

TECHNOLOGY STRATEGIC PLAN

For Information Technology Services

April 2015



Governors State
UNIVERSITY

Prepared by Information Technology Services (ITS)
GOVERNORS STATE UNIVERSITY, UNIVERSITY PARK, IL 60484

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I. Introduction

I.A. Mission

The mission of the Information Technology Services (ITS) Department is to provide high-quality computing, networking, and telecommunications services in the most cost-effective manner and to facilitate the management, teaching, and learning processes.

I.B. Core Values

Integration

Promote and facilitate the effective integration of computing into the basic mission of the university through planning, programming, training, consulting, and other support activities.

Functionality

Develop, enhance, and manage the university's computing networks to provide high-speed, transparent, and highly functional connectivity among all computing and information resources.

Reliability

Develop and maintain highly effective, reliable, secure, and innovative information systems to support academic, administrative, and research functions.

Integrity

Facilitate the collection, storage, and integrity of electronic data, while ensuring appropriate access.

Innovation

Promote new uses of information technology within the institution by supporting exploration of innovative applications.

Leadership

Assume a leadership role in the planning, design, implementation, and operation of all shared computing resources in the public labs and faculty work areas.



I.C. Key Accomplishments 2014

This section summarizes key accomplishments by the ITS department in line with the goals of the president's Strategy 2015 document.

Goal 1 - Academic Excellence: Provide distinctive academic programs that effectively prepare students to become leaders and productive citizens in the global community.

1. Modification to SSIS Blackboard population code so all students are enrolled into the new student orientation shell.
2. Coordinated and processed logins in Blackboard for University accreditation efforts.
3. Management/Administration of all four (4) Blackboard LMS environments.
4. Transitioned Online SEIs to new file format as required by vendor.
5. Modified automated processed to populate Blackboard course shell with Graduate students.
6. Modified automated processed to populate Blackboard course shell with College of Education students.
7. Implemented an online graduation application form
8. Developed a report for advisors to provide them information on their advisees
9. Developed a report to identify students who were admitted but not registered
10. Reviewed and corrected issues with identifying Inactive and Lost students
11. Implemented direct interface between Colleague and GSU Bookstore (Follett ConnectOnce)
12. RapidTrack myOneCard tracking software installation in Fitness Center and Academic Resource Center
13. Implemented State of Illinois Transferology Program (u.Select)
14. Uploaded City College Equivalencies into Test and Production for use in Degree Audit evaluations
15. Rolled out Windows 8 on campus computers, replacing all Windows XP computers
16. Coordinated the purchase, configuration and distribution of over 300 Asus laptops to incoming students and faculty cohorts.
17. Expanded student pay for print to A2 lounge and Prairie Place

Goal 2 – High Quality Faculty and Staff: Provide students access to a highly qualified, motivated, and diverse faculty and staff.

1. Processed Student Evaluations of Instruction (SEI) forms for Spring/Summer/Fall of 2014.
2. Monitored and addressed discrepancies in staff positions that were causing problems with distribution lists.
3. Created Unemployment Compensation (IDES) Monthly Report for Finance
4. For FY2015 all employees received new SURS code using the Tier system from the State, SURS limit placed on all employees.
5. Benefits office can now produce LTD Remittance and Eligibility files for Prudential



6. Budget office can now produce the active employee position report with accurate information on it.
7. Created retro-pay stipends for all employees receiving salary increases
8. Updated UPI Dues (Faculty Dues)
9. Corrected calculation of CUEs per Faculty Contract update
10. Updated electronic check (e-check) process so that vendors are now able to have checks processed through ACH and receive email notifications
11. Corrected the Medicare tax code calculation after the new SURS codes were attached to every employee
12. Provided support for the processing of W2, 1098-T and 1099-MISC tax forms
13. Developed Faculty Workload and Adjunct Workload reports
14. Processed Colleague user access request forms for 2014

Goal 3 – Continuous Process Improvement: Develop and sustain a climate of continuous improvement that is defined by evidence-based decision-making focused on enriching the student experience.

1. Created new Ellucian Colleague test environment current as of 10/2014.
2. Created new Recruiter Development environment to safely test upgrades and changes.
3. Upgraded BusinessObjects/WEBI reporting system to version 4.1
4. Upgraded Blackboard to AR2014CU3 along with CUs.
5. Deployed new server to centralize all automation on GSU databases.
6. Added additional comments to Search for Sections in Online Registration
7. Added Prairie Place residents to Regroup selection for emergency messages in housing
8. Added Intersession group to Regroup as a standalone group
9. Added screen customizations to require a phone type when a phone number is entered in Colleague
10. Automated the posting of GL transactions to support ITWorks grant software
11. Reviewed and enhanced the priority registration rules to handle edge cases
12. Added a new registration rule to support the new freshmen class
13. Added 120+ new fields to WEBI to provide enhanced reporting and analytics
14. Provided a mechanism for Admissions staff to track and report on student's grades and GPA from other institutions
15. Made historical HR/Payroll data easier to report on
16. Implemented Electronic Transcript transmittal system (eTranscripts)
17. Created an automated process to calculate/update section dates
18. Created a report to view transcript order history
19. Branded Colleague UI Client with GSU logo
20. Added student pictures to Colleague UI Client
21. Disaster recovery tests are conducted regularly at a remote location.
22. Continue writing RFPs for the consideration of upgrading GSU applications and internetworking infrastructures.
23. Singularity has been upgraded and is currently being evaluated for possible replacement.



24. Increased technology spending on student-centered projects including the replacement of obsolete equipment in the ACS Laboratories. In 2014 remodeled Library and Lab adding new technology and updating existing. Adding 4 new computer labs and three meeting collaboration rooms.
25. SAN - The SAN infrastructure continues to grow from 2009 through 2014 as all critical systems have started utilizing this system which makes better use of disk space, provide better redundancy and flexibility for expansion of network application storage.
26. Virtualization technology and methodology continues to be implemented from 2009-2014 in efforts to reduce the number of servers. The reduction of servers contributes to the reduction of energy required to run these systems in the GSU data center.
27. In 2014 the GSU phone system received a much needed upgrade in order to ensure it remained a critical communication system for emergency and nonemergency requirements.
28. In 2014, deploy wireless MESH to Library/Cube and Prairie Place, remaining campus will receive upgrade to 802.11a/b/g/n/ac by 6/15.
29. Upgraded internetwork cabling infrastructure – re-cabled 14 communication closets (7000+ ports)
30. Upgraded all data closet[s] and data center switching hardware to support upgrade from a 1G to a 10GB backbone (130+ switches)
31. Upgraded server fault tolerance – upgrade backup tape technology to LTO6, SQL and file server clustering added or improved in 2014.
32. Upgraded or added key system security infrastructure – Firewall, Intrusion prevention system, Email Spam filtering
33. Increased bandwidth to primary and secondary internet service provider for main campus and housing (primary from 150mb to 250mb, and backup from 10Mb to 25Mb)
34. Upgraded campus security (Camera, Fire Alarm) infrastructure – added fiber, upgraded servers
35. Assisted with implementation of campus On-Card system – New cash register system, pay for print, library book checkout, laundry service payment
36. Implemented GSU Chat web services for Admissions and Dual Degree program administrative staff
37. Instituted WEBI user workshops for both student and financial data reporting. Each meets weekly.

Goal 4 – Visibility, Outreach, and Economic Catalyst: Pursue initiatives that make GSU a preferred destination in the region, that create a vibrant public dialogue, and that increase the university's effectiveness as an economic catalyst in the region.

1. Created new distribution lists for all male/female and freshman students.
2. Integrated custom fields for applications from Recruiter to Colleague
3. Created CAS mappings for HAMPCAS, CSDCAS, PTCAS and OTCAS to import student application data from WebAdmit into Recruiter
4. Trained Admissions to import data from WebAdmit to Recruiter



5. Automated the maintenance of source codes for our Alumni Development office
6. Enhanced reporting to the National Student Clearinghouse by adding College Level
7. Implemented Wealth Engine to provide prospective donor analytics for the Alumni Development office
8. In 2014 created, renovated, and/or enhanced websites and web services
 - a. Athletics Recruitment, Mascot Search, and State Articulation web forms
 - b. Search engine optimization (SEO)
 - c. "Why Not" website based on feedback from marketing
 - d. Gender Matters Conference and Small Business Development Center (SBDC) event registration processing
 - e. Student FERPA process for College of Education students
 - f. Departmental Directory Listing pages and Recruitment Live Chat pages
 - g. Online registration pages for State Articulation, Family and Friends, and COE Special Programs
 - h. MSW sub site for student information
 - i. Community Garden - www.govst.edu/garden
 - j. Developed Library Group Room Reservations and Housing Incident workflows
 - k. Implemented the Visual Zen and Housing Single Sign On (SSO)
 - l. Developed Marketing Design and HR Termination Workflows
 - m. Created "Find my Classroom", "Most Used Links" and "How do I?" web applications

Goal 5 – Social, Ethical, and Environmental Responsibility: Build an institution that is socially, ethically, and environmentally responsible.

1. Created integration between Recruiter and Document imaging for freshman applications.
2. Created integration between Recruiter and Document imaging for international applications.
3. Created Colleague screens for staff to update emergency contact information
4. Created security reports to give Colleague stakeholders more insight into who has access to their screens
5. Developed an online form for students to check their immunization compliance
6. Created reporting fields to fulfill new requirements for immunization reporting
7. Created the new state mandated ILDS report
8. Developed an interface for bringing Prairie Place addresses into Colleague
9. Assisted Procurement and Financial Services in fulfillment of FOIA requests
10. Setup document imaging capabilities (Singularity) for the Financial Aid and ITS departments
11. Implemented the financial aid public document storage for website
12. Changed in WebAdvisor for Financial Aid, added checkbox for students to read and check before student accepts awards
13. Desktop Energy savings
14. Enforced and developed improved energy-saving hardware specifications.

Goal 6 – Financial Growth and Sustainability: Diversify GSU's revenue streams to ensure resources that are necessary for institutional growth and fiscal sustainability.



1. Automated all needed processes for our ITWorks Grant Management server.
2. Created monitoring for our ITWorks Grant Management server.
3. Setup Budget Selection under Budget, Buy, & Pay to display a second Fiscal Year to include view prior year budgets
4. Install Self-Service Student Finance under Online Services
5. Upgrade Synoptix to version 7.0 on client desktops
6. Created an interface for Lexis Nexis so that our Development office could obtain updated contact information for Alumni
7. Created an interface from Housing software to Colleague receivables. Student invoices are created from Housing System (RMS) transactions



I.D. One-Year Action Plans – FY2014

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
Goal 1 - Academic Excellence: Provide distinctive academic programs that effectively prepare students to become leaders and productive citizens in the global community.				
	Continuous ongoing plans for the Ellucian portal continue to evolve.	\$ 25,000	Increasing student satisfaction as measured in surveys and learning evaluations.	
	Provide students with opportunities for keeping up with best technology practices in the field. Purchase laptop/tablet technology for all incoming Freshman.	\$ 200,000	Establish technology benchmark for incoming freshman.	
	Support implementation of Acalog online catalog	\$ -	Scheduled for completion April 2015	
	Implementation of Ellucian's Degree Audit Module along with course transfer articulation is scheduled to be released to advisors May 2013.	\$ 221,000	Provide students with course equivalencies as they relate to their program of study. Live for advisor use 2013FA. Assessment ongoing for proper time for student access, based on % students with transcripts in system (~70% of undergrads as of April 2015).	FY12, FY13, FY14
	Implement Ellucian Colleague to GSU Bookstore Interface (FALink) to allow students to charge their books to their financial aid refunds.	\$ 8,000		FY14
	Implement Ellucian Student Planning Self-service for more robust support of student advising/degree audit/program planning/registration.	\$ 85,000	Dependent on enhanced capacity to add student transcript data to Colleague.	
d. Enhance and maintain high quality graduate programs while exploring opportunities for new program development.				



Goal 2 – High Quality Faculty and Staff: Provide students access to a highly qualified, motivated, and diverse faculty and staff.				
a. Develop and implement plans and processes to hire, retain and reward faculty and staff of exceptional quality.	Fill several needed technology support positions and continue to hire the best qualified personnel:	\$ 250,000	Highly-qualified technical staff as indicated in resumes and performance	FY11, FY12
	Consider terminal degrees where appropriate			
	PeopleAdmin upgrade and Colleague integration		First phase (upgrade) started. Second phase (integration) planning.	FY14
	Colleague Position Control implementation to enhance workforce mgmt.	\$ 5,000	In process	FY14
	Colleague Position Management implementation to enhance workforce mgmt	\$ 4,500	Dependent on Position Control and Ellucian release, which has been delayed.	
b. Advance faculty and staff development to provide and support: • Best pedagogic and professional practices; • Scholarly and career development; • Grant-related activities; • Rewards for professional public service; • Increased use of technology.	Increase University staff productivity with campus-wide project management software	\$ 75,000	Increasing number of training opportunities offered campus-wide	
	Support grant proposals with technical consulting, including the specification of technical infrastructure	\$ -	Increasing attendance in training classes offered	
	Set standards and policies for students, faculty and staff including software licensing, hardware purchases, email, and telephone use.	\$ -	The presence of a definition of academic and administrative competencies	
	Improve faculty awareness and use of available technology services, tools, and software including electronic portfolios, materials repositories, plagiarism software and digitized content.	\$ -	Increasing efficiency in the purchasing function as reported by management	FY12, FY13, FY14
	Provide effective communication of training opportunities.	\$ -	Successful Implementation of business application solutions included in the tactical planning period	FY12, FY13, FY14
	Implement E-Procurement	\$ 150,000		
	Implement Online Job Applicant portal including integration with Ellucian Colleague	\$ 6,700		FY13, FY14
c. Reduce reliance on adjunct faculty.				



d. Increase the number of faculty and staff holding a terminal degree.				
e. Increase GSU's online course/program presence.	Support and expand online course offerings as well as the delivery of courses enhanced with Blackboard. Continue incorporating leading technologies to our already successful Blackboard implementation.	\$ -	Progress indicators could include:	FY11, FY12, FY13
Goal 3 – Continuous Process Improvement: Develop and sustain a climate of continuous improvement that is defined by evidence-based decision-making focused on enriching the student experience.				
a. Assess the quality of programs and services offered by all units in the university and use the findings for continuous improvement.	Implement the Blackboard course grading system to integrate with Ellucian.	\$ -	Provide better space utilization and need for additional space and tech classrooms.	FY12, FY14
	Expand R25 reporting functionality to publish space utilization. Upgrade from Crystal reports to web services reporting.			FY13, FY14
	Upgrade R25 software to the latest product 25Live			FY13, FY14
b. Increase and refine the assessment of student learning to enhance academic program quality and curriculum development and revision.	Expand learning evaluations including the implementation of online course and student evaluation of instruction (SEI). Implement software for national comparison of courses and instructors. RFP currently being prepared.	\$ 40,000	Increased use of evaluations with a more effective tool. National comparison of results.	FY12, FY13, FY14
c. Continue to seek and attain specialized accreditation for all programs where available and appropriate, or require outside review of those programs where no specialized accreditation program exists.				
d. Increase the use of technology by faculty and staff to deliver high quality instruction and services.	Upgrade campus technical infrastructure (see detail)	\$ 261,800	Increasing faculty and staff satisfaction as measured in surveys	FY11, FY12, FY13, FY14
	o Continue to consolidate and upgrade another 25% of all servers using Virtualization and SAN (establish secondary SAN Infrastructure). Upgrade domain controller infrastructure.		Reduced new server acquisition costs brought about by SAN and Server Virtualization	



o Create and implement campus desktop hardware replacement strategy 25% of all equipment (\$360,000 Annually)		Improvement in the speed of campus business applications, such as Ellucian	
o Upgrade Faculty and Staff Email Storage (Archiving). Implement policies for archiving email that will result in less GSU server capacity consumed by old email. Upgrade faculty/staff email server hardware and software.		Improves availability of	
o Improve network/server security. Implement vulnerability and risk assessment auditing tools. Establish annual process for review.		Improve delivery and availability of computing resources.	
o Upgrade file storage capabilities for Faculty/Staff by introducing a cloud storage infrastructure (Solution similar to Onebox, Google Drive or iCloud). An in-house cloud storage helps insure security of sensitive data.		Increasing satisfaction with campus desktops as measured in faculty, staff and student surveys	
o Upgrade Campus Telephony system (VoIP) (\$75,000), Add call queing system, replace analog gateway.		Reduced new server acquisition costs brought about by SAN and Server Virtualization	
Ongoing bi-annual disaster recovery tests and remote location (SunGard facility). Continue to expand and include business units in the process. Continue to leverage changes in disaster recovery methodology and technologies to streamline and speed up process to recover.	\$ 165,000	Ensures delivery and availability of computing resources.	FY10, FY11, FY12, FY13, FY14
Disaster Recovery / Business Continuity / Business Impact Analysis. The technical implementation of the recovery of GSU systems has been completed and tested but requires a corresponding business plan for recovery of functionality by other GSU business units.	\$ 165,000	Ensures delivery and availability of computing resources.	
Maintain exhaustive software inventory to remain in compliance with software vendor licensing requirements. This includes monitoring of network concurrent licensing products.	\$ -		FY11, FY12, FY13, FY14



