TECHNOLOGY

MASTER PLAN 2020-2025

CUESTA COLLEGE

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Introduction

The Cuesta College Technology Plan provides a framework for the implementation of technology initiatives that directly support the mission and strategic college goals. The Technology Plan is intended to provide a roadmap for the next five years that will guide prioritization and action for resource allocation and implementation of Cuesta's technology initiatives.

Cuesta College practices a data-informed approach to continuous improvement of institutional practice and effectiveness. In early spring 2020, the Cuesta College completed the Strategic Plan 2020-2023 focused on progress toward institutional goals as outlined in the San Luis Obispo County Community College District Comprehensive Master Plan 2016-2026: Educational Master Plan, the Student Equity and Achievement Plan, the Guided Pathways Implementation Plan, and Cuesta College's local Vision for Success goals. Strategic planning brings clarity to the decision-making process and sets forth the three-year plan for allocation of resources to most efficiently and effectively achieve the institutional goals. The Strategic Plan 2020-2023 aligns Cuesta College to the California Community Colleges Chancellor's Office "Vision for Success". This alignment focuses on maximizing student's opportunities to achieve their educational goals while specifically working to address the identified equity achievement gaps at the college. Technology resource allocation is vital to the successful implementation and sustainability of the Strategic Plan and fundamental to maintaining an effective environment for the core mission of teaching and learning. The Technology Plan 2020-2025 was developed through the Technology and Web Committee. The Technology Plan recommends allocations and initiatives designed to improve sustainability of currently implemented technologies and support innovative technologies.

The COVID-19 pandemic during the 2020 spring semester created a significant shift in Cuesta's technology posture and IT services. Pre-COVID-19, secure information transactions were primarily conducted on-campus. Teaching and learning were mainly on-campus

activities, and items such as payroll, financial aid, and counseling were physically conducted on the Cuesta network. During COVID-19 many of these activities moved off campus creating a shift in the information technology services and security.

The Technology Plan 2020-2025 has four goals to address the functional use of technology systems and resources across the district.

Goal 1: Increase Service Levels for Technology Resources and Services

Goal 2: Ensure Timely Access to Information

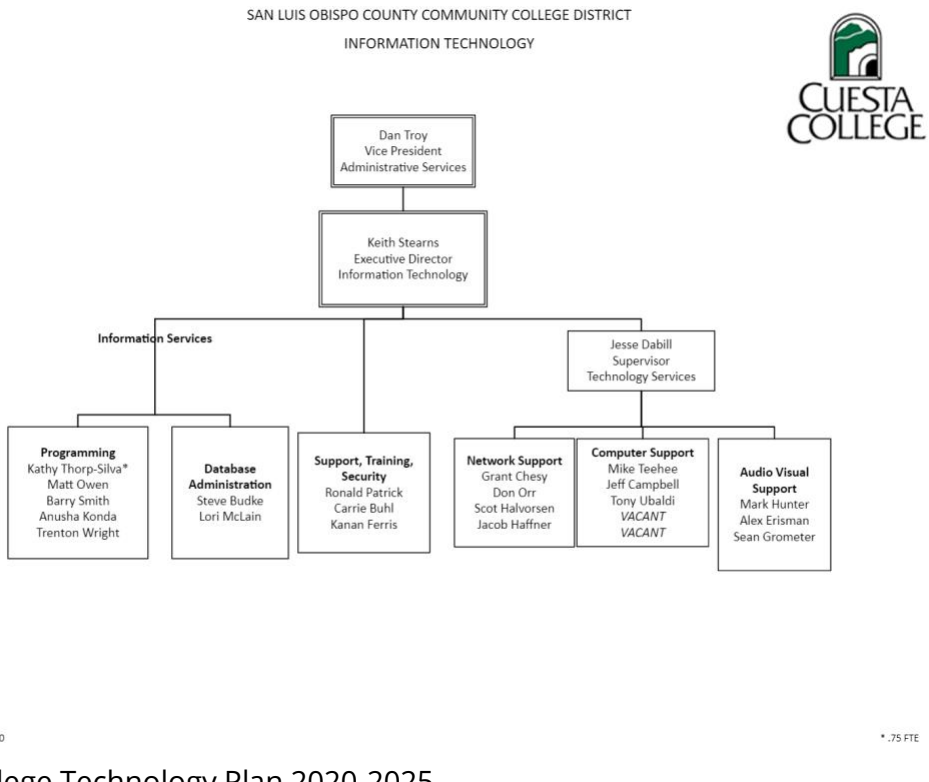
Goal 3: Pursue a Sustainable Model for Technology Resources

