

Annual Program Review: Information Technology

Review time period: July 1, 2019 to June 30, 2020

1. Purpose of the Program

- a. State the purpose of program, area or unit and how the it supports the College Mission.

The Palo Verde College Information Technology Department will provide the quality technology and support our student's needs for their personal and professional growth.

- b. How does the program, area, or unit support the College Mission?

- The Palo Verde College Information Technology Department is committed to provide the best technology possible for all students to be successful and achieve their personal and professional academic goals.

2. Population(s) Served

- a. Describe the populations served by the program, area or unit, identifying special populations, if any.

- At three physical locations: Blythe Main Campus, Needles Center, Child Development Center.
- Students, faculty, adjunct faculty, staff, outside agencies through system integrations, the public and community members making use of campus facilities/web resources/communication systems.
- To a lesser but growing extent, correspondence students, incarcerated students, online students, and off-site adjunct faculty members.
- Disabled students through assistive technology
- Public and outside agencies via college website and communications services

- b. Describe other populations that should be served by the program, area or unit and identify plans to implement.

- We would like to offer a better educational experience to remote and incarcerated students.

3. Accomplishments in Achieving Goals

- a. List area-related Strategic Planning Goals and program, area or unit specific goals, and describe progress in achieving each goal, strategy, objective, and appropriate task during the review period.

Strategic Planning Goals:

Task #	Task	Progress Report
7.1.1.1	Work with the Technology Committee to assess our current technology and if we are meeting the District's needs. If we are not meeting needs, develop a plan and timeline to resolve the deficiency (2017-18)	The committee is meeting regularly to provide a forum to address these needs.
7.1.1.2	Work with the Technology committee and all constituent groups to assess the technology needed for the near future. If a future need is found, prepare a plan and budget to acquire the technology and training before the need arrives (2017-18 and ongoing).	The Program Review Committee has incorporated snapshot/addendums for all divisions, and technology needs are highlighted for the current and future academic years.

7.1.1.3	Annually evaluate the training and technical support IT provides for faculty and staff to ensure these services are appropriate and effective.	The snapshot/addendum provides a forum for equity analysis for the impact of the training that has been provided, and if there are any disproportionate impacts, then they will be singled out and addressed.
7.2.1.1	Send IT staff to training annually to ensure they can provide state-of-the-art support for new technology and security.	IT staff regularly sent for state-of-the-art training, provide in-house IT-specific online training resources, and attend Microsoft Ignite annually as scheduling permits.
7.2.1.2	Develop optional and mandatory training for all staff and faculty to ensure they are knowledgeable of district technology and security needs, policies, and procedures (ongoing as needed).	This is being addressed through the BP and APs at the district level. In addition, all staff have access to online training opportunities through Lynda.com, Keenan (insurance carrier), and Canvas.

Department Goals:

- Our 10G WAN equipment is in the process of being deployed. A 10G WAN will facilitate building an Azure Disaster Recovery site for servers and services needed to maintain the District's continuity of business in the event our on-premises servers or services are destroyed or temporarily inaccessible.
- Deploy more automated Endpoint Detection and Response (EDR) with 24/7 third-party monitoring. EDR will help reduce the impact of Ransomware.
- Add immutable storage to our current server backup system or migrate to a new backup system that has immutable storage abilities to reduce the impact of Ransomware.
- Upgrade the District's phone system from Microsoft Skype for Business to Microsoft Teams.

b. Explain modifications, if any, of program, area, or unit-specific goals for the upcoming year.

None

4. Service Area Outcomes (SAO)

a. Revise if needed and provide metric data for Service Area Outcomes in the area or unit.

Service Area Outcome	Metric
Information Technology/SAO #1: The IT Department will provide ongoing support regarding the usage and proper functioning of the technology resources that support District and instructional operations.	The number of helpdesk support tickets serviced/events supported during the annual review period. Helpdesk tickets are not an accurate assessment of tasks complete because the helpdesk system is not the only way to contact IT.
Information Technology/SAO #2: The IT Department will maintain appropriate and current technology resources for the District in accordance with a standardized replacement methodology.	The percentage/number of desktop computers, servers, network/infrastructure devices replaced or upgraded/refreshed within the annual review period. <i>See detail table provided in Section #8.</i>

b. What changes and initiatives were undertaken during the review period to improve SAO outcomes?