Evaluate and implement a new document management system to replace the current non-integrated system. RFP currently being prepared.	\$ -		FY12
Implementation of online timesheets / Time accrual	\$ 6,000	Eliminate paper time sheets, automate the process of time accrual and provide more timely information on employee time accrual balances	
Expand use of document imaging to other university departments such as Registrar, Financial Aid, and Legal.	\$ -	Automated import of applications from third party.	FY12, FY13, FY14
Formalize the delivery of IT services to the user community. Better align those services to the needs as defined in the universities strategic plan. Use frameworks like ITIL in the establishments of a service catalog and service level agreements (SLAs) for service delivery.	\$ -	Service catalog continues to be reviewed and updated annually.	FY12
Support implementation of campus inventory management tools and with the transition to and with the new ERP system.	\$ 50,000	Better tracking of university assets.	FY12
Cube Lab-Planning for Equipment Replacement. Create a detail plan for identification and replacement of aged equipment (25%) on an annual basis. Any such efforts would include finding opportunities to expand capability and functionality of equipment.	\$ 50,000	Establish consistency of computer performance and age in computer lab classrooms.	FY10, FY11, FY12, FY13, FY14
Technology Enhanced Classroom LCD Planning for aged Equipment Replacement. Create a detail plan for the identification and replacement of obsolete equipment on an annual basis.	\$ 75,000	Establish consistency of equipment performance and age in classroom computers in podiums.	FY10, FY11, FY12, FY13, FY14
Establish an A/V equipment management strategy. Provide planning and management for campus-wide audio-visual equipment as well as address aged equipment replacement strategy.	\$ 75,000	Replace 10-15% of aging equipment annually.	FY13, FY14



	Technology Enhanced Auditorium. Add technical equipment to one GSU Auditorium (Sherman Music Recital Hall, Hall of Honors, E-Lounge, F1622 Lecture Hall, and Engbretson Hall) to increase the availability of spaces where technical presentations can occur.	\$ 50,000	Progress would include adding fixed technology to a room that currently has none such as Sherman, Annex or E-Lounge.	
e. Develop and administer regular satisfaction surveys (including, but not limited to applicants, current students, alumni, employers, and other stakeholders).	Implement a new Student Evaluation of Instruction (SEI) instrument.	\$ 20,000	Better completion rate allowing students to respond online or on paper.	FY12, FY13, FY14
f. Continue to build on past successes the university has made regarding diversity, which already exceed national averages in most areas. • Increase community knowledge and awareness of diversity and acceptance of cultural differences. • Increase faculty and staff diversity. • Increase student diversity in a manner that is compatible with and reflective of the populations we serve. • Internationalize campus to better serve students and expand opportunities.	Maintain a diverse technology staff	\$ -	Increased diversity. ITS continues to be a model for the entire university by hiring diversity.	FY10, FY11, FY12, FY13, FY14
Goal 4 – Visibility, Outreach, and Economic Catalyst: Pursue initiatives that make GSU a preferred destination in the region, that create a vibrant public dialogue, and that increase the university's effectiveness as an economic catalyst in the region.				
a. Build regional community awareness of campus activities through effective outreach and communications programs. • Increase community service projects that build connections to the university. • Increase community service projects that build connections to the university. • Share expertise of the university with	In cooperation with Public Affairs continue to update and utilize technology to enhance the exposure on the university on the internet. (Redesign content and navigation in progress using additional media types)	\$ -		FY10, FY11, FY12, FY13, FY14
	Actively involve GSU in collaborative tools and social networking as well as business contacts through LinkedIn as an example.			



<p>members of our regional community.</p> <ul style="list-style-type: none"> • Increase our external presence through media coverage and proactive engagement with journalists. • Expand and promote university outreach. • Establish the University as a recognized regional destination for conferences. 				
	<p>Develop an application to virtually tour the Nathan Manilow Sculpture park</p>	\$ -	Increased satisfaction with web offerings for the campus as seen in student/faculty/staff survey responses	
<p>c. Enrich the student experience at GSU.</p> <ul style="list-style-type: none"> • Be a model for high quality student services for adult learners. • Develop a new student center (includes: Library facilities, Computing facilities, Small group spaces, Recreational facilities, Bookstore and other retail options) • Develop residential life opportunities. 			Increasing student satisfaction as measured in surveys and learning evaluations	
			Increasing student retention	
<p>d. Expand the role of GSU in the regional network supporting economic development.</p> <ul style="list-style-type: none"> • Expand the role of CenterPoint services. • Bring together education, business and government to develop network of support services. • Continue to support the growth and retention of business in the region. • Develop business relationships that support students and academic programs and involve students in solving real world problems. 				



Goal 5 – Social, Ethical, and Environmental Responsibility: Build an institution that is socially, ethically, and environmentally responsible.				
a. Increase outreach into the poorest areas of our region and increase service to those who are traditionally underserved by higher education.				
b. Ensure that ethics and social justice concepts are incorporated into program curricula.				
c. Create opportunities to offer institutional expertise to help solve regional problems.				
d. Provide regional leadership and serve as a model for sustainable development, minimization of global warming emissions, and maintenance and improvement of environmental quality.	Adopt the recommendations of climate savers campus-wide where practical	\$ -	Evaluations of newly purchased equipment to assure compliance with guidelines.	FY10, FY12, FY13
	http://www.climatesaverscomputing.org/learn/energy-saver-guide/		Evaluated Printers and printer usage on campus to identify areas of energy savings.	
e. Develop a comprehensive, institutional action plan to achieve climate neutrality and fulfill the <i>American College and University Presidents Climate Commitment</i>				
f. Become a model of sustainable construction and development, best land use practices, and best practices for storm water management that is consistent with the <i>Illinois Sustainable University Compact</i> .				
Goal 6 – Financial Growth and Sustainability: Diversify GSU's revenue streams to ensure resources that are necessary for institutional growth and fiscal sustainability.				
a. Develop and implement effective infrastructure and strategies to advance a relationship-based philanthropy model, resulting in				



increased donations to the Foundation.				
b. Systematically identify objectives and activities for sustainable unit-level advancement activities.				
c. Establish, support, and continuously assess the university's infrastructure for increased sponsored research activities among faculty and staff members.				
d. Pursue new financial opportunities and sources of revenue through increased contracts, grants, extra-mural funding, and diversified investment strategies.	Support grant proposals with technical consulting	\$ -	Increased financial opportunities	
e. Maintain and expand governmental relations at both the state and federal levels to enable access to and opportunities for increased funding in support of the university's mission.				
f. Optimize future enrollment management strategies and adjustments to student tuition and fees to ensure an appropriate, sustainable balance with GSU's ongoing commitments to accessibility, affordability, and academic quality.	Increase links to our web site to increase visibility via feeder schools, blogs and social media.	\$ -	Increased future enrollments	FY10, FY11, FY12

II. Current Environment

ITS provides computer resources, services, and support for instruction, research, and administration at Governors State University (GSU). ITS is divided into five sections:

- Technical Services
- Support Services
- Application Development
- Telecommunications
- Colleague Project Office

The campus-wide Ethernet local area network (LAN), which utilizes a fiber-optic backbone, makes computing services available across campus.

II.A. Technical Services

Technical Services consists of the following staff.

- Director
 - Senior network engineer/Network Manager
 - 3 network specialists
 - Helpdesk manager
 - Cube Manager (Part-time)
 - Evening Help Desk Supervisor
 - 2 Technical Support Specialists
 - 2 ACS Lab Technical Support Specialist
 - 3 Helpdesk student workers (1.5 FTE)
 - 8 Cube student workers (4 FTE)

The network infrastructure and server management area consists of a senior engineer and three network specialists who maintains connectivity on the LAN/WAN and the Internet. Members are responsible for performance monitoring and tuning, configuration, resource use, account authorization, security monitoring, network server, and data/voice cabling infrastructure management.

The Helpdesk consists of a Manager, an Evening Supervisor, two technical support specialists, and three student workers. This area provides technology usage and connectivity support for all faculty, staff, and students. This includes software and hardware installation and repair, new purchase consultation, and software site licenses.

The Cube consists of a manager, 2 technical support specialist and 8 student workers. It provides technology usage and connectivity support for all faculty and students who utilize computer labs, library and technology enhanced classrooms throughout campus. The Cube staff also provides supplemental Helpdesk coverage to faculty, staff, and students during evening and weekend hours of campus operation.

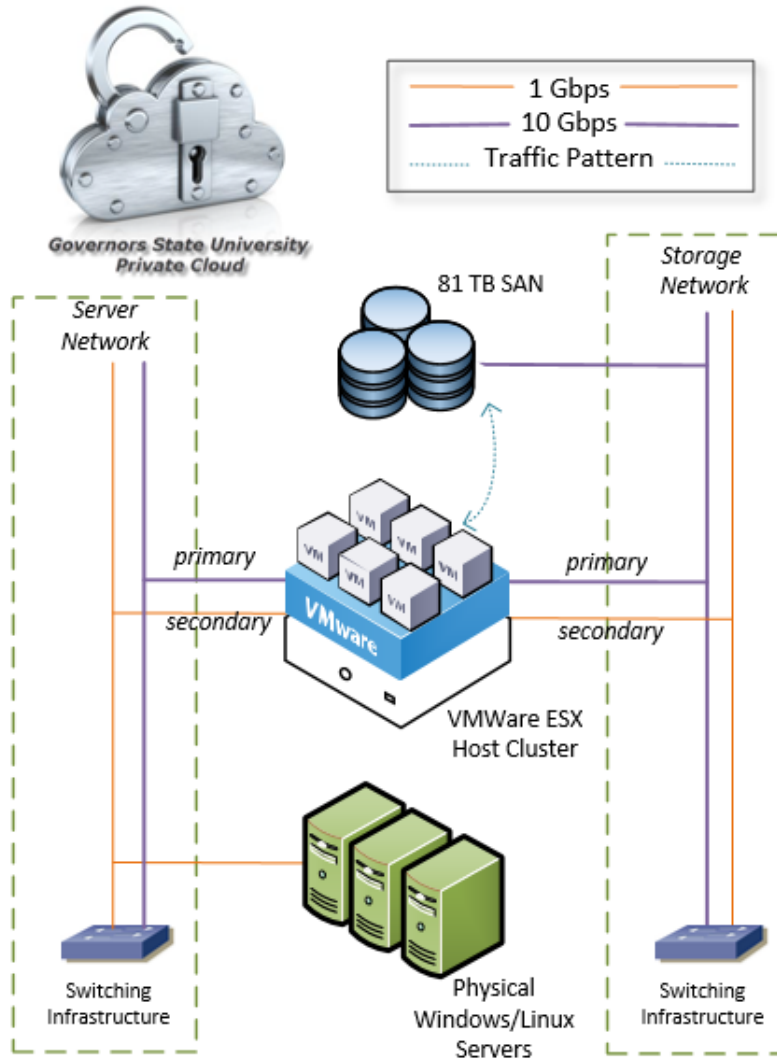


II.A.1. Network, Server-Hardware, and Telephone-System Infrastructure

The GSU data/voice infrastructure continues to grow. Below is a snapshot of some key components that comprise the network infrastructure.

1. 168 servers supporting in excess of 121 network applications. 96% of these network applications are on virtualized systems.
2. 2900 managed email accounts and 28556 student email accounts
3. Thirty nine main and remote campus technology-enhanced classrooms, of which 15 are also computer labs
4. More than 1700 PC/Mac/Laptops/Smartphones
5. More than 600 printers (120 of these are networked)
6. 162 indoor and 28 outdoor emergency phones and 35 campus/hallway phones on campus
7. 1022 total IP-based (Cisco) telephones on campus
8. Six rooms with video-conferencing units
9. The fiber-optic backbone connects eight main campus buildings, and 1 remote campus are connected via the Internet.
10. Seventy One (71) security cameras
11. 400+ Wireless Access points with 4300+ daily connections
12. More than 6,500 network jacks throughout campus are connected to 13 communication closets.
13. Roughly 85% of all classroom and lounge areas have wireless network coverage.
14. The main campus has an Internet backbone connection of 250MB.
15. Remote access capability through SSL VPN connectivity is available to faculty and staff.
16. All faculty and staff are given personal network home directories (H drive).

GSU Private Cloud Diagram





Total Servers	168
Physical Servers	8
Virtualized Servers	160
Authentication	- 7
Blackboard (Prod/Test/DB)	- 7
Database (Prod/Test)	- 10
DNS	- 3
Email Systems	- 4
ERP Systems (Prod/Test/DB)	- 34
File Server	- 4
General Testing	- 8
Helpdesk	- 16
IT Apps	- 24
Legacy	- 7
Misc Apps	- 19
Web	- 3
VoIP	- 7
VMWare Host Servers	- 15

II.A.2. Data Storage

Currently, data storage within the GSU network is mixed between a centralized SAN and directly attached storage. All data is backed up to tape or to disk regularly. The total amount of available storage the university maintains is close to 81 TB (1 terabyte = 1,000 gigabytes). Critical data is stored at an off-site facility for disaster-recovery purposes. Backup tapes are picked up daily by a service and stored at their secure facility 50 miles from the GSU main campus.

II.A.3. Email System

GSU provides email services for all faculty, staff, and active students. The student email system is a hosted solution by Microsoft called Office 365.-This system currently maintains more than 28,556 accounts.

The faculty and staff email system is Microsoft Exchange. It consists of several server systems. This platform has provided the university with a solid and robust email solution for the past seven years. This system currently maintains more than 2,900 accounts.

