



IT Strategic Plan

Supporting the Mission of the University with Planned and Managed Information Technology Resources and Services

Executive Summary

Introduction

The *Information Systems Security Policy* established by the Athens State University Board of Trustees specifies that the University will provide “an appropriate and sustained information system security profile that conforms to industry standards to safeguard the deployment, management, and use of all information technology resources.”¹ This plan includes information technology related goals and objectives that provide a framework for how the requirements of the *Information Systems Security Policy* can be met.

The intention of this plan is to establish a strategic direction for the procurement and use of appropriate and planned information technologies at Athens State University. This plan will provide valuable information that can be used to make informed and shared decisions about mission critical technology resources.

The budget requirements to run the existing technology infrastructure and renew/replace both central and desktop computing resources are central to the plan. A three year budget is included and based on operational and replacement costs of current resources and funding requirements for new initiatives decided for the upcoming fiscal year.

Continuous monitoring and adjustment of this plan will be necessary to keep it aligned with the priorities established by the University mission and new opportunities and initiatives of the future.

¹ The Athens State University Board of Trustees approved the *University Information Systems Security Policy* at the April 19, 2013 meeting. The policy is published at www.athens.edu/policies/

Issues/Concerns

Mission Critical Systems & Operations

The central computing and network resources that support Banner, the Blackboard learning management system, electronic mail, and the IT help desk are considered mission critical resources and services at the University. Currently, these mission critical systems are operationally stable. An uptime goal of 99.97% requires appropriate hardware and software resources along with a competent and reliable technical support staff. Specific issues/concerns:

- Network management is overseen by two areas of the University, one technical and other non-technical. Unifying network management under technical leadership is imperative to supporting this mission critical system.
- Currently, there is no redundant link to the Internet for the main campus. Weighing out the risks of a break in the only Internet connection against the costs to reduce those risks should be reviewed and understood by Administration.
- Budget planning for upgrades and replacement of hardware will be an ongoing requirement to keep central computing and network resources functioning within the operational tolerances and service levels required by students, faculty, and staff.

Policies/Procedures

- The University has limited policies and procedures in place for IT related matters.
- The change in governance and the establishment of the *Information Systems Security Policy* by the Board of Trustees has set the beginning point for operational policy development.
- Specific policies and procedures are necessary to maintain the security profile of the IT operations including End User & Desktop computing, Systems & Network Security, and Academic Technology Environments.

Applications/Services

- A number of applications have been developed in-house and is maintained by one IT staff member; these include the assessment management system (AMOS), the survey development tool (AIMEE), and advisement and transfer credit management system (SAM). Maintenance of these systems is an ongoing concern and planning to replace these systems with commercial products is advised.

- There is no plan for a campus wide-document management system or intranet.

Staffing

- The IT department has limited staff to cover the network and systems area. These are mission critical areas that must have qualified and available staff to address daily work and respond to system failures.
- The IT and OIPRA units each have staff assigned to carry out the tasks normally assigned to a management information systems (MIS) unit. This creates inefficiencies, inconsistent communications, and a non-unified approach to resolving issues.

Client Services

- The Web content in the IT and Academic Support areas need to be improved for student, faculty and staff use.
- A front-facing, user accessible help desk is needed to serve students, faculty, and staff. Currently, help desk is provided through telephone services and e-mail, but there is no physical location.
- Service expectations must be established based upon the available resources and communicated to the user community.
- Service requests are handled through phone calls directly to IT staff many times through e-mail when they should go through a more formal and defined process.
- User expectations of IT, OASIS, or IR service levels are not established and communicated to stakeholders.

Desktop Computing Resources

Desktop computers are on almost all faculty and staff desk at Athens State. A functional, up-to-date computer system in the office is a necessity for all employees at the University.

- Approximately 71% of the desktop computers used by students and 66% used by faculty, and staff need to be replaced. Many desktop computers are more than six years old and some as old as 9 years. The desktop computers are out of specification for current operating system

requirements and software applications run very slowly. No centralized replacement plan is in place.