Goal 4: Promote a Safe and Secure Operating Environment

Information Technology at Cuesta College

Organization

The Cuesta College Information Technology (IT) department provides support to Cuesta College employees including computer hardware, software, audio/visual hardware and software. The department services include technology support, technology training, information security, network maintenance, programming, and database support. The Information Technology department works closely with the distance education faculty support team to assist with appropriate software, support and training for faculty as well.



Governance

Two separate content committees, Technology and Web Committee and Online Education Committee, advise Information Technology on matters related to administrative and instructional technologies.

These committees have members who serve on both and collaborate with one another to ensure a close working relationship. Each committee develops and posts agendas and minutes to strengthen communication and consistency in developing and implementing college technology recommendations.

Technology and Web Committee

The Technology and Web Committee is a content committee which develops and recommends standards and policies regarding technology and web resources at Cuesta College. The Educational and Facilities Master plans, the Strategic Plan, and the Technology Plan guide the Committee's decisions. The Committee facilitates college-wide participation to ensure appropriate and adequate technology and web services. The Committee recommends processes for updating and replacing district technology and web services.

Online Education Committee

The Online Education Committee (OEC) promotes the quality, growth and sustainability of online learning and instructional technologies at Cuesta College. This Committee develops and recommends standards and policies in the following areas:

- Technology training and support for online learning and course development to enhance student success
- Course delivery and evaluation methods
- Faculty qualifications for assignment, and evaluation standards
- Compliance with current state and federal regulations

Facilities and Staffing

Measure L funded construction of a data center, building 2800, was completed in early spring 2020. The new center advances the readiness of Cuesta College to leverage cloud services through provision of a reconfigured new centralized fiber plant which provides increased speed and a simplified architecture for San Luis Obispo. The new data center additionally provides offices for the network

technicians, programmers, and database administrators. The computer technicians, technology trainer, and user support offices have offices in 3180 on the SLO campus. The audio/visual technicians are in 3141. IT also uses the 4109 area on the SLO campus for storage and processing of computer equipment.

IT employees have designated office space in building N3100 on the North County Campus to facilitate ease of maintenance and upgrades.

IT Staffing:

FTE	Position
1	Executive Director Information Technology
1	Supervisor Technology Services
1	User Support / Support Assistant
1	Technology Trainer / User Support
1	Information Security Specialist
1	Senior Network Administrator
3	Network Administrator
3	Audio Visual Technician
5	Computer Technician
4.75	Programmer Analyst
2	Database Administrator

Office Technology

The IT department maintains several office technologies such as telephones, computers, printers and scanners. Each department/division is responsible for funding its technology purchases and refreshes. Cuesta owns and maintains 1017 office computers with a total value of $1,086,550. Annual replacement costs for those computers is $175,930.04.

Server Infrastructure

Cuesta College has implemented virtual server infrastructures at both San Luis Obispo (SLO) and North County Center (NCC). The hardware supporting Cuesta's enterprise applications is sized appropriately for the demand of the user community. Cuesta College's IT department maintains monitoring of mission critical systems. Virtual server infrastructure at NCC matches the SLO equipment to facilitate disaster recovery. Cuesta's South County Center relies on the network infrastructure of Lucia Mar Unified School District. The school district provides Cuesta's network connectivity in general. In addition, they support two virtual private network connections which allow network access to our student information systems as well as other secure network software.