II.A.4. Helpdesk

The Helpdesk maintains and supports the use of all technology equipment and applications used by faculty, staff, and students. This includes desktops, laptops, printers, mobile devices, and



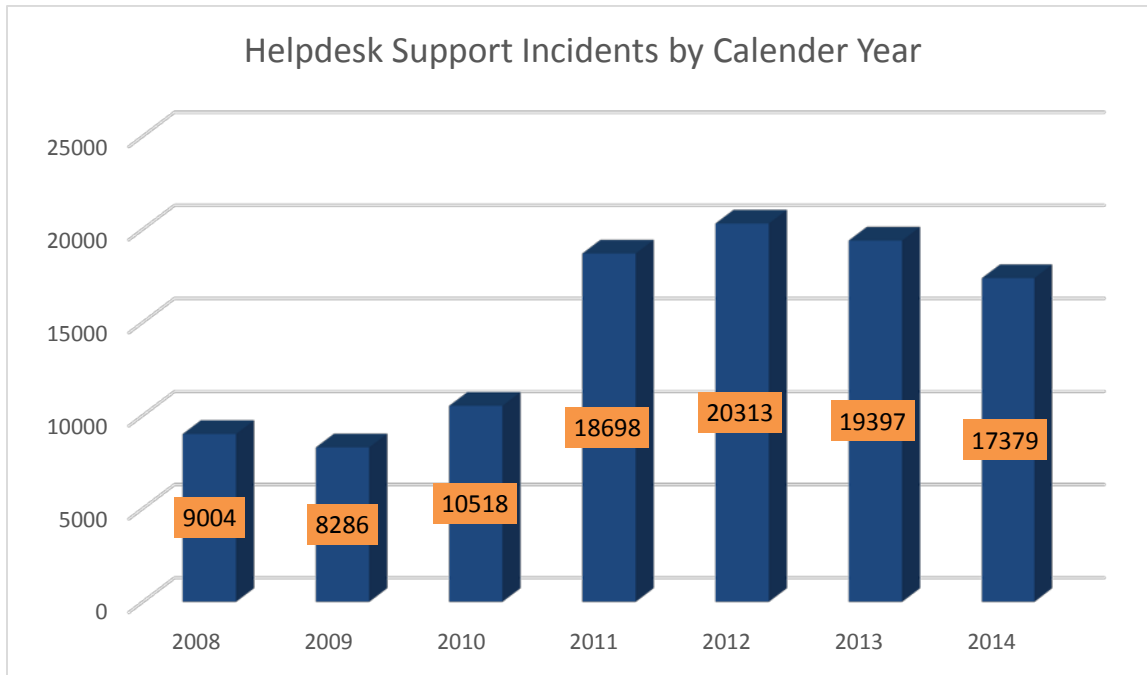
audio-visual equipment. The level of support continues to extend beyond the walls of the main campus as online teaching grows and faculty, staff, and students utilize their personal home computers, laptops, and mobile devices in the learning process. Wireless activity continues to increase during evening hours and existing infrastructure often experiences saturation in some areas of campus as students, faculty, and staff are connecting laptops and other mobile devices to the internet.

The Helpdesk utilizes a Service Management System that is designed to track incidents, resolutions documentation, and workflow management. The state-of-the-art system, HEAT, is designed to be an enterprise service management system to be used for all organization services, not just information technology. This system is helpful in supporting the Helpdesk's efforts to establish good practices and maintain a commitment to continuous quality improvement.

HEAT facilitates the maintenance of service levels. The Helpdesk staff makes every effort to resolve issues at the time of the service call. This is the initial method for resolving issues before assigning a priority level. Helpdesk staff logs in and assign priorities for all requests not resolved at the time of the call, based on specific definitions. Requests are handled according to the priority assigned to them.

The following table describes the priority levels assigned to requests for hardware/software problem resolution with associated response and completion time commitments:

Priority	Definition	Response Time	Completion Time
Critical	Incident that affects entire university community or group of users	Immediate	Within 2 hours
High	Incident that affects a single user	Within 2 hours	Within 1 working day
Medium	General service request or incident	Within 8 hours	Within 2 working days
Low	Service request that does not require immediate attention or involves long range planning.	Within 3 working days	Within 5 working days



*Change from 2010 to 2011 is due to implementation Ellucian’s portal and student single sign on implementation.

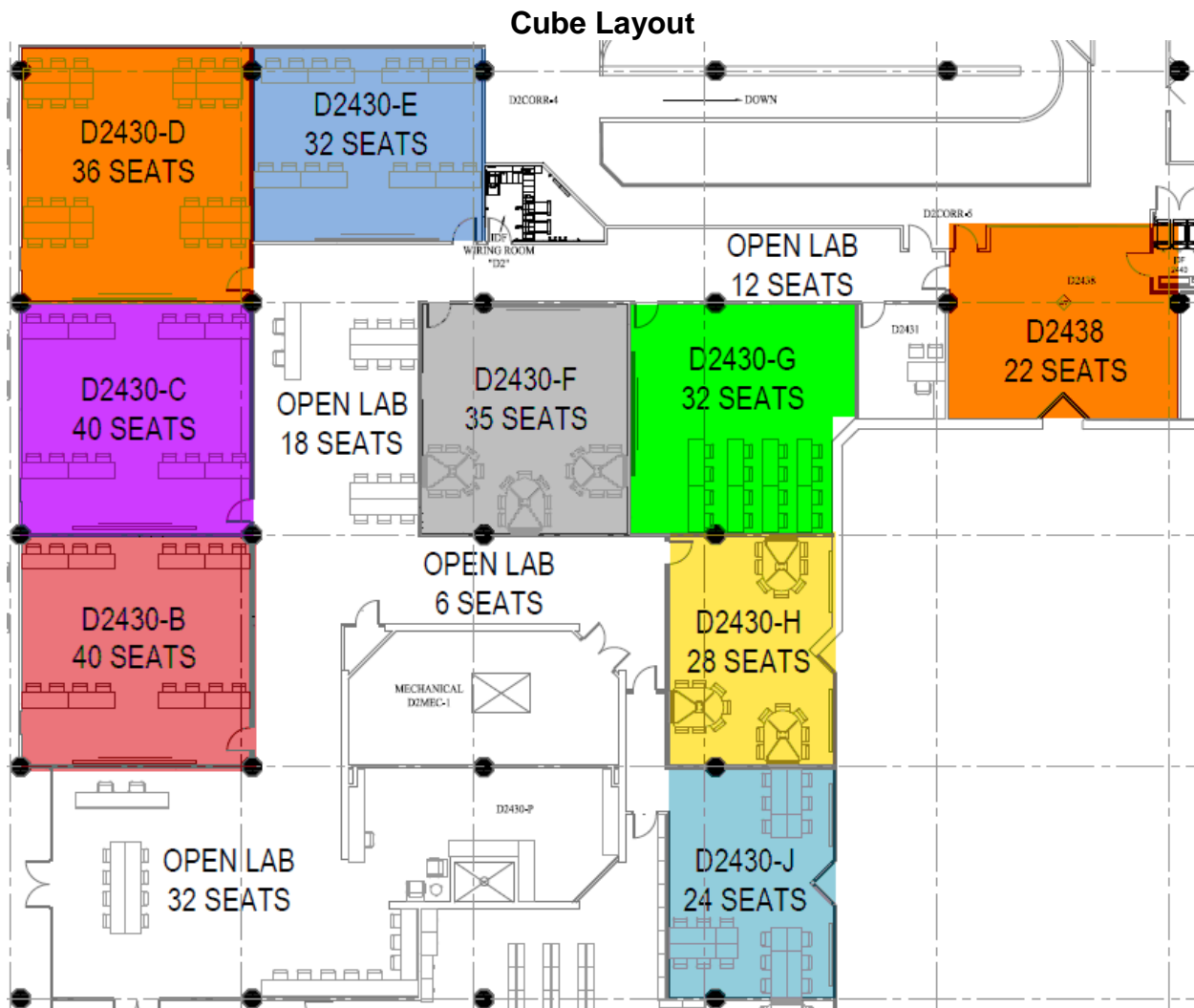
II.A.4.a. Helpdesk Staff - 2015

Position	2009	2010	2011	2012	2013	2014	2015
Help Desk Manager	1 FTE	1 FTE	1FTE	1 FTE	1 FTE	1 FTE	1 FTE
Help Desk Supervisor (evening)	0 FTE	0 FTE	0FTE	1 FTE	1 FTE	1 FTE	1 FTE
Technical Support Specialists	5 FTE	3 FTE	4 FTE	4 FTE	2 FTE	2 FTE	3 FTE
Hardware Specialist	1 FTE	1 FTE	0 FTE	0 FTE	0 FTE	0 FTE	0 FTE
Student Workers	2 (1 FTE)	7 (3.5 FTE)	7 (3.5FTE)	4 (2 FTE)	3 (1.5 FTE)	5 (2.5 FTE)	3 (1.5 FTE)
Temp Worker	0 FTE	0 FTE	0 FTE	0 FTE	0 FTE	1 FTE	0 FTE
Total	8 FTE	8.5 FTE	8.5 FTE	8 FTE	5.5 FTE	7.5 FTE	8 FTE

- 2 FTE positions are unfunded

II.A.5. Cube and Technology-Enhanced (Smart) Classrooms

The level of support provided by the Cube staff is similar to that of the Helpdesk. Lab staff report to Helpdesk management. Services covered by the lab staff are no longer confined to the Cube facility, which consists of 383 computers in 10 computer lab rooms and open areas.



The coverage extends to support an additional 73 technology-enhanced classrooms, 4 classrooms with a mounted projector, 18 with a mounted TV and DVD\VCR, 54 open computers in the Library as well as 11 remote computer lab classrooms located throughout campus. Additional services provided by the Cube staff include student software tutoring and answering Helpdesk calls during evening and weekend hours. During Summer 2014 the Cube was renovated and expanded to include more rooms and seats per room.

II.A.5.a. Cube Staff—2015

6.5 total FTE staff

- Lab Manager (part-time)
- 2 Technical Support Specialist
- 8 Student workers (4 FTE)

II.A.6. Security Cameras

ITS maintains a security camera system consisting of 75 cameras and three servers. Six of those cameras are on the roof of the main campus covering the areas in and around the parking lots. The remaining cameras monitor hallways and entrance doors. Recently cameras have been added to some remote buildings on campus (Print Shop and Grants Building). All cameras are recording activity continuously, 24 hours a day.

II.A.7. Network Security

The university computer systems are not immune to the many security threats confronted by every organization. A substantial investment has been made to insure the continued stability and protection of all systems on campus. Security touches every piece of equipment on campus including routers, switches, servers, desktops, and laptops. Vendor-security and anti-virus updates are applied regularly on every server and desktop.

II.A.7.a. Firewalls

Firewalls and intrusion detection and prevention systems are in place scanning every packet of data that enters the university through the Internet.

II.A.7.b. Antivirus

Anti-virus software is installed on every desktop, laptop, and server. Additionally, every email is scanned for viruses, worms and Trojans.

II.A.7.c. Password Management

GSU's Policy 64 is a network use policy. The policy states, among other things, that all faculty and staff passwords must be changed every 60 days, students every 120 days and must be a minimum of eight alpha/numeric characters, and must be unique.

Policy 64 became an official GSU campus-wide policy during the 2nd quarter of 2008.

The State of Illinois Auditors Office requires that all faculty and staff must acknowledge annually that they have read and understand the university's Network Use Policy (Policy 64).

It is the responsibility of the university and the ITS to maintain the integrity and security of all data. One way to help insure this is to use technology to force password changes for all faculty and staff members.

Policy 64 defines a secure, "strong" password as follows:

- Must be 8 characters in length
- Must include punctuation such as; ! \$ % & * , . ? + - =

- Must start and end with letters
- Must not include the characters # @ ' " `
- Must be a unique password going back 6 previous passwords
- Passwords expire a minimum of every 35 days.

Per additional research into industry standard ‘strong’ passwords GSU has implemented additional requirements for a user’s password.

- Must have a numeric character (0-9)
- Must have both a lowercase and uppercase letter
- Password cannot contain your account name or parts of your full name
- Should not repeat a character more than twice within a password

GSU has one password management system for faculty, staff and students. This system includes the mandatory enforcement of password changes.

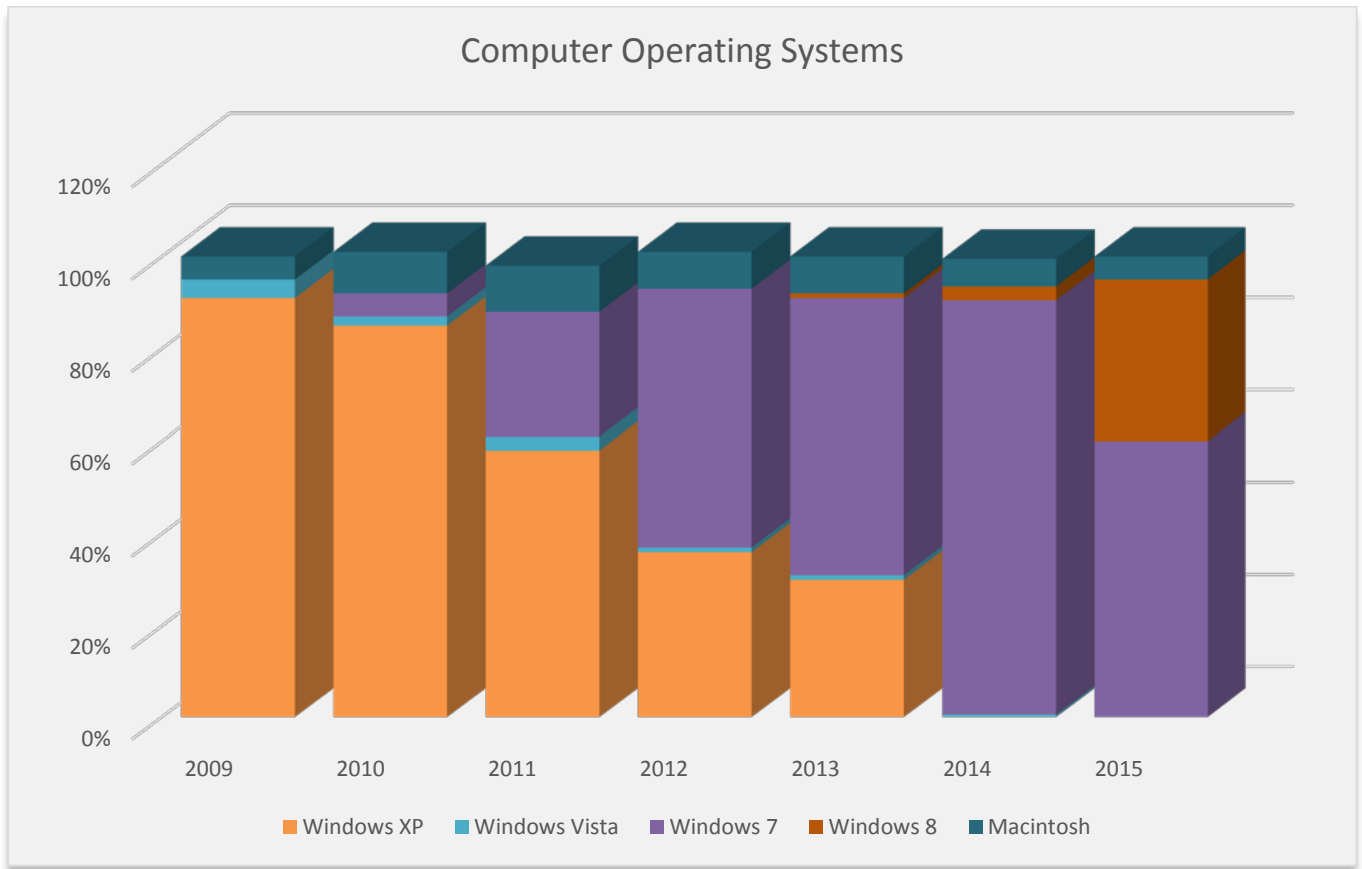
II.A.7.d. Student Housing / Guest Wireless

GSU’s student housing and guest wireless networks are segmented from accessing GSU’s primary network containing production servers, infrastructure devices and campus PCs. This was done primarily to limit bandwidth consumption as well as to provide another layer of security from non-business related traffic entering the primary network.



II.A.8. Workstations on Campus

The university has seen a steady increase in computers on campus. What continues to grow is the number of faculty and staff with more than one computing device, e.g., desktop, laptop, and smartphone.