Few of the changes we intended to make were made due to the demands COVID placed on the department.

5. Strengths, Weaknesses & Accomplishments/Activities

a. List and comment on the major strengths of the program, area, or unit.

- We have replaced our traditional VPN with Zscaler ZPA for easier user remote access to internal resources and applications.
- Added Zscaler ZIA for internet security to all district laptops.
- Adapted to COVID by significantly increasing our remote learning and employee access capabilities.

b. List and comment on the major weaknesses of the program, area, or unit. Discuss gaps or issues identified in section 4 and propose solutions.

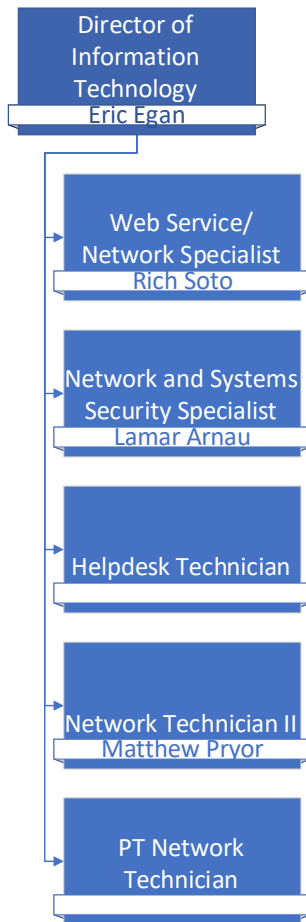
- Better disaster recovery capabilities.
 - We currently back up critical files and store them off-site, but we do not have a "Disaster Recover Site" to maintain the continuity of business in the event of the total loss of the main server room or Administration building. We will be building a "Cold" (the normal state is off) standby recovery site in Microsoft Azure. We plan on building a standby recovery site in Azure that would allow us to have business-critical services up and running quickly.
 - Add immutable storage and backups to be better prepared for Ransomware.
 - We have been migrating servers and services to the cloud and need to continue.

c. List activities and discuss accomplishments during review period.

See attached Information Technology Board Reports for details on activities.

6. Human Resources and Staff Development

a. Provide current organization chart of the program, area or unit, showing key functions and responsibilities.



There is a Help Desk Tech I located in Needles, but organizationally this is listed in the Needles organizational chart.

- Director of IT
 - Plan, organize, control, and direct the activities and operations of the Information Technology Department; evaluate, develop, modify and implement information systems standards and procedures; establish procedures for the maintenance of the District's database integrity.
- Web Service/Network Specialist
 - Website
 - Phone system
 - Disaster recovery
 - Network Equipment
 - Servers
- Network and Systems Security Specialist
 - Network Admin
 - Security
 - Servers
 - Network Equipment
- PT Helpdesk Technician
 - Helpdesk
- Network Technician II
 - Helpdesk

- Network Technician
- Helpdesk Technician
 - Helpdesk
 - Purchasing

b. Are current management and staff adequate to perform functions and responsibilities satisfactorily and to achieve program, area, or unit goals? Explain.

It is unknown if current management and staff are adequate because we do not know what the "New Normal" after COVID will be. Current IT staffing is very strained and insufficient because of all the rapid changes due to COVID. Current staffing is not adequate to support the Performing Arts Complex or the new athletic program's events, e.g., basketball games, etc.

c. Describe specific professional development activities in which program, area, or unit members participate and explain how such activities benefit or enhance the program and support and facilitate student learning.

- CISOA Conference and CISOA, Eric Egan – Networking with other CCC IT Directors, IT Security training, cooperative state technology projects, technology interaction with student success initiatives.
- We subscribe to an online training service that offers live online classes as well as self-paced recorded classes.
- Lamar Arnau recently earned a number of Microsoft Azure certifications.
- The goal is for each team member to spend 10% of the workweek in training.

d. Describe areas of unmet professional development needs among personnel in this program, area, or unit, if applicable, and outline plans to address these needs.