Cuesta College's server and storage infrastructure will reach end of life in 2021. IT is leveraging the Measure L general obligation bond to upgrade technology equipment as a long-term sustainable replacement and upgrade resource is pursued. These replacements are planned for 2021-22 and again in 2026-27 as indicated in the Technology Implementation Plan at an approximate cost of $520,000. Cuesta College will continue to increase utilization of virtual private cloud hosting as well as cloud-based software in order to reduce infrastructure costs, environmental risk, physical risk, and equipment costs.

The approximate ten-year cost for maintaining on premises server and storage infrastructure at both SLO and NCC is $1,660,000, whereas costs for cloud services would be $1,560,000. Cuesta needs to continue to monitor cloud costs and advantages while searching for ongoing funding sources to facilitate a cloud transition.

Demands on Cuesta College's network server topology continue to increase as academic and student support programs, information security requirements, and institutional initiatives expand. The planned implementation of Voice over Internet Protocol (VoIP) will further increase the demands on the network. Goals and priorities contained within the Technology Plan related to the total cost of ownership, integrated planning, and adoption of cloud-based technologies will support the long-term sustainability of Cuesta College's network server topology.

Network Infrastructure

The passing of Measure L provided much needed funding for Cuesta College to upgrade the network infrastructure which was badly in need of repair. $16,000,000 of the total bond was allocated to technology upgrades. The approximate cost of replacing the entire network infrastructure is estimated near $15,000,000. Overall costs to maintain the network and supporting equipment is approximately $2,500,000 annually. In 2016 Cuesta created a Technology Implementation Plan to match the available Measure L funding to the needed infrastructure upgrades. The plan discovered several technology dependencies, such as the need for a Data Center before running fiber or upgrading most building telecom rooms. The plan has proven extremely valuable and accurate. The timing of several projects has been changed due to dependencies and supplemental funding sources.

The majority of Cuesta's fiber and telecom room upgrades are expected to be complete by the end of the second issuance (March 2021), along with the Voice over Internet Protocol (VoIP) phone upgrades which depend on those upgrades.

Classroom and Laboratory Technology

Nearly all Cuesta College instructional spaces on the SLO and NCC campuses are outfitted with instructional technology which includes an internet connected computer workstation with overhead display through a digital projector. Measure L includes funding for upgrading all classroom audio visual systems to a new standard. The updated classroom standard will be created with faculty in cooperation with the IT department ensuring appropriate and adequate classroom resources for classroom learning.

Classroom computer labs are outfitted with 1:1 student computer workstation in addition to the classroom instructional technology. The student computer workstations have internet connectivity and are installed with software identified to meet learning outcomes of various programs of study. Classroom and laboratory technology are at various stages of productive use life cycle allowing for phased recapitalization. Traditionally, replacement has been funded through resource allocation requests integrated into the Institutional Program Plan and Review, and Comprehensive Program Planning and Review processes. IT maintains and annually distributes a lifecycle replacement schedule for equipment.

IT updates and maintains 75 laboratory classrooms with a total of 1535 student facing workstations which have a total cost of $1,582,600. Each department is responsible for providing funds for the replacement of laboratory spaces. College-wide the cost of those annual replacements is $250,399.45.

Cuesta's audio-visual systems are installed in 89 SLO and 30 NCC classrooms. The cost to bring all classrooms to the standard being developed will be approximately $2,200,000, assuming a modest growth in the proposed standard. With a ten-year lifecycle for classroom standards, that translates into a $220,000 annual cost to maintain up to date instructional spaces.