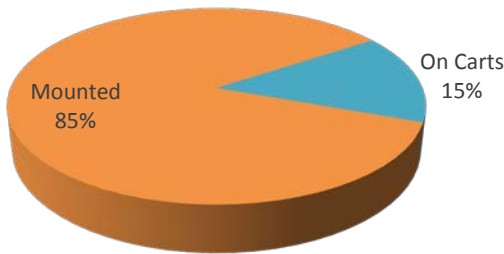
There are approximately 1,700 PC/MAC Laptops and Desktop computers on campus.

II.A.9. Audio-Visual Equipment

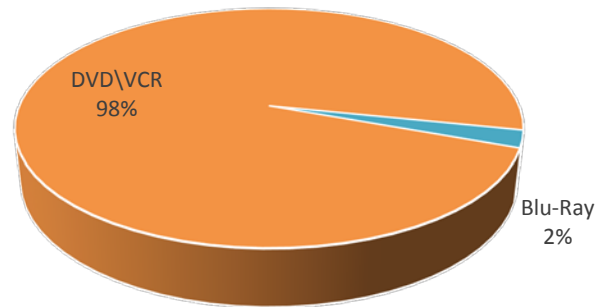
In the beginning of 2008, ITS assumed responsibility for maintaining and setting up all A/V equipment on campus. This consists primarily of all fixed and mobile LCD Projectors, televisions, VCRs, and DVD/VCR combo units throughout campus.

2014 Audio Video

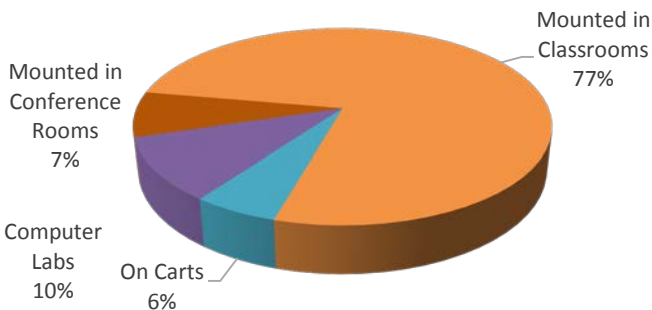
Televisions



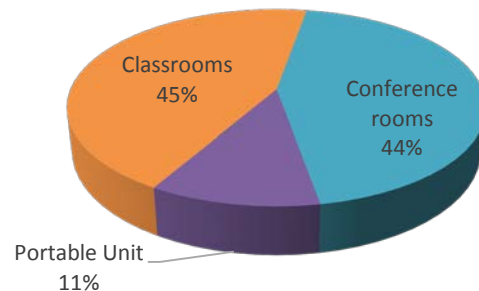
Media Player Types



Projectors



Video Conference Units



II.A.10. Wireless

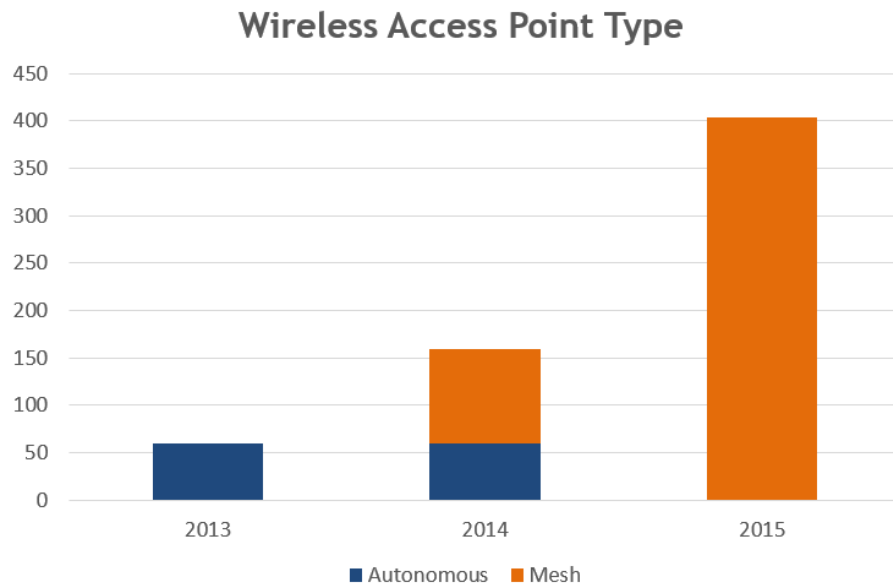
A hybrid wireless solution is currently in operation on campus. The legacy autonomous access points (non-MESH), which cover standards 802.11a/b/g/n, are spread out across campus and satellite sites and cover approximately 75% of all classrooms and study areas. A wireless mesh environment was deployed to the newly renovated F wing in FY14 encompassing 53 access points. In addition the student resident hall and newly renovated computer labs/library have been outfitted with mesh access points to further expand this model.



The mesh allows all faculty, staff, students, and guests the ability to seamlessly travel throughout the space without the need to re-associate with separate access points. The goal is to slowly expand this mesh throughout campus as funds become available.

In addition, modules were installed on each new mesh access point to allow for the new 802.11ac wireless standard that became available to the market in 2013.

Below is a historical graph showing the type and number of access points over the last three years. Prior to 2013 the amount held steady at approximately 50.



II.A.11. Disaster Recovery Testing

ITS conducts a semi-annual off-site disaster recovery test to execute a fully functional restore of GSU's applications. GSU contracts with SunGard and performs this exercise at their Wood Dale facility which is 50 miles away from main campus. This test includes ITS personal and critical administrative area staff, i.e. Business Office, Financial Aid, Registration, and HR.

Note: A second phase to disaster recovery testing is the development of a business continuity plan. This phase looks at computer system disaster preparedness from perspective of each business unit on campus. This plan is being discussed in another PBAC group and is not part of this ITS plan. While this is not a current State of Illinois audit finding, it has been a material finding since 2010. We make this notation because we do not want this need to be overlooked.



II.B. Support Services

Support Services has been unstaffed completely for approximately eight years, since 2006 and unstaffed partially for approximately nine years. When fully staffed, Support Services should consist of the following:

- Director
 - Technical trainer
 - Publications editor/documentation specialist
 - 2 Student workers (1 FTE)

Support Services' main function is to train and orient employees in the use of technologies that enhance instruction and research. This group would keep the GSU community informed of developments in computer technology, including developments within the ERP systems; announcing products that have been approved for use and support at GSU; and conducting training sessions and offering opportunities for learning technical skills. Interdepartmental documentation enables cross-training ITS employees.

Please see section III. Major Issues/Challenges, C. Staffing—Open Positions for descriptions of the vacant positions.

II.C. Application Development

The Application Development Group consists of the following staff.

- Director
 - Associate Director
 - 3 applications analysts (technical associates)
 - 2 web analysts (technical associates)
 - 1 database administrator

Application Development supports software applications on campus, including, but not limited to:

- Ellucian Colleague ERP
- Jenzabar CX (Legacy)
- SharePoint 2010 (Portal)
- Microsoft SQL Server 2008 (Reports, Queries, Custom Procedures, Import/Export of data)
- Operational Data Stores (ODS)
- CMS400.NET content management system for the GSU Website
- Blackboard Learning Management System (4 Environments, Production, Intersession, Development and Test)
- Resource25 event/space planning tool
- Singularity document imaging tool
- Web Intelligent reporting (WEBI) and Dashboards (as a part of BusinessObjects)
- Synoptix Financial Reporting Tool
- ITWorks Grant tracking software
- RMS Housing Management Software
- IDMS – myOneCard ID card Access, production, e-Commerce and management
- Regroup – Emergency Notification Software



Application Development supports GSU staff members who utilize the above applications (among others) as part of their responsibilities to adhere to the university's mission and manage daily business operations. The technical associates train end-users directly or facilitate training through other sources. They also provide documentation for thousands of processes and electronic resources.

In addition, operational services include functions, such as printing, packaging, and scanning Student Evaluations of Instruction (SEIs), each term as well as generate and provide summary reports to all colleges.

Supporting software applications translates to programming and data management. The applications require fluency in a variety of programming languages, e.g., Colleague Studio, .NET, T-SQL and C#. The applications reside on different operating systems, including UNIX and Microsoft Windows. The members of this group not only have a variety of skills to support many different demands, but they also specialize in certain skills to provide the expertise to keep the applications running with minimal downtime.

Application Development provides solutions for the changing needs of the university. They work with user groups to assist with the implementation of new functionality or change to existing processes. This group has a good understanding of university operations and often partners with the campus to implement innovations such as a universal calendaring tool or a Degree Audit package.

As a comparison, the legacy Jenzabar CX system had an average of 120 faculty and support staff use the system on a daily basis while the Ellucian system has an average of 75 faculty and support staff login and use Colleague on a daily basis via the Colleague UI client. The remaining faculty and staff, as well as students utilize Ellucian Online Services via the MyGSU Portal.

II.C.1. Administrative Systems

Administrative systems support functions on campus, such as admitting someone to the university, paying an employee, and processing a financial-aid application. There are a series of administrative applications working together to support most of the university's administrative functions. These are described below.

II.C.1.a. Ellucian Colleague

The Ellucian Colleague system is an Enterprise Resource Planning (ERP) system used in higher education to coordinate all facets of institutional operations under one roof. The concept of the ERP is that data is shared amongst all areas of the institution, decreasing duplicate data, errors, and delays. It also helps employees work more efficiently and allows students to utilize self-service tools such as web-based registration.

According to Gartner, Ellucian Colleague remains one of the most competitive ERP platforms for higher education institutions. In the past, the company previously known as Datatel merged with SunGard Higher Education to form Ellucian.

Ellucian now has the Banner, PowerCampus, and Colleague product lines, making it one of the largest higher education ERP providers in the world. The merger will bring new functionality and additional features and modules, which will further enhance the current product.

- Ellucian Colleague Release 18 for SQL
- 100 user licenses, 80 in Production, and 20 in Test.
- 525 user accounts and 380 active accounts.

Modules Licensed:

Academic Records	Employee Labor and Relations	Reporting Dashboards
Accounts Payable	Finance	Reporting Analytics (ODS)
Accounts Receivable	Financial Aid	Students Finance
Advancement	Financial Reporting (FRX)	Students Records
Benefits Enrollment	Fixed Assets	Student Self-Service
Bookstore Interface	General Ledger	WebAdvisor Student
Campus Organizations	Gradebook*	WebAdvisor Employees
Cash Receipts	Human Resources	WebAdvisor Faculty
Communications Management	Intelligent Learning Platform (ILP)*	WebAdvisor Alumni*
Compliance Reporting	Major Donors Management	WebAdvisor Student Course Planning*
CORE	Payroll	Web Approvals
Course Materials	Planned Giving	Web Requisitions
Curriculum Management	Position Management*	Web Receiving
Degree Audit	Project Accounting	Web Purchase Orders
e-Advising*	Purchasing	Web Time Entry/Approval*
eCommerce	Recruiting and Admissions	WebIntelligence (WEBI)
Ellucian Mobile	Registration	Workflows
Ellucian Portal	Retention Alert*	WealthEngine Interface
Ellucian Recruiter	Resource25 Interface	WebAdvisor Instant Enrollment

* Not presently implemented.

II.C.1.b. Jenzabar CX – Legacy System

The Jenzabar CX system was the institution’s previous ERP system. Replaced with Ellucian Colleague, it now stands as a legacy system with archival data. Although most of the information was migrated from Jenzabar CX to Ellucian Colleague, some information remains in the legacy system, which is still needed by various departments for reporting purposes.

ITS is executing a migration of all Jenzabar CX data out of that legacy system and provide users access to key information in a controlled and secured fashion. At the present time ITS has successfully transferred the entire Jenzabar CX database from its legacy Informix database on the Hewlett-Packard server into a Microsoft SQL/Windows server. We have conducted



interviews with all major operational units and gathered a series of requirements for access to this archived data.

We are developing interactive reports and archiving data to searchable PDF where appropriate. Users will validate this information and the legacy system will be shut down permanently. The server itself still houses the legacy SEI reports and will remain operational until a new SEI system is implemented.

II.C.1.c. Resource25 (R25) Room Scheduling

Resource 25 (R25) is a scheduling tool for the university to better facilitate and centralize the room scheduling functions of the university for both academic and public events. The tool helps facilitate the matching of event needs to the best space possible, without over-committing resources. This provides the university better utilization of its resources.

R25 also contains a web interface to allow the campus community easy access to this information. Student can easily check their class room assignments, and visitors can easily find their events as well. Requests to schedule events can be made via the web by designated faculty and staff.

- What version? 3.4
- How many users? 6 Administrators, 130 Users
- How many rooms? 123

II.C.1.d. Degree Audit

Deployment of the Ellucian Degree Audit module is ongoing. The module itself provides an evaluation of completed student coursework versus requirements and requisites for completion of a student's degree program. Similar to DARS (previous system) it also allows 'what-if' scenarios for students who wish to know their requirements to complete another degree if they wish to change their major. From an advisor point of view, the system helps academic advisors see the student's progress at a glance without having to look at transcripts.

The implementation of the Colleague Degree Audit module has begun with the course equivalencies of 26 Illinois schools with the highest student transfer rates at GSU. By defining course equivalency tables, GSU can import transcripts and quickly ensure that the courses are in the transcript to meet the needs of Degree Audit at the time of evaluation.

Degree audits are also built for every program in every academic catalog year, so they must be designed, tested, revised, and finally implemented. At the present time GSU has completed the partial implementation of undergraduate degree program audits, which are now available for use by the university's academic advisors. Audits of undergraduate minors will be rolled out next, followed by graduate and doctoral program audits.

II.C.1.e. Document Imaging



Document imaging software provides the ability to scan paper documents and store them in electronic format. It also files them electronically with search capabilities for easy retrieval by authorized users.

Additionally, this software package provides workflows to move electronic information through predefined processes. This product is used to facilitate the admission decision process. As Admission documents come in, they are scanned. When an electronic file is ready to be evaluated for a decision, it is routed to the person responsible for this via Singularity workflows. This creates a process that is traceable, accountable, and timely.

The Procurement Office is also utilizing this technology. There are no workflows, but documents will be images and stored for easy retrieval. Other departments of the university have expressed interest in moving to utilizing this technology.

ITS is currently evaluating the current tool to determine effectiveness and integration with the Ellucian suite of products.

- What version of Singularity do we run? 7.0.4u2
- How many documents are stored? 411,082
- How many users have access? 411
- Which areas are setup for Doc Image access? Admission, Financial Aid and ITS

II.C.1.f. Interfaces

Each of the systems described here has interfaces built behind the scenes to share information. The Ellucian data is the central repository of information on campus. Transparent to the user, these interfaces promote sharing of information so redundancy of information and maintenance of information can be avoided. All of our systems interface with the data maintained in the Ellucian system. These interfaces are constantly monitored for accuracy and constantly maintained as university needs change.

Blackboard to Colleague	Colleague to Windows AD	Housing (RMS) to Colleague
Recruiter to Colleague	Colleague to ODS	Colleague to Grant Management
Recruiter to Singularity	Colleague to Housing	Central Application System (CAS) to Colleague
Colleague to Portal	Colleague to myOneCard	Colleague to GSU Bookstore (Follett)

II.C.1.g. Level of Customization

With the implementation of the Ellucian suite of products, it was the decision of the university to make every effort to utilize the product without customization. In a few cases, customizations of the standard product have already been approved and made.

- Sub-routines that generate Active Directory accounts and passwords have been modified to help automate the process and meet auditors' password formatting requirements;
- Web advisor forms have been modified to remove sensitive data from being displayed;
- Removal of student restrictions when balances are paid in full via the web or at the cashier's office on campus;
- Added functionality which links students to the bookstore to purchase text books for their classes as well as identify required text books for a particular class;
- Refined the online schedule of classes to display pertinent registration dates for each class;
- Refined the student schedule to display pertinent registration dates for each class. [BJ1]
- The Official Transcript and Purchase Order forms have been modified to enhance layout and readability.
- Online Services forms added for Immunization compliance.

