Allegany College of Maryland
Campus Technologies

PLAN
2021-2023

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CONTENT

THE ROLE OF TECHNOLOGY AT THE COLLEGE IS ONE OF **INNOVATION & PLANNING**

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EXECUTIVE SUMMARY

The Information Technology Department ("ITD") is proud to be a strategic partner to many areas of the college. Our commitment to support of the college's mission sets and directs our planning for the future. The extensive vision and purpose of our department positions us to provide quality in information services and seamless support. Our key organizational units provide robust infrastructure, teaching and learning technologies, enterprise software solutions, technical support, and information security to all areas of the college.

This planning document is developed by Information Technology and is reviewed by the Vice President of Finance and Administration, the Senior Vice President of Instructional and Student Affairs, the Associate Dean of Institutional Effectiveness and Research, and the Institutional Technology Advisory Committee, ("ITAC"), who provides needed input for document improvement and to ensure document objectives alignment with the Colleges Strategic Plan, the Educational Master Plan, the Facilities Master plan, and the Financial plan of the Institution.

The campus technology plan serves as a guide to support our philosophy of leading through innovation while dedicating our energies to understanding the needs of our campus partners. Our previous technology plan served as a building block for our rapidly growing and evolving college. The focus of this plan guides not only instructional support tools, but the systems and services that create an outstanding infrastructure for learning and for our future.

The broad themes of this plan establish the framework for our goals for the next three years. An obvious theme of a commitment to service and data security throughout the plan underscores the changing landscape in our field. The sophistication of a modern technology organization requires increased security vigilance, improved communications, building constituency partnerships, new skill development, proper staffing and applicable infrastructure upgrades needed to support Institutional aspirations for faculty, staff and student success. Our commitment to improve information systems and services will create efficiencies in partner units across the campus.

As the College advances beyond the final years of its current technology plan, this document outlines partnerships where information technology can and will strengthen systems and services over the next three years at the institution.

VISION, MISSION, VALUES & GUIDING PRINCIPLES

TECHNOLOGY VISION

The vision of the Information Technology Department is to create a secure and reliable service-oriented technology environment that is in support of the College's educational and administrative goals. Revised 2020.

TECHNOLOGY MISSION

The Information Technology Department's mission is to provide comprehensive technology services to advance instruction, college services, and business processes for students, faculty, and staff. Revised 2020.

TECHNOLOGY VALUES

Collaboration
We encourage and harness collaboration among people, units, and institutions for serving the common good.

Integrity
We are guided by virtues of honesty, transparency, and fairness in our actions.

Innovation
We are committed to exploring emerging technologies and implementing creative solutions to provide greater value to the college.

GUIDING PRINCIPLES

The ever-quickening pace of technological advancement requires flexibility and speed in the management of resources and in the processing of information in Administrative operations. To thrive and compete in this technological environment, Allegany College of Maryland must continually strive to value innovative and creative thinking, employ transparent decision-making, and include user needs in all IT decisions.

ITD will engage in collaborative relationships within the college community, acting as a trusted partner who anticipates needs and responds with innovative solutions in support of the Institutions mission of teaching, learning, and community service.

PLAN FOCUS AREAS

TEACHING, LEARNING, & DISCOVERY

Goal **1. Enhance the effective use of emerging technologies in ways that support the College's mission of student success.**

Objectives

1.1 Examine the benefits and challenges of BYOD, and plan for the use of personal devices in classrooms, labs and study spaces at all campus locations.

1.2 Provide support for technology used in teaching and learning that delivers creative, equitable, and innovative engagement while cultivating faculty digital fluency.

1.3 Identify and support ways to enhance the digital student experience.

1.4 Plan for and deploy new learning hardware and software that will replace aging technology used by various programs in classrooms and labs.

QUALITY OF SERVICE

Goal **2. Tailor a customer service mission to the broader technical support philosophy of the college that is flexible and sustainable.**

Objectives

2.1 Improve IT operations to help ensure the best possible operational efficiency, and service uptime for the systems ITD supports.

2.2   Advance a project proposal framework that standardizes submission, improves vetting and directs the financing of ITD initiatives.

2.3 Organize a communications strategy that will improve information sharing with college constituency groups.

2.4 Conduct a periodic review of the college website and update structure, programming and content as needed.

2.5 Explore the use of Artificial Intelligence and bots as a method of improving self -service options for our students, faculty and staff.

INFORMATION SECURITY

Goal   **3. Provide a secure and robust information infrastructure that supports and protects the enterprise, its systems and users.**

Objectives

3.1   Advance data security college-wide through the use of data classification and by establishing protocols for the effective protection of technology resources.

3.2   Review and decide upon a new security platform that will replace existing technology and can provide centralized security, support machine learning, and reduce false positives and reveal alerts that matter.

3.3   Continue to improve security compliance based on environmental changes impacting systems and services.

3.4   Improve upon existing identity management by deploying security protocols that will enhance account protect for faculty, staff and students.

INFRASTRUCTURE

Goal   **4. Implement technology initiatives by deploying infrastructure solutions that will help reduce costs and improve end-user efficiency.**

Objectives

4.1   Expand the use of the print management program, introduce print security and control, continue replacement of our aging phone system and where possible, reduce the colleges computer lab device inventory.

4.2   Improve upon and expand the network design to support new learning initiatives, flexible teaching environments and administrative support services while modernizing the colleges switching architecture.

4.3   Migrate suitable systems to cloud-based services to reduce server replacement, support the demand for cost-effective storage, provide information security, and deliver business continuity through efficient data back-up and recovery.

ENTERPRISE SOLUTIONS

Goal   **5. Explore ways in which to guide innovation to support information sharing, direct decision making, improve software use, and deliver on institutional goals.**

Objectives

5.1   Provide robust reporting tools that delivers data into the hands of more people affecting better decision-making campus-wide.

5.2   Utilize educational and student-related data to gain insights, decipher trends, identify patterns, and act on complex issues that impact student success.

5.3   Deploy a document management solution and promote improved data flow and business efficiencies through the use of electronic forms and workflow automation.

5.4   Improvement utilization of existing software while implementing new solutions that will be cost effective, reduce redundancy and provide the greatest return-on-investment.

5.5   Implement ITD organizational change that will improve the flow of critical services and provide continuity within the department hierarchy.

INITIATIVE AIMS, STRATEGY & ACTIONS

TEACHING, LEARNING, & DISCOVERY AIMS

The College values active student engagement and faculty who are dedicated to excellent teaching and scholarly accomplishment. Technology can play an integral role in facilitating teaching, learning, and discovery.

Since our last technology plan, noteworthy changes have occurred in consumer and educational technology. Numerous devices and applications have become a natural part of our daily lives. These new tools have prompted research on and initiatives related to flipped, blended, hybrid, mobile, and online learning. Inspired by the possibilities presented by emerging technologies, more and more College faculty are exploring digitally enhanced teaching and learning, adopting new pedagogical models like flex instruction, and experimenting with new devices like tablets and Chromebooks.