Security

Cuesta College is working towards increasing our security profile, including Information security threats that continue to be a serious concern for Cuesta College, as well as the drastic change Covid-19 has had on the security landscape for the district. Services and data that were once only available onsite are being accessed remotely by staff, faculty, and students. In addition, threat actors see opportunity in the chaos of the pandemic and have greatly increased phishing attempts against government and education entities. Cuesta

College continues to improve its security profile and adapt to these emerging threats. The district has worked to keep up with these challenging times, from adopting new VPN technologies for securing connections into Cuesta's network to investigating cloud-based antivirus and end point protection for securing district devices that have moved offsite.

The district has standardized its disaster recovery solution for enterprise applications, as well as distributed application architectures for the SLO and NCC campuses to continue to protect our onsite resources and provide services without disruption. A new data center on the SLO campus has improved physical security and availability of enterprise systems through the deployment of alert systems, server room environmental monitoring, intrusion monitoring, and backup power. While these systems are still inadequate to fully secure Cuesta's technology resources and data, annual security risk assessments using the National Institute of Standards and Technology (NIST) framework help IT improve Cuesta's security posture. The district maintains these systems and procedures to mitigate threats and will continually improve and adapt to emerging threats.

Support Services

Support Services are interwoven through multiple areas at Cuesta College. Student Success and Support Programs provides unified helpdesk services for students. Students are provided a central point of contact for technology, username/passwords, registration, application, and general inquiry. This single point of contact facilitates ease of rapid response to ensure students receive just in time information to support success.

IT provides a helpdesk for all employees that is easily reached via phone, email, and work orders. The IT helpdesk is a primary point of contact for all technologies on campus including classroom media, computers, connectivity, and VoIP phones. The helpdesk resolves first tier matters and refers higher level issues to the appropriate staff for resolution.

The IT department provides technology training across a wide breadth of applications. These trainings are offered by the technology trainer according to a published schedule and upon request. Additionally, the technology trainer and IT department make available a large selection of documentation and training videos that provide quick assistance for technology challenges.

Device support is available from IT for all Cuesta College computer and media technologies. Highly qualified technicians support the ongoing work of employees by responding quickly to address device failure. From keyboards to monitors, PCs to Macs, IT technicians provide the solutions necessary to keep Cuesta College devices operating and connected.

Faculty teaching via the Canvas learning management system receive not only training, but ongoing technical support from the Instructional Designer.

The IT department at Cuesta College will continue to improve support services and meet the technology support expectations of employees and students. A theme across the Technology Plan 2020 – 2025 is to focus on revising policies and procedures to improve transparency of project prioritization, increase training opportunities, improve website content usability and reliability, and introduce an integrated helpdesk that serves students and employees.

Enterprise Applications

Cuesta College has implemented and maintains multiple enterprise platforms and applications to support identified educational and administrative business needs of the college. New third party applications a reviewed against existing applications to ensure functionality does not exist in Cuesta's current application suite.

As contracts are created or renewed, vendors and their products are evaluated to ensure the following.

- End user data privacy, including FERPA
- Accessibility compliance including section 508
- Overall security practices and history
- Data redundancy and disaster recovery
- Response to data breach, including notifications and cost liability
- Ownership of data, including transferring or destroying data upon completion of contract

The following list highlights these applications but is not necessarily a comprehensive list of all enterprise systems.

Canvas

Cuesta College adopted and began instruction on the Canvas Learning Management System (LMS) during the fall 2016 term. The Canvas LMS provides web-based classroom management tools for file hosting, communication, assessment and student performance monitoring. These tools are available to all scheduled courses, as well as campus clubs and organizations. Canvas hardware and software is hosted by Instructure. IT supports Single-Sign-On (SSO) authentication and Student Information System data exchange with Canvas.

Banner

Cuesta College has utilized Ellucian Banner as a Student Information System since 2007. Cuesta enjoys a mature implementation of software including admissions, registration, Degree Works, financial aid, student planning, scheduling, curriculum, student billing,

finance, human resources, Banner document management, and self-service. Many in-house reports, subsystems, and integrations have been developed. Efforts are underway to minimize customization to facilitate uncompromised utility of patches and version updates, and to prepare for a potential transition to cloud service.

