current Academic and Services Support employees include:

Ken Sawicki, Alternative Media Specialist, full-time in this position since 2001.

Barbara Barker, Lab Technician – Computers, full-time in this position since 1989,⁴ supporting faculty and students using information technology in computer graphics laboratories and classrooms in the APL building.

Burton Arceneaux, Lab Technician – Computers, full-time in this position since 2007, supporting faculty and students using information technology in Business and Computer Studies laboratories and classrooms in the BE building.

Christian Ochs, Lab Technician – Computers, part-time (50%) in this position since 2007, supporting faculty and students using information technology in the district's open computer laboratories in SSV, BE and Palmdale.

The Technical Assistance Center (Help Desk) is currently staffed by two temporary part-time hourly employees. Staffing is limited by available funding. Hours vary from semester to semester and do not typically cover evening or weekend timeframes. Current Technical Assistance Center employees include:

Patricia Fuller, Help Desk Technician, temporary part-time hourly.

Nicole Clark, Help Desk Technician, temporary part-time hourly.

⁴ Barbara Barker originally reported to an academic division (Fine Arts). This position was transferred to ITS in 2003.

Changes in Staffing Over the Past Five Years

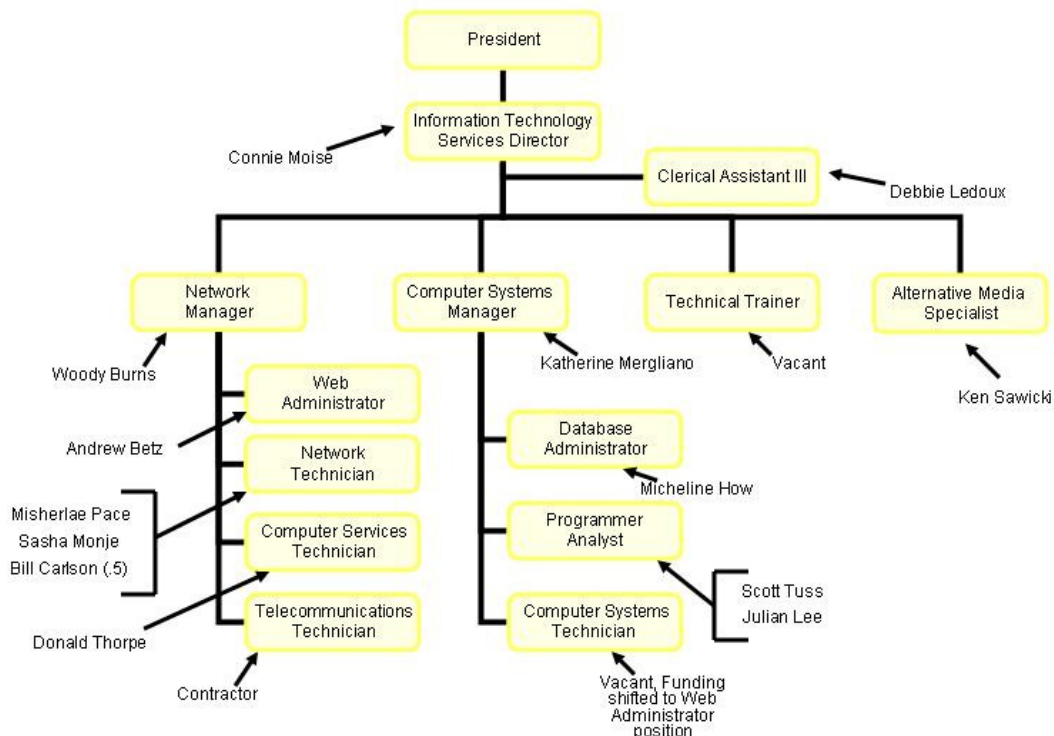
In response to AVC's growth in terms of number of students and employees and amount of technology and related services required by the institution since 2003, ITS Area staffing has increased. The organizational chart and staffing as it was five years ago is diagrammed below in Figure 2, *ITS Organization Chart, March 2003*. Staffing in the area has increased from 12.5 FTE employees in 2003 to 21 FTE employees in 2008 in response to the need to expand support for the additional human and technology resources acquired by the institution during this period.

Since 2003, in the Network Management department, the Network Technician and Computer Services Technician positions were reclassified and now have the same position description with a title of Computer Services Technician. The number of staff in this position has increased from 3.5 to 4.5, however, over the past five years, four Computer Services Technicians left the institution, with two positions remaining unfilled for most of a year, weakening the level of support provided by this department. In addition, the Web Administrator position was reclassified and is now a Systems Administrator. This position also remained unfilled for over six months, when the previous incumbent left AVC. Another change to this department was the creation of a full-time permanent Telecommunications Technician position, which had previously been served by a contractor.

In the Computer Systems Management department, an additional Programmer Analyst position has been added since 2003, in order to support development initiatives

Figure 2.

ITS Organization Chart



associated with the Banner database and other institutional software applications. One of the two Programmer Analysts employed in 2003 left the institution but was replaced without much delay. The Computer Systems Technician position has not been filled since funds originally allocated to that position were re-allocated to partially fund the Web Administrator position (now called Systems Administrator) in the Network Management department.

As indicated above, the Technical Trainer position was funded for the first time in 2006. The position has been filled twice since then, with essentially no vacancy between employees.

The System Security Administrator position was recently added to address the significant requirements for network and computer systems security, data protection and regulatory compliance.

The Academic and Services Support department originated with the development of an ITS Staffing Plan in 2006. This department includes two Computer Lab Technician positions that were reassigned to ITS from academic divisions, along with a categorically funded part-time Computer Lab Technician. One of the original two Computer Lab Technicians left AVC and the position remained vacant for more than a year. In addition to these positions, the Alternative Media Specialist position as well as the two part-time hourly Help Desk Technician positions currently completes this department. There is no manager position funded for this department, so the ITS Director is filling that role at present.

C. Productivity – Initial Program Review

Productivity toward ITS Area Operational Outcomes can be measured quantitatively and qualitatively. In this section, productivity measures are reported or described as they relate to each Operational Outcome.

1. Ensure transparent reliability of IT infrastructure, district IT equipment, information systems and telecommunications resources.

The ITS Area provides network infrastructure services including internet and intranet access, employee and student e-mail services, file sharing and print services for approximately 2,500 computers and approximately 1,400 telephones. These services are used by all district employees and many students. For the periods indicated in the chart, the district has experienced the following percentage “up time” for critical systems:

Service	Up Time	Period of Time Analyzed
Network infrastructure:	>99.5%	010107 - 060108
E-mail:	>98.0%	010107 - 060108
Student Information System (Banner):	>99.54%	010103 - 060108
Portal services (myAVC):	>99.3%	010107 - 060108
Telephone services:	>99.82%	010107 - 060108
Public web site (www.avc.edu):	>99.2%	010107 - 060108
Distance Education server (AVConline.avc.edu):	>99.5%	010107 - 060108
Network access to file and print services:	>99.5%	010107 - 060108

2. Facilitate secure access to district computers, information systems, telecommunications and other information technology resources.

The ITS Area served 11,741 individual students who visited and used the computers provided in the open computer labs 183,660 times for a total of 410,569 hours since July 2005. This represents service to 23.2% of the 50,524 unique students enrolled during this same time period. In addition, of the 50,524 unique students who enrolled since July 2005, 41,861 of them, 82.9% used web-based computer systems and services implemented and supported by ITS for activities including course registration, online fee payment, and access to student records, course materials for both traditional and online courses, institutional organization pages and information and academic resources such as library and learning center services. AVC has also collected \$5,273,608.73 via online fee payment procedures implemented and supported by ITS since fall 2005.

Since 2003, AVC has identified a number of security breaches, primarily involving shared passwords to individual user accounts. ITS addressed two known breaches involving access to web servers, one in 2004 on the BannerWeb server and one in 2008 on the Pathways web server. The BannerWeb server was found to have been used as a video repository by an external hacker. The Pathways server administrative password was extracted by an automated process applied over a 2 year period by an external hacker. ITS addressed both of these issues and has protected all servers against such attacks in the future. No student data was compromised by either of these attacks.

Using our former SPAM server, ITS filtered out an average of 30,000 daily SPAM and unwanted bulk e-mail messages over the past five years. Since implementing the new SPAM server this year, the average number of SPAM and unwanted bulk e-mail

messages blocked daily has increased to 170,000. From June 2008 through mid-August 2008, ITS processed 2,834,663 e-mail messages.

ITS supports 86 computers in the Learning Center that provide students with various assistive technologies. In addition, each computer lab supported by ITS includes at least one station with assistive technology installed.

Since September 3, 2005 ITS has processed 530 myAVC name change requests. Students and employees may request to have their myAVC username and email address changed due to either a legal change of name, or a misspelling of their name in Banner.

The following chart shows the number of Banner Account Requests processed during the past 5 years, through May 2008, for a total of 781 since the initial implementation of Banner in 1999.

Base of existing accounts	274
2003	72
2004	83
2005	60
2006	94
2007	157
through May 2008	41
TOTAL	781

3. Provide quality technical training and assistance to students, employees, alumni and community members.

Since e-mail and portal services (myAVC) were made available to students in November 2005, ITS has provided documented technical assistance to 25,260 users of these services. Many more undocumented hours of technical assistance have been provided to students who visit the campus and request myAVC password reset services, which we address immediately upon confirming the requestor's identification. 463 hours of myAVC group training were attended by a total of 302 employees within 5 months of the initial myAVC implementation.

Overall, ITS Technical Training has offered 74 formal workshops over the past 2 years. Although on average 24 seats were available in each of these training sessions, only 119 employees participated overall, with at least 16 workshops cancelled due to lack of attendance.

In 2007, 85 Braille, large print books or other alternative media formats for instructional materials were provided to 31 different students. In that same period of time, 40 videos were captioned to accommodate hearing impaired students.

ITS Technical Assistance documented responses to 8,413 employee requests for assistance since January 3, 2005. These are shown in the chart below according to type of request. In addition, ITS logged 30,649 calls for myAVC assistance, primarily from students, since March 22, 2006.

Request Type	Total
AVC Password Change	34
Blackboard	1
Fault - Email	949
Fault - Network	1660
Fault - PC Hardware	1236
Fault - Printer / Network Printing	1039
Fault - Software / OS	527
Ghost Lab	27
Hardware Installation	381
Hardware Relocate / Assess	315
Intranet / Network Share Change	18
Labs - Assessment Center	0
Labs - BE	5
Labs - Corp. Comm. Ed.	1
Labs - Learning Center	2
Labs - Library	6
Labs - MAC	1
Labs - Math Science	10
Labs - Tech Ed	4
Macintosh Misc	15
MY AVC	267
Phones	943
Setup Computer	208
Software Install	645
Training	57
User Settings	15
Virus Related	11
Web Assistance	36

In the past year, in addition to assistance provided to individual computer users, ITS provided direct computer lab technician support to 77 faculty members using 430 computers in 20 instructional computer labs, including Windows and Macintosh computers. Direct support of instructional computer labs occurs when a designated computer lab technician is specifically assigned to assist faculty with lab hardware and software configurations and technical problem solving. Indirect computer lab support is also provided by ITS for all computer labs used by faculty and students, even though designated ITS computer lab technicians are not available to support all labs. There are currently 24 additional computer labs containing 581 computers⁵ provided by the district without direct ITS computer lab technician support.