This work is rooted in the College's commitment to engaged teaching and learning. Technology is not an end in itself, but rather an essential means to sustain, support, and deepen student learning. Leadership is needed to foster campus conversations and guide decisions related to the effective uses of technology at ACM, specific to our academic culture and student body. The Information Technology Department is uniquely positioned to provide this guidance. With our active participation on strategic groups and committees, our resilient partnerships across academic and administrative units, and our knowledgeable, informed, and dedicated technology staff, IT is equipped to meet faculty, staff, and student needs and adapt to a changing technological environment. The department is committed to support technology use campus-wide that simultaneously deepens student learning and encourages cutting- edge innovation.

ITD aims to create an ecosystem of instructional technology tools at ACM that reflects best practices in and current research on pedagogy, learning sciences, instructional design, assessment, and learning analytics. Partnerships with Instructional Affairs, eLearning and Tech Ed Services (eLets), the ITAC, other campus groups, and external partners will be essential. Through consultations, training, innovative projects, knowledge sharing, and operational services, ITD is committed to being a department that is agile, actively adapts, supports innovation, and anticipates the evolving technology needs of our faculty, staff, and students.

TEACHING, LEARNING, & DISCOVERY STRATEGY & ACTIONS

Goal   **1. Enhance the effective use of emerging technologies in ways that support the College's mission of student success.**

Strategy

Evolve the learning environment into an interconnected learning ecosystem that encourages an agile, learner-focused atmosphere. Plan for the expense, implementation and management of new classroom technologies such as virtual reality, augmented reality, Esports, artificial intelligence, gamification, robotics, IoT and hybrid-cloud learning ecosystems. Explore the use of AI solutions like virtual assistants that can be integrated into various platforms (LMS and Navigate integration, learning assistance, and tutoring help) to improve students' engagement. Promote the use of student owned devices in all learning venues.

Objective   **1.1 Examine the benefits and challenges of BYOD, and plan for the use of personal devices in classrooms, labs and study spaces at all campus locations.**

Actions

A.   Establish a bring your own device ("BYOD") advisory group that will oversee the planning for BYOD services and will set applicable guidelines needed to govern a successful bring your own device strategy. Develop a BYOD policy for students.

B.   Implement a user-friendly BYOD plan that aligns with institutional goals and meets the ever-evolving principles of end-user security and privacy. Set standards for BYOD devices and apply needed security protocols.

C.   Work with Instructional Affairs to integrate BYOD into classrooms, labs and study spaces where possible with an emphasis on software and services that will support the use of personal devices in the classroom and will enable faculty choice of tools suitable to learning outcomes.

Objective   **1.2 Provide support for technology used in teaching and learning that delivers creative, equitable, and innovative engagement while cultivating faculty digital fluency.**

Actions

A.   Implement a new retention model (Brightspace Alerts, Navigate Notify) that clearly identifies risk categories and allows for the development of coordinated outreach and interventions early on in the students learning life-cycle.

B.   Continue deployment of Navigate : Appointment Scheduling, Calendaring, Meeting Notes, and Reporting for faculty use in assisting students with their academic path while helping to reduce roadblocks to student success.

C.   Implement new classroom technologies (zSpace lab, eSports Gaming, Hackathon space, enhanced medical labs, criminal justice finger printing, computer enhanced microscopy) that will stimulate innovative faculty instruction.

D.   Provide a unified view of relevant systems available to faculty through "Ellucian Experience", a new user interface (UI) that enables access to all faculty services.

E.   eLets will work with a faculty test group to pilot Class for Zoom (CFZ), then implement if proven effective. ITD will update Class clients when made available.

F.   Deploy new software titles to support instruction and improve student engagement such as Cruise Control, Respiratory Self-Evaluation, Zulu, GTA Virtual Auto Mechanic/Auto Expert, PicoScope, Leopoly Dental, and Blender.

G.   Develop an understanding of faculty's digital proficiency and devise ways in which to improve their knowledge of new technology being deployed or in use at the college.

Objective   **1.3 Identify and support ways to enhance the digital student experience.**

Actions

A.   Conduct a student digital experience survey each year and use those results to affect change that will advantage student success.

B.   Implement the Navigate Mobile App. Decommission Ellucian Mobile.

C.   Design informal learning spaces that encourages students to collaborate, study and personalize their learning. Include devices that will support shared interactions.

D.   Improve the campus network to support the high bandwidth demands of our students, their devices, and applications by installing new fiber between buildings and upgrade switches to 40Gb.

E.   Connect the main Cumberland campus with the Makerspace learning annex in order to support flexible instruction and provide innovative engagement for students.

F.   facilitate learning in and out of the classroom by making it easy for students to access the same teaching resources, on their personal device, no matter where they are.

G.   Plan for and implement wireless printing in support of student personal device use.

H.   Implement "Ellucian Experience" to enable singular access to systems students use.

I.   Move Continuing Education ("CE") online registration to Ellucian Instant Enrollment and provide non-credit transcripts to help improve CE students' digital experience.

Objective   **1.4 Plan for and deploy new learning hardware and software that will replace aging technology used by various programs in classrooms and labs.**

Actions

A.   Implement a virtual learning lab that can be utilized by programs campus-wide to extend faculty teaching methods and improve the student learning experience.

B.   Establish an eSports program that will expand upon opportunities for creative student engagement. Start with an eSports Club and extend as demand warrants.

C.   Modernize training facilities for Nursing, and Raspatory Therapy with the latest technology available to ensure students are prepared for real-world medical careers.

D.   Design and deploy a new Hackathon space that will be use to provide a hands-on approach to developing cybersecurity skills which are necessary to secure today's technology environments.

E.   eLets will install FLEX capable rooms with advanced touchscreens, processor-controlled equipment, cameras, and mics with support for a variety of tablets and laptops.

F.   eLets will further develop a simplified streaming system utilizing Rally carts to be used in spaces that don't warrant a fully equipped FLEX room.

G.   eLets will deploy new document cameras that connects directly to a PC rather than to a projector. This allows images to show on both the PC monitor and projector.

H.   Continue the replacement of aging desktop and laptop computers in labs and classrooms. Including; Cumberland campus, Bedford campus, Gateway Center, Garrett Nursing, Somerset, and Makerspace.

QUALITY OF SERVICE AIMS

The support units within ITD continue to develop and implement a customer first strategy. This strategy enables our campus community to have the best experience every time they interact with technology. Using this approach, the team will continue to build a superior ITD service organization focusing on strategic hiring, training, and communication methods to ensure success.

QUALITY OF SERVICE STRATEGY & ACTIONS

Goal

2. Tailor a customer service mission to the broader technical support philosophy of the college that is flexible and sustainable.

Strategy

Improve upon the existing service management strategy by utilizing informed support metrics. Provide faculty, staff and students with self-service options that can help resolve technical issues quickly. Use performance results to inform the customer service mission. Ensure all projects are supported by campus constituency groups and are effectively managed.

Objective

2.1 Improve IT operations to help ensure the best possible operational efficiency, and service uptime for the systems ITD supports.

Actions

A. Conduct a technology survey for faculty and staff each year that will inform ITD of the instructional and business needs of our end-users. The results of the survey will be used to direct institutional technology planning.