SARS – Scheduling and Reporting System

Various departments at Cuesta College utilize the SARS suite of applications to manage student appointments for student support services, and track classroom hours for positive attendance accounting. The Counseling department, CaFE, and DSPS utilize SARS to manage contact types for mandated state reporting. Custom integrations with Banner have been developed to automate data imports to Banner in order to support California Community Colleges Chancellor's Office Management Information Systems reporting mandates. SARS Track is used in tutoring and other positive attendance classrooms.

Google Suite

Cuesta College provides Google accounts to all students. Google provides several easy to use web-based productivity tools that are centrally managed by the IT department and available to students and employees. The G Suite tools allow students to access Gmail, Drive, Calendar, Hangout and other Google tools during their time at Cuesta College. Cuesta sends all official electronic communications to official myCuesta provided student email accounts hosted in Google Gmail.

Office365

Cuesta College provides Office365 accounts for all staff, including their official email account. The solution is provided to employees as part of the annual Microsoft Campus Licensing Agreement through the California Community College Foundation. The Office365 service includes email, OneDrive, SharePoint, Teams, etc. In addition, there are online and downloadable version of Teams, Word, Excel, OneNote, PowerPoint, Outlook, etc. Committees and shared governance organizations use Office365 SharePoint for committee communication and collaboration.

Rave Mobile Safety

Rave Mobile Safety alert system is the emergency communication tool for Cuesta College. Cuesta College also utilizes the Rave's Guardian mobile application for emergency communications. Rave records community contact phone numbers and email addresses allowing the Cuesta College Police Department to quickly and efficiently send out notifications and emergency alerts to faculty, staff, students, and community members.

Aruba

The wireless network solution at Cuesta College underwent a major upgrade in 2017. SLO and NCC locations received all new single mode fiber, core switches, edge switches, and access points in order to maximize wireless network throughput and capacity.

VMWare

IT has standardized the virtual infrastructure on the VMWare platform. This platform provides reliability, security, resiliency, and intuitive functionality for the management of the virtual infrastructure. This software meets current IT needs.

Evisions

Evisions' Argos reporting platform is utilized for self-service access to reports generated from Cuesta College's Banner system. Argos provides access to formatted reports to employees who are authorized to obtain access. Cuesta also utilizes Evisions' Intellicheck and FormFusion products.

Elumen

Cuesta College utilizes Elumen's cloud-based solution to inventory, assess, and report course learning outcomes. The office of Institutional Research manages operational support of the software and Information Technology manages authentication support for the software.

eXplorance Blue

Cuesta College utilizes Blue's cloud-based solution to inventory, analyze, and report student evaluation of Faculty. The office of Institutional Research manages operational support of the software and Information Technology manages authentication support for the software.

AIM

Accessible Information Management (AIM) is a comprehensive accommodation, appointment, and case management software that is utilized primarily by the Disabled Student Programs & Services department at Cuesta College. AIM meets current accessibility requirements for student and staff, provides data protection with 256-bit SSL Encryption, and has secure servers that allow access from any computer with an internet connection. Cuesta College students use the AIM portal to apply to DSPS, to upload documentation, to notify instructors that they are authorized to use DSPS accommodations, and to request and use individual accommodations.

Kurtzweil

Kurzweil 3000 is an Assistive Technology platform that aligns with learning strategies and Cuesta College processes. Kurtzweil offers a multisensory approach and multiple means of

access to text; whether in print or in digital formats. Kurzweil 3000 includes the highest quality Optical Character Recognition (OCR) software available, which reproduces scanned print documents with the exact layout and formatting found in the original. This tool supports students with learning disabilities, those diagnosed with dyslexia, dysgraphia or other literacy challenges. Students can access content and common literacy supports from any device or computer with internet access. Staff and faculty can also utilize Kurtzweil as a tool to ensure accessibility standards are met with any content creation or marketing efforts.