⁵ Includes 80 blade PCs.

4. Proactively collaborate with others to implement emerging IT solutions to meet the district's instructional and operational needs.

Over the past 2 years, ITS worked with individual instructors, divisions, departments and student service areas to implement a number of technology projects, including the following:

- Implemented Banner integration with CCCApply, a state initiative to facilitate the community college application process for students, particularly those who may attend more than one community college. The integration between CCCApply and Banner ensures students applying to AVC through CCCApply are automatically loaded into the Banner student information system, providing they have met the necessary admissions requirements. Additionally, error handling provides a means for capturing admissions applications that have errors. Those applications are recorded in a separate table with an error indication whereby Admissions & Records can perform manual assessment of those applications. Additionally, myAVC accounts are automatically created for applicants and information regarding their myAVC account is then emailed to the student.
- Implemented network upgrade (\$1.3 million bond project) to provide increased reliability of network switches, better security, switch and server management.
- Implemented computer upgrades using one-time funds (\$137,000), primarily in instructor offices.
- Updated and expanded Palmdale telecommunications infrastructure, including IP telephone, wide-area network and open computer lab for students.
- Updated Fox Field technology, including IP telephone, wide-area network capabilities and condensed and versatile student computer lab.
- Updated computer equipment in Commercial Music lab, Computer Graphics lab, Library Information Competency lab, Math labs and Student Services.
- Upgraded classroom technology by completing installation of internet connections and computer configurations to support media boxes that had been previously installed.
- Completed implementation of Document Imaging system to reduce institutional paper records management. Initial usage of this system is in the Admissions and Records area.
- Completed installation of Room Scheduling software to maximize facility utilization for classes and events.
- Implemented SARS application, primarily used to facilitate Counseling appointment scheduling, but includes other features such as the ability to automatically provide AVC notifications to students via phone.

- Initiated deployment of thin client and blade technology in Counseling, Library, Math and Science, and Assessment. Implemented virtual servers to reduce the quantity of physical servers maintained by ITS staff. These two projects helped reduce the total cost of ownership of district technology through streamlining technical support and by reducing energy requirements.
 - Upgraded the AutoCAD software and assumed responsibility for managing the software licenses on an ongoing basis.
 - Replaced plotter used by students in the GIS program.
 - Provided implementation support to the podcasting project coordinated by the IMC.
 - Implemented emergency telephone system in new parking areas.
5. Collaborate with others to encourage appropriate use and comprehensive standardization of IT resources.

Standardization of technology provides a strong benefit to the institution by reducing the complexity of the information technology environment for both the users and the support staff. In addition, standardization allows the institution to take advantage of significant discounts and achieve economies of scale in technology procurement, implementation and maintenance procedures. The development of standard procedures and policies for information technology use protects the institution's IT resources including student and institutional data. The following lists examples of standardization that ITS has implemented through collaboration with other AVC areas and/or with outside resources.

- Initiated PC Blade implementation; PC blade technology allows standardization and extreme flexibility for a variety of deployment scenarios. Made test blades available to some faculty and staff for their evaluation and input.
- Developed procedure to facilitate creation of multiple media formats for audio/video instructional materials; set standard configuration in the PC labs to allow access to all industry standard media formats.
- Currently working on a "Security Awareness Campaign" to help campus community understand the risks and necessary measures to ensure secure wireless access to AVC network resources.
- In collaboration with instructors of the Business and Computer Studies division, developed a standard virtual configuration to address the challenge of multiple system boot configurations in the instructional computer labs.
- Restructured Active Directory; Active Directory provides many new standards for resource management, standardized workstation and printer names, and standardized Active Directory organizational structure.

- Training for faculty on the use of myAVC to properly enter grades. This training has several steps the first of which is to familiarize faculty with the myAVC environment. Lack of network security awareness and practices became very evident during these training sessions, which provided an opportunity to inform and educate faculty regarding their obligation to protect student data through appropriate use of the IT resources to which they have access.
 - Developed the automated system to deliver the CCCApply information into the Banner database.
 - Developed processes to utilize myAVC to deliver information to AVC constituents and as a means of communication (e.g., campus announcements, e-mail instead of paper mail and group collaboration).
 - Implemented procedure to ensure appropriate IT training has been received prior to providing access to the production database environment.
 - Continue to collaborate with stakeholders to ensure appropriate access and security are available and maintained for all IT resources.
 - Continue to collaborate with IT users to identify appropriate software and system applications to meet institutional requirements, serving students, faculty, staff and other community constituents.
 - Continue educating users on the proper use of targeted messages via myAVC versus the use of e-mail messages for notifications to large populations or groups of AVC IT users.
6. Respond to district needs by continuously improving the processes and procedures that facilitate effectiveness in all IT services.

A survey of ITS effectiveness was conducted in Fall 2007. In summary the Fall 2007 survey results imply that full-time faculty have a higher expectation level for ITS than other groups, which showed more evenly distributed satisfaction ratings. In response to the survey results, ITS worked to concentrate more effort on serving faculty in order to improve their satisfaction levels with the services. Some of the changes included redistributing Help Desk coverage for employees so that skilled Computer Services Technicians are available to provide immediate assistance to faculty between the hours of 7:30am and 10:00pm Monday through Thursday, and from 7:30am to 4:00pm on Friday. Also, significant effort was made to meet and collaborate with faculty assigned to teach in the computer labs supported directly by ITS Computer Lab Technicians in order to coordinate with them regarding their specific requirements in the labs.

The same survey that was conducted in the Fall 2007 semester was conducted again in Spring 2008. Refer to Section II. B. 4. in this document for a summary of the Fall 2007 and Spring 2008 data and satisfaction levels among constituent groups who participated in the survey. The survey is one tool that provides information regarding district needs and how the ITS Area can improve the processes and procedures that facilitate effectiveness in all IT services

D. Revenue – Initial Program Review

Aside from institutional general funds, the ITS Area’s only revenue source over the past five years has been a state categorical program known as the Telecommunications and Technology Infrastructure Program (TTIP). Funds allocated to AVC from this source are shown in the table below.

TTIP Allocations	
Year	Revenue
FY 2003-2004	\$ 64,234.00
FY 2004-2005	\$ 58,369.00
FY 2005-2006	\$ 52,332.00
FY 2006-2007	\$ 46,958.00
FY 2007-2008	\$ 45,183.00

TTIP fund allocations have been very limited for the past five years, provided by the state to primarily sustain library electronic databases such as EbscoHost. The majority of the annual allocations have been used for this purpose each year as directed by the state. The remaining funds have been used to provide technical training to ITS Area employees to maintain their skills in the specific areas they are required to support such as Banner training, network utilities and firewall software training. In addition the balance of these funds has been used to supplement the general funds allocated to the ITS Area to replace servers, equipment parts or network components.

While AVC demand for information technology based systems and services has continued to increase, available budget to meet these increasing demands has trended downward. Revenue from TTIP has decreased by 30% since FY0304, while district allocations to ITS projects have also declined in relationship to the overall budget, moving from 0.5% of the district budget to 0.3% of the district budget since FY0405.

	FY0405	FY0506	FY0607	FY0708
ITS operating budget (excludes personnel)	\$311,898.00	\$276,992.00	\$289,139.00	\$385,995.00
District ⁶	\$66,644,000.00	\$76,721,000.00	\$81,397,000.00	\$146,752,229.00
% District funds allocated to ITS	0.5%	0.4%	0.4%	0.3%

⁶ Includes categorical expenditures.

E. Budget – Initial Program Review

BudgetAcct	Item	Projected FY 08-09 Budget	Expenditures At End of FY 07-08	Expenditures At End of FY 06-07	Expenditures At End of FY 05-06	Expenditures At End of FY 04-05
11150 4400 6780000	Software	\$ 9,345.00	\$ 4,124.77	\$ 15,046.00	\$ 18,123.00	\$ 19,605.00
11150 4500 6780000	Supplies	\$ 25,283.48	\$ 22,855.74	\$ 13,935.00	\$ 20,428.00	\$ 5,891.00
11150 4530 6780000	Warehouse - office supplies	\$ 4,890.08	\$ 3,831.54	\$ -	\$ 2,773.00	\$ 288.00
11150 4561 6780000	Non-Cap Equip, <\$5000, Computer		\$ -	\$ -	\$ 1,094.00	\$ -
11150 4562 6780000	Non-Cap Equip, <\$500, Computer	\$ 25,373.59	\$ 17,719.88	\$ 20,787.00	\$ 31,193.00	\$ 12,643.00
11150 4592 6780000	Non-Cap Equip, <\$5K, Computer		\$ -	\$ 4,997.00	\$ 3,749.00	\$ 27,994.00
11150 5100 6780000	Contract Services	\$ 19,934.00	\$ 18,375.00	\$ 16,816.00	\$ 4,199.00	\$ 2,614.00
11150 5110 6780000	Consultants		\$ -	\$ 125.00	\$ 2,375.00	
11150 5200 6780000	Travel and Conference	\$ 1,088.29	\$ 582.57	\$ 4,416.00	\$ 1,138.00	\$ 1,260.00
11150 5300 6780000	Dues and Memberships		\$ -	\$ -	\$ 399.00	\$ -
11150 5310 6780000	Licenses and Fees	\$ 313,618.91	\$ 265,778.74	\$ 147,530.00	\$ 143,087.00	\$ 56,682.00
11150 5525 6780000	Utilities, Telephone	\$ 575.50	\$ 390.81	\$ 741.00	\$ 132.00	\$ -
11150 5640 6780000	Computer Repairs		\$ -	\$ -	\$ 510.00	
11150 5650 6780000	Equipment Repair	\$ 48,333.78	\$ 30,741.39	\$ 13,149.00	\$ 10,922.00	\$ 10,878.00
11150 5655 6780000	Equipment Repair Contract	\$ 29,796.22	\$ 21,397.39	\$ 35,223.00		
11150 5802 6780000	Freight Expense	\$ 200.00	\$ 196.88	\$ 174.00	\$ 347.00	\$ 70.00
11150 5830 6780000	Advertisement		\$ -	\$ -	\$ 809.00	
11150 5840 6780000	Computer/Tech Related Services	\$ 16,200.00	\$ -	\$ 16,200.00	\$ 35,714.00	\$ 173,973.00
One time money	Equipment				\$ 21,627.00	
	TOTAL	\$ 494,638.85	\$ 385,994.71	\$ 289,139.00	\$ 276,992.00	\$ 311,898.00

Section II. Self-Evaluation

A. Employees

1. ITS Area employees are actively involved in the selection of full-time and part-time employees. Student employees, primarily hired to monitor computer laboratories or serve as supplemental clerical help in the office, are selected by the respective supervisors and recommended to the Director.
2. The number of employees in the ITS Area is not adequate to meet the needs of the institution. According to the staffing ratios provided by the California Community College System Office, for an institution this size, the ITS Area should employ the following types and numbers of employees to meet the minimum support requirements of the students, faculty and staff.