B. Prioritize key technical processes and build an improvement roadmap that includes automation where applicable.

C. Continue to progress preventative maintenance efforts that will sustain technology at all campus locations.

D. Work to equip technical staff with relevant, actionable data that will allow them to rapidly identify and resolve issues that threaten system availability and performance.

E. Build meaningful connections with institutional stakeholders in order to help them better understand and support college technology goals.

F. Improve upon existing self-service offerings by building out the helpdesk knowledge base and the ITD website. Include relevant communications that will inform constituencies of important technical matters.

G. Develop a service catalog containing software, hardware and pricing that can be used to make informed buying decisions.

H. Implement failover services that will allow for the continued use of technology should inhouse systems fail.

I. Integrate D2L Brightspace and the SIS using Ellucian ILP.

J. Develop SLA's that inform the technology experience and provide support for a strong service management and constituency success model.

Objective   **2.2 Advance a project proposal framework that standardizes submission, improves vetting and directs the financing of ITD initiatives.**

Actions

A. Work with the Institutional Technology Advisory Committee to develop a suitable project proposal document.

B. Establish protocols for the vetting of technology initiatives that will guide the project approval process.

C. Seek project approvals from advisory groups like the Institutional Technology Advisory Committee ("ITAC"), President's Advisory Team (PAT), President's staff, and Faculty Senate before projects are funded.

D. Deploy a financial readiness process that will help to predict when expensive technology projects can be funded.

Objective   **2.3 Organize a communications strategy that will improve information sharing with college constituency groups.**

Actions

A. Progress the information cycle for technology initiatives that are in planning, being deployed or are nearing completion.

B. Expand efforts to inform end-users of potential technical security risks and provide guidance for limiting user's exposure.

C. Direct all technology communications through a single point of contact in order to simplify reply requests.

D. Continue to improve upon reporting of system outages, downtime for maintenance, and general system accessibility.

E. Test and deploy the free Alertus software that can push notifications to all end-user devices connected to the college domain.

F. Implement campus telephone paging to expand the portfolio of emergency notification methods that can be used during campus incidents.

Objective   **2.4 Conduct a periodic review of the college website and update structure, programming and content as needed.**

Actions

A. ITD and Marketing staff will work to integrate a searchable electronic catalog of courses into the college website that will source data from the College's student information system. Catalog content will be maintained electronically. Once the new catalog is ready it will be made available to the site.

B. Periodically assess the college website and modernize its structure, programing and content to ensure the relevance and accuracy of the information.

C. As new ADA compliance standards emerge, ITD will work with Marketing to incorporate any accessibility requirements into the College website design.

D. In order to remain in compliance with state, federal, and international laws governing data privacy, ITD and Marketing will review and update website privacy notifications.

E. ITD and Marketing staff will begin management of the Makerspace website in February of 2022. ITD and Marketing will plan for and implement any needed site improvements.

Objective   **2.5 Explore the use of Artificial Intelligence and bots as a method of improving self-service options provided to our students, faculty and staff.**

Actions

A. ITD will examine the use of AI and bots as tools to improve institutional services.

B. Deploy a chatbot that can provide 24/7 support to prospective and current students. This first point of service can engage with students across live chat, social media, SMS and voice.

C. Utilize AI to manage form submission so that requests can be directed to the appropriate college resource for quick response.

D. Integrate AI into the Student Information System ("SIS") so that end-user inquires can be addressed in real-time via voice, SMS, chat and social media.

E. Maintain institutional privacy and security when implementing AI services.

INFORMATION SECURITY AIMS

Allegany College's mission is that of an academic community that transforms mind, body, and spirit and encourages freedom of thought and liberty of conscience. Providing a secure and robust information technology infrastructure that supports this mission is critical.

Because ACM bears the responsibility for taking steps to protect the confidentiality, integrity, and availability of information in its custody, whether in electronic or material form, an effective Information Security Program must ensure the development of information security policies and the adoption of best practices, oversight and regulatory compliance across the entire college, vulnerability assessment and remediation, incident response and business resilience.

Several actions can be taken to improve upon the existing security strategy, such as expanding data classification institution-wide, refreshing our knowledge of laws and regulations that govern information protection, continue to advance our cyber awareness skills, and deploy new security platforms that will further protect our student, faculty and staff data.

INFORMATION SECURITY STRATEGY & ACTIONS

Goal   **3. Provide a secure and robust information infrastructure that supports and protects the enterprise, its systems and users.**

Strategy

To maintain the security, integrity and accessibility of college data, ITD will inform departments of best practices to insure security compliance and provide oversight of protected data maintained by the campus community.

Objective   **3.1 Advance data security college-wide through the use of data classification and by establishing protocols for the effective protection of technology resources.**

Actions

A. Conduct a yearly campus-wide data security survey of which the results will be used to help departments better understand existing vulnerabilities.

B. Provide guidance to institutional units on the appropriate classification of data along with advice for controls that can be applied to mitigate or eliminate risk associated with known data protection weaknesses.

C. Assist faculty and staff with their understanding of regulations which informs the protection of sensitive information, such as FERPA, HIPPA, GLBA, PCI-DSS.

D. Provide to faculty and staff tools that can detect and eliminate unnecessary sensitive data residing on department computers. Funding will be sought to support this initiative.

E. ITD will take over Makerspace technical systems beginning January 2022. To ensure compliance with appropriate security protocols, ITD will conduct a security risk analysis and implement necessary controls needed to secure services.

Objective **3.2 Review and decide upon a new security platform that will replace existing technology and can provide centralized security, support machine learning, and reduce false positives and reveal alerts that matter.**

Actions

A. Review the latest threat vectors, and industry recommendations for desktop and server virus protection. If warranted, replace our current platform with a more robust anti-virus solution.

B. Implement a Managed Detection and Response ("MDR") or Extended Detection and Response ("XDR") service that will help to automate the detection and remediation of security events. This will centralize security detection and prevention.

C. Evaluate and deploy a compliance solution that will assist with audit review and reporting. This solution should also integrate with the MDR or XDR selected.

D. Improve current methods use to oversee third-party vendors who create, process, maintain, transmit, or store institutional data that is classified as restricted or protected.

Objective **3.3 Continue to improve security compliance based on environmental changes impacting systems and services.**

Actions

A. Conduct a yearly review of ITD's incident response plan and update the design to incorporate new environmental security factors.

B. Improve upon ITD's disaster recovery model and update business continuity plans for critical systems.

C. Replace SAN's cyber awareness training with Vector Solutions safe colleges offering. HR will take over course planning and scheduling for the new training platform. To maintain compliance with federal standards, all college employees will continue to be required to complete cyber awareness training each year.

D. Advance ITD's ability to scan internal and external systems and services to assess compliance with institutional security standards.

E. Develop and approve an e-signature policy and include a clear understanding of "signature authority" and its uses.

Aims and Recommendations

Objective   **3.4 Improve upon existing identity management by deploying security protocols that will enhance account protect for faculty, staff and students.**

Actions

A. Deploy multi-factor authentication ("MFA") for administrative accounts using Duo's MFA platform.

B. implement multi-factor authentication ("MFA"). Choose an appropriate vendor to supply security dongles that will provide RAS level access tokens for secure login from any device.