- We almost have sufficient staffing to meet the day-to-day tasks, but current staffing levels make it very difficult to allocate time to training.
- More conferences like Black Hat and RSA security conferences.
- Increase departmental cross-training.

e. Describe organizational changes that would improve program, area or unit performance. Provide timelines for the achievement of such changes and describe measures that assess the effectiveness of such changes.

- Changing current half-time Help Desk position at the main campus into full-time would help staff the needs of the Performing Arts Complex, the athletic program's technical support needs and faculty and staff training. Making that position full-time would also allow for more training time for the IT team members.

7. Facilities

a. Are current facilities adequate to support the program, area, or unit? Explain.

- The current IT staff workspace and equipment rooms are adequate for current needs. The current location is perfect for providing responsive support to students, faculty, and staff.

b. Describe plans for future changes to support facilities.

- Move more to the cloud.

8. Technology and Equipment

a. Is the current technology and equipment adequate to support the program, area or unit? Explain.

- The District will need to increase spending on cybersecurity, online education, a remote workforce. If the adoption of additional technology continues, we may need helpdesk staff just for faculty and students.
- b. Describe plans for future changes to support technology or equipment.
- Move more to the cloud.
 - Natural gas-powered generator for longer data center runtime during power outage. Current run time on battery backup systems only provides time for system shutdowns. Many services require 24/7 availability, such as email exchange, college website, online registration, Canvas online courses system. A generator would enable these systems to remain available even during extended outages at the main campus.
 - Azure disaster recovery site – enabling rapid fail-over to cloud copy of critical systems. In the event of extensive damage to equipment or primary campus facility, these cloud replicas could be quickly switched on for better business continuity.
 - More security cameras.

9. Financial Resources

- a. Provide an appropriate financial report for program, area or unit during reporting period. Explain any significant deviations from previous reporting period.

Budget Code	MIS	
2019-2020	Budgeted	Expended
Supplies	\$22,839.45	\$22,839.45
Benefits	\$202,752.30	\$202,752.30
Conferences	\$7,961.84	\$7,961.84
Contracts	\$472,224.56	\$456,564.25
Copying/Printing	\$60.45	\$60.45
Equipment	\$50,283.02	\$50,283.02
Professional Growth	\$4,590.00	\$4,590.00
Salaries	\$432,617.61	\$432,617.61
Student Workers	\$3,246.25	\$3,246.25
Travel	\$698.78	\$698.78
Utilities	\$580.69	\$580.69

- b. Describe whether the current budget is adequate to carry out the responsibilities of the program, area or unit or operation.
- It is difficult to determine if the current budget is adequate to meet current ongoing needs because of COVID. 1. What is a temporary increase in spending, and what will be ongoing? 2. How much support will faculty need as online education expands? 3. What new apps and services will be needed for remote workers and online education? The need for a backup generator remains.
- c. Describe plans for future budget changes, if any.
- Request increased funding for cybersecurity.

10. Four-year plan

a. Place future request for resources (human, facilities, technology & equipment, and financial) in a four-year matrix to facilitate future planning.

			2020-21	2021-22	2022-23	2023-24
Future Area Needs	Human Resources			½ time helpdesk position to full-time	Add a position for Online Education support for faculty and students.	
	Fiscal Resources			Increase Cybersecurity funding.	Increase technology refresh budget by 50% Increase Cybersecurity funding.	Increase Cybersecurity funding.
	Physical Resources			Backup power generator. More security cameras.	More security cameras.	More security cameras.
	Technology Resources			Azure disaster recovery site. Better Endpoint Detection and Response	Move more to the cloud.	Move more to the cloud.