Position	CCCCO TCO Ratio	AVC TCO	AVC Actual	Need to hire
Computer Technicians	1/150 PCs	16.7	4.5	12.2
Computer Lab / Classroom Technical Assistants	1/75 PCs	7.7	4.5 ⁷	3.2
Network / Systems Administration (Database and System Security Administrators)	1/300 PCs	8.3	2.0	6.3
Network Engineer / Technician	1/500 PCs	5.0	0.0	5.0
Instructional Designer / Technology Specialist	1/100 FTEF	4.3	0.0	4.3
Webmaster / Web Designer	1/4000 FTES	2.8	1.0 ⁸	1.8
Multimedia Production Specialist	1/200 FTEF	2.2	0.0	2.2
Instructional Application Developer/Administrator	1/200 FTEF	2.2	0.0	2.2
Helpdesk Technician	1/5000 FTES	2.3	0.0	2.3
Technical Management	1/10 ITS staff	2.1	2.0	0.1
Multimedia Technician (Alternative Media Specialist)	1/300 FTEF	1.4	1.0	0.4
Technical Training Specialist	1/300 FTEF	1.4	1.0	0.4
Web Administrator (Systems Administrator)	1/12000 FTES	1.0	1.0	0.0
Communications Technician	1/6000-12000 FTES	1.0	1.0	0.0
Application Development	2/12000 FTES	2.0	3.0	-1.0
IT Director	1	1.0	1.0	0.0
Clerical Support (Technical Analyst)	-	-	1.0	-
		61.4	23.0	39.4
CCCCO = California Community College System Office				
TCO = Total Cost of Ownership				
PC = Windows and Macintosh computers, number = 2500				
Lab PCs = Windows and Macintosh computers, number = 581				
FTEF = Full-time Equivalent Faculty, number = 432 (fall 2007)				
FTES = Full-time Equivalent Students, number = 11,279 (annual 2007-08)				
Full-time Equivalent ITS Area employees = 20				
Number of Individual ITS Area employees = 21				

⁷ Includes 2 computer laboratory technician positions that do not report to the ITS Area.

⁸ Webmaster position does not report to the ITS Area.

The most significant staffing need has been identified in the area of institutional technical support. There are several examples of this inadequacy. There is no permanent staffing allocated to the ITS Technical Assistance “call center”, established to provide technical assistance to students. ITS Technical Assistance is advertised as available to students for assistance with the myAVC internet portal service, yet this service is staffed by two part-time temporary employees. While ITS provides computer lab technician support to 22 computer labs, as described above, there remain 24 computer labs with no direct ITS computer lab technician support. In addition, the ITS Area survey results from Fall 2007 and Spring 2008 indicated a requirement to improve technical support, particularly to full-time faculty. “In November 2007, a task force was requested by the College Coordinating Council to review the Information Technology Services Area and propose an organizational structure to address the issues of inadequate support to academics and student services, especially in distance education and the labs.”⁹ Although in FY 2007-2008, evening technical support was provided for the first time when a Computer Services Technician was hired to serve the institution in the evening hours, no service is currently available during weekend hours either on campus or via telephone. The expectation for 24x7 technical assistance has been strongly expressed by both faculty and students, however, the institution has made no commitment to staff the ITS Area to accommodate this support expectation.

AVC has become institutionally dependent on several major databases, including Banner (test, pre-production and production databases), Sun One e-mail and calendar systems, Astra room scheduling, Hershey imaging, Horizon Library systems, ShoreTel phone system, Help Desk work order, Learning Center time clock and positive attendance, various directory databases for user authentication, and more. However, ITS employs only one database administrator. Most of the databases are minimally maintained at best, since priority is placed on the student information system, Banner, that houses student academic records and associated transactions, and requires the attention of a full-time database administrator.

In addition, a number of significant software applications have been implemented at AVC during the past few years, many of them associated with the aforementioned databases. Some of these applications include SARS, Hershey Singularity, Astra Schedule, Xtender, myAVC, Clean_Address, BOGW, CCCApply, Donor Perfect, Blackboard, Horizon, and numerous applications developed by the ITS Area Computer Systems Department to assist users in obtaining their goals.

Several areas of technology specialization require dedicated (or at least designated) staff to implement and maintain the equipment and systems involved. Some examples of such technology include wireless network access, mobile communications and unified messaging, PC blade technology, networked fax

⁹ Excerpt from ITS Review Task Force - Summary Recommendations, April 30, 2008.

services, document imaging and document management, virtual services, “pay-for-print” services, access management, profile and authentication services, social networking technologies, class capture, netcasting and video streaming services, internet applications and many more. Institutional expectations for technical expertise in these areas continue to increase, but current ITS Area staffing levels simply cannot keep pace with the expectations.

The ITS Area Staffing Plan was submitted to the President in February 2006 at his request and has been reviewed, revised and used annually as part of the budget request process. The ITS Area’s personnel budget augmentation requests for FY 2008-2009 included the following positions, which have not yet been identified as approved or funded:

- Academic and Services Support Manager (requested in FY 2006-2007 and FY 2007-2008)
 - Help Desk Technicians (2 positions requested)
 - Online Media Specialist (requested in FY 2006-2007 and FY 2007-2008)
 - Computer Services Technician for Instructional Technology Support (requested in FY 2007-2008)
 - Lab Technician – Computers
 - Administrative Assistant
3. Several ITS Area employees are actively involved in professional organizations and external activities to benefit AVC. Current and recent organizational affiliations of ITS Area employees include the California Community Colleges Banner Group (3CBG) where participation by AVC ITS Area employees in statewide offices (chair, vice-chair and board member), along with workshop, discussion forum and state conference hosting has brought significant recognition to AVC as a state leader in CCC student information system expertise.

The ITS Area Computer Systems Manager participates as an active member of the 3CBG’s Configuration Control Board to address Banner problems or add functionality of benefit to all California Community Colleges. This group, consisting of representatives from the California Community Colleges who use Banner, guides development of the California Community College baseline version of Banner by SungardHE’s California Community College Solution Center.

The ITS Area Network Manager has been a featured speaker at the state CISOA (Chief Information Systems Officers Association) Conference attended by CCC Chief Information Systems Officers.

In addition, membership in several professional organizations enables ITS Area employees to maintain technical currency. These include SETA, Oracle TechNet, TechRepublic, LumDev, and the IEEE Computer Group.

4. ITS Area employees regularly participate in staff development activities and implement what they learn in the service area. The following list shows the training seminars and workshops attended by ITS Area employees since 2003. Many of these workshops are required in order for the employees to maintain the technical skills needed to support the technology applications and equipment used by the district. Technical practices learned at these seminars and workshops are consistently applied to ITS Area services and systems in response to requirements by the institution's computer, telephone and system users. In addition, many of the listed workshops, such as those addressing MIS changes, provide ITS Area employees with the necessary training to enable compliance with state or other mandated reporting or data maintenance requirements.

Accountability Reporting for Community Colleges, 2006

Acuta Conference, 2006

Administrative Assistants Conference, 2005

Banner 3CBG Users Conference, annually 2003 – 2007

Banner API Creation & Architecture, 2006

Banner Summit, annually 2003 – 2008

Blackboard Regional Workshop, 2008

BOGW Meeting, 2008

Campus Technology, 2007

CAPED Convention, annually 2006 – 2007

Configuration Control Board Meetings, annually 2003 – 2008

CCCApply Workshop, 2005

CCC Solutions Center Planning Workshop, 2005

System Office MIS Workshops, annually 2003 – 2008

CISOA Annual Meeting, 2005

Dealing with Difficult People, 2006

Enterasys Executive Briefing, 2006

Excel Basics & Advanced Training, 2005

Excel Basics & Excel Beyond the Basics, 2007, 2008

Extreme Data Summit, 2007

Hershey Singularity Training, 2004

Hershey Singularity Conference, 2005

How to Supervise People, 2007

HP Desktop Virtualization Seminar, 2006

Implementing ShoreTel IP System, 2006

International Technology and Persons with Disabilities Conference, 2007

Luminis Training, 2005

MAC Retreat, 2005

Microsoft Training, 2005

MIS Financial Aid Data Workshop, 2005

MIS Regional Training, 2007

Network Security Workshop, 2004, 2007

NMPT Network Security Training, 2007

Oracle Architect Forum, 2006

Powerful Communication Skills for Women, 2005
State Data Warehouse Meeting, 2007
Sungard (GCF) Generic Connector Framework Training, 2007
Symantec Ghost Solution Training, 2007
Tech Security Conference, 2008
Wireless for Higher Education Conference, 2003

B. Customer Relations

The customer base of the ITS Area includes all users of information technologies provided by Antelope Valley College. Students and employees of the district are primary customers, however, prospective students, community members, members of the Board of Trustees, alumni, vendors, donors, and colleagues from other educational entities are also customers who require services from the ITS Area.

1. The ITS Area facilitates training and presents workshops for district employees on a variety of information technology software applications and utilities. These are scheduled on various days and times, including evening and weekend hours in order to accommodate attendee schedules.

When major information technology services are upgraded or require maintenance, the ITS Area endeavors to schedule outages to accommodate the district's instructional and operational activities. In addition, ITS notifies district information technology users in advance when outages are planned.

ITS Technical Assistance (Help Desk) service is provided 70 hours/week to district employees and more sporadically (based on limited hourly employee funds and schedules) to student users of myAVC and its associated services. Since many AVC services are available online via the internet, students and employees have an expectation of 24/7/365 availability of technical support that current staffing and funding does not enable the ITS Area to provide.