C. Partner with ISA, ITAC and faculty Senate to devise a plan for the rollout of multi-factor authentication. The initial focus will be to activate MFA for staff with access to sensitive employee and student data. Remaining staff will be enrolled once initial activations are complete. The final stage will be to implement MFA for faculty.

D. Pilot MFA to a small group of students and if successful activate MFA on new student accounts beginning spring of 2023. Offer optional MFA to current students.

E. Expand multi-factor authentication to all mission critical applications and services. This would include Colleague and Self-service.

F. Review the latest Zero-trust security solutions and recommend use if warranted. Also consider password-less options for account access control.

INFRASTRUCTURE AIMS

In 2014, ITD implemented an on-premise virtual infrastructure using VMWare's virtual server technology. Then in 2018, ITD deployed KVM's ProxMox hyper-converged solution. The goal for these projects was to transition physical servers to a virtual environment that offered extendable, efficient, and reliable infrastructure to meet campus computing needs.

As the computing needs of the College continue to evolve, the IT department will adopt a hybrid strategy, focusing on external "cloud" solutions where appropriate and internal virtualization for all other applications and services. ITD will focus on the drivers and business need of a new solution and in doing so, will determine if an existing cloud service is a "right fit" for the organization. If during this determination it is deemed that a solution is not suited for the cloud, ITD will deploy it in the on-site virtual environment.

This Cloud strategy will be evaluated on a regular basis, and ITD will make changes as warranted to the approach. Part of the strategy is to provide a business analysis of each solution considered to help coordinate and work with internal and external stakeholders in order to better define the business case, requirements, and technical specifications of the solution being considered.

INFRASTRUCTURE STRATEGY & ACTIONS

Goal   **4. Deploying infrastructure solutions that will help reduce costs and improve end-user efficiency.**

Strategy

Investigate best practices and solutions to consolidate storage, retrieval, and archives for all campus data and digital media. Replace aging technology (Phone System, Networking equipment (wired and wireless), Datacenter Servers, etc.) with cost effective and efficient solutions that will support the colleges technological direction.

Objective

4.1 Expand the use of the print management program, introduce print security and control, continue replacement of our aging phone system, replace older distance learning equipment, and where possible, reduce the colleges computer lab device inventory.

Actions

A. Expand the use of the print management program by networking standalone printers and continue to consolidate devices where possible.

B. Implement PaperCut for secure printing and to provide flexible print anywhere options for students, faculty and staff.

C. Continue replacement of the colleges aging NEC phone system with the unified communications solution (Sangoma) that will support the mobile office worker and combine diverse technologies into a single communications platform.

D. Examine lab usage as part of the BYOD strategy. Identify underutilized computers that can be eliminated freeing up space which can be used for other educational endeavors.

E. eLets will modernize the distance learning system at the Bedford Campus.

Objective

4.2 Improve upon and expand the network design to support new learning initiatives, flexible teaching environments and administrative support services while modernizing the colleges switching architecture.

Actions

A. Redesign the Campus network (replace fiber between buildings, update older wiring within buildings and upgrade network switches) to support current and future technology implementations like BYOD, and virtual meetings, and lecture streaming.

B. Improve the wireless networks reliability, diversity, and coverage, within and outside campus buildings by systematically replacing access points with newer technologies that support Wi-Fi 6.

C. Monitor and increase our Internet bandwidth capacity based on historical trends and the appropriation of available funds. Add redundancy to the internet backbone.

D. Partner with a telecommunications vendor to expand 5G coverage on campus.

D. Replace the Willow Brook Woods wireless infrastructure with fiber connectivity to the buildings and ceiling mount access points that will support Wi-Fi 6.

E. Plan for and implement a "mobile first" workforce strategy to build on what we've accomplished during the pandemic. Include funding for staff and faculty home office equipment and services.

F. Modernize campus emergency calling systems (fire dialers) with newer technology.

Objective

4.3 Migrate suitable systems to cloud-based services to reduce server replacement, support the demand for cost-effective storage, provide information security, and deliver business continuity through efficient data back-up and recovery.

Actions

A. Deploy a cloud strategy for systems that are better served by this implementation approach. Fully fund SaaS (software as a service) options for new learning solutions and administrative applications.

B. Migrate the SIS to Ellucian's SaaS cloud platform beginning March of 2022. This implementation is estimated to take 18 months to complete.

C. Consider cloud storage and recovery to improve the current business continuity strategy by providing additional levels of data protection that will ensure continued service operations after an event.

D. Implement cloud DNS services that will allow access to college systems should internal verification be limited or unavailable.

E. Investigate the use of Azure cloud services for hosting windows and Linux virtual environments.

ENTERPRISE SOLUTIONS AIMS

As technology at the college has grown, so has the sophistication of systems that support it. No longer does the "one size fits all" approach to systems apply; instead, departments across campus are finding third-party software solutions that serve their specific needs – from Human Resources PeopleAdmin suite to Instructional Affairs Navigate. An outsourced solution often provides a "best in class" approach to doing business, while being configurable to adapt to specific workflows and needs.

ITD is committed to partnering with departments contemplating a relationship with a technology vendor. There are several key factors to consider; costs, features and innovation, infrastructure required, licensing and support, legal and regulatory compliance, security, and integration options.

Evaluating the features offered is the most obvious step. Typically, an off-the-shelf product will not mimic ACM's process identically, so it is also important to take time to review process workflows and look for opportunities to improve existing procedures in ways that are better supported by the tool.

One of the initial concerns with implementing a new solution is understanding what infrastructure is required to maintain the system. Currently, ACM has a mix of third-party solutions that are hosted (i.e. D2L Brightspace, AcademicWorks, Navigate, PeopleAdmin, Maxient, and Parchment) and on premise (i.e. Point and Click, Dentrix, Raisers Edge, Colleague, and Self-service). For hosted solutions, questions exist related to the security of the servers and access to the data that should be considered before purchase.

As data moves outside of the central student system (Colleague), and in many cases completely off-site, integration options become an important factor. Currently, there are over 10 connections to Colleague from outside sources that must be secure and available at all times. Maintaining these important connections is critical to the daily operations of the College.

Reporting needs are frequently offered within a solution like Colleague, but there is a growing need to aggregate data from many sources for inclusion in reports that will provide insight into

Aims and Recommendations

the effectiveness of our teaching and learning ecosystem. Dashboards can help provide up-to-date information needed by leadership, department heads, and supervisors to direct the decision-making process.

In addition, managing vendor relationships will have a huge impact on the success of an outsourced solution. Service level agreements should establish expectations for timely support should an issue arise. Understanding the customer service model and hours of operation will help set appropriate expectations for the vendor.

ENTERPRISE SOLUTIONS STRATEGY & ACTIONS

Goal

5. Explore ways in which to guide innovation in support of information sharing, direct decision making, improve software use, and deliver on institutional goals.