OU Campus

Cuesta College adopted OmniUpdate's OU Campus Software as a Service (SaaS) content management system in 2010.

OU Campus offers web content owners an easy-to-use interface to update web content for their departments without the use of HTML. Content owners are appointed by department and trained in the software so that they can make prompt changes to the website allowing for the most up-to-date information to be provided to our audience.

OU Campus bundles with a ticketing support system and they host the proprietary software and templates; allowing end-users to perform day-to-day maintenance and updates without IT involvement.

Monsido Web Governance

SiteImprove SaaS was implemented in 2014 to support the website policies and procedures by checking for broken links, misspellings, readability score, while assisting in maintaining ADA compliance.

Cuesta changed over to Monsido in 2019 to take advantage of the advanced ADA compliance feature for tracking PDFs.

25Live Pro

CollegeNET's SaaS product, 25Live Pro provides a centralized system for campus space and event scheduling and publishing to college calendars on the website and portal.

Room Scheduling is managed by the Facilities Services department and calendar events are coordinated by the Marketing and Communications department.

Implementation of the Technology Plan

Priorities are embedded in the Technology Plan 2020 – 2025 to enhance the integration of technology planning with the Strategic Plan. Action plans will be developed in coordination with department and divisional heads to scope, prioritize, implement, and maintain projects associated with each priority. Projects will be evaluated and prioritized based on

the goals and priorities listed in the Technology Plan as well as the goals and objectives in the Strategic Plan.

Assessment of the Technology Plan

To support continual improvement of the technology planning process for subsequent technology plans, the Technology and Web Committee will be engaged in assessing the effectiveness of the planning process for the Technology Plan 2020 - 2025. Findings and recommendations identified through the assessment will be utilized in the development of subsequent technology plans.

Goals and Priorities

The following goals and priorities have been identified as the areas of concentration for technology projects in support of the Strategic Plan:

Goal 1: Increase Service Levels for Technology Resources and Services

Priority 1.1: Improve user experience through modernization and expansion of technology services

Cuesta is committed to improving equitable access and the user experience of our technological services by keeping current on application versions, major updates, and keeping employees trained.

IT is beginning to utilize user experience (UX) methodologies to produce data which informs decisions. Through this work, student preferences and opinions will influence major changes using website analytics and surveys.

Conversion of existing paper forms to online services is progressing but needs additional focus. Many existing online services need to be upgraded to current software versions or be replaced using modern software tools. Many paper records are stored throughout the college and still need to be digitized.

Priority 1.2: Improve ability for students and guests to utilize their own devices at all Cuesta College locations

According to the 2019-20 student technology survey, 46% of respondents currently bring their own device to campus, 89% say they could if required. On the same survey, 21% responses indicate some level of dissatisfaction with the campus wireless system.

Cuesta College's 2017 Developing Hispanic-Serving Institutions (DHSI) grant provides funding to improve wireless infrastructure through the year 2022. Many improvements in usability, speed, and coverage has been made since 2017. There continue to be opportunities to provide safe, ubiquitous, and easy to use coverage for our students and other constituents.

Learning Tools Interoperability (LTI) integrations are standardized rules which allow external tools to communicate with LMS systems. With LTI integrations in Canvas, and an increase in cloud offerings of instructional software, many courses have moved away from dependencies on installed software or hardware. This change also increases the student's ability to use their own device, which they are generally more comfortable using.

In addition to wireless expansion and ease of use, other elements like power sources for laptops and electronic devices in strategic gathering areas, as outlined in the 2016-2026 Facilities Master Plan, will be helpful.

Another result of increased ability for students to utilize their own devices is the potential overall decreased cost in purchasing and maintaining devices.