2. One area that ITS could improve according to both the survey results and the ITS Area Review Task Force report, is the area of communication with customers. "...[T]he task force recommends increasing and improving the level of communication¹⁰ between ITS and the institution through the establishment and availability of an ITS administrative assistant, located in an area that may also serve as a satellite of the ITS technical assistance center, thereby providing evening and weekend assistance in addition to regular weekday support. The administrative assistant would act as a resource for employees who need information but may not need to call for specific technical assistance. The task

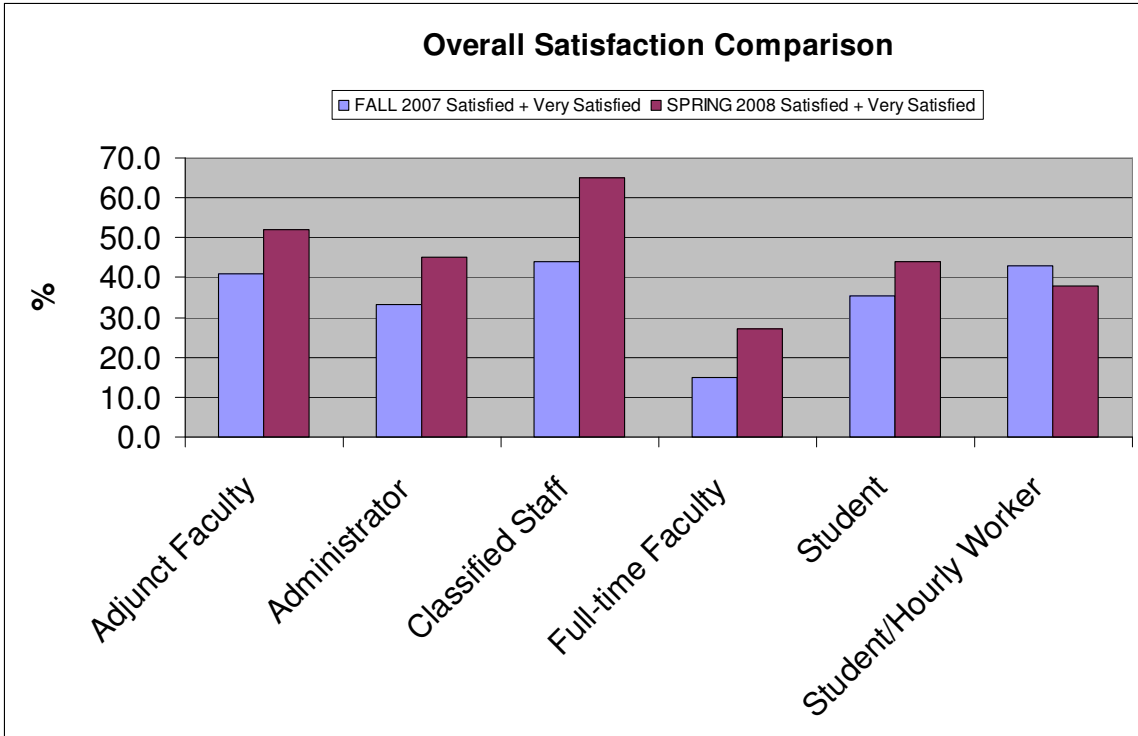
¹⁰ This communication should take the form of voice and electronic mail messages to employees regarding significant information technology changes/events, employee orientations and personal/group technology training opportunities, printed and electronically posted reference and technical assistance materials, technical assistance contact information posted in classrooms and labs, and by any other means identified to provide information to the institution regarding AVC information technology services.

force believes that a centrally accessible location for the administrative assistant would improve access to ITS information and technical assistance to both students and employees.”

3. Although the ITS Area meets regularly with district operational entities such as Facilities Planning and Maintenance and Operations, as well as with Student Services representatives in the Banner Student Team meetings, ITS does not have well established opportunities for formal interaction with instructional areas to review their plans and discuss instructional technology priorities.

While the Information Technology Committee provides a limited opportunity for this kind of dialog, the Committee is focused on broad institutional priorities and faculty comprise only a part of that group. The IT Committee is not designed to serve as a forum for instructional technology discussions, except as a subset of its mission. Similarly, the Distance Education Committee has a focused mission and offers only minimal (and very defined) opportunities for discussion of instructional information technology requirements. The ITS Area could serve the institution more effectively if opportunities for focused discussion of instructional priorities requiring information technology support and service could be established. The ITS Area attempts to understand and address the district’s instructional information technology service requirements by reviewing the Educational Master Plan, discussing specific instructional technology projects with deans, and devising strategies to meet the instructional requirements.

4. The ITS Area surveyed students and district employees in Fall 2007 and again in Spring 2008. As shown in the graph and chart below, customer satisfaction as reported from the survey responses improved for almost all customer categories, including students, full-time faculty, adjunct faculty, classified employees, and administrators, while student/hourly workers reported slightly lower satisfaction rates from the Fall 2007 survey to the Spring 2008 survey. While some satisfaction ratings are still low in terms of the overall percentage of survey responses, the improvement shows that the ITS Area is working to respond to customer concerns by making changes in service and operations to better meet their needs. In addition, lower satisfaction percentages may reflect higher expectations from some customer categories.



	Adjunct Faculty Fa07	Adjunct Faculty Spr08	Admin Fa07	Admin Spr08	Classified Staff Fa07	Classified Staff Spr08	Full- time Faculty Fa07	Full- time Faculty Spr08	Student Fa07	Student Spr08	Student /Hourly Worker Fa07	Student /Hourly Worker Spr08
Dissatisfied	20.5	14	25.0	30	28.0	10	26.9	17	4.5	7	10.7	15
Very Dissatisfied	12.8	12	12.5	0	5.3	10	35.5	25	6.8	4	7.1	8
Neutral	25.6	22	29.2	25	21.3	16	18.3	28	43.6	40	39.3	33
Satisfied	25.6	28	16.7	25	34.7	33	12.9	20	31.6	30	21.4	28
Very Satisfied	15.4	24	16.7	20	9.3	32	2.2	7	3.8	14	21.4	10
TOTAL Dissatisfied + Very Dissatisfied	33.3	26.0	37.5	30.0	33.3	20.0	62.4	42.0	11.3	11.0	17.9	23.0
TOTAL Satisfied + Very Satisfied	41.0	52.0	33.3	45.0	44.0	65.0	15.1	27.0	35.3	44.0	42.9	38.0

5. The ITS Area coordinates with community agencies and organizations as appropriate to support facilities, activities and events requiring information technology services. As an example, the ITS Area Network Department personnel work closely with their counterparts from the Antelope Valley Union High School District to provide support services to the SOAR High School situated on the AVC Lancaster campus. Another example is the coordination between the ITS Area Telecommunications Technician and the personnel at California State University-Bakersfield (CSUB) who provide telecommunications support to the CSUB facility located on the Lancaster campus.

C. Quality of Service

1. The Information Technology Services Area contributes effectively to student access, retention, and achievement of learning outcomes by providing the technology and technical assistance necessary for student access to services and instructional resources. Some of the ways in which ITS quality of service may be defined are described below.

The myAVC internet portal provides students a means for accessing their account information, grades, registration and related services, and a dynamic schedule of classes. In addition, myAVC provides free email accounts and personalized calendar service for students and facilitates communication between AVC service areas, instructors, students and classmates, as well as allowing AVC service areas and instructors to post information that helps foster student success.

To enable students to access available network and internet-based resources and services, the ITS Area manages several computer labs open to any enrolled student. In addition, instructional labs supported directly by ITS offer configurations designed to meet the instructors' requirements facilitating the teaching and learning processes in those classrooms.

ITS provides a reliable IT infrastructure enabling computer-based and telephony based interaction between students, faculty, and support staff. This includes installing, configuring, integrating, managing, and safeguarding software and equipment for direct use by students, as well as indirectly supporting students by supporting faculty and other college support staff in providing instruction and services to students.

For students with disabilities, the ITS Area facilitates access through assistive technology such as Internet Explorer Kurzweil 3000, which many LD and ESL students use to read college text books, because they can take e-notes while reading as well as bookmark important points for future reference.

The myAVC technical assistance provided to students facilitates access by resetting passwords, assisting students with site navigation, answering general registration and financial aid questions, instructing students how to access and complete admission and FASFA applications, answering basic Blackboard

questions and providing additional support telephone numbers for further assistance. In addition, myAVC Technical Assistance staff provide students with telephone extensions and general information pertaining to other AVC student services, directing them to areas such as Counseling, Job Placement, Career/Transfer Center, CalWORKs, and EOP&S for support or additional information.

2. The Information Technology Services Area recognizes and responds appropriately to external factors such as regulations, agency reviews, and community needs. The role ITS plays in preparing mandated state reports demands constant communication with the California Community College System Office and other regulatory agencies. As regulations and reporting requirements change, ITS Computer Systems responds accordingly to ensure accuracy and compliance with these changes while preserving the integrity of AVC's data.

ITS Area employees participate in several key professional organizations (see section II. A. 3) and use this professional contact to stay abreast of developments in the industry that may affect our services. These organizations also serve as resources when we wish to compare best practices or identify solutions to new challenges in information technology. ITS Area employees participate in various external support groups and email lists that provide information regarding regulations and impending review. Also, community needs are addressed by our direct support of projects initiated by the Institutional Advancement office and training provided by the office of Corporate and Community Education.

3. The ITS Area effectively assists faculty in the delivery of instruction, however for special purpose applications and mid-semester configuration change requests, ITS support of instruction has not been as effective.

The ITS Area provides a stable and robust computing infrastructure, supporting a wide variety of electronic communication opportunities, as well as a Technical Trainer to assist in developing faculty awareness and proficiency in using available information and telecommunications technologies. Technical training is offered to faculty through the Faculty Professional Development program as well as one-on-one and includes topics such as software application use and implementation for classroom and online delivery.

Computer labs, classroom computer technology and faculty office computers are configured by ITS technicians according to instructional requirements. However, there is no established or well documented process for a faculty member to initiate, implement and integrate a new technology into the district's infrastructure. At this time, many faculty self-initiate projects independent of ITS and expect ITS Area support, usually at an instruction-critical moment, to make their projects work. There is no district process that requires faculty to work with ITS in advance, and there is no authority allowing ITS to assert that they cannot support a project.

Computer Services Technicians are assigned to designated facilities to provide technical support to faculty and the instructional information technology they use. These technicians immediately respond to calls for ITS Technical Assistance during instructional hours, with some exceptions based on staff schedules. In addition, Computer Lab Technicians work closely with the faculty who use the computer labs they are assigned to support to ensure preparation of the labs well prior to the start of a semester. In addition, the Computer Lab Technicians monitor and maintain stability in the labs throughout the semester and respond to any calls for assistance from faculty using those labs. Computer Services Technicians work closely with the Computer Lab Technicians and directly with the faculty to maintain proper working order of information technology equipment on a daily basis.

While all classroom technology is not the complete purview of ITS, ITS Area technicians work closely with Instructional Multimedia Center personnel to ensure proper technology operation in classrooms equipped with media boxes and their associated projection equipment. In addition, ITS Area Network Services maintains the services and network infrastructure designed to enable use of video-conferencing technology and other high bandwidth technologies such as video streaming and podcasting support, while the Instructional Multimedia Center personnel directly assist faculty in using these services.

The ITS Area also provides support to instructors using online resources such as Blackboard and myAVC by coordinating integration of these environments with the district's course enrollment data and by providing direct support to faculty who require training or assistance in implementing online materials for instruction.

The Alternative Media Specialist provides support to faculty who need information or assistance to accommodate students with disabilities. The Alternative Media Specialist also offers training in the latest assistive technologies as well as guidance on disability awareness in the classroom in partnership with the Disabled Student Services office.

4. Information Technology Services works to identify areas needing improvement on an ongoing basis and makes an effort to correct problems and improve services based on planning and various sources of performance feedback as described here.

The ITS Area personnel make a habit of listening to and developing an understanding of the district's requirements, staying technically current, being mindful of district technology issues, limitations or concerns and convening to develop solutions to address challenges. We listen to our user community and respond to address their requirements, as funding permits. When district technology users plan to implement new technology-based projects but neglect to

collaborate with ITS early in their planning, this creates a scenario for failure or at least for costly surprises that the users had not considered prior to engaging in the new project. ITS would like to partner with district technology users to ensure that new technology plans are implemented thoughtfully, successfully and in a state that is operationally sound for the life of the project.