- In student labs and technology classrooms, 29 of the 43 instructor computers (64%) and 176 of the 245 (72%) lab computers are seven to nine years of age and need to be replaced. Approximately 34% (12) of the projectors in technology classrooms are eight years old and will need to be replaced in the next two years.
- Because there has been no formal desktop replacement cycle in place for both the academic and administrative area, replacements have been deferred for a considerable time.
- With 63% of all computers on campus to be replaced due to age, there will have a tremendous budget impact to replace all that are recommended in one budget cycle. However, deferred replacement of equipment affects the efficiency of faculty and staff due to slow systems and equipment failures.

Meeting Student Expectations for Technology Resources

Athens State, like most other colleges/universities, is attempting to keep pace with 21st century student technology demands. The Educause top 10 IT issues identified by colleges and university includes several issues brought on by the consumerization of technology including the demand for wireless connectivity, transforming the delivery of services with technologies, and the growing demand for online education.

Identified technologies used by student that will impact the campus are:

- Wireless network located in areas where there are classrooms and student activities.
- Mobile interfaces for Blackboard and Banner Self Services are known technologies that are within reach now.

The IT Security Profile of the Campus

The IT security profile of the University has been reviewed and three issues are seen as priorities:

- Prior to September of 2012, user access levels to the Banner system were assigned without consideration of roles and responsibilities and allowed all users of the system to have access to much of the data. These access levels were pulled back to more appropriate levels based upon decisions of administration in the functional area, thus strengthening data access

security. Further documentation and assignment of roles must be completed to provide data security.

- Additional firewall protection between the mission critical, central resources and the outside are needed and will be implemented during the 2013-2014 fiscal year.
- Data security and management policies and procedures are necessary to provide the appropriate framework and guidelines for data access controls. There are currently few policies in place and no ongoing, defined training program for faculty and staff on data and information security practices.

Banner & ERP Related Applications

- The annual cost of Banner and the applications used with it for application maintenance alone was \$250,434 in 2012-2013. This amount only supports the current configuration without additions or modifications.
- Additional features for Banner have been requested by the functional areas for the 2013-2014 year, including an additional instance of the Banner database for development work space.
- The Degree Works application, scheduled for implementation in 2013-2014 fiscal year, requires the Unix operating system. The current Banner implementation runs on a Windows platform. Adding another operating system to support for a mission critical application will be a challenge for the IT staff.
- During 2012 – 2013, a number of Banner consultants were employed by the Student and Financial areas to review, modify, and implement system functions and business processes necessary to fully deploy the Banner system at Athens State. There is a potential to lose the investment made for improvements by the consultants if recommended business processes are not implemented through a campus wide adoption of the Banner functions and processes.

Future Technology Needs for the Campus

Several areas should be explored to determine if more efficient and cost effective solutions can be implemented. Technology can be used to leverage the position of the University as a low-cost, quality, institution of higher education. Students have expectations that the technologies they demand will be ubiquitous. Some of the technologies that should be explored are:

- Web content management system
- Mobile computing strategies

- Cloud computing and outsourced technology services
- Dashboards and business intelligence
- Enhanced learning management system tools
- Alternative course delivery methods

Accomplishments and New Initiatives – 2012-13

- The technology advisory committee was appointed in Fall 2012 and has met several times over the past academic year.
- The technology advisory committee is coordinating the faculty review of the learning management system functions and associated applications currently implemented at Athens State to determine the features faculty require/desire in an online learning system. This information will be used to write the RFP for the learning management system renewal in 2014.
- The upgrade of the network in the summer of 2013 increases the backbone speed from 100 mbits to 1Gbit and replaces equipment that was approximately 10 years old.
- Funding for critical needs of approximately \$300,000 has been approved for the 2013-2014 fiscal year.
- The average age of the servers in the central server farm is 4 years; the majority of systems with 3 or less years of use.
- Forward thinking and good planning by the IT department has built redundancy in the central infrastructure and staff skill sets.
- Service level agreements are under development that will establish the user expectations for service and allow IT to set priorities based upon the categorization of resources as mission critical, mission central, non-mission critical, or new initiatives/projects.
- The adoption of a central help desk philosophy is taking shape through staff re-alignments between Academic Technology Services and the IT department. In addition, telecommunication requests are to be received and dispatched through this system.
- A staffed, handicapped accessible physical help desk is planned for the 2013-2014 academic year. Currently, it is located in the IT department on the second floor of the Founders annex and is not visible nor handicap accessible.