Strategy

Better utilize existing reporting resources and obtain new tools that can improve self-service data analysis and decision reporting. Review and consider automation offerings that would improve the organizations product purchase and payment processes. Explore the use of AI technology to assist with student support services, i.e. robotic assistants. Deploy a modern document management, electronic forms and workflow solution that is scalable, seamless and integrates with the colleges existing student information system.

Objective

5.1 Provide robust reporting tools that delivers data into the hands of more people affecting better decision-making campus-wide.

Actions

A. Implement Ellucian Analytics proof of concept for Student and one additional area (Advancement, Finance, Financial Aid, Human Resources or Recruitment).

B. Expand the use of Ellucian Analytics to other areas of the college that have interest in utilizing this information resource.

C. Employ developer licenses and training provided by Ellucian to improve the business analytics/intelligence skills of employees.

D. Create reports and dashboards that can be used to answer many institutional planning questions.

F. Standardize on a flexible reporting platform that will work with any data source.

Objective

5.2 Utilize educational and student-related data to gain insights, decipher trends, identify patterns, and act on complex issues that impact student success.

Actions

A. Classify the data to be collected from information resources like the LMS, Colleague and Navigate, then integrate the information into a single data repository. Establish the relationships between the data, identify trends, and correlate for reporting.

B. Identify key focus areas that can be influenced by data-driven analysis, such as creating an early warning dashboard to help identify academically at-risk students.

C. Use features in Ellucian Analytics, Navigate or Argos to create intuitive data display models that will effectively interpret results and will improve the Colleges ability to make data-informed decisions.

D. Personalize communications with data. Whenever we can capture data about prospective students—through outlets such as the FAFSA, scholarship applications, on-site forms, or emails with recruitment staff—we can build a better picture that can help our institution personalize outreach and chart a path to future success.

Objective **5.3 Deploy a document management solution and promote improved data flow and business efficiencies through the use of electronic forms and workflow automation.**

Actions

A. Implement Softdocs Content Management, eForms and workflow to support an institutional effort to replace paper files, automate forms processing and establish workflows that will allow for efficient document handling.

B. Review current paper-driven and manual processes to develop electronic ways to submit request forms, justify purchases, complete sign-up sheets, process change requests, and provide approvals while keeping data integration needs as a primary driver for the appropriate solution (Colleague forms, custom web forms, O365 forms, SharePoint forms, PDF forms, or Formstack).

C. Train key faculty and staff throughout campus to become "Power Users" who will learn to create their own forms and workflows.

Objective **5.4 Improvement utilization of existing software while implementing new solutions that will be cost effective, reduce redundancy and provide the greatest return-on-investment.**

Actions

A. Utilize the software we have more effectively by providing more training opportunities for employees while engaging vendor consultants to address usage challenges and to present best practices that can improve operations and foster institutional success.

B. Review the current enterprise software inventory and replace older solutions with modern applications while eliminating or consolidating repetitive services. Look for software that has automated functionality and can be integrated with AI.

C. Where possible, integrate our Student Information System ("SIS") with ancillary systems using Ethos API's instead of pushing data through manual workflows.

D. Integrating a document management solution into the college's SIS for the instant retrieval of documents associated with student and employee records.

E. Implement electronic vendor payments using colleagues E-Check capabilities.

F. Shift the campus away from Webadvisor which is end-of-life and transition users to Self-service academics, financial aid, budgeting, time entry, benefits enrollment, projects accounting, account inquiry, procurement, and receipt of goods and services.

Objective **5.5 Implement ITD organizational change that will improve the flow of critical services and provide continuity within the department hierarchy.**

Actions

A. New position – Hire one (1) Director of Technology Services to focus on hardware deployment, networking and unified communications projects.

B. New position - Hire one (1) Information Security Administrator to focus on data security, policy, and compliance.

Aims and Recommendations

C. New position – Hire one (1) Network Technician to assist the Network Security Engineer with the deployment, maintenance, support and security of the colleges extensive communications systems, wired network and wireless services.

D. Crosstrain ITD staff to improve support coverage, aid the technical development of staff and create new opportunities for advancement.

E. Fund ITD staff training needed to insure the effective implementation, proper use and management of existing and new systems.

PLANNING, ACQUISITIONS & FINANCIALS

PLANNING

Much has occurred in recent years with changes in funding, teaching methods, and enrollment fluctuation that necessitates a reassessment of the technology landscape. The development of updated technology goals and objectives will ensure a progressive and successful technology environment for students, faculty and staff.

As such, technology planning has been an integral element in fulfilling the College's mission. This plan links to priorities in the College's Strategic Plan (2015-2020), and is guided by the technology theme as outlined in the Educational Master Plan. These priorities identify the need for appropriate resources (human, financial, facilities, and technology) to meet the needs of the college community.

Each year, the Information Technology department ("ITD") works to identify College-Wide Technology Initiatives. These Initiatives are derived from industry trends, curriculum requirements, administrative initiatives, and the exploration of emerging technologies.

As technology goals are developed, ITD, in partnership with the ITAC, is charged with ensuring the needs of each college department are addressed. The resulting areas of focus become the cornerstones of the Technology Plan. After the strategy has been established, each department partners with ITD who works to acquire and implement the technologies that complete the goals and objectives outlined in the plan.

ACQUISITIONS

During the College budgeting process, each department identifies hardware and software that fulfills the goals and priorities outlined in the units academic and/or administrative plan. These hardware and software items are included in annual departmental budget requests.

Each Budget Manager submits their requests to his or her Vice President or Dean. The Vice President or Dean reviews these requests and creates a final list for the area.

These area requests are incorporated into the college Master Equipment List. This master list is a working document of all equipment needs (even those that are not technology-related). Since technology needs can change rapidly, the President, Vice Presidents, and Deans prioritize and update the master list throughout the year. Technology items on the Master Equipment List are signed off on as projects and purchases are approved. The Technology Plan is also updated to reflect the completion of these goals and objectives.

FINANCIALS

The success of our vision relies on our ability to finance projects and services consistently and with high quality. Specifically, we will proactively manage the significant growth in the cost of delivering IT services and capacity demand; continually drive improvements in operational effectiveness and efficiencies; manage risk and recognize and implement meaningful innovations.

ACM Annual Budget **by Service**						
		Budget	*Budget*	**Estimate**		
Fiscal year		**2021**	**2022**	**2023**		
Service Area						
Main: IT Administration		342,845.00	409,843.00	399,895.00		
Main: IT Academic Support		163,100.00	166,050.00	190,240.00		
Main: ERP		356,162.00	392,816.00	415,427.00		
Bedford: IT Administration		0.00	0.00	0.00		
Bedford: IT Academic Support		2,700.00	2,700.00	2,700.00		
Somerset: IT Administration		0.00	0.00	0.00		
Somerset: IT Academic Support		500.00	500.00	500.00		
Total Annual Budget		865,307.00	971.909.00	1,008,762.00		
Staff compensation costs						
Fund Balance Approved		719,620.00	945,427.00	0.00		
Grand Total		1,584,927.00	1,917,336.00	1,008,762.00		

PLAN CONCLUSION

As this technology plan goes into effect, specific implementation strategies for each of the initiatives will be developed. IT will work with the relevant leadership and constituencies to make sure that the operational plans are developed collaboratively and are congruent with the Institutional Strategic Plan and the Educational Master Plan. The goals include expected outcomes and key performance indicators. These will become the backbone of the ongoing assessment of each of the goals and the plan itself. The plan will be assessed on a formal basis annually to allow for any required course corrections due to changing organizational conditions and new technology requirements.