Board Reports

6/1/2020

- We have prepared 25 refurbished Dell laptops for staff. Like the refurbished desktops we have been purchasing, we have the distributor take pre-owned laptops with a good processor, double its memory, and replace its slow mechanical hard drive with an extremely fast solid-state harddrive. The result is an excellent laptop that costs the District only \$320 each, including tax and shipping, rather than a \$1,000+ for each laptop. These laptops can also plug into a "dock," turning them into a desktop with a normal monitor(s), keyboard, mouse, printer, speakers, etc. The result is the instructor will not need to have a desktop *and* a laptop.
- Deployed a new security service that scans all machines for vulnerabilities in our internal and external network. This service was deployed by PVC IT but paid for by the Chancellor's office. :)
- Continued integration of CampusLogic for Financial Aid
- Decommissioned another server (Called "DAuthority"), because what it did is now done by a single server that has already replaced over half a dozen other servers, making management more efficient and saving the district considerable money.
- Deployed "AD Recycle Bin," a free feature in the new server operating system that increases our backup and recovery abilities.
- Assisted staff with telecommuting.
- Setting up laptops for staff and faculty.
- Performed cleaning and organizing of our internal directory database (it keeps track of every person, machine, services, security settings, passwords, and more), making it more secure and easier to manage.
- Resolved two issues with pvc-services – one was caused by a bad patch, the other was a bad java upgrade.
- Installed a video security system at CDC. One 360 degree camera in each classroom, two cameras are surveilling the playground from two different angles, one outside on the north wall surveilling the vehicle entrance/exit, and one facing west surveilling the parking lot.
- We upgraded our two primary server backup systems to the newest version.
- In the process of installing another 25 webcams on user's desktops so more people can participate with video when in a Zoom meeting.

5/5/2020

- Prepared 75 EOPS Laptops.
- Prepared 30+ laptops for staff to work from home. (and continue to do so.)
- Helped two teams in PVC vans deliver the EOPS laptops to students.
- Continued working with the Audio Visual architects on the new CS conference room.
- Built, deployed, and tested a new easier to use, and more secure Virtual Private Access (VPN) for staff and faculty. We are not working with a few test users to work through the remaining custom configuration and issues.
- Training Staff and faculty to use a VPN.
- We have deployed "Proctorio" for faculty and students.
 - *Proctorio is a remote proctoring tool integrated into Canvas quizzes that helps maintain the academic integrity of online exams. It allows instructors to choose settings that manage how an exam is proctored.*
- We have deployed "Labsert for faculty and students."
 - *Labster gives students access to a realistic lab experience that will let them perform experiments and practice their skills in a fun and risk-free learning environment.*
- We continued deploying CampusLogic for the Financial Aid department.
 - *Sales says: Complex processes are causing students to get lost on the financial aid journey, often dropping out or over-borrowing. They can't figure out how much your institution costs, how they'll pay for school, or how to stay in school. This confusion leads your prospective students to your competitors,*

or worse, causes them to give up on college altogether. CampusLogic's award-winning platform smooths the way—for your students and your staff.

4/6/2020

- Helped to restore the Unified District's phone system
- Updated servers
- Enabled Data Protection Manager (Our backup and recovery program) to export to Microsoft Azure (cloud service), so critical servers are automatically backed up to an off-site location, not on the west coast.
- Fixed student Colleague to AD accounts
- Automated Student Office 365 Licensing.
- Student email accounts are nearly functional again.
- Things Lamar learned at Chief Information Systems Officers Association (CISOA) conference that helped secure our network:
 - Bloodhound to find group mappings
 - Cleared account operators group
 - Checked our domain controller auditing and alerting systems.
- Finished Single Sign-On and Virtual Machines to run the new CampusLogic for the Financial Aid Department
- Configured and Deploy a new (recycled) host for the websites and services and redundancy.
- Finished setting replicas for both clusters. (A "Replica" is a copy of a server in another location for when the primary server fails.) For critical servers, the replication to the standby server happens every five seconds.)
- Repurposed and readied 20 GED laptops in case they are needed for remote workers. The laptops can quickly be returned to service as GED laptops when the current crisis is over.
- Researched, found, and purchased an easier and more secure Virtual Private Network (VPN). The new VPN will make it easier for our new remote workforce to connect back to their desktop at PVC from any location. The new VPN includes Internet security as well; our remote users will be more protected when using a district laptop from home.
- Helped new remote users adjust to working remotely.