The Technical Trainer records feedback on training sessions which is then analyzed. Changes to the session content or presentation are incorporated for future training sessions based on this feedback.

The ITS Area has worked with the Office of Institutional Research to conduct customer feedback surveys to identify areas of perceived improvement and perceived inadequacy, and implements near-term plans to address the deficiencies identified by the survey responses. (See section II. B. 4. in this document.) Additionally, the ITS Area maintains a database of help calls, that allows for the identification of users that need assistance or training or equipment that needs repair or replacement. The ITS Technical Assistance service is interactive and provides for immediate implementation of improvements to technology services used by faculty and other district employees. The myAVC Help Desk service provides similar immediate support to students who have technical questions when using myAVC portal services.

When any positive or negative feedback is received, it is shared amongst the ITS Area personnel to consider, assess, evaluate and determine the best course of action to continue best practices or to address problems. Weekly staff meetings are held to identify issues, discuss practices and propose steps to be taken. ITS Area staff members work in conjunction with outside sources/service providers to understand and learn various aspects of systems software and/or to assist in correcting technical issues. We apply methodical and consistent evaluation practices to the services we provide, consider projected services needed due to growth, requirements and the availability of new technology; we train and promote information technology education among ITS Area staff; and we encourage collaboration and cross-training within the service area to maximize our effectiveness as a service organization.

5. The ITS Area employees develop procedures to provide the many services and support activities to the district. These include many procedure based services such as technical assistance, access to technical resources or information, technology project planning and maintenance, procurement and distribution of information technology hardware or software, technology training, technology services status information, open computer lab services to students, and information technology policy development in conjunction with the appropriate participatory governance committees. The ITS Area employees review and revise these procedures as circumstances require. Many of the internally used procedures are described in the following paragraphs. In addition, a number of

the procedures developed to assist information technology users are described below.

Technical assistance to district information technology users is provided, tracked and evaluated through a database in which requests for information technology support and assistance are recorded. Requests are recorded based on a standard set of general problem categories and reports are generated to enable analysis and subsequent development of better approaches to providing service and support. Support services and solutions implemented by an ITS Area employee are documented in the database and serve as a resource for additional analysis of common problems and applied best practices.

Access to technical resources such as district network services, computer applications and data is provided through Access Request Forms completed by the requestors. User accounts require appropriate authorizing signatures as well as agreement by the requestor to abide by district data confidentiality policies. Request forms and their associated procedures are published in the Forms & Docs resource in myAVC for access by all district employees. In addition, Human Resources in-processing of new employees facilitates completion of the required forms as appropriate. Requests for reports from the student information system, Banner, are forwarded to the Computer Systems Manager for action. Requests for assistance in relocating office areas or moving personnel are coordinated through the Office of Facilities Planning. ITS will not relocate personnel or set up new office areas without guidance from Facilities Planning and collaboration with Maintenance and Operations.

Technology project planning and maintenance follows a standard application planning procedure, however, this procedure needs to be updated and refined. In addition, the technology project planning procedure has been used as an internal tool within the ITS Area and should be published to enable better planning by district information technology users who wish to implement new technology projects. Communication of the application planning procedure may help address the need for better collaboration with district information technology users who are planning to implement new technologies as discussed in section II. C. 4. above.

Procurement and distribution of information technology hardware or software to district information technology users is facilitated through the ITS Area's Technical Analyst. Quotes for district standard information technology hardware and software are obtained and provided to requestors, along with preparation of all paperwork associated with new information technology procurement. The Technical Analyst oversees the procedure for procuring, receiving, staging, deploying and tracking the status of all computer hardware and software for the district. In addition software licensing is managed through the district's software library, maintained by the Technical Analyst. Requests for computer hardware or

software are made via e-mail to the Technical Analyst, making this procedure as simple as possible for the requestor.

Technology training requests are made through the Faculty Professional Development Office or directly to the Technical Trainer. This procedure needs some attention since a catalog of available training opportunities is not currently published and without referrals for training, district information technology users may be unaware of the many opportunities that are available to them to enhance their skills.

The status of information technology services such as e-mail, telephone or myAVC portal services is not readily available to users, who must rely on contacting the ITS Technical Assistance or myAVC help desk for status information. A web site is under development to enable us to provide this information to users.

Several computer labs are maintained and operated by the ITS Area and are open to any enrolled student, offering access to the basic computer applications used by students in their education. Lab procedures and operating hours are published and made available to each lab user. Instructors are informed regarding the availability of the labs at the beginning of each major semester so that they can pass the information along to their students. In addition, information about the open computer labs is posted in myAVC in the Academics tab in the Computer Labs channel.

Procedures are developed through participatory governance groups such as the IT Committee to enable secure and acceptable use of computer and telecommunication resources, to help protect district data and provide guidance on the appropriate use of the district's computing resources. These procedures include the Computer Use and Electronic Mail Guidelines, Acceptable Use Policies, Web Page Development Procedures and more. Each of these procedures is developed by a participatory governance committee and reviewed by district constituent representative groups before being accepted and published. Such procedures are published (at a minimum) in the Forms & Docs tab in myAVC under Information Technology documents.

6. The ITS Area operates by a written set of Standard Operating Procedures governing employee work schedules and compensation in accordance with the Federation of Classified Employees' Collective Bargaining Agreement with the district. ITS Area employees adhere to these Standard Operating Procedures.

D. Institutional Support

1. Facilities: Currently, ITS Area employees have office spaces in six different locations throughout campus. This is primarily due to the absence of institutional planning for information technology services as a distinct service area requiring

its own facilities and resources. ITS has historically been an afterthought in institutional planning, although in recent years the Strategic Planning and Budget Council has highlighted the significant role that information technology plays in institutional planning by including the Computer and Information Technology Plan among the strategic plans that support the Educational Master Plan as a part of the district's integrated planning process.

While the current ITS Area facilities are utilized to capacity, little additional support has been given to any near-term or long-term expansion of the physical space allocated to the ITS Area, other than planning for a secondary network operations center in the northern area of campus to provide for redundancy and failsafe support of network services through additional equipment. Some minimal work space has been designed into the network operations center; however it was not designed as an office facility to accommodate any growth. The planned network operations center's heating and cooling environment is designed to support computer equipment and not to accommodate the environmental requirements of office personnel. A request in FY 2007-2008 for a small centralized space that could serve as a "counter" for Information Technology Services, to enable access to technical assistance for district employees as well as for students, was not supported. Space planning for the newly hired System Security Administrator involved provisioning a former storage closet as an office.

The challenge of having ITS Area operations spread across several facilities will continue for the foreseeable future since district space in general is in high demand. If additional ITS Area staffing requests are approved, additional office space will be required. In addition, a former office space is now configured for use as training and meeting space, housing 5 computer workstations used in technical training sessions offered by the Technical Trainer to faculty and staff. This space is far from ideal and limits the effectiveness of ITS Area training initiatives.

2. Equipment and resources: Equipment and other resources used to provide information technology services have been acquired over the years, often by other areas, departments or divisions, with little or no input from ITS. Many of these resources are aging or have already surpassed the manufacturers' recommended "end-of-life". A server consolidation plan is under development to provide a replacement path for key operational servers, while laying the foundation for on-going replacement as servers near their end-of-life. For the first time, equipment leasing is under consideration as an option to help sustain the district's technology investment.

Educational Master Plan Assumptions, Challenges and Opportunities # 5 states "Technology needs will continue to change as technology advances, and the college will provide modern facilities with updated infrastructure that supports teaching and learning." The Computer and Information Technology Plan identifies strategies for cost effectiveness and stewardship of the district's

information technology resources under Goal #3, which states “Practice good stewardship over our information technology resources to maintain the cost effectiveness of district investments in these resources.” The strategies supporting this goal are:

“3.1 Plan for and maintain the telecommunications and network infrastructure to facilitate and support growth and changing requirements.

3.2 Prioritize information technology spending in accordance with institutional goals, establishing priorities that are practical and sustainable.

3.3 Develop a multi-year computer and information technology expenditure plan [Information Technology Services area budget], including planned and budgeted equipment and software upgrades.

3.4 Re-deploy usable equipment when feasible and salvage parts from below-standard computers prior to disposal in order to provide the broadest possible access to technology in a cost effective manner.”

3. Budget: The 2007 Educause Core Data Summary Report indicated that the median percentage of total campus expenses spent on information technology services for community colleges was 7%.¹¹ At Antelope Valley College, in FY0708, the ITS Area’s operational budget (excluding personnel) was 0.3% of the district’s budget.¹² The ITS Area expenditures including personnel for that same budget year totaled \$1,974,073, approximately 1.4% of the district’s expenditures. These figures were derived using both district and categorical fund data.

The Educational Master Plan goals are aligned with the goals of the Computer and IT Master Plan, which are supported by the Information Technology Services Area’s planned operational outcomes and strategies described in section I of this document. The Alignment section of the Computer and IT Master Plan, section VI, identifies the following Educational Master Plan requirements and links them with the Computer and IT Master Plan goals. These are not in any particular order of priority.

- Technology Support Staff for Instruction and Service Areas
- Wireless Internet / AVC network access for students and employees
- Alternative media and emerging technology development and support
- Online (internet-based) technology support
- Technology modernization, computer upgrades and “smart” classrooms
- Technical Training

Funding for initiatives to support these Educational Master Plan requirements is requested annually through the district’s budget augmentation request process. The Technical Trainer, Computer Lab Technician and Computer Services

¹¹ Educause Core Data Service Fiscal Year 2007 Summary Report, IT Financing and Management, Table 2-10, page 18.

¹² Refer to budget chart on page 15 of this report.

Technician positions funded in recent years all serve to support these identified requirements.

However, quality information technology is expensive to implement and to maintain. The institution's minimal commitment to information technology is reflected in its minimal budgetary commitment (1.4%) to IT projects and resources. A commitment to information technology services in order to meet the Educational Master Plan requirements listed above requires a substantial but carefully planned and managed budget. Some technology investments have been made by isolated divisions or service areas without coordination with or consideration for the institution as a whole. As an example, when a number of classrooms were upgraded to "smart classrooms" with media boxes containing capabilities for computer and network service plus projection, these upgrades were not coordinated with ITS. As a result, a substantial amount of time and money was required to correct the connectivity and operational problems after the project had been "completed".