- Work has begun to merge the Help Desk support for distance education into the existing help desk responsibilities for university business hours of 8 – 5. Evening help desk services will continue with the contracted services of Blackboard but will be reviewed for quality and areas needing improvement.
- The new ShoreTel telephone system will become the newest mission critical IT resource. This system has been received and implementation began in July 2013. The ease of management of the new system will release staff resources previously devoted to telephone services to move into an active role on the backside of central system and network support and management.
- Improvements are underway to improve the efficiency of existing staff in all areas reporting to the CIO. Efforts toward this will be carried out through the staff reorganization plan.
- Continue to downsize the physical footprint of the server farm through virtualization.
- Analyze the internal development of applications versus less expensive, easily maintained, off-the-shelf applications.
- Review computer lab utilization and determine if the number of workstations is appropriate for on-campus student population. Likewise, review specialized lab needs in areas like computer science for equipment and software need for curriculum support.
- Determine how mobile computing can be leveraged to decrease the costs of replacing traditional desktop resources for students.
- Look at the budget implications for equipment renewal/replacement and new initiatives.
- Determine if off campus options can be a cost effective solution for CPU cycles and storage needs of the University.

Budget Implications

Following is a breakdown of the current year spending (2012-2013) on technology in four areas: Banner, Distance Education, Web Services, and Central Resources. It does not include individual department spending on technology related items. These four areas total \$751,597 or 86% of the student technology fees allocation. This leaves 14% of the \$878,858 technology fee revenue (\$127,261) remaining for renewal and replacement of hardware, new initiatives/projects, and growth for central network and computing hardware.

Table 1

Technology Spending for Banner, Learning Management, and Central Resources			
Technology Fee Revenue		\$878,858.00	
Annual Expenditures			
Banner/ERP Related			
	Alchemy NetCOBOL	\$2,050.00	% of Tech Budget
	Alliance ST (Jukebox Service)	\$3,200.00	
	Banner Maintenance	\$108,362.00	
	BSC Imaging System	\$11,000.00	
	Evisions Argos, E-check, Tax, & Mask	\$9,500.00	
	Nelnet Payment Service	\$27,295.00	
	Oracle Maintenance	\$85,000.00	
	Oracle Tru-Up Licenses	\$0.00	
	Runner Technologies	\$2,600.00	
	Total	\$249,007.00	28.33%
Distance Education			
	Blackboard	\$325,637.00	
	Identity Verification (Axiom)	\$12,000.00	
	Online Testing	\$4,190.00	
	Tutoring	\$4,795.00	
	Online tools	\$87,968.00	
	Outsourced Help Desk After Hours	\$8,000.00	
	Total	\$434,590.00	49.45%
Web Services Contract			
	Web content management staff	\$60,000.00	
	Total	\$60,000.00	6.83%
Central Resources			
	Network, servers, campus licenses, classrooms, labs		
	Total	\$135,261.00	15.39%

The physical technology assets of the University are valued at approximately \$1.8 million (this does not include conduit or other physical plant resources outside of buildings). These assets fall into three replacement lifecycle categories. Assets with a 15 to 20 year replacement lifecycle include the power generator, the IP telephone system, and physical network wiring. Assets with a lifecycle of approximately 8 to 14 years include the network backbone & switch infrastructure and technology classrooms. The last group of assets falls into a 5 to 8 year replacement cycle and includes the central servers & storage and desktop computers. To illustrate the effect on annual budgets, the replacement costs for each lifecycle category are included in Table 2.