Priority 1.3: Enhance technical proficiency of District employees through training on new and existing technologies offered in various modalities

Cuesta will offer multiple technology training opportunities throughout the year. Trainings will be offered in various modalities including certification programs, workshops, self-paced training, job aids/video tutorials, and ad-hoc one-on-one training sessions. Training will be primarily provided by the Instructional Designer and the Technology Trainer. Additional support and training also will be provided by various Information Technology staff and various designated faculty for distance education support.

In addition to providing training through the various modalities, the Instructional Designer and Technology trainer will partner with the Professional Development Committees in order to provide and advertise training opportunities.

Some self-paced/online training opportunities are made available through the CVC/@ONE and through the Vision Resource Center courses, which are made possible through funding from the California Community College Chancellor's Office.

As technology continues to develop, IT will provide training as needed for improvements to existing technologies, as well as any newly adopted technologies.

Goal 2: Ensure Timely Access to Information

Priority 2.1: Provide relevant, actionable data in support of goals and objectives outlined in Cuesta's Strategic Plan

The goals in Cuesta College's 2020-2023 Strategic Plan work in alignment with campus efforts around the local Vision for Success goals, with a targeted focus on closing equity achievement gaps at Cuesta College. The Strategic Plan includes objectives surrounding Access, Completion, Transfer, Unit Accumulation, Workforce, Facilities and Technology, and Fiscal. Each goal requires actionable data to advance corresponding objectives. Cuesta's IT department will need to modify or expand systems to provide appropriate services and information to advance those objectives.

As an example, Objective 2A from the Strategic Plan states: Increase in the number of students who earn an Associate Degree or Associate Degree for Transfer, credentials, certificates, or specific job-oriented skill sets. The existing Degree Works system contains data on students' progress towards degrees and certificates. The system can be automated to identify students who completed or are close to completing these awards. Then awards can be made, or students can be counseled on remaining work that would complete the award.

Priority 2.2: Improve single point of access for employees and students to login to receive relevant information

Information Technology has successfully converted many software applications and platforms to single sign-on, which allows easy access to important information and better security through authentication.

myCuesta serves as a portal which provides access to self-service and software platforms for students, faculty, and staff.

Students wish to be able to enroll and make changes to their accounts solely online. The portal allows access to information, services, and systems for their account.

Faculty and staff use the portal to gain access to platforms needed to perform their day-to-day duties. The portal also provides access to an Employee dashboard, which provides up to date records of earnings, benefits, pay information, and vacation balances.

Cuesta adopted Office365 to offer the Microsoft suite of applications. Office365 works seamlessly at remote locations and on campus.

IT will continue to convert other applications and platforms which serve the students, faculty, and staff to single sign-on.

Cuesta College provides access to its diverse student, employee, and community audiences and, is committed to ensuring Information and Communication Technology and Instructional Material are in accordance with the Section 508 of the Federal Rehabilitation Act and the Web Content Accessibility Guidelines (WCAG 2.0 Level AA) of the Worldwide Consortium (W3C).

Cuesta is in the process of adopting the Information and Communication Technology and Instructional Material Accessibility Plan.

The standard will outline how Cuesta employees will utilize the accessibility tools provided through Microsoft Office applications and Adobe Acrobat to ensure all electronic documents are accessible.

Further work is needed to remediate the existing instructional materials and documents found on the college website. The standard lists several remediation software tools that will speed up the remediation process. Once the policies and standard are adopted, the college will select one software tool and purchase a limited number of licenses; key staff will be chosen to do this work.

Goal 3: Pursue a Sustainable Model for Technology Resources

Priority 3.1: Leverage the capabilities of current technology to ensure maximum utilization and value are achieved

Many of Cuesta's current information systems offer capabilities beyond their current use. Taking advantage of the systems extended capabilities or extending the system's use beyond the limited departments using the system would add functionality for a limited cost. There are also several state resources that provide functionality Cuesta College has not taken advantage.