2021-2023 TECHNOLOGY PLAN

APPENDIX - PROGRESS BY YEAR
TEACHING, LEARNING, & DISCOVERY

Objective 1.1	Examine the benefits and challenges of BYOD, and plan for the use of personal devices in classrooms, labs and study spaces at all campus locations.
Timeframe	2021-2023
Task(s)	• Establish a BYOD working group to oversee planning. • Create a student BYOD policy that will guide implementation. • Implement a BYOD strategy that aligns with institutional priorities. • Work with constituency groups to integrate BYOD into classrooms, and labs. • Plan for the reuse of lab spaces reclaimed by BYOD.
Measure(s)	%Student's digital satisfaction. # of obsolete lab and classroom devices. $ Replacement costs savings.
Outcome	Improved student's digital satisfaction and reduce replacement costs of college technology. Increase student's digital satisfaction by 10%. Reduction obsolete lab and classroom equipment by 20% yearly. Reduce replacement costs for devices by $700,000 baseline is $1,402,026 based on current equipment costs.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	45% In Progress
Branch	Academic
Cost	Employee expense associated with time spent on planning and implementation of BYOD: Estimate $8,000.

Objective 1.2	Provide support for technology used in teaching and learning that delivers creative, equitable, and innovative engagement while cultivating faculty digital fluency.
Timeframe	2021-2023
Task(s)	• Implement a retention model based on Brightspace Alerts and Navigate Notify. • Continue deployment of Navigate applications that will be used by faculty. • Implement new classroom technologies (zSpace, eSports, Hackathon, etc.). • Provide a unified view of relevant systems available to faculty via Ellucian Experience. • Pilot Class for Zoom and if warranted implement it. • Deploy new software titles to support instruction and improve student engagement. • Understand faculty digital proficiency and devise ways to improve it.
Measure(s)	% student retention % increased enrollment % student graduation rates
Outcome	Navigate launched April 2020, Navigate Mobile App August 2020, Navigate student Launch October 2020, Navigate planner launched May of 2021, Retention Alert September of 2021, Faculty training 2022. Increase student retention by 20%, improve enrollment by 10%, increase graduation rates by 15%.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Two: optimize enrollment. Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans. IP Five: Planning and Assessment: Strategic Goal One: expand strategic planning process to ensure systematic and sustainable planning, using student learning assessment and institutional effectiveness data.
Status	48% In Progress
Branch	Academic
Cost	IT Budget: FY20 - $49,000 FY21 - $125,600 FY22 - $129,700 FY23 - $132,800 FY24 - $135,800

Appendix

Objective 1.3	Identify and implement ways to enhance the digital student experience.
Timeframe	2022-2023
Task(s)	• Conduct a survey each year to capture student digital experience feedback. Use these results to plan for future student's digital experience improvements. • Implement the Navigate Mobile App and Decommission Ellucian Mobile. • Utilize BYOD to support and improved the digital experience for students. • Install new fiber between buildings that will support the high bandwidth demands of our students, their devices and applications. Upgrade backbone switches to 40Gbs. • Connect the main campus with the Makerspace learning annex • Make personal device access to resources available to students from anywhere. • Plan for and implement wireless printing in support of personal device use. • Move CE online registration to Ellucian Instant Enrollment.
Measure(s)	%Student's digital satisfaction. %Student service up-time. % Available network bandwidth.
Outcome	Students will have more time online and, in the classroom, to improve learning outcomes. Student resource up-time improve to 99.99%. Expand network bandwidth from 1 Gbs to 40 Gbs. Improve student access to digital resources from any location.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	60% In Progress
Branch	Academic
Cost	Fund balance request: network improvements fiber $130,000. Additional AP's $80,000. Paper Cut purchase to improve wireless printing $28,000. Fund Balance Computers: $290,475

Appendix

Objective 1.4	Plan for and deploy new learning hardware and software that will replace aging technology used by various programs in classrooms and labs.
Timeframe	2021-2022
Task(s)	• Implement a virtual learning lab that can be used by programs campus-wide. • Establish and eSports club that will support student engagement. • Modernize training facilities for Nursing, and Respiratory Therapy. • Create and equip a Hackathon space for cyber skill building. • Install FLEX capable rooms, Rally carts and deploy new document cameras. • Replace aging computers in labs and classrooms with state-of-the-art technology.
Measure(s)	% of students who repeat Clinicals. % of obsolete computers replaced yearly. # of students engaged in immersive learning (AR/VR).
Outcome	Utilize new devices and software to engage students, increase collaboration and improve learning outcomes. Reduce the number of students who repeat Clinicals. Replace 20% of obsolete computers in labs and classrooms yearly. Establish a baseline for immersive learning (AR/VR) and gauge student skill improvement based on its use.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	78% In Progress
Branch	Academic
Cost	Fund balance approved Zspace: $58,000 Nursing and Respiratory Therapy training lab estimate: $180,000 Fund Balance Computers: $290,475

Appendix

QUALITY OF SERVICE

Objective 2.1	Improve IT operations to help ensure the best possible operational efficiency, and service uptime for the systems ITD supports.
Timeframe	2022-2023
Task(s)	• Conduct an employee technology survey yearly. Use results to direct ITD planning. • Build and improvement roadmap and prioritize automation where possible. • Progress preventative maintenance efforts at all campus locations. • Provide relevant, actionable data to technical staff for improved problem solving. • Build meaningful connections with stakeholders to support technology goals. • Improve self-service offerings and communicate important technical matters. • Develop and publish a service catalog to inform purchase decisions. • Implement failover services to keep technology operational during system outages. • Integrate Brightspace and the Student Information System using Ellucian ILP. • Develop SLA's to guide the technology experience for all constituencies.
Measure(s)	% service uptime. % of new services. # of reported issues. Average time to resolve.
Outcome	Provide a strong service management approach that focuses on the needs of all College constituencies.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	72% In Progress
Branch	Administrative
Cost	Employee expense associated with time spent on planning and implementation of operational improvements Estimate $10,000.

Appendix

Objective 2.2	Advance a project proposal framework that standardizes submission, improves vetting and directs the financing of ITD initiatives.
Timeframe	2021-2022
Task(s)	• Work with ITAC to develop a suitable project proposal document. • Establish protocols for vetting technology and guide approvals • Seek project approval for all advisory groups. • Setup a financial readiness process to predict when expensive tech can be deployed.
Measure(s)	# of Project requests % of Projects approved % of Projects over budget # of Projects completed on time
Outcome	Improve the project request process, provide effective project oversight and ensure projects are on-track and under budget.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	75% In Progress
Branch	Administrative
Cost	Employee expense associated with time spent on planning and implementation of project development Estimate $6,000.