3/2/2020

- Built and in the process of testing a possible replacement for our student print stations.
- Setup CS123 for the accreditation team.
 - Ran additional network cables.
 - Installed more network ports in cs123.
 - Setup the printer for the accreditation team
 - Set up a workstation for the accreditation team.
- In the process of updating difficult desktops and getting them back to auto-updating.
- Continued to enable more desktops to be started remotely to be after hours.
- Rearranged the classroom for Maria Gamez.
- Replaced hard drives in security server to restore video security to 100%
- Enabled automatic off-site backup of critical servers on the new backup servers.
- Moved INOW and INOW-SQL servers off host14 to a new, faster set of servers that will reduce downtime.
- Moved COLLAPP, COLLDB1, and PVCBIZSQL off host18 to a new, faster set of servers that will reduce downtime.
- Set up another large physical server in the CL building to hold copies of Virtual servers in the CS building. These copies (called "replicas") and are updated every five minutes. If the original server fails, the replica can be activated in minutes.
- Continued to segment the network into smaller pieces to increase security. In the end, computers will only be able to access the computers they have to.
- In the process of replacing our Antivirus program with a Microsoft Atchaved Protection.
- Worked with various Audio Visual specialists for the remodeling project.

2/4/2020

- Installed a water protection shield over some of the servers in the main server rooms for water leaks from above.
- Deployed extremely critical Server updates.
- Repaired major components on the large uninterruptible power supply for our main server group at the main campus.
- Started a new power management system for our cluster host servers to do graceful autonomous shutdowns of their guest virtual machines and then themselves when we have a power failure.
- Began setting a new student pay-to-print system, to replace the current, problem pron third party system. PaperCut Student Printing.
- In the process of updating and resolving issues with the PVC print management system, PaperCut, to report printing more accurately.
- Received two new phones to begin planning the upgrade of the phone system.
- Visited needles to deliver equipment and supplies, retrieved some servers to be refurbished and repurposed.
- In the process of deploying new desktops to the 3D printing and graphics art classroom.
- Update critical server security agents (RedCloak Agents).
- Updated Firewalls.
- Fix network security scanning systems scanning issues.
- Update servers with critical patches
- Updated Admin Center to work with the new server clusters.
- Fix issue with Canvas Shibboleth

1/13/2020

- Updated ClearPass; Network Access Control to the newest version.
- Configured Replica VM's for many of our servers. A replica is an automatic copy of a primary live server to a backup server that is off and in a different building. The replicas (backup servers) are updated every five minutes and can be started up in the event the primary server fails.
- Moved HR's technology to their temporary location.
- Resolved major issue with installing and distributing the new Adobe products, Acrobat Pro, Photoshop, Illustrator etc.
- Lamar and I went to Needles and finished most of the technology configuration for the trailers; Wi-Fi, phones, Polycom, network, etc.
- Moved the last of the server into the new high performance server clusters we built.

12/3/2019

- One of the more interesting things we did this month is saving the District \$30,000. One of our server clusters runs on a program built by Nutanix. They recently raised their maintenance prices. Nutanix wanted \$30,000 for tech support for our four-server cluster for three years! Not hardware warranty, just tech support! Nutanix is awesome, but not that awesome. So we purchased about \$200 in parts from eBay and converted the Nutanix cluster to Microsoft Storage Spaces Direct (S2D). We recently deployed a new five-server Microsoft S2D cluster, so we are very familiar with it, and the conversion from Nutanix to S2D went very well. The new S2D cluster is already in service.
- Finish configuring Dell CTA/RedCloak/Snare on Firewalls and Servers. (Security)
- Moved the majority of virtual servers off of Host servers onto the two clusters.
- Worked with Lamar to install new HBA's and get nodes added to the cluster.
- Worked with Lamar to move virtual servers off hosts to clusters.