Whenever possible Cuesta College should consider using current hardware and software rather than purchasing new systems. In addition to the cost of purchasing, implementation, and training costs involved with new systems, multiple systems create confusion among customers.

Priority 3.2: Identify opportunities and funding for total cost of ownership of Cuesta College's technology resources

As with any institution, Cuesta has limited funds for purchasing and maintaining their technology. Over the past several years, extended funding included funding from the Foundation, Measure L, Developing Hispanic Serving Institution grants, Institutional Effectiveness Partnership Initiative, Coronavirus Aid, Relieve, and Economic Security, as well as other funding sources. Cuesta needs to continue to identify and utilize outside sources to maintain the technology infrastructure and software needs.

In 2018 the Information Technology department began providing Technology Lifecyle Reports to each department. The lifecycle reports contain the overall annual cost to keep their technology up to date, as well as identifying technology which is near or at end of life. Departments and Divisions are responsible for updating their technology but lack the annual general fund budget to keep computers up to date. Increased budget funding or outside revenue needs to be identified to keep the cost of ownership funded.

Priority 3.3: Continue to identify opportunities for cost savings, and service expansion by utilizing cloud technologies and services

The technology industry is increasingly moving towards cloud infrastructure and technologies. Many of Cuesta's Measure L upgrades are targeted around providing the speed and redundancy needed to access cloud systems from our internal network. Several of Cuesta's systems are cloud based and the number will continue to increase. However, cloud technology continues to prove more costly when considering total cost of ownership. In addition, cloud services require ongoing funding as opposed to purchasing on-premises systems which can be funding through capital funds.

Despite the challenges, cloud computing is increasing and includes many advantages such as increased disaster recovery, redundancy, security, flexibility, scalability, mobility and others. On many cloud services, total cost of ownership is lower as well.

Cuesta needs to continue to monitor and train to prepare for the eventual transition to cloud computing. Cuesta also needs to continue to identify ongoing funds that can support cloud computing.

Goal 4: Promote a Safe and Secure Operating Environment

Priority 4.1: Implement College-wide information security awareness and training program

Information Technology will establish orientation training materials for new employees that cover the basics of information security; including password best practices, phishing awareness, and malware. These training materials will be available on the website for use beyond orientation. A similar set of materials will be made available for students with a recommendation these materials be included in student orientation.

Cuesta College IT will continue to send periodic Security Tip emails to faculty and staff addressing active and emerging threats, as well as reminding all users of the basics of information security. Similar communications will be developed for students and provided to Student Success and Support Programs for distribution.

Priority 4.2: Increase information security risk assessment and remediation to improve security

Threats to technology systems include attacks, environmental disruptions, human or machine errors, and structural failures. Risk assessments will be performed on new and existing assets, both physical and digital to identify these threats. Periodic risk assessments shall be conducted to identify new risks and evaluate existing mitigation strategies.

> Risk assessments evaluate, but are not limited to, the following (adapted from NIST SP 800-30):
>
> (i) relevant threats or threats directed against other organizations (vendors, cloud providers, etc.)
>
> (ii) vulnerabilities both internal and external
>
> (iii) potential impact that may occur given the threats exploiting vulnerabilities
>
> (iv) likelihood that harm will occur
>
> (v) mitigation and remediation strategies

Priority 4.3: Update security practices to reflect increased off campus use of information systems.

COVID-19 shifted Cuesta's information security posture and accelerated the adoption of cloud technologies as students, faculty, and staff were moved off campus. More college

assets were being used from home, and many staff and faculty used home devices for work functions. These changes introduced many new information security challenges.

A shift in information security policies is required. Today's work environment requires new security postures and policies for everything from updating the operating systems and applications on remote clients to identifying and securing legitimate unmanaged device access. Information Technology must now not only secure Cuesta's infrastructure, but also ensure the security of vendor and cloud resources.