4. Technical support: Information technology equipment ages rapidly, so supporting and maintaining the district's investment in information technology requires a steadily increasing budget to maintain operation of key IT software, equipment and services, as well as budget augmentations to enable periodic upgrades of equipment that has reached its "end-of-life".¹³

In addition, the number of skilled ITS Area personnel is insufficient to implement and maintain the technology and software required and requested (and sometimes acquired without notice) by the institutional areas. As described elsewhere in this document, the demand for institutional IT resources and services has trended upward while the ITS Area budget for operations and technical support has trended sharply downward. While the quality and commitment of technical support personnel is high, the number is low compared to the institutional need. As an example, the myAVC portal system providing service to all students as well as to all district employees is a key institutional application, yet it has no permanent employees assigned to provide technical support to its users. Positions to provide this service, along with other needed positions, have been requested through the annual budget augmentation request procedure.¹⁴

5. Training: While a Technical Trainer is available to serve institutional information technology training needs, technical training for the ITS Area personnel requires a different level of commitment and often a much more costly investment in advanced technology training workshops and seminars. Only 7 of the 62 workshops, conferences and seminars attended by ITS Area personnel in the last 5 years (listed in section II. A. 4 of this document) realistically provided the advanced level of technology training needed by the ITS Area personnel to enable

¹³ See Computer and IT Master Plan strategy 3.3 identified in section II. D. 2 of this document.

¹⁴ See section II. A. 2 of this document.

them to confidently implement and maintain the sophisticated software applications and information technology equipment used by the institution.

6. Staff development activities: While staff development activities such as participation in seminars and workshops for information technology professionals are encouraged, opportunities for the acquisition and expansion of ITS Area employees' knowledge and skills have been limited. This is primarily due to the high cost of such opportunities. However, ITS Area employees are encouraged to take lead roles in implementing new applications, equipment and technology services, affording them hands-on professional development activities in their areas of interest and expertise. In addition, employees are encouraged to participate in regional conferences with their peers from other institutions to share best practices and review solutions to commonly experienced IT challenges.

E. Accreditation Standard III.C identifies the standards for the institution's technology resources. The broad technology resource requirement is that technology resources are used to support student learning programs and services and to improve institutional effectiveness. In addition, the standard includes a requirement that technology planning is integrated with institutional planning.

Accreditation Standard 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."

Accreditation Standard III.C.1a. "Technology services, professional support, facilities, hardware, and software are designed to enhance the operation and effectiveness of the institution."

Accreditation Standard III.C.1d. "The distribution and utilization of technology resources support the development, maintenance, and enhancement of its programs and services."

Assuring that information technology support initiatives meet institutional needs while enhancing operational effectiveness must be explored before new information technology is acquired. To facilitate information technology related acquisitions, the ITS Area implemented a procedure in 2002 in partnership with the Office of Business Services. When district divisions or departments require information technology resources, they simply send an e-mail notification to the ITS Area identifying the requirement along with their funding source. The purchase requisition and any associated quotes, bids, contracts or other documentation is prepared by ITS and forwarded to the requestor for verification and approval.

Despite the IT acquisition procedure, information technology projects are still often pursued by various individuals, divisions or departments without collaboration with the ITS Area. When the Office of Business Services receives a purchase requisition for any

information technology related acquisition that has not been coordinated or reviewed with the ITS Area, that purchase requisition is forwarded to the ITS Area for verification. The ITS Area's verification process includes a review of the planned acquisition with the requestor to identify the degree to which the requested information technology services or items meet the requestor's objective, an evaluation of the requested services or items for cohesiveness and compatibility with existing infrastructure and support resources, verification that an existing solution is not already in place to meet the request, a pricing and vendor support comparison, and a review of how the requested services or items may affect existing information technology standards, practices or support resources.

Another ITS Area practice that demonstrates how we are meeting Accreditation Standard III. C. 1 is found in the ITS Area's support of 20 instructional computer labs. The ITS Area includes two permanent Computer Lab Technicians whose primary focus is to provide service and support to these labs. Once the instructional schedule for a coming semester is ready for publication, these technicians contact each faculty member assigned to teach in one of the supported computer labs to make sure the lab is configured to support the planned teaching and learning objectives. The technicians complete a thorough review of the configurations of their assigned instructional computers labs and share the information regarding equipment and software applications with the faculty members assigned to teach in those labs. Since this process begins well before the actual beginning of the semester, any required changes can be planned and implemented between semesters, thereby reducing or eliminating impact to the students and faculty. The Computer Lab Technicians continue to provide technical assistance as needed to the faculty members throughout the semester, ensuring that the use of IT in teaching and learning is closely supported.

Accreditation Standard III.C.1b. "The institution provides quality training in the effective application of its information technology to students and personnel."

ITS Area Operational Outcome 3 states "Provide quality technical training and assistance to students, employees, alumni and community members." A Technical Trainer position facilitates quality training for the institution in information technology. See Section I. B., page 4, of this document for a description of the technical training offered to the institution.

Accreditation Standard III.C.1c. "The institution systematically plans, acquires, maintains, and upgrades or replaces technology infrastructure and equipment to meet institutional needs."

Goal 3 in the Computer and Information Technology Master Plan calls for planned ongoing information technology replacement. To address this goal, a budget augmentation request to provide the district with computer and IT upgrades and replacements has been submitted annually since FY 2005-2006 by the ITS Area. However, the institution has not made operational funds available to fund this request, relying instead on one-time allocations that have been infrequently available in varying

amounts. AVC has not made a commitment to providing ongoing funds for planned replacements of IT equipment.

Accreditation Standard III.C.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.”

As stated earlier in this document, the Computer and IT Master Plan goals are aligned with the goals of the Educational Master Plan. The Information Technology Services Area’s planned operational outcomes and strategies support the Computer and IT Master Plan goals. The Computer and IT Master Plan is among the strategic plans that support the Educational Master Plan as a part of the district’s integrated planning process guided by the Strategic Planning and Budget Council. ITS Area effectiveness is assessed through institutional surveys and planning is adjusted to address requirements identified through survey responses. In addition, ITS Area direction is guided by advice from the Information Technology Committee, a participatory governance committee. The IT Committee is “... charged with alerting and briefing the chairperson of pending issues that may impede, strengthen or otherwise impact upon the information technology area.”¹⁵

Section III. Planning

A. Accreditation

The 2004 Accreditation Evaluation Report’s Commendations to AVC opened with the following statement: “To acknowledge the good work that has been done, the team wishes to commend the college and staff for the:

- support services provided the college by the Information Technology division,...”¹⁶

Of the 5 recommendations described in the 2004 Report, none were directed toward Information Technology Services, however the ITS Area continues to play an integral enabling role in providing the resources to support institutional responses to each of the recommendations. The recommendations involved improvements in the areas of planning, communication, student learning outcome development, diversity, and human resources and organizational structure.

2004 Accreditation Self-Study planning agendas related to or relying heavily upon ITS included “...communicating through a variety of venues...”¹⁷; “Publish agendas and minutes... on... websites.”¹⁸; “Evaluate and improve student access to services...”

¹⁵ Excerpt from the Information Technology Committee Charter and Mission Statement.

¹⁶ Accreditation Evaluation Report, Antelope Valley College, October 2004, page 4.

¹⁷ Planning Agenda for the Accreditation Self-Study, 2004, Dialogue: 1, page 239.

¹⁸ Planning Agenda for the Accreditation Self-Study, 2004, Dialogue: 2, page 239.

online...¹⁹; “Evaluate the organizational structure...²⁰; “Hire sufficient ... staff and administrators to provide programs that develop and support student learning.”²¹; “Evaluate and improve campus publications... online.”²²; “Implement online an application option and online orientation.”²³; “Provide hands-on assistance to students on how to complete the online application, how to access grades and financial aid status, how to register and drop/add online, how to pay online, and how to find critical information on the web.”²⁴; “Offer web-based ... testing.”²⁵; provide access to services through web pages and streamed videos;²⁶ “Utilize ... online plagiarism detection...”²⁷; “Offer ... credit courses... online...”²⁸; develop websites²⁹; provide e-mail accounts for students³⁰; “monitor, maintain and upgrade the... videoconference system...”³¹; “upgrade and maintain student records and administrative database system...”³²; “...support distance learning...”³³; “Implement ... Position Control Budget software...”³⁴; “Create a database for a variety of recruitment sources.”³⁵; provide technology training³⁶; “Conduct a focused survey on information technology training needs and develop an employee training plan based on needs.”³⁷; “Hire additional staff in ITS...”³⁸; “Provide funding (per board approved position, 9/13/1999) for Technical Trainer.”³⁹; improve the “print network” and upgrade older equipment in the Library⁴⁰; “...purchase ...a collection of e-books...”⁴¹; and “Use National Student Loan Clearinghouse Enrollment Search...”⁴².

In the role of enabler, the ITS Area has provided the resources to fulfill most of the requirements of the planning agendas identified above. Some of the ITS Area efforts that contributed to the completion of these agendas are provisioning the web servers

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- ¹⁹ Planning Agenda for the Accreditation Self-Study, 2004, Institutional Commitment: 3, page 239.
²⁰ Planning Agenda for the Accreditation Self-Study, 2004, Organization: 1, page 239.
²¹ Planning Agenda for the Accreditation Self-Study, 2004, Organization: 2, page 239.
²² Planning Agenda for the Accreditation Self-Study, 2004, Institutional Integrity: 2, page 240.
²³ Planning Agenda for the Accreditation Self-Study, 2004, Student Support: 2, pages 240-241.
²⁴ Planning Agenda for the Accreditation Self-Study, 2004, Student Support: 6, page 241.
²⁵ Planning Agenda for the Accreditation Self-Study, 2004, Student Support: 12, page 241.
²⁶ Planning Agenda for the Accreditation Self-Study, 2004, Student Support: 16, 18, page 241.
²⁷ Planning Agenda for the Accreditation Self-Study, 2004, Improving Student Learning: 5, 10, pages 241, 242.
²⁸ Planning Agenda for the Accreditation Self-Study, 2004, Improving Student Learning: 8, pages 242.
²⁹ Planning Agenda for the Accreditation Self-Study, 2004, Electronic Communication: 1, 3, 4, 5, page 243 and Planning: 10, page 246.
³⁰ Planning Agenda for the Accreditation Self-Study, 2004, Electronic Communication: 2, page 243.
³¹ Planning Agenda for the Accreditation Self-Study, 2004, Technological: 1, page 243.
³² Planning Agenda for the Accreditation Self-Study, 2004, Technological: 2, page 243.
³³ Planning Agenda for the Accreditation Self-Study, 2004, Technological: 3, page 243.
³⁴ Planning Agenda for the Accreditation Self-Study, 2004, Human Resources: 7, page 244.
³⁵ Planning Agenda for the Accreditation Self-Study, 2004, Human Resources: 10, page 244.
³⁶ Planning Agenda for the Accreditation Self-Study, 2004, Training: g, h, o, p, page 244.
³⁷ Planning Agenda for the Accreditation Self-Study, 2004, Training: n, page 244-245.
³⁸ Planning Agenda for the Accreditation Self-Study, 2004, Staffing: c, page 245.
³⁹ Planning Agenda for the Accreditation Self-Study, 2004, Staffing: h, page 245.
⁴⁰ Planning Agenda for the Accreditation Self-Study, 2004, Fiscal Resources: 1, page 245 and Equipment: 6, 7, page 246.
⁴¹ Planning Agenda for the Accreditation Self-Study, 2004, Equipment: 5, page 246.
⁴² Planning Agenda for the Accreditation Self-Study, 2004, Research: 9, page 246.

and network based services that enable access to web resources provided by AVC, as well as developing interfaces and authentication services to maintain and report data accurately and provide access to only those who are authorized to have access. Some of these efforts are evident in services such as the myAVC portal service with student e-mail accounts, online application, registration, financial aid and records related services, and in the ITS Area support for the infrastructure and data integration for online courses, video streaming, materials publication, online assessment and plagiarism detection.