As in the past, these customizations will require a higher level of support by internal staff. The application vendor can rarely help ITS with these and will not support customizations as part of the standard support contract. In order to be supported by the vendor additional contracts called Software Assurance Contracts would need to be purchased and only apply to customization work done by the vendor. The cost of these contracts is based on the original cost of the customization and increases each year the contract is renewed. Based on this the university has not opted to purchase Software Assurance Contracts to date.

II.C.1.h. Ellucian ODS

Ellucian Operational Data Stores (ODS) provides the reporting platform that standardizes data onto a separate reporting server, flattens complex data structures, and provides data models with user friendly field names that are used extensively as the Colleague product expands in functionality.

This platform has been expanded to include data not delivered by Ellucian but requested by GSU users, further enhancing its capabilities and functionality.

II.C.1.i. SAP BusinessObjects (WEBI)

The BusinessObjects platform consists of a web-based platform designed for users to be able to access reports directly from GSU's reporting database (ODS) consistent with assigned security roles. The product itself is a web portal, and it has file/report sharing tools and a self-service



report development tool called Web Intelligence or WEBI, which the users utilize to design their own reports based on data that has been catalogued and labeled for their use and from the Operational Data Store (ODS).

BusinessObjects offers a powerful, intuitive interface that enables business analysts and non-technical information consumers to ask spontaneous and iterative business questions about their data. Users can use simple drag-and-drop techniques to access data sources and create interactive reports to answer business questions. Innovative visualization functionality allows end users to view two- and three-dimensional charts, Dashboards, and hone in on specific areas of focus for more powerful, revealing analysis.

Staff and faculty now have decision-quality information readily available to investigate issues, identify the root causes of problems, and explore new opportunities – without relying on IT to create reports. In addition, because our users have autonomy, the IT department is no longer burdened with a backlog of reports and does not need to build and maintain multiple variations of numerous queries and reports.

During 2014, the BusinessObjects server was upgraded from version 3.7 to version 4.1. This upgrade included new functionality and enhanced compatibility with current operating systems and browsers. The upgrade included demo sessions and user training.

- Version? 4.1 Service Pack 3
- Number of licenses? 45
- Number of users? 44 (43 users, 1 test account); 1 spare named license
- Approx. number of WEBI reports? 5,000

II.C.1.j. Crystal Reports

Crystal Reports is a technical report development tool used to generate reports that users can then utilize in the BusinessObjects (WEBI) portal. Different from WEBI, where users build their own reports, Crystal Reports is used to write complex reports, and is now being used to write reports in support of the CX Phase-Out Project to provide users access to archived CX data in the SQL database.

Crystal Reports is also used to write complex distributable reports to multiple recipients. This is known as publication development. ITS has developed advisor/advisee reports and advisor transcript tracking reports, which are sent individually to each academic and program advisor with custom information.

During 2014, the Crystal Reports engine was upgraded from version 2008 to version 2013 as part of the BusinessObjects 4.1 upgrade.

II.C.1.k. Synoptix



Synoptix is a financial report writing tool that is highly specialized and focused exclusively on financial data from the Ellucian Colleague general ledger. This tool is primarily used by financial staff to develop reports and analyze account activity and movements. Much like the WEBI tool for general reporting, Synoptix allows the user to define and expand their reports, based on labeled and catalogued data. Unlike WEBI, it is meant to analyze data in a model that is useful to accounting and finance professionals and provides equations, totals, functions, and grouping very similar to Excel.

- Which version do we have? 7.1.6
- How many licenses? 5 concurrent licenses
- How many users? 12 user accounts

II.C.1.i. Regroup Emergency Notification System

Regroup is a health and safety notification application utilized by the GSU Emergency Response Team (ERT) to notify students and staff about campus events such as closings and emergencies. This system is able to mass-notify persons via e-mail, SMS, and pre-recorded voice messages

- How many people are setup for notification in Regroup? 7,000
- How many notifications are sent via regroup? 9,500

II.C.1.m. Housing Software (RMS)

Prairie Place operations including applications, contracts, assignments, and meal plans are managed with specialized software by Residential Management Systems (RMS). The software integrates with Ellucian Colleague via custom interfaces to send billing charges and receive student information.

- Housing contracts issues in 2014? 372
- Meal plans contracts issued in 2014? 27

II.C.1.n. MyOneCard Software (IDMS)

The institutional identification card for students and staff, called myOneCard, is also used to access student services (Health/Fitness Center and Academic Resource Center). The software used to issue, manage, and print the cards is called ID Management System or IDMS. The software also interfaces with Ellucian Colleague and third-party vendor services to allow students to load balances and spend money at various locations on campus including the GSU Bookstore, the GSU Café, and the GSU C-Store at Prairie Place. Students can also pay for laundry services at Prairie Place and pay for printing services.

- Number of cards issued to Staff and Faculty in 2014? 777
- Number of cards issued to Students in 2014? 5,158



II.C.2. Web Systems

II.C.2.a. University Web Site

The university web site, www.govst.edu, is the Internet presence for the university. GSU developed and maintains its Internet presence using a Content Management System (CMS), provided by the software vendor Ektron that enables authorized users to add and/or manipulate content on a web site.

The web is maintained by approximately 92 content contributors from throughout the university. The web technology, as well as support for the 92 content contributors, is provided by ITS.

The CMS consists of two main elements:

Content management application (CMA): Allows the contributor, who may not know HTML, to manage the creation, modification, and removal of content from a Web site without needing the expertise of a webmaster.

Content delivery application (CDA): Uses and compiles the CMA information to update the web site.

The features of a CMS system vary, but most include Web-based publishing, format management, revision control, and indexing, search, and retrieval.

This GSU web site, which consists of approximately 10,796 pages, provides the public with information about the university, its degree programs, community outreach programs, Sculpture Park, Center for Performing Arts, and much more.

The web presence also includes a custom-built application that supports the Why-Not application. This application facilitates the receipt of Why-Not suggestions on the university web site, the routing of the suggestion to the right area of responsibility, and the posting of the response to the suggestion. The customization is built within the framework of the Ektron content management system.

- How many websites do we serve? 10
- How many visitors in 2014 for the main site? 595,160
- How many hits in 2014 for the main site? 5,865,813
- What version of Ektron are we using? Version 8.7
- How many content editors are there? 92
- How many pages are there? 10,796

II.C.2.b. Online Class Schedule

The “Class Schedule” on the GSU website is a custom-built application that displays the class schedule in an easy-to use format for students. The application pulls the data directly from Colleague. A link to the bookstore for each class provides textbook information relative to the class.

II.C.2c. Ellucian Recruiter Admissions Application

The Recruiter system offers web based recruitment and admission forms for prospective students to complete and request information about and apply for admission to the university. The tool is a product of the Ellucian suite described previously.

This prospective student and online admission application tool not only facilitates the recruiting and admission application process, but it also provides a way for student to immediately pay their admission application fee via a credit card.

Automated workflows have been developed to follow up with perspective students via email. Workflows are also in place to follow up with prospective students who fail to complete and submit an application for admission.

ITS has tested an upgrade for the Recruiter application from version 2.6 to version 3.1. Some important features of this upgrade include in-application reporting, ability to edit applications in Recruiter before sending to Colleague and inter-connectivity with Social Media such as Facebook. Once the Office of Admissions completes testing on version 3.1, ITS will migrate the Production environment.

- How many licenses do we have? 22 user licenses, 16 for Production and 6 for Test
- How many users are setup? 32 user accounts
- What version do we have? Recruiter 3.1
- How many applications we made in 2014? 10,001

II.C.2.d. Student Portal

The student portal is the main entry page for students to access all GSU information relative to being a student, i.e., academic information and records from any PC with Internet access. For example, students can perform registration tasks: add or drop a class, pay their bill, access their 1098T forms, review their demographic and academic information, and print a copy of their schedule. They can also access their financial-aid information including checking the status of their financial aid, review their financial aid award letter and accept and reject financial aid awards.

Additionally students can access their GSU student email, register for the password reset tool, login to Blackboard, Online Orientation as well as read university announcements and the GSU View.



II.C.2.e. Faculty and Staff Portal

The faculty and staff portal is the main entry page for faculty and staff to access Outlook email and calendar, Online Services (Web Advisor), Colleague UI, Blackboard and SharePoint Team Sites. All faculty and staff can access their pay advices, leave balances, sick and vacation, and W-2 forms from the portal.

Designated faculty and staff can also review financial budgets, submit purchase requisitions, purchase orders, receive goods and approve or deny purchase requisitions.

Faculty members can enter the grades of their students using the Web from any PC with internet access as well as view a student's schedule of classes. Faculty can also view and print class lists. In addition, they can email a single student or their complete class with one email message.

Faculty and staff also have access to "Team Sites" that houses lists / documents / discussion forums for their department or project. These sites are strictly limited by security as to who can see the content. There are currently 87 team sites in production.

II.C.2.f. Online Credit-Card Payment

The university web site provides several areas on the web sites for students to pay via a credit card. They can use this functionality to donate to the university, pay for theater tickets, pay their tuition, and pay the admission fee during the application process. The university uses Official Payments Corporation as its main credit card processing service. No credit card or e-check numbers are stored by any university system in compliance with PCI-DSS regulations.

- Main Payment Processor? OfficialPayments (OPC)
- Secondary Processors? Authorize.NET, PayPal, Sequoia, Follet

Payment Processing by Area and Merchant

- Colleague, Recruiter, Cashier – Official Payments TransFirst
- Housing - OPC TransFirst
- Conference Online Registrations - OPC TransFirst
- Development/Advancement Donations – Authorize.net TransFirst
- Dining Services - Sequoia, non-GSU
- GSU Bookstore- Follet, non-GSU
- Center for Performing Arts - Official Payments (OPC) TransFirst
- Student Life - Official Payments (OPC) TransFirst
- Family Development Center- Official Payments (OPC) TransFirst



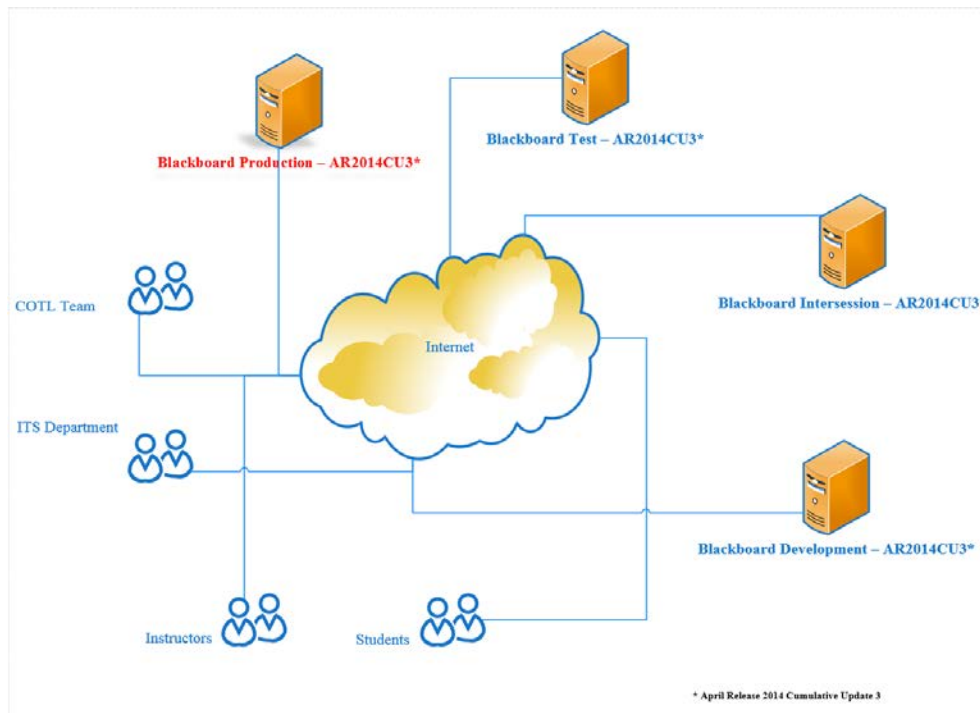
II.C.2.g. Learning Management System (Blackboard)

Blackboard is the Learning Management System (LMS) of the university. It provides online classroom functionality to students. It facilitates instruction through class discussions, listing and receiving homework assignments, quiz and exam functionality, email, and more. Currently, all classes have a presence in Blackboard. Some classes are entirely online, and other classes still meet in the classroom, but use some components of Blackboard to enhance the class.

We currently maintain and support four separate Blackboard environments. They are comprised of Production, Development (for innovative technology experimentation and development), Test (for testing of updates to be applied in production), and Intersession environments. The intersession environment was necessary because Production needs to be offline for a brief period during break between terms. With the intersession servers online, IT can provide continuous LMS services with no interruption to students and faculty.

Several enhancements were implemented to our LMS environment this year. Due to the complex nature of classes, and extensive use of our LMS systems, the separate layered environments for testing, development, intersession classes, and production are regularly updated and maintained. Currently all four environments are running the Blackboard April Release 2014 version, with the latest stable cumulative update tested and installed (CU3).

- Environments: Production, Intersession, Development and Test
- Version? Blackboard Learn version 9, April 2014 Release Update
- Courses in 2014? 3,710
- Students in 2014? 8,338
- Faculty in 2014? 693



II.C.2.h. 25Live Online Event Calendar

The university calendar is maintained using the R25 product described above. This information can be accessed via the R25 web viewer on the university web site. Here, anyone can view the university calendar of both academic and non-academic events. Users can view the locations at GSU where events take place to see if there is anything scheduled there or not. Information is listed for several months in advance and can be viewed by day, week, or month.

Currently the R25 product is being upgraded to the 25Live product that is a web application, which includes functionality to allow registration for events.

- What version? Version 23
- How many users? 6 Administrators, 130 Users
- How many calendars? Currently 2 – soon to be 5

II.C.2.i. Online Orientation/Directed Self-Placement

This application is a web-based introduction to the university for incoming students who take only off campus courses. This is an award-winning custom application developed by ITS staff in conjunction with the Academic Resource Center. Authentication for this application was upgraded to integrate with Active Directory.

It is required that all distance transfer students (non-freshmen students who take only off campus courses) complete Online Orientation before they register for classes. It provides information to incoming students such as financial responsibility, resources such as tutoring, library, and the fitness center.



The second component, Directed Self Placement (DSP) must be completed by all undergraduate level students prior to registering for classes. This online tool helps students evaluate their Math and English skills. It helps them decide how to select the best course in the subject matter to prepare them for their GSU experience. Directed Self Placement replaced the mandatory placement examinations in math and English.

II.C.2.j Student Orientation

The online orientation system that was previously coupled with the directed self-placement system has been augmented by the cloud solution Visual Zen Orientation. This solution allows students to register for on campus orientation sessions. Reminder and confirmation emails are sent to students directly from VZ Orientation. A daily automated data feed has been developed and is used to populate the VZ system of newly admitted students. We are currently working with the vendor to implement SSO for this cloud solution.

II.C.2.k. Online Faculty and Staff Directory

The faculty/staff directory on the GSU website is a custom-built application to display the directory information of faculty and staff. The data originates from the Ellucian Colleague database.

Further development has created filters, so that the individual College, Department, Division and Program can have their own custom directory.

II.C.2.l. Ellucian Mobile

GSU has implemented the Ellucian Mobile application platform providing students and faculty access to reference information such as phone numbers, campus maps, and other contact information.

The application also allows browsing of enrolled courses for students. This mobile application is presently available and supported by GSU on Apple iPhone and iPad devices as well as Android devices. The application is free to download and use, and it requires the user to logon securely before any information can be accessed. Users utilize their GSU accounts to access this system.