Table 2

	Lifecycle Categories			
	15 - 20 year lifespan	8 - 14 year lifespan	5 - 7 year lifespan	
	Power Generator, IP Telephone, Wiring - building/interbuilding	Network infrastructure, Technology Classrooms	Servers, Storage, Desktop Computers, Printers	
Total Value of Assets	\$239,500.00	\$505,000.00	\$1,034,850.00	\$1,804,000.00
Annual Percentage Replacement	0.056 (18 years)	0.11 (9 years)	0.2 (5 years)	
Annual budget impact	\$13,412.00	\$55,550.00	\$198,170.00	\$267,132.00

The annual budget impact for assets with a 5 – 8 year replacement cycles is approximately \$198,170 (based on 5 year replacement). 20% of the total asset value of \$990,850. In 2012-2013, the renewal & replacement budget of \$127,261 is \$70,000 less than what would be needed to fund just this category of asset. Adding the 8 – 14 year lifespan category, another \$55,000 should be budgeted annually to replace equipment on a nine year replacement cycle. Estimating the cost of asset replacement outside of these two categories is difficult to predict and would likely be anticipated nearer to the equipment end-of-life.

The lifecycles used in this illustration extends the technology life to an extreme. Also, other factors must be considered including whether the technology is mission critical and serves all stakeholders in the case of the network and servers and those assets that serve individuals. The evolution of technology is not entirely predictable; as technology improves and matures, the replacement lifecycle is extended because the equipment has a longer useful life.

The detailed budgets are included in the *IT Strategic Plan* that accompanies this summary.

Goals & Objectives

There are eight goals with related objectives/tasks/recommendations organized in a three year planning cycle framework in the Strategic IT Plan. Each year aligns with a detailed budget of the hardware & software resources necessary to achieve the objectives. These goals are based upon the standard roles and responsibilities of information technology services common in universities serving students in both on-campus and online settings. The objectives associated with each goal in the *IT Strategic Plan* are in response to the risks and vulnerabilities outlined previously.

- Goal-I:** Establish and maintain a reliable, redundant, and secure information and communication technology infrastructure -- including hardware, software, storage, communications, and networking resources that follows industry standards and aligns with institutional requirements to deliver instruction and manage business processes.
- Goal II:** Establish and maintain quality on-campus and on-line learning environments that support program curriculums and adopted course delivery methods while providing excellent resources to the students.
- Goal III:** Establish and maintain desktop hardware and software standards for the campus that effectively support the academic curriculum and business processes.
- Goal IV:** Implement and maintain the ERP system (Banner and associated third party systems) required to support business processes, administrative operations, and planning activities at the University.
- Goal- V:** Establish and maintain visible and accessible technology support services for students, faculty, and staff including walk-in, telephone, e-mail, and web resources that meet the service levels required by all communities served.
- Goal-VI:** Establish and maintain an information system security and technology integrity profile using defined security standards including required acquisition, management, and replacement policies, procedures, and practices for centralized and desktop computing, networking, communications, and data storage/access.
- Goal VII:** Implement an assessment plan with methods of measuring and reporting key performance indicators and assessment plans.
- Goal-VIII:** Provide timely and informed responses to new technology initiatives and opportunities that can improve the quality of the student experience and staff and faculty efficiencies in the academic and business functions of the University.

The detailed objectives associated with each of these goals are included in the detailed *IT Strategic Plan* that accompanies this summary.

Recommendations

If approved by the President, the following are recommendations of the CIO:

- Communicate to all stakeholders the vision, mission, goals, and objectives for information technology presented in this plan while continuing to identify new goals and objectives necessary to support the mission and new initiatives of the University.
- Implement a process by which all future University initiatives and technology requests will be reviewed with consideration to the associated budget and staff implications.
- In collaboration with all University stakeholders, the CIO will annually update the IT Strategic Plan and present it to the Technology Advisory Committee, Administrative Council, and the President's Cabinet for input and recommendation.

This plan can be an effective tool for budget planning allowing technology resources and services to stay in alignment with the University mission while serving as a record of the progress toward the goals and objectives established for information technology at the University.