As discussed earlier in this document, ITS submitted a staffing plan and subsequently reorganized (in 2006) in accordance with that plan, hired a few new positions, including a Technical Trainer, and conducted focused surveys regarding the technology and technology training needs of AVC employees.

The ITS Area's Operational Outcomes, measurements and progress on each are described in detail in section I.C. of this document.

B. Trends and Changes

Changes in the ITS Area since 2003 have included staffing increases, workload and scope increases, and budget decreases. ITS Area staffing has increased from 12.5 FTE employees in 2003 to 21 FTE employees in 2008 as described in section I. B. of this document. Workload and scope increases for ITS can be illustrated by reviewing the increases in the numbers of students and employees served by the district over the past 5 years, along with the increase in the number of computers and telecommunications equipment provided, and the increased number of services and applications supported. From 2003 to 2008, ITS provided services to approximately 11% more district employees,⁴³ and to more than 24% more students⁴⁴ per semester. Also, from 2003 to 2008, the number of computers used at the district increased by approximately 25% and the number of telephones and voice mail accounts increased by 75%. In addition, the ever-changing complexity of information technology applications in general continues to challenge the ITS Area to stay abreast of this dynamic industry on all levels. As described in section I. D. of this document, the ITS Area budget has decreased from 0.5% of overall district expenditures to 0.3% of overall district expenditures. The ITS Area's operating budget alone has decreased by 4% since 2003, but a more interesting figure to examine is the decrease of 39% in the ITS Area's operating budget since FY 2001-2002, which was the ITS Area's best funded fiscal year to date.

In the area of compliance with state and federal laws, there has been increased attention in the IT industry over the past 5 years. These changes have required the

⁴³ CCCC Data Mart Headcount report for Fall 2003 showed 796 employees and the same report for Fall 2007 showed 886 employees. Does not include hourly or student employees.

⁴⁴ CCCC Data Mart Headcount report for Spring 2003 showed 11,431 students and the same report for Spring 2008 showed 14,131 students.

ITS Area to dedicate more energy to accommodate reporting requirement changes such as those addressing race/ethnicity reporting and privacy protection.

C. Operational Outcomes, Goals and Strategies

The ITS Area's six long-term objectives are embodied in the Operational Outcomes identified in section I. A. of this document, and repeated below for convenience. These are reviewed and updated annually by the ITS Area employees. Following each Operational Outcome below is the associated Computer and IT Master Plan Goals and/or supporting Computer and IT Master Plan Strategies. The alignment⁴⁵ of the Computer and IT Master Plan Goals with the institution's Educational Master Plan is discussed in section II. D. 3. of this document.

ITS Operational Outcome 1. Ensure transparent reliability of IT infrastructure, district IT equipment, information systems and telecommunications resources.

Computer and IT Master Plan Strategies:

- 1.1 Develop and implement methods to support and enhance identified student needs related to the use of information technology in the curriculum and in student support areas.
- 1.2 Provide a variety of ways in which students can gain access to information and services, including assistive technology where applicable.
- 1.6 Promote and maintain consistent technical standards for classroom-based technology.
- 1.7 Ensure that technology is accessible to persons with disabilities.

Computer and IT Master Plan Goal #2: Use information technology to improve the efficiency of college operations.

Computer and IT Master Plan Strategies:

- 2.1 Maintain minimum functional standards for office and service area computing in accordance with the State Community College System Office baseline standards.
- 2.2 Develop and continuously update a district computer and information technology disaster recovery and business continuity plan.
- 2.3 Strategically use information technology as an operational resource to facilitate communication and provide open access to information.
- 2.4 Use available information technologies to facilitate internal and external communication.
- 2.7 Ensure the availability and reliability of communication infrastructure, including telephone and network services.
- 4.1 Provide adequate technical resources to support computer and information technologies in labs, classrooms, service areas and offices.

⁴⁵ The Alignment section of the Computer and IT Master Plan, section VI, identifies six Educational Master Plan requirements and links them with the Computer and IT Master Plan goals.

ITS Operational Outcome 2. Facilitate secure access to district computers, information systems, telecommunications and other information technology resources.

Computer and IT Master Plan Goal #1: Use information technology to enhance access, learning, retention and student success.

Computer and IT Master Plan Strategies:

- 1.1 Develop and implement methods to support and enhance identified student needs related to the use of information technology in the curriculum and in student support areas.
- 1.2 Provide a variety of ways in which students can gain access to information and services, including assistive technology where applicable.
- 1.3 Review and revise the district's current IT equipment inventory as needed to assure that the State Community College System Office baseline standards of access to computers for students and employees are met or exceeded.
- 1.5 Ensure that technology is accessible to persons with disabilities.
- 1.7 Ensure that information technology is available to support developing community needs as reflected in the academic programs.
- 2.3 Strategically use information technology as an operational resource to facilitate communication and provide open access to information.
- 2.6 Where feasible and secure, facilitate off-campus access to district information technology resources for employees.
- 2.7 Ensure the availability and reliability of communication infrastructure, including telephone and network services.
- 3.4 Re-deploy usable equipment when feasible and salvage parts from below-standard computers prior to disposal in order to provide the broadest possible access to technology in a cost effective manner.

ITS Operational Outcome 3. Provide quality technical training and assistance to students, employees, alumni and community members.

Computer and IT Master Plan Goal #4: Maximize use of the district's information technologies through information technology-related professional development, training and support resources.

Computer and IT Master Plan Strategies:

- 4.1 Provide adequate technical resources to support computer and information technologies in labs, classrooms, service areas and offices.
- 4.2 Provide on-going information technology-related professional development and training programs for all district employees where financially feasible.
- 4.3 Continue collaborative approach to addressing technology needs and issues through the district's Information Technology Committee.

- 4.4 Use existing professional development avenues such as the Staff Development and Flex programs to provide information technology-related training opportunities for employees.
- 4.5 Provide discipline-specific training on information technology tools and applications required in the performance of job duties.
- 4.6 Provide specific training related to policies associated with ADA requirements, fair-use copyright law, intellectual property, and other topics related to the institutional mission.
- 4.7 Provide current information to all district employees about what computer and information technology is available throughout the district and how to access and use it.

ITS Operational Outcome 4. Proactively collaborate with others to implement emerging IT solutions to meet the district's instructional and operational needs.

Computer and IT Master Plan Goal #1: Use information technology to enhance access, learning, retention and student success.

Computer and IT Master Plan Strategies:

- 1.1 Develop and implement methods to support and enhance identified student needs related to the use of information technology in the curriculum and in student support areas.
- 1.4 Continually assess the district's IT equipment and collaborate with appropriate administrators when upgrades of outdated or below-standard computers are identified.
- 1.7 Ensure that information technology is available to support developing community needs as reflected in the academic programs.
- 2.3 Strategically use information technology as an operational resource to facilitate communication and provide open access to information.
- 2.5 Develop processes by which each division/department within the district may create and maintain relevant content for the district's Web site.
- 2.8 Maintain and communicate to all employees the district's "Computer Use and Electronic Mail Guidelines."
- 4.3 Continue collaborative approach to addressing technology needs and issues through the district's Information Technology Committee.
- 4.7 Provide current information to all district employees about what computer and information technology is available throughout the district and how to access and use it.

ITS Operational Outcome 5. Collaborate with others to encourage appropriate use and comprehensive standardization of IT resources.

Computer and IT Master Plan Goal #1: Use information technology to enhance access, learning, retention and student success.

Computer and IT Master Plan Strategies:

- 1.1 Develop and implement methods to support and enhance identified student needs related to the use of information technology in the curriculum and in student support areas.
- 1.5 Continually assess the district's IT equipment and collaborate with appropriate administrators when upgrades of outdated or below-standard computers are identified.

Computer and IT Master Plan Goal #2: Use information technology to improve the efficiency of college operations.

Computer and IT Master Plan Strategies:

- 2.3 Strategically use information technology as an operational resource to facilitate communication and provide open access to information.
- 2.5 Develop processes by which each division/department within the district may create and maintain relevant content for the district's Web site.
- 2.8 Maintain and communicate to all employees the district's "Computer Use and Electronic Mail Guidelines."
- 4.3 Continue collaborative approach to addressing technology needs and issues through the district's Information Technology Committee.
- 4.7 Provide current information to all district employees about what computer and information technology is available throughout the district and how to access and use it.

ITS Operational Outcome 6. Respond to district needs by continuously improving the processes and procedures that facilitate effectiveness in all IT services.

Computer and IT Master Plan Goal #1: Use information technology to enhance access, learning, retention and student success.

Computer and IT Master Plan Strategies:

- 1.1 Develop and implement methods to support and enhance identified student needs related to the use of information technology in the curriculum and in student support areas.
- 1.2 Provide a variety of ways in which students can gain access to information and services, including assistive technology where applicable.
- 1.4 Continually assess the district's IT equipment and collaborate with appropriate administrators when upgrades of outdated or below-standard computers are identified.
- 1.6 Promote and maintain consistent technical standards for classroom-based technology.

1.7 Ensure that information technology is available to support developing community needs as reflected in the academic programs.

1.8 Advance and promote emerging technologies.

Computer and IT Master Plan Goal #2: Use information technology to improve the efficiency of college operations.

Computer and IT Master Plan Strategies:

2.2 Develop and continuously update a district computer and information technology disaster recovery and business continuity plan.

Computer and IT Master Plan Goal #3: Practice good stewardship over our information technology resources to maintain the cost effectiveness of district investments in these resources.

Computer and IT Master Plan Strategies:

3.1 Plan for and maintain the telecommunications and network infrastructure to facilitate and support growth and changing requirements.

3.2 Prioritize information technology spending in accordance with institutional goals, establishing priorities that are practical and sustainable.

3.3 Develop a multi-year computer and information technology expenditure plan [Information Technology Services area budget], including planned and budgeted equipment and software upgrades.

3.4 Re-deploy usable equipment when feasible and salvage parts from below-standard computers prior to disposal in order to provide the broadest possible access to technology in a cost effective manner.

4.3 Continue collaborative approach to addressing technology needs and issues through the district's Information Technology Committee.