II D. Colleague Project Office

The Ellucian Colleague implementation project began in 2010. Since 2011, the Colleague Project Office in its current configuration has been tasked with project management and coordination responsibilities related to the continuing implementation of Colleague and related systems, as well as with their integration with existing university systems and business processes. These roles necessarily require significant orientation and training of system users, which is an



additional major responsibility of the CPO. In addition, the CPO provides a conference room and training/working computer lab, primarily for sessions related to teams working on projects under management and for standing committees whose work is Colleague-related.

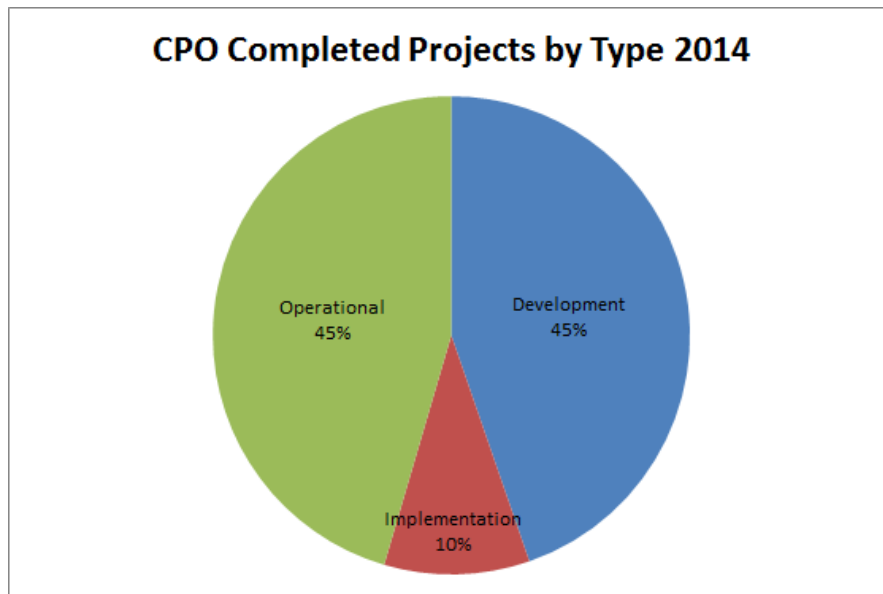
During the Fall 2014 semester the CPO was relocated from the office of the Executive Vice President and became a unit of Information Technology Services. The Colleague Project Office has a staff of two:

- Assistant Vice President for Administrative Systems
- CPO Coordinator/Manager of Ellucian User Services & Training

The data and charts below summarize the **completed projects** in which the Colleague Project Office participated in a management/coordination role during calendar year 2014.

Each of CPO's projects is assigned one of three project types:

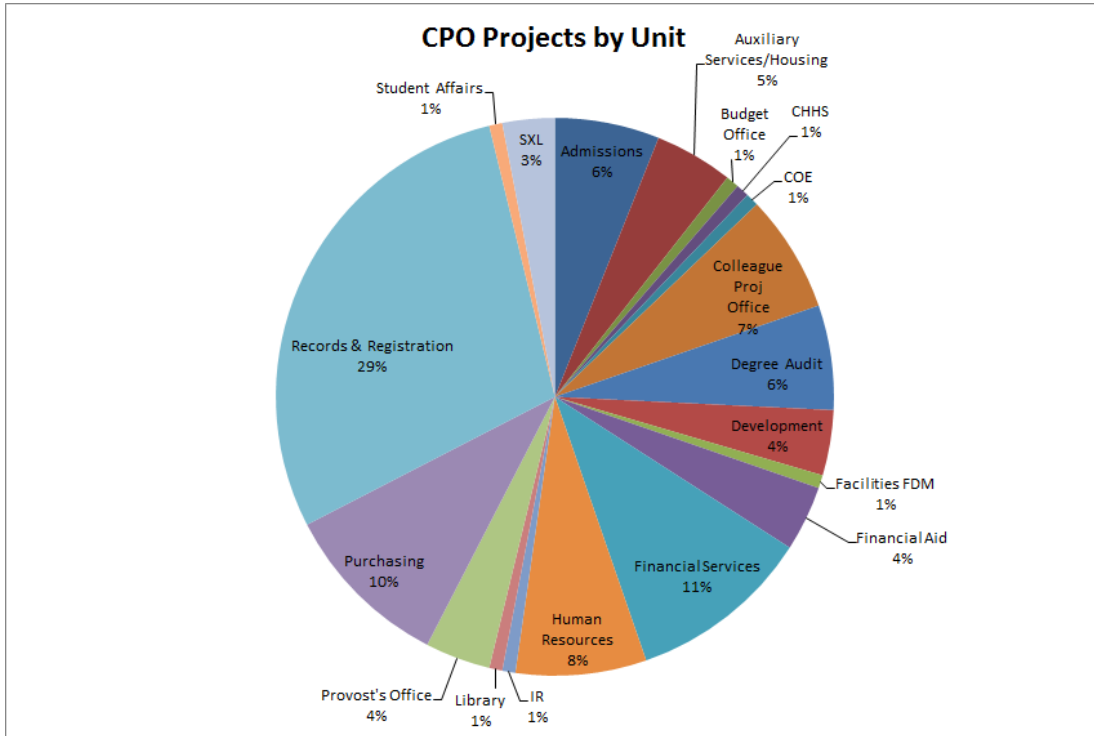
- *Implementation projects* bring modules/tools/processes/resources to initial production status
- *Development projects* adjust/improve the function of existing modules/tools/processes/resources
- *Operational projects* assist business units in completing tasks related to their normal primary roles



Project Type	Projects
Development	59
Implementation	13
Operational	60
Total	132



CPO provides Colleague-related project management services to many of GSU's operational units:



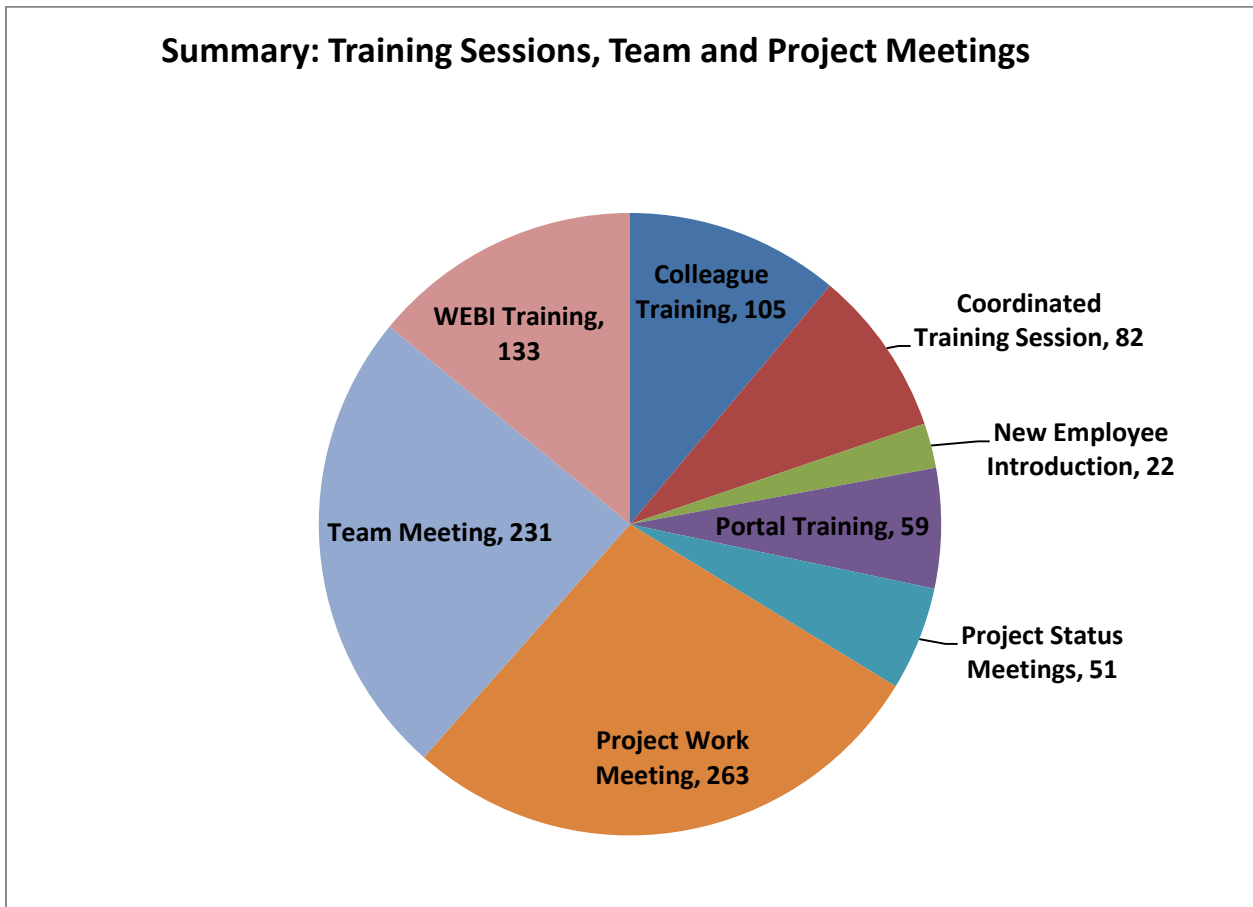
GSU Unit Served	Projects Completed 2014
Admissions	8
Auxiliary Services/Housing	6
Budget Office	1
College of Health & Human Services	1
College of Education	1
Colleague Proj Office	9
Degree Audit	8
Development	5
Facilities FDM	1
Financial Aid	5
Financial Services	14
Human Resources	10
Institutional Research	1
Library	1
Provost's Office	5
Purchasing	13
Records & Registration	38
Student Affairs	1
School of Extended Learning	4



Total	132
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In addition to project management, the Colleague Project Office provides many services to faculty and staff members. The list below provides a categorized summary of training and team and project meetings held in the Colleague Conference Room and Colleague Training Lab. The CPO provides Colleague Training, WEBI (Web Intelligence Reporting) Training, Portal Training and New Employee Introduction Training. Training sessions provided by the CPO account for over one-third of all meetings held in the Colleague Office Suite.

The staff also coordinates many sessions for other units for project-related work and training. The majority of the Colleague system team meetings are coordinated through the office, and all unit project status meetings are coordinated by and meet in the Colleague Project Office.



II.E. Telecommunications

II.E.1. Telephone System administration



In 2005, the University upgraded its traditional PBX phone system to an IP Telephony system. Now in place are Cisco's Call Manager, unity voicemail, and E911. This new system has been extremely stable and reliable. It received a version upgraded in FY12. This phone system technology is computer network based and with this design comes capabilities not possible with a traditional PBX. One such capability is broadcast paging through the speakers in the phones using an application called Informacast. This functionality is critical to emergency mass notification.

The GSU telecommunication system supports the following devices and functions:

- 1012 Cisco IP Office phones
- 57 classroom Cisco IP telephone
- 8 parking lot emergency telephone/blue light strobe stanchions
- 29 yellow external building entrance emergency telephones
- 109 red emergency hallway telephones
- 49 ivory campus house telephones
- 11 elevator telephones
- 16 Conference phones
- 65 fax machines

Another application available with this computer network based is unified messaging. With unified messaging voicemail messages are sent as a voice file as attachments in emails to recipients.

II.E.2. Switchboard Operations

The routing of calls that come into the GSU main number 708-534-5000 is managed by a group of two full-time and one part-time switchboard operators. The hours of this operation is 8:30am – 8pm M-F and Saturdays from 8:30am until noon. When the switchboard is not being attended a calling tree is in place for callers to route their own calls to critical areas on campus.

II.E.3. Mobile Devices

Over the past few years, GSU has expanded its inventory of cell phones and smartphones*. Currently there are 86 cell phones and smartphones, 30 air cards for laptops and 61 iPads with 3G/4G service being managed by ITS and issued to appropriate staff.

*A smartphone is a mobile phone offering advanced capabilities beyond a typical mobile phone, often with PC-like functionality. It offers advanced features, e.g., e-mail and Internet capabilities, and/or a full keyboard. In other words, it is a miniature computer that has phone capability.

II.F Committees (Guidance/Oversight)

II.F.1. Colleague Operational Governance Group (COGG)

The Colleague Operational Governance Group (COGG) is comprised of unit heads, power users and other representatives of units that are major users of Colleague. The group meets on a monthly basis to accomplish the following tasks:

- Develop institutional policies, practices, and norms for Colleague use
- Provide guidance and oversight for Colleague governance matters, including security, customization, and core data
- Set institution-wide Colleague project priorities
- Facilitate the sharing of updates and other information between and among operational units
- Develop and manage activities to assess the effectiveness of Colleague use across the institution.

This is also a forum for IT to bring updates and information to the group most affected by Ellucian issues. Each group member is responsible to act as a representative from their area. Therefore, they should be soliciting issues from their area to bring to COGG, and vice versa, they should be sharing information discussed at COGG with their group.

II.F.2. Web Oversight

The Web Oversight committee provides guidance and leadership to the university website. The maintenance of the web is decentralized, meaning that areas maintain their own web presence. This committee provides standards, structure, and a central point of guidance for this group.^[nb2]

II.F.3. R25

The R25 committee is responsible for the implementation and continued use of the R25 product. Currently phase I, implementation of events and the online calendar is complete. Phase II is complete, where an interface is used by the university community to request events and spaces. Phase III was the upgrade to replace the Crystal reporting tool with a web services reporting tool. We are now preparing to upgrade to the 25Live tool which is a web based tool which also has the functionality for individuals to register for specific events.



II.F.4. PBAC-IT

This committee is part of the overall PBAC committee structure that provides university consensus and governance. The IT committee of PBAC is responsible for providing guidance in information technology for the university.

II.F.5. Standing Colleague-related Committees^[nb3]

ITS is represented on all university Colleague-related standing committees:

- Colleague Operational Governance Group (COGG)
- Colleague Technology Users Group (C-TUG)
- Student Records-Degree Audit Team
- WREST Portal Subcommittee
- COGG Reporting Subcommittee
- Student Core Team

II.G. Budget

The ITS budget has not received any significant increases in the past several years. In FY12, ITS accomplished many projects with the funds from the carry forward account. In FY13, the budget was approximately \$68,000 less than previous years. The department had to make additional cuts due to budget implications with the state. Cutting the budget by five percent was an arduous task. With the loss of a help desk position and other service reductions, the ITS Department works diligently to stay operational.

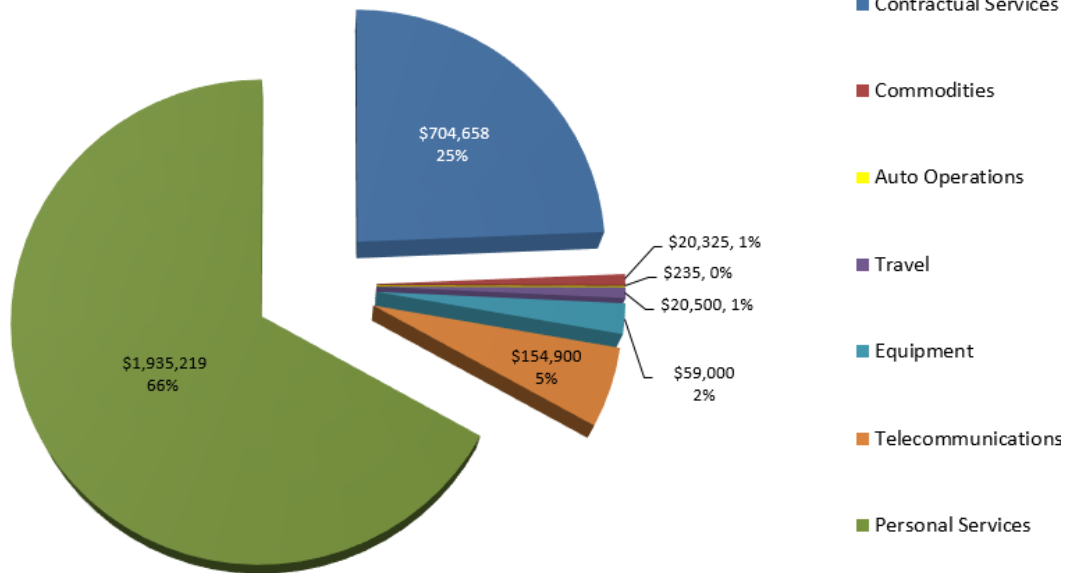
Fiscal year 2014 proved to be quite challenging, the ITS Department had another year of cuts. The reduction of \$93,486 was a significant loss to a decreasing budget. As more campus enhancing projects take place other projects are not able to be funded. ITS looks forward to accomplishing projects by receiving funds from ITS carry forward account. Unfortunately, this fiscal year most of the funds from the carry forward account were not available.