- Backup server audit after moving virtual servers to clusters.
- Fixed the cost-per-print report in PaperCut.
- Work in theater for PVHS Talent Show at the beginning of the month. Ran the soundboard for the tech rehearsals and actual show.
- Took a school car to Palm Desert to pick up the drivers who took the vans to get wrapped.
- Created employee ID cards. Got the first four printed. J
- Assisted Matt in deploying new computers that he wanted off Windows 7 before his leave.
- Staff has been having problems with Office updates lately, we have been running a lot of the. Microsoft Repair Tool and installing Office 365 for problem machines.
- Setup a board surface rack to charge and organize all the laptops in a small space.

11/4/2019

- Worked with the company, "SoundImage" to make sure everything in the Performing Arts Complex auditorium is optimal.
- Restored the Scantron machine.
- Working to change a server cluster from Nutanix to Storage Spaces Direct. Saving the District about \$11,000 a year.
- Working on getting a second scantron machine setup as a backup and for the time of year, the scantron receives heavy use.
- Upgrading the video security servers to a new version and increasing recording capacity.
- Setup TrueVis plotter for Staci.
- Continue to track down desktops that do not auto-update.
- Work with Dr. Singler to get speaker situation taken care of in the music classrooms & her office.
- Work on Dr. Cicci's Microsoft Word problem & getting her a new machine.
- Help keep staff happy during the weird Outlook problem at the beginning of the month
- Established a new system for Board laptops.
- We had a UPS fail in Needles, but we had parts on standby. Reordering the stand by parts.
- Ordered equipment for the Needles trailers.
- Working with Dell engineers on some issues we are having with some critical equipment. So far Dell is unable to resolve the issue.
- Started rolling out 24/7 monitoring for 10 critical servers by SecureWorks with "Red Cloak" and "Snare." Setup a "Counter Threat Appliance" for the new security agents to report to.
- Still rolling out new desktops for employees.
- Started building a "Penetration Test" machine and tools to test our security on a continuous basis.

9/30/2019

- New cameras in Scott's new classroom
- New wall screen and projector in Scott's new classroom
- Designed a lot of graphics for various departments.
- Finished building our server cluster and have move about 40 virtual servers onto it from old servers.
- Resolved a phone issue with Microsoft engineers.
- Resolving issues with desktops that will not auto patch.
- Moved around the technology in the HR Dept and added a new Tech 1's station.
- Added a new workstation, phone etc in student services.
- Replaced about 55 out of 100 desktops we have to deploy.
- Built a separate mini network for the nursing lab so a third party can manage their computers without access to the districts network.
- Tested USB Polycom phones for the Needles project; they worked well.
- Assisted 30 students with the foundation laptops

- Deployed new laptops to staff.

9/3/2019

- Wake On LAN project. Continuing to track down PCs that do not respond to wake up commands.
- Moved many staff/faculty offices and classrooms during the beginning of the semester (get their computers set up and such).
- Assist with setting up laptops for students awarded laptops
- Fixed camera in ASG
- Minolta cost per print issues resolved.
- Created a new print server.
- IEN student account issues and access resolved.
- Setting up account/phones and moving new faculty/staff
- Refreshed a few servers to the newest version.
- Working with Jeremy to fix how eulician exports to our systems to fix the automatic creation of student email accounts in Office 365.
- New Curriculum website
- New CalFresh Website
- Setup New accounts and laptops for foundation
- New DPM server/New landing servers for restore
- Multiple photoshop projects for various departments.
- Server security updates
- Gathered the requested information for the accreditation project.
- Started deploying new desktops for staff and faculty.
- We have improved the IT workbench and workroom for better management of desktop repairs.

8/2/2019

- Brought a new server cluster (five servers that act as one) online and now testing it. This will make everything to do with student data faster, Ellucian, PVC services, Imagenow etc. This will be the end of about a year long project.
- Upgraded our existing server cluster.
- Deployed a new security server (Called Tenable) that can scan all network devices, (not just desktops and servers), to find any vulnerabilities that we need to patch or upgrade.
- Some desktops were not updating after hours because the patching server could not wake them up. Because of this, they would interrupt the users during the workday. We are going to each desktop to ensure they can be started up remotely by our patching server.
- Going to each desktop to make sure they are updating.
- Deploying 50 new student computers that were received in June.
- Moved Scotts computer lab to PAC.