Objective 2.3	Organize a communications strategy that will improve information sharing with college constituency groups.
Timeframe	2021-2023
Task(s)	• Progress the information cycle for technology initiatives. • Expand efforts to inform end-users of security risks. • Direct all ITD communications through the IT Helpdesk. • Continue to improve reporting of system outages and maintenance downtime. • Test and deploy the free Alertus software with push notifications. • Implement telephone paging to expand emergency notification methods.
Measure(s)	Time to completion Budget vs Actuals Communication effectiveness
Outcome	More projects are initiated and completed on time and at or under budget. Improve ITD's overall communication effectiveness.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	88% In Progress
Branch	Administrative
Cost	Employee expense associated with time spent on planning and implementation of a communications strategy: Estimate $4,000.

Appendix

Objective 2.4	Conduct a periodic review of the college website and update structure, programming and content as needed.
Timeframe	2021 - 2023
Task(s)	• Integrate a searchable electronic catalog of courses into the college website. • Periodically assess the college website and modernize its structure. • Maintain ADA compliance for the college website. • Keep the website compliant with state, federal and international privacy laws. • Manage the Makerspace website beginning February 2022.
Measure(s)	# of ADA website issues Website ADA compliance score
Outcome	Maintain website regulatory compliance. Keep the website optimized for accessibility. Connect prospective and existing students with needed information about College programs and services.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP Two: Organizational Development and Support: Strategic Goal Three: Expand and promote professional development opportunities.
Status	58% In Progress
Branch	Academic/Administrative
Cost	IT Budget: Modern Campus $32,000.

Appendix

Objective 2.5	Explore the use of Artificial Intelligence and bots as a method of improving self-service options provided to our students, faculty and staff.
Timeframe	2023
Task(s)	• Examine AI and bots as tools to improve institutional services. • Deploy a chatbot that can provide 24/7 support to prospective and current students. • Utilize AI to manage form submissions and direct requests to appropriate staff. • Integrate AI into the SIS so that end-user inquires can be address in real-time. • Maintain institutional privacy and security for AI service.
Measure(s)	% increase of student service satisfaction # of paper flows converted to automated workflows
Outcome	Modernize services provided to current and prospective students. Create 24/7 self service offerings. Eliminate paper folders and integrate document access within the SIS. Streamline paper processes with automated workflows that saves time and adds value to the service experience of our students, faculty and staff.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	5% In Progress
Branch	Academic/Administration
Cost	Fund balance request: $90,000 for modernization initiatives.

Appendix

INFORMATION SECURITY

Objective 3.1	Advance data security college-wide through the use of data classification and by establishing protocols for the effective protection of technology resources.
Timeframe	2021-2023
Task(s)	• Audit departments who receive and store protected information. • Provide guidance to institutional units on the appropriate classification of data. • Assist faculty and staff with regulations (FERPA, HIPPA, GLBA, PCI-DSS). • Provide tools that can detect and eliminate unnecessary sensitive data. • Conduct a security analysis of the Makerspace identify risks and mitigate.
Measure(s)	% of departments with risky security scores. % of audits completed yearly.
Outcome	Improve the security, integrity and availability of protected data. Increase the number of departments that are conducting yearly assessments of their data security processes and are adjusting procedures to ensure college data is protected. The 2021 department data security audit of 21 departments is complete with mixed results. ITD will work with units who scored below 80% on the survey to identify and improve the departments security processes and procedures. ITD helpdesk will continue to promote cyber awareness throughout 2022 and will continue to inform both employees and students of potential security threats. ITD will partner with HR to develop and implement the next series of cyber awareness trainings utilizing the SafeColleges platform.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	76% In Progress
Branch	Administrative/Academic
Cost	IT Budget: $84,000 in annual security support costs.

Objective 3.2	Review and decide upon a new security platform that will replace existing technology and can provide centralized security, support machine learning, and reduce false positives and reveal alerts that matter.
Timeframe	2022-2023
Task(s)	• Review threat vectors and select an anti-virus solution that reduces security events. • Implement MDR or XDR to improve overall security and reduce false positives. • Deploy a compliance solution that can centralize detection and review. • Continue to improve third-party oversight.
Measure(s)	% of compliance agreements vs parties holding data. % of contracts with SLA's for data protection. # of security events that are considered high risk. % reduction in false positives.
Outcome	Protect student and employee data regardless of location status.
Link	Educational Master Plan Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. Institutional Strategic Plan IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	45% In Progress
Branch	Administrative/Academic
Cost	IT Budget: $84,000 in annual security support costs.

Appendix

Objective 3.3	Continue to improve security compliance based on environmental changes impacting systems and services.
Timeframe	2022-2023
Task(s)	• Review established incident response procedures and adjust as needed. • Improve ITD's disaster recovery model and update business continuity plans. • Replace SAN's cyber awareness training with Vector solutions cyber training. • Advance ability to scan internally and externally the systems we maintain. • Hold tabletop exercises in order to determine areas of improvement. • Ensure backup and recovery protocols are in alignment with threat vectors. • Implement an e-signature policy and include clear guidelines for "signature authority".
Measure(s)	# of systems classified as critical # of desktop exercises performed yearly
Outcome	Improve the colleges ability to respond to and mitigate security threats.
Link	Educational Master Plan Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. Institutional Strategic Plan IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	60% In Progress
Branch	Administrative/Academic
Cost	Employee expense associated with time spent on planning and improving College website Estimate $5,000. IT Budget: $84,000 in annual security support costs.

Appendix

Objective 3.4	Improve upon existing identity management by deploying security protocols that will enhance account protect for faculty, staff and students.
Timeframe	2021-2023
Task(s)	• Deploy Duo MFA for administrative accounts. • Activate Multi-factor Authentication (MFA) for faculty and staff. • Select an appropriate vendor to supply FOB's for MFA use. • Work with constituency groups to plan the rollout of MFA. • Pilot MFA with a group of students and if successful activate MFA for new students. • Offer opt-in MFA to current students attending the institution. • Review Zero-trust and password-less options for account access control.
Measure(s)	% of Employees without MFA activation. % of Students without MFA activation. % of secure administrative accounts. % of Employees using Zero-trust or password-less access.

Outcome	Eliminate user account password compromises for faculty and staff. Protect College servers and end-points from intrusion and data exfiltration. Secure Remote (VPN) access to College systems and resources. Reduce or eliminate student password account compromises.
	    All faculty and staff accounts (Using Single-Sign-On) now utilize MFA protections
	    Administrative accounts are being protected using Duo MFA.
	    ITD is testing Duo MFA with Colleague and Self-service accounts.
	    ITD and ITAC are partnering to plan for Student account MFA activation.
	    ITD working with Admissions/Registration/Advising will pilot student MFA.

Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	78% In Progress
Branch	Administrative/Academic
Cost	ITD Staff time spent assisting employees and students with security concerns estimate: $3,000. Budget expenditures for Duo: $1,440. Estimated future cost of Duo: $ 38,960.