II.G.1. Personnel vs. Non-Personnel

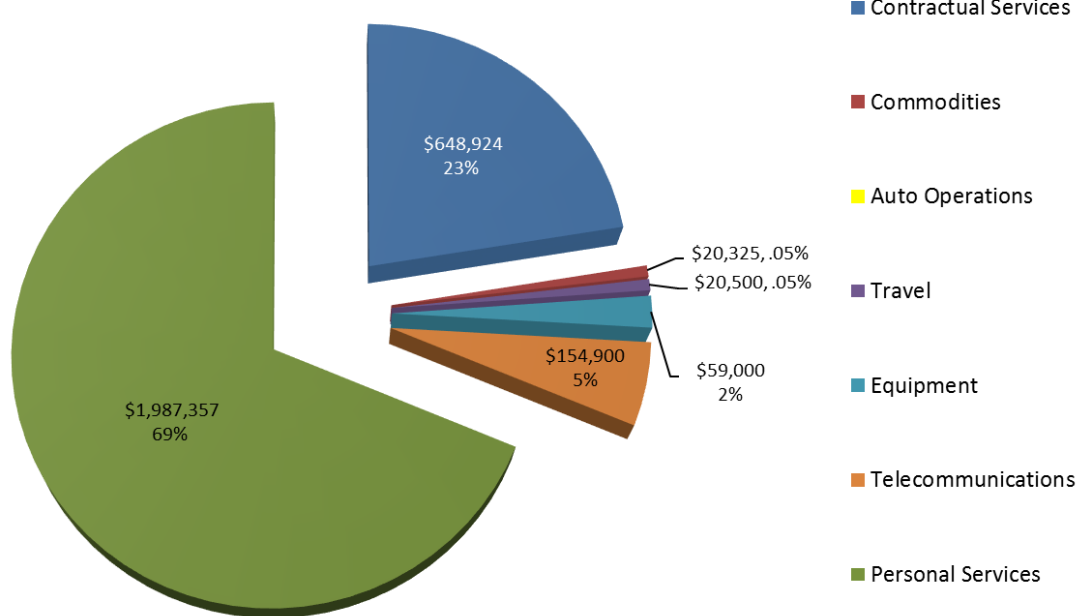
The two pie charts in this section depict the breakdown of the ITS budget for FY2014 and FY2015. The comparison of the two charts illustrates the decreasing amounts of the operational (non-personnel) budget. Each year cuts are made to accommodate the diminution of the budget.



FY2014 - ITS Appropriated Account (10-302000)



FY2015 - ITS Appropriated Account (10-302000)





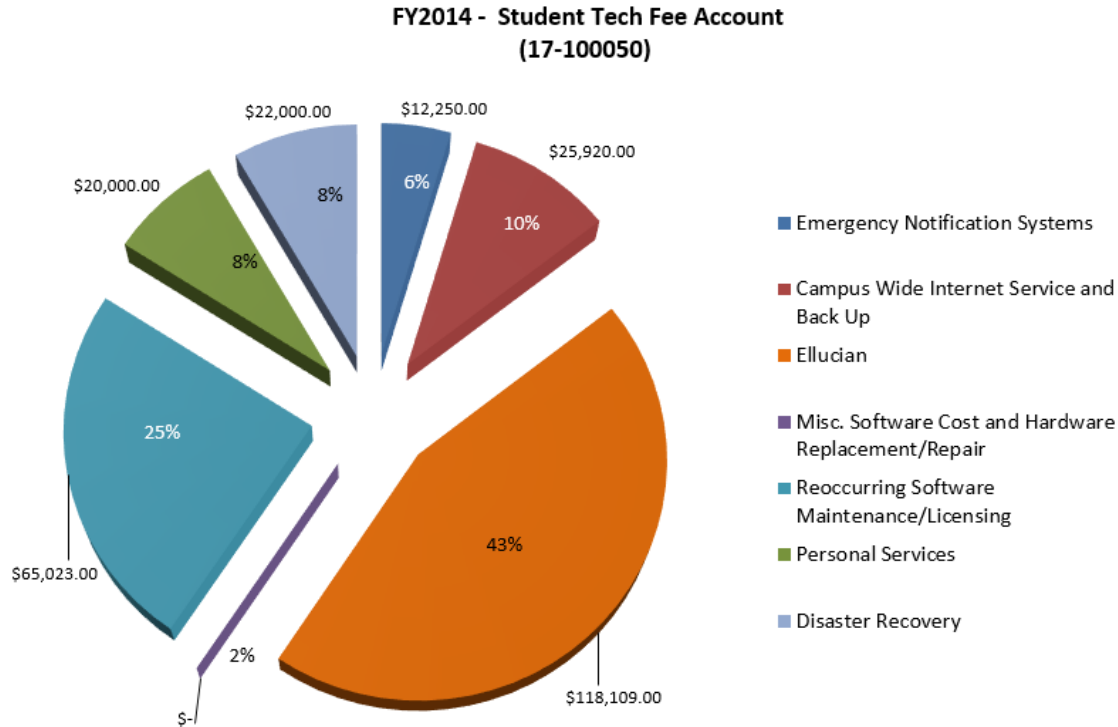
II.G.2. Blanket PO Increase

The ITS Department has numerous maintenance renewals each year. The renewals costs continually increase at a rate of 5-10% per year. Unfortunately, the budget has been decreasing as technology maintenance is increasing. Every year, ITS acquires additional maintenance agreements from purchases of equipment and software from other departments. As the department prepares a budget for FY16, the realization of a shrinking budget is evident. Each year it becomes progressively more difficult to pay for all the renewals.

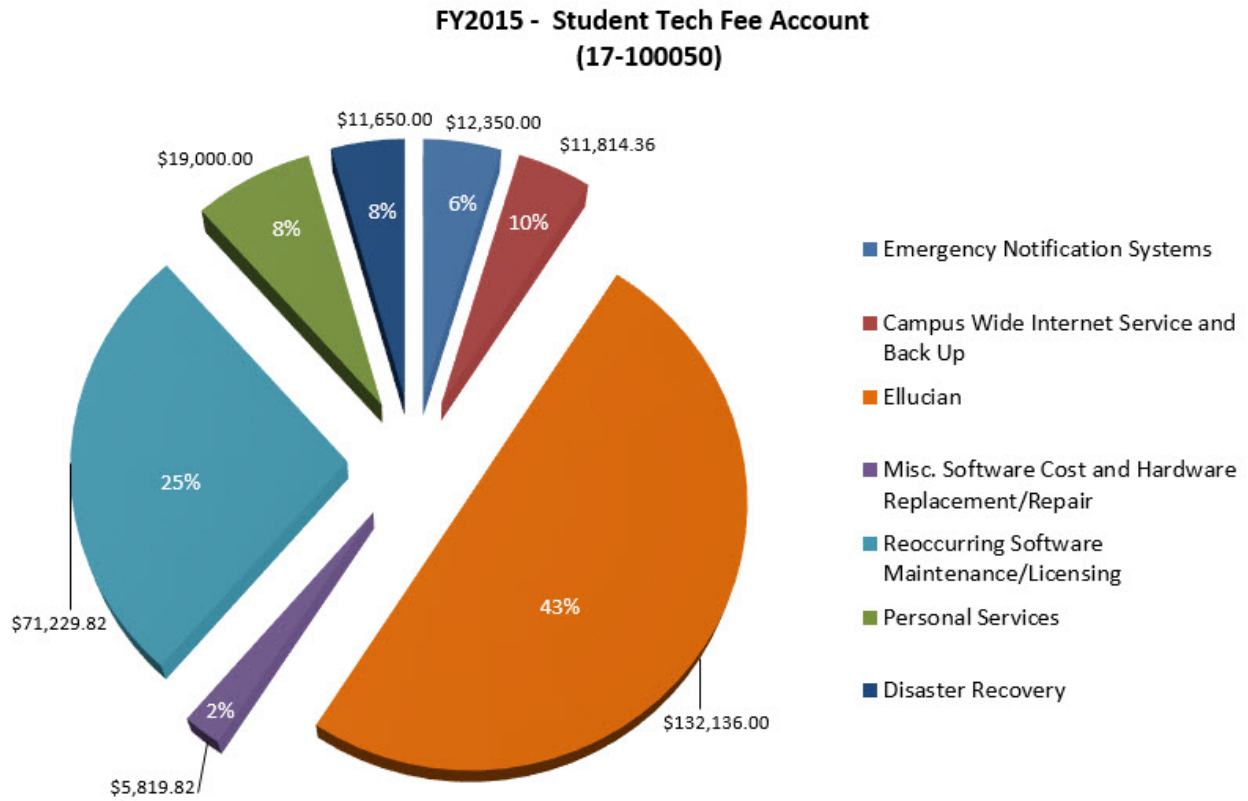
II.G.3. Student Technology Fee Account

The decreasing ITS appropriated funds known as the 10 account, forces ITS to pay for other items from the Student Tech Fee Account. The comparison of the two charts in this section shows 100% of the funds are allocated.

In FY14, the Student Tech Fee Account received the same amount, \$264,000, as the previous year. The ERP system, Ellucian Colleague, absorbed 43% of this account. Every year recurring software maintenance/license costs and campus wide internet services continue to increase. ITS' budget has not been adjusted for yearly maintenance increases.



In FY15, \$264,000 was allocated for the Student Tech Fee Account. However, Ellucian Colleague still consumes almost half of the budget leaving the remainder to pay for necessities.



III. Major Issues/Challenges

III.A. Funding

ITS has an annual budget like all departments of the university. The budget is for annual expenditures such as maintenance and personnel. Very little discretionary funds are included in the annual budget. Because of this and other university priorities, funding has not been available to address rapidly growing ITS needs. During the last three years, the ITS Department had to reduce its budget by three to five percent to accommodate the unstable state funding to the university.

This document had identified many areas of needs and a project list is quite expensive. Addressing all of these needs is costly. Marginal increases in the department budget will not provide realistic financial resources to address ITS' needs. A major infusion of capital is necessary. Whether it would be through selling bonds, borrowing with some financial agency, increasing the technology fee, donations from the community, large amounts of capital are needed.

III.B. Infrastructure

III.B.1. Hewlett-Packard UNIX – HP-UX

Two HP-UX servers, which house the legacy Jenzabar CX system, remain in service with extremely limited access. Once the archival reporting tool is in place access will be even more limited. The vendor no longer supports the hardware and software.

III.B.1a. Faculty and Staff eMail

GSU currently owns and operates its own email system for all faculty and staff personnel. The environment is very stable providing each mailbox owner with a limit of 2GB. Individual mailboxes have not only become a depository of communication, but an alternate files storage system. The challenge of this is growth beyond what is recommended for optimal performance and user experience. Another challenge is the growth of storage space to maintain the growing use of email beyond basic communication. Due to demand, users are able to go beyond the 2GB limit on a need basis. The chart below suggests steady growth over time and currently 10% of mailboxes have been allowed to expand beyond the default limit.

Summary Stats:

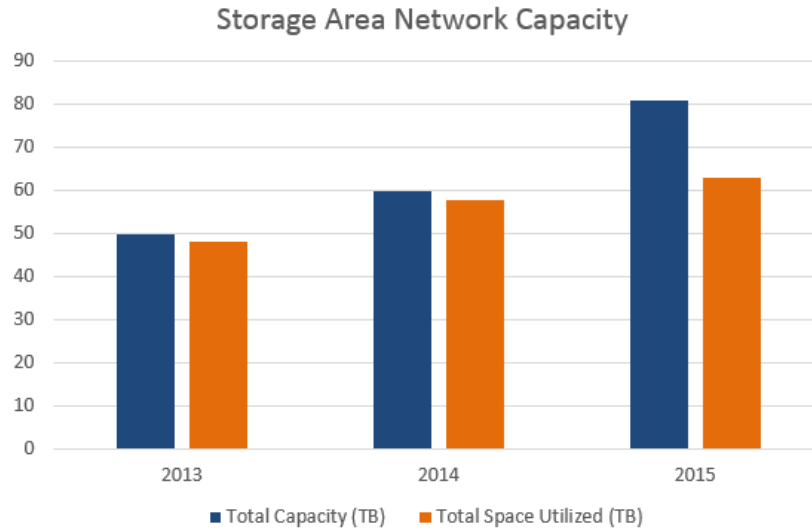
- 10% - Over the 2GB threshold
- 8% - Nearing threshold
- 3% - Three times over the pre-designed threshold

GSU will need to address this issue by either setting policy to enforce storage limits or increase limits at the expense of performance. ITS could also address this problem through technology by



implementing additional archiving technology to allow for growth in mailbox sizes. This last approach will help ensure optimal user experience and performance, but not address cost of overall increased storage requirements.

III.B.2. Data Storage—Storage Area Network (SAN)



The screen shot above illustrates the capacity and usage in (TB) over the last three year of GSU’s central storage system. Currently GSU has allocated 75% of the 81TB storage capacity available.

- With the advent of virtualization GSU has been able to consolidate 96% of its infrastructure of physical servers. This has put an increased reliance on the SAN to be the hub for all virtual machines and thus a mission critical piece of infrastructure. Due to this reliance on a smaller number of servers a planned obsolescence strategy needs to be employed as soon as possible. Without this plan the likelihood of outages due to hardware failure increase.
- There are more than 2,600 faculty and staff email accounts. The default mailbox size limit is 2GB; however, a growing number of individuals need larger amounts of storage. The result is server storage capacity that continues to grow to a point where it is becoming difficult to manage. Additionally, there has not been an established policy to address the overall retention age requirements of email.
- The SAN was implemented in the spring of 2010. As with any system a planned obsolescence of the main components of the system needs to be established. This would include the controllers and hard disks. In late 2013 the primary controllers were



upgraded based on end of sale/end of support dates. Currently the SAN is divided up into tiers of storage each with several disk arrays. These disk arrays have the following EOS/L dates and will require replacement at an estimated cost of \$35K each year for FY17 and FY18;

Tier 1 Storage	
450 GB Drive arrays	8/20/2018
Tier 3 Storage	
2 TB Drive arrays	8/01/2019

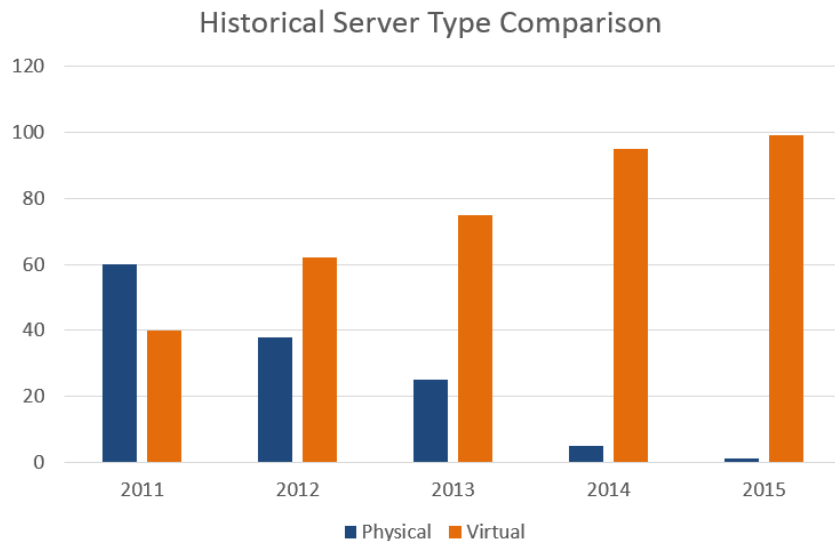
III.B.3. Server Replacement Strategy/Virtualization

Over the last five years, GSU has aggressively converted physical servers to virtual servers within the framework of a VMWare ESXi farm.