D. Resources Needed

Short-term (3 – 5 years)

In late 2005, the president requested staffing plans from all areas and divisions. The ITS Area submitted a staffing plan in February 2006 that projected staffing needs based on anticipated institutional growth and development both in Lancaster and in Palmdale. These projections identified the human resources needed in ITS to maintain service quality at current levels as the institution continues to grow. The staffing plan initially had 5 phases as well as a long-term phase. This plan has been adjusted annually to address changing institutional requirements for IT support and service, and to carry forward those positions from earlier phases that are still needed but have not been funded. Personnel requests submitted as budget augmentation requests have followed this plan annually since the FY2005-2006 fiscal year. As discussed in section II. A. 2. of this document, the ITS Area's personnel budget augmentation requests for FY 2008-2009 included the following positions (and cost estimates, including benefits), which have not yet been identified as approved or funded:

Positions Requested in FY0809	Cost Estimate (including benefits)
Academic and Services Support Manager (requested in FY 2006-2007 and FY 2007-2008)	\$ 100,433.29
Help Desk Technicians (2 positions requested)	\$ 105,618.64
Online Media Specialist (requested in FY 2006-2007 and FY 2007-2008)	\$ 78,648.25
Computer Services Technician for Instructional Technology Support (requested in FY 2007-2008)	\$ 69,895.06
Lab Technician – Computers	\$ 64,109.14
Administrative Assistant	\$ 64,109.14

A budget augmentation was requested in FY2008-2009 for additional student employees to operate the Open Computer Labs. Also, additional hourly employee funds were requested if the full-time permanent Help Desk Technician positions were not funded.

Augmentations Requested in FY0809	Cost Estimate
Student Employee Funds (8,140 hours)	\$ 73,281.00
Hourly myAVC Help Desk Technician Funds (2,816 hours)	\$ 42,249.00

Beyond additional staffing, other requested resources required to simply maintain current levels of service and operation are shown in the table below. As briefly discussed in section II. D. 4. of this document, budget augmentations have been requested annually to enable regular upgrades of computer equipment that has reached its “end-of-life”. The request for an ongoing operational computer upgrade augmentation has not yet been funded.

As described in sections I. D. and III. B. of this document, the ITS Area’s operational budget has fluctuated and declined to such a degree over the years that it is now approximately 15% lower than it was in 1999. A budget restoration of \$265,815 was requested in FY0809, but has not been funded.

Augmentations Requested in FY0809	Cost Estimate
Campus-wide Computer Upgrades to provide replacements on an approximate 3 year cycle (requested in FY0506, FY0607 and FY0708)	\$ 300,000.00
Restoration of Operational Budget	\$ 265,815.00

Earlier requests that have not been funded over the past 5 years are shown in the table below. These requests must be re-evaluated since the institutional climate and requirements have changed dramatically since they were originally identified as requirements. It is likely that these requests are still needed but cost more or may be available to the institution in some other form.

Augmentations Requested since FY0506 but Not Funded	Cost Estimate⁴⁶
Oracle Enterprise license	\$ 122,500.00 ⁴⁷
Server replacement	\$ 35,000.00
Reporting tool (e.g., Crystal Reports)	\$ 35,000.00 one time; \$ 7,000.00 ongoing
Professional Development / Technical Skills Maintenance for ITS Area Staff	\$ 15,000.00 ⁴⁸
Disaster Recovery	\$ 37,600.00 ⁴⁹
Parts and supplies	\$ 8,283.00
Fax server	\$ 2,279.00

Given recent institutional demand for a number of new computer applications, in addition to the personnel needs identified above, another Programmer Analyst is needed along with another Systems Administrator. These positions would be key to supporting the servers, applications, interfaces, implementation and maintenance of such systems as AMMS (Maintenance and Operations database), SMS (Electronic Lock database), SSO (single sign-on for students and employees), CMS (web content management system), and a new LMS (new online course learning management system if Blackboard is replaced). The Programmer Analyst is needed to fulfill some of the added mandated federal, state, and agency reporting requirements currently assigned to the Computer Systems Manager.

In addition, given recent plans to expand and add a significant amount of technology to the institution's facility at Palmdale, a technical support resource is needed for on-site service at that location. At a minimum, a Computer Lab Technician is needed to provide support and daily maintenance and to ensure reliable operation of the IT equipment and applications used at the Palmdale facility.

A table showing these positions and their associated costs is below.

⁴⁶ Cost estimates for all of these items are now unrealistic since they are so old. Current price quotes at time of purchase would be required.

⁴⁷ Figure represents earliest cost estimate for initial one-time cost which is no longer valid. Cost today would be closer to \$350,000.00.

⁴⁸ Figure represents earliest cost estimate for 2 technical courses, which would serve one or 2 employees.

⁴⁹ Figure is an order of magnitude too small today. To preserve mission critical systems will require an investment of approximately \$250,000.00 in equipment and services, plus personnel.

Positions Needed but not yet Requested	Cost Estimate (including benefits)
Programmer Analyst	\$ 86,091.75
Systems Administrator	\$ 91,520.70
Lab Technician – Computers	\$ 64,109.14

In addition to the preceding resources, physical space for a service area is needed. As described in section II. D. 1. of this document, the ITS Area staff are located in six different office areas across campus. None of these provides a “counter service” for either students or employees. A location where students and employees could ask for IT assistance or drop off account request forms or equipment to be repaired, would additionally give a physical presence to the service area that is not currently available. Requests for such a space have not yet been addressed.

Long Term (7 – 10 years)

Following the phases described in the ITS Area’s staffing plan over the long term, additional positions to meet the growing demand for information technology support are shown in the table below, although cost estimates provided are based on current estimates and would have to be adjusted. These positions will be needed to fill support requirements for the ever growing student and employee populations as well as to support the IT operations in new facilities that are planned or currently under construction.

Positions Needed Long Term but not yet Requested	Cost Estimate (including benefits)
Technical Trainer	\$ 69,895.06
Telecommunications Technician	\$ 64,109.14
Database Administrator	\$ 91,520.70
Lab Technician – Computers	\$ 64,109.14
Technical Analyst (software license management and ad hoc reporting)	\$ 64,109.14
Computer Services Technician	\$ 69,895.06
Programmer Analyst (2)	\$ 172,183.50
Help Desk Technicians	\$ 52,809.32

While significant interest has been expressed by faculty and students for wireless access to AVC network services, there has been no institutional commitment to this project. The Wireless Access Plan that was prepared in summer 2007 describes the physical requirements to implement the wireless equipment needed to serve the Lancaster campus only. The estimated cost for the Lancaster wireless equipment as well as a 50% Systems Administrator to maintain the service was \$245,748.00 in 2007. However, the plan does not identify the required cabling for internal and external placement of access points. Cost estimates for the cabling would be needed

before proceeding with this project. Also, the plan does not include the Palmdale facility. Additional equipment would be required to provide a similar service at the Palmdale facility or other AVC facilities.

The many applications and services provided and supported by the ITS Area are operating on aging servers, and without adequate redundancy in cases of failure. In addition, the institution has not implemented a comprehensive, scalable storage management plan such as a storage area network. These projects are encompassed in a plan that is under development to consolidate the institution's servers and back-up systems while reducing the Network Operations Center's energy consumption "footprint". The goal with the Server Consolidation Project is to address the problem of aging servers and back-up equipment while reaping the benefits of built-in redundancy, scalability and energy cost reduction. This project is anticipated to cost \$500,000.00 to \$1,000,000.00, but can likely be implemented on a lease plan or in phases. Grant funding for this project will be pursued.

Other projects that have been discussed as institutional priorities, but have not received any budgetary commitment include a more comprehensive networked video conferencing system, video surveillance systems integrated with the electronic lock project, and an updated radio communications system.

Finally, a facility to accommodate the growing ITS Area personnel will be required. Some very preliminary discussions regarding the remodeling of the current Student Services building have taken place with a potential accommodation for some ITS Area office space included. However, competition for facility space is intense and increases as the institution grows.

Section IV. Summaries and Recommendations

A. Significant Findings

Significant findings described in this document include the following:

- The ITS Area was highly commended for the quality of support services provided to the district in the 2004 Accreditation Commission's Evaluation Report of AVC.
- A number of key ITS Area positions remain unfunded, despite repeated requests and significant justifications based on institutional priorities.
- The level of technical support provided to the institution, particularly to faculty, students and the educational technologies in use, is inadequate.
- The ITS Area's operating funds and declining budget allocation as a percentage of district expenditures is insufficient to enable continuing technical support of the institution at existing levels, much less to expand the level of technical support by adding new applications and services.
- Implementation of new IT applications has continued to occur without allocated funding for technical support personnel or ongoing maintenance costs. ITS is often pushed by other areas to implement an IT solution based on the availability of initial one-time or categorical funds. This has resulted in poorly supported

applications, overburdened technical support personnel, and equipment with no replacement plan in place.

- The ITS Area facilities are dispersed and inadequate.
- Information Technology equipment and system resources are aging with no sign of institutional support for an ongoing replacement plan.
- Communications between the ITS Area and institutional constituent groups is deficient in both directions. Constituent groups indicate that they are uninformed about ITS Area projects or service changes that may affect them. Information technology projects are often planned and sometimes implemented by district groups or individuals without ITS collaboration.
- At current staffing and funding levels, the ITS Area is unable to keep pace with the increasing expectations of the district’s IT users.

B. Major Recommendations

Actions plans designed to support the ITS Area’s Operational Outcomes and address the inadequacies summarized as significant findings in section IV. A. of this document are described below with estimated implementation costs and timelines where applicable. As expected, several of these recommendations are also described as unfunded budget augmentations elsewhere in this document.

Recommendation	Estimated Cost	Implementation Timeline	ITS Area Operational Outcome
Fill key ITS Area positions as requested. ⁵⁰	\$ 482,813.52	3 – 5 years	1, 2, 3, 4, 5, 6
Establish a forum for dialog between ITS and faculty regarding support for educational technology.	--	Spring 2009	4, 5
Allocate ITS Area budget augmentations as requested. ⁵¹	\$ 639,096.00	3 – 5 years	1, 6
Inform district employees of procedures such as the IT acquisition procedure briefly discussed in section II. E. on page 34 of this document.	--	Post procedures on Information Technology web pages and widely publicize standard procedures each semester beginning Spring 2009.	3, 4, 5

⁵⁰ See table of “Positions Requested in FY0809” on page 43 of this document.

⁵¹ See table of “Augmentations Requested in FY0809” on pages 43-44 of this document

Recommendation	Estimated Cost	Implementation Timeline	ITS Area Operational Outcome
Work with Facilities Planning and Campus Development to identify facilities to accommodate ITS Area personnel and services.	Unknown, to be estimated by Facilities Planning and Campus Development office.	3 – 5 years	2, 3, 6
Complete and implement Server Consolidation Project discussed in section III. D. on page 47 of this document.	\$500,000.00 - \$1,000,000.00	3 – 10 years	1, 2, 4, 6

While the 2004 Accreditation Commission’s commendation of ITS is evidence that the service area is doing a good job with its available resources, given the increasing reliance on information technology as critical to the institution’s mission, a stronger commitment in terms of ITS Area resources is needed. The ITS Area Vision is to provide reliable, accessible, high quality information technology services supporting the district’s instructional and operational needs. This program review has identified numerous obstacles to this vision. In addition, information technology underpins every Guiding Principle of the Educational Master Plan as well as providing the foundation on which the operation of any institution of higher education relies. With the immense dependence that the institution has on information technology services, AVC must ensure a stronger commitment to providing the resources necessary to support the operation of the district and to sustain the Educational Master Plan and its Guiding Principles.