Appendix

INFRASTRUCTURE

Objective 4.1	Expand the use of the print management program, introduce print security and control, continue replacement of our aging phone system, replace older distance learning equipment, and where possible, reduce the colleges computer lab device inventory.
Timeframe	2021-2023
Task(s)	• Expand the use of the print management program. • Implement PaperCut for secure printing and to provide flexible print anywhere. • Continue replacement of the colleges aging NEC phone system. • Examine lab usage as part of the BYOD strategy. • Modernize the distance learning system at the Bedford Campus.
Measure(s)	% handsets deployed % of print devices not yet networked. % of print revenue covering print costs. % lab usage vs lab devices
Outcome(s)	Phone apps can replace the need for handsets. Apps can be installed on desktops, laptops and other mobile devices. Workers can take the office with them when traveling or working from home. Consolidate printing and provide more affordable print services. Reduce unnecessary printing, and gain back student print costs for excessive printing.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	72% In Progress
Branch	Administrative
Cost	Employee expense associated with time spent on connecting standalone printers: Estimate $3,000, ITD budgeted funds phone system $200,000, ITD funds request for PaperCut $28,900.

Objective 4.2	Improve upon and expand the network design to support new learning initiatives, flexible teaching environments and administrative support services while modernizing the colleges switching architecture.
Timeframe	2021-2023
Task(s)	• Implement new fiber campus-wide with extended fiber to the guard shack, clubhouse, apartments and ballfield dugouts. • Improve the wireless networks reliability, diversity, and coverage. • Monitor and increase our Internet bandwidth capacity based on historical trends. • Partner with a telecommunications vendor to expand 5G coverage on campus. • Plan for and implement a "mobile first" workforce strategy. • Modernize campus emergency calling systems (fire dialers) with newer technology.
Measure(s)	% improvement in throughput % of bandwidth utilization % increase in service satisfaction
Outcome	Improved network performance, provide greater network bandwidth along with support for new electronic teaching approaches and methods such as classroom streaming, remote learning and anywhere anytime access to services and learning resources.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	70% In Progress
Branch	Administrative/Academic
Cost	ITD budgeted funds fiber deployment: $170,000.

Appendix

Objective 4.3	Migrate suitable systems to cloud-based services to reduce server replacement, support the demand for cost-effective storage, provide information security, and deliver business continuity through efficient data back-up and recovery.
Timeframe	2022-2023
Task(s)	• Deploy a cloud strategy for systems that are better served by this approach. • Migrate the SIS to Ellucian's SaaS cloud platform beginning May of 2022. • Consider cloud storage and recovery to improve current business continuity. • Implement cloud DNS services that will allow access to college systems. • Investigate the use of Azure cloud services for hosting windows and Linux.
Measure(s)	% of faculty/staff service utilization % of Uptime for Navigate % of Uptime for ERP % reduction in datacenter servers
Outcome	Provide anywhere, anytime access to critical faculty, staff and student services. The Navigate implementation is 85% complete with utilization around 10%. Additional Navigate training is underway that will lead to greater utilization. The ERP to cloud project will begin in March of 2022.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	40% In Progress
Branch	Administrative/Academic
Cost	ITD budgeted costs: ERP to cloud $705,231, Navigate budgeted costs: $126,800.

Appendix

ENTERPRISE SOLUTIONS

Objective 5.1	Provide robust reporting tools that deliver data into the hands of more people affecting better decision-making campus-wide.
Timeframe	2023
Task(s)	• Implement Ellucian Analytics proof of concept for Student and one additional area. • Expand the use of Ellucian Analytics to other areas of the college. • Employ developer licenses and training provided by Ellucian to improve skills. • Create reports and dashboards used to answer many institutional planning questions. • Standardize reporting tools that are flexible and will work with any data source.
Measure(s)	# of reports migrated to new reporting tool. # of staff with improved reporting skills. # of institutional dashboards deployed.
Outcome	Extent data access and reporting to all interested employees looking to improve department or college planning processes. Standardize on a flexible reporting platform.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	0%
Branch	Academic/Administrative
Cost	Fund balance request Ellucian Analytics: $36,750 subscription, $43,000 one-time setup fee.

Objective 5.2	Utilize educational and student-related data to gain insights, decipher trends, identify patterns, and act on complex issues that impact student success.
Timeframe	2023
Task(s)	• Classify the data to be collected from information resources like the LMS, Colleague and Navigate. • Identify key focus areas that can be influenced by data-driven analysis. • Use features in Ellucian Analytics, Navigate or Argos to create intuitive data display models. • Personalize communications with data by building a student success profile.
Measure(s)	# of areas that can benefit from improved analysis. # of successful communications campaigns. % increase in student retention. % increase in student graduations.
Outcome	Utilize reporting to improve student outcomes and drive student success.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	0%
Branch	Academic
Cost	Fund balance request for data analysis tools: $38,000.

Objective 5.3	Deploy a document management solution and promote improved data flow and business efficiencies through the use of electronic forms and workflow automation.
Timeframe	2022-2023
Task(s)	• Develop a project plan proposal and seek approvals • Implement Softdocs Content Management, eForms and workflow. • Review current paper-driven processes and develop electronic ways to submit forms. • Train key employees throughout campus to become automation "Power Users".
Measure(s)	# of processes eligible for automation % of processes automated
Outcome	Drive student success by automating institutional business processes.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	25%
Branch	Administrative
Cost	Fund balance request for Softdocs: $97,125 total cost for 5 years $289,421.

Appendix

Objective 5.4	Improvement utilization of existing software while implementing new solutions that will be cost effective, reduce redundancy and provide the greatest return-on-investment.
Timeframe	2022-2023
Task(s)	• Utilize the software we have more effectively thru skill building and process changes. • Replace older enterprise software with modern integrated applications. • Deploy Ethos and use API's to integrate applications. • Tie the document management system to the college SIS for fast storage and retrieval. • Implement electronic vendor payments. • Plan for the transition from Webadvisor to Ellucian Self-service.
Measure(s)	# of employees participating in training opportunities. # of aging applications in need of replacement. # of constituency groups moved to Self-service.
Outcome	Improved use of software, better provisioning of services and efficient processing of payments.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	40% In Progress
Branch	Administrative/Academic
Cost	Budget Funding for contracted services: $45,000

Appendix

Objective 5.5	Implement ITD organizational change that will improve the flow of critical services and provide continuity within the department hierarchy.
Timeframe	2023
Task(s)	• Hire one Director of Technology Services. • Hire one Information Security Administrator. • Hire one Network Technician. • Crosstrain ITD staff. • Fund ITD staff training.
Measure(s)	% increase in project performance. % reduction in security compliance issues. % increase in network performance. % increase in ITD employee satisfaction.
Outcome	Improve ITD operations by enhancing the flow of critical services and provide continuity within the department hierarchy.
Link	*Educational Master Plan* Educational Support Services: ACM seeks to ensure quality educational services and infrastructure that are accessible, support student retention, and enhance the learning success for the student. *Institutional Strategic Plan* IP One: Student Success and Access: Strategic Goal Three: identify and diminish barriers that impede student success. IP Four: Resource Management: Strategic Goal Two: proactively plan for the infrastructure needs of the college. Strategic Goal Three: utilize data to align resource allocation with institutional plans.
Status	0%
Branch	Administrative/Academic
Cost	Budget for new positions and new software purchases to be determined.

Appendix