With now more than 160+ virtual servers housed on fifteen physical servers it will be critical to employ an obsolescence plan due to the dependency on these host servers. A replacement plan of 30% of all virtual host servers per year is recommended to head off potential component failure and to insure redundancy and maximum up time for the virtual server farm. The cost for this planned replacement is approximately \$15K per year.

The current Faculty/Staff email system is on revision Exchange 2010. Exchange 2013 is the current version with Exchange 2015 coming out 4th quarter 2014. GSU is due to upgrade the systems to the most current revision at an upgrade cost of approximately \$15K (hardware cost only).

Below illustrates a historical perspective from 2011 to present comparing the percentage of physical servers to virtual servers.



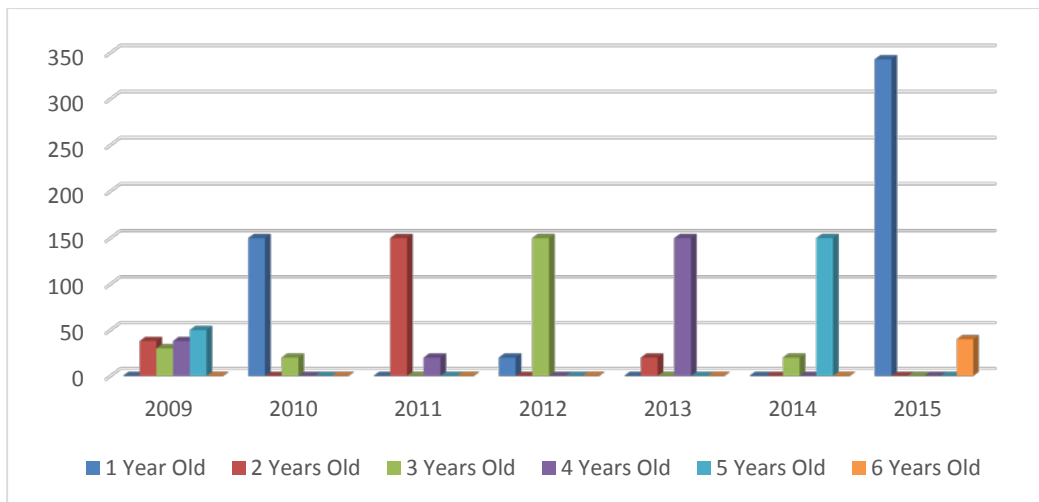


Highlighted advantages of server virtualization (consolidation)

- Reduces the amount of hardware supported in the environment.
- Allows GSU to stay compliant with “green” computing initiatives.
- Allows the network staff the ability to dynamically deploy servers and to decommission servers from the environment in a fraction of the time it would take to do so with a bare-metal server.
- Streamlines the disaster recovery process and reduces the amount of servers required to successfully restore an environment.
- Allows for dynamic migration of resources for process-intensive applications within a virtualized farm.
- Increases the window of retirement for servers due to the nature of allocating resources in a virtual environment.
- Provide tools to build adequate application test environment.

III.B.4. Cube Equipment Replacement Strategy

With the renovation of the ACS Lab into the Cube almost all the computers were completely replaced. The 40 computers that were not replaced were in D2438 and D2440 neither of these rooms were renovated. At this point a planned obsolescence strategy should be implemented where ¼ of the computers get replaced every year.



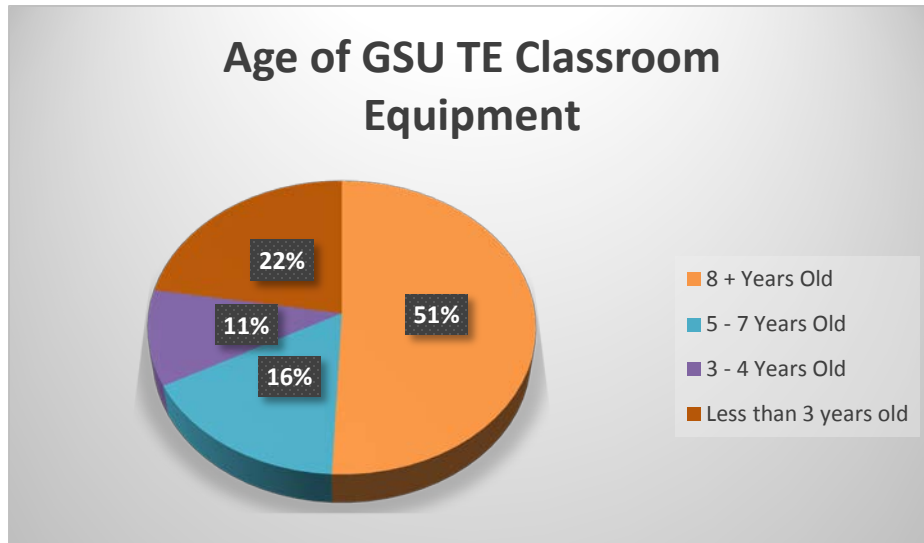
III.B.5. Technology Enhanced - Classroom Equipment Replacement Strategy

First group of classrooms implemented over ten years ago, much of this equipment has been replaced to date.

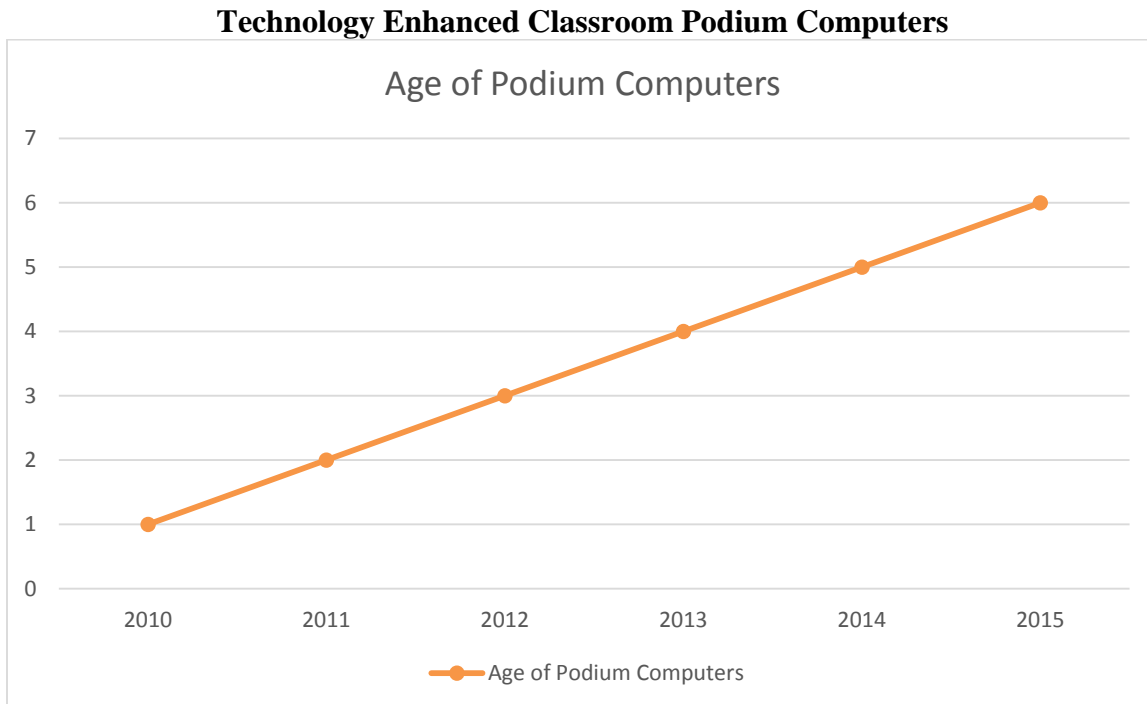
Fifty-one percent of the equipment in classrooms are 7+ years old. An additional 16% is between 4-6 years old. Frequency of repairs was steady up until this past year where it really accelerated.



Repairs and equipment replacement amounted to over \$35k during the 2012/2013 Winter break, and \$24k during the 2013/2014 Winter break. Newer technology and features are available in some cases. Newer technology such as wide screen projectors and HDMI technologies have become the standard the past year.



Computers in the podiums in the 63 technology enhanced classrooms were replaced five years ago and should be planned for upgrade during calendar year 2014.





III.B.6. DASTechnology Implementation – Enhancing 4G coverage on campus

The areas major carriers (AT&T, Verizon, Sprint, T-Mobile) do not provide adequate cell signal coverage on the GSU 750 acres campus. More specifically, it is within the main campus building itself where coverage is inconsistent. Conversations with the carriers suggest that coverage is adequate and within their acceptable parameters. A Distributed Antenna System (DAS) is a technology that could help amplify 4G cell coverage within the main campus building in areas where coverage is weak. This system helps with phone call ability only. . With a solid 802.11a/b/g/n/ac MESH infrastructure covering every area of campus, all other smartphone and mobile device functionality is not affected by this lack of 4G signal coverage.

III.B.7. Cost of Printing on Campus

There are currently no controls of printing on campus. Cost annually is well over \$300k a year for ink/paper and hardware and has been steadily increasing for many years. There exists an opportunity to reduce environmental and total cost of ownership campus-wide for printing material mostly by leveraging economies of scale – i.e. standardization, reduction of equipment, and expanding functionality of copier fleet. There are a number of options that exist that can be carried out individually or collectively. Here are some examples:

- Reduce color printing
- Eliminate individual desktop printers
- Use only laser printers
- Enforce Duplex printing
- Standardize on cost effective printers
- Pull Printing to network printers
- Enforce wide margins
- Leverage existing managed print services currently only providing copy functionality.

III.B.8. Centralization of Software Licensing on Campus

Software licensing is managed by ITS and all colleges and business units individually. This should be centralized in order to avoid monetary fines and legal action against the university for violations of license use agreements. All open source and paid software have a license agreement. Many open-source software are available free to install for personal use, but not for consumer use on computers owned by an organization. The challenge exists in the fact that all staff have the ability to install software on their university computers. While they are able to download, install and accept the terms of the license agreement by using, it is the university that is ultimately liable for the correct use and licensing of that product. ITS has technology in place to track software installed on every computer on campus and could also review and maintain license agreement use. This would require that all software be purchase by ITS, and rights for staff to be able to install software on their own be removed from campus computers. Before software is installed ITS can review the license agreement and Helpdesk staff can then install software on university owned equipment.



ITS tracking software (LANDesk) currently identifies 1,506 unique software titles install on campus computers. Only a small fraction of that number is part of the standard campus desktop configuration and consists of licenses ITS currently maintains.

III.B.9. State Auditor Security Compliance

The ITS department is audited by the State office of the Audit General on an annual basis. Their material and immaterial findings over the past several years have all focused on security. While this is no surprise, the recommendations that have been made have progressively required substantial resources to comply. Most can be addressed by existing staff resources, but others require purchase of technology or require the cost to outsource the expertise required.

Below are the current ITS audit findings.

- Failure to establish a Business Continuity Plan for entire university – *Finding IM10-1*
- Weakness over establishing a regular end user security training/awareness program - *Finding IM2014-002*
- Physical security weaknesses related to computer room and wiring closets - *Finding IM2014-002*
- Ensuring that applications processing credit card transactions are PCI compliant - *Finding M2014-001*
- Failure to perform a risk assessment of the University's computer resources - *Finding IM2014-001*
- Failure to finalize a breach of security procedures - *Finding IM2014-001*
- Failure to formalize a statement of purpose on the University policy to comply with the Identity Protection Act - *Finding IM2014-001*
- Failure to encrypt all laptop hard drives - *Finding IM2014-001*
- User rights were not periodically reviewed - *Finding IM2014-003*
- Weakness over application change management process - *Finding IM2014-003*

III.C. Applications

III.C.1. Ellucian Colleague

The university is completing its fourth year utilizing the Ellucian Colleague system as its ERP. With all major implementations there are always growing pains. As we move into our fifth year additional modules have been scheduled for implementation with more scheduled for year five.

III.C.2. Student Evaluations of Instruction (SEI) System

Student Evaluation of Instructors (SEI) has been in use at Governors State University since before Jenzabar CX. The custom application went live in Jenzabar CX in 1997 as a method used by the Provost's Office to evaluate the Faculty members.

We have been using a paper based system with university developed questions. This process requires pre-printed specially-made forms, envelopes, and labels.

In the summer of 2009, the Office of Extended Learning piloted an online solution, OCE, for off-campus and distance learning courses. Since then, we have been managing paper evaluations, and providing the Institutional Research office with technical support for online evaluations.

The process used to create, distribute, collect and scan is extremely labor intensive and requires many manual steps including printing, handling, stuffing and labeling over **9,500 forms per semester**.

These forms are then returned to ITS, scanned and processed to have reports created and distributed with the original forms. This process is currently used to ensure student anonymity and data integrity.

The process is presenting some challenges as the GSU's needs change and its programs grow. With the advent of Inter-Session courses, Early Start sections, and need-based scheduling changes, there is no flexibility to adjust the process being used.

Handling of massive amounts of forms and dependence on outdated technology creates additional difficulty. Finally, the need to use this data for analysis in conjunction with Colleague data would be of great value to the institution.

A Task Force was formed by the Provost in 2014 to start reviewing needs and requirements that lead to a system specification and an RFP process. ITS is participating in this process.

III.C.3. Document Management System

As part of the "Admission Re-Engineering" project (2005), GSU decided to purchase a document management system that would allow scanning, storing, and creation of workflows for all student documents. We are current using the Singularity Document Management System that was developed by Hershey Systems.

Hyland Software purchased Hershey Systems and announced that they would no longer be developing the Singularity product. Singularity has reached its end of life. Technical support would continue to be offered for the product, but updates and fixes would not be offered.

Current Issues

- Problems with newer browsers: System is only compatible with a few older web browsers, developed with outdated technology, and is no longer updated. Limited compatibility with current web browsers.
- No longer updated/enhanced by vendor: Current technical defects will not be addressed, no new enhancements or improvements will be released.



- Difficult to use, fewer users, improper utilization: Outdated and difficult interface has led some to abandon using the system, and technical/functional shortcomings have generated parallel paper systems and other improper use.

A Task Force was formed by the Provost in 2014 to start reviewing needs and requirements that lead to a system specification and an RFP process. ITS is participating in this process.

III.C.4. PCI-DSS Compliance

Material Audit Finding 2014-001

GSU is required to comply with Payment Card Industry's Data Security Standards (PCI-DSS) and the ITS department ensures compliance of all systems that utilize technology for transaction processing.

GSU currently utilizes Official Payments Corporation as its main processor and TransFirst as the main credit card merchant processor.

Secondary payment processors and merchants are used throughout the institution for functions such as the Center for Performing Arts box office and mobile credit card terminals for special events.

Keeping track of every vendor's PCI-DSS compliance is a complex task. New services and new providers are added as the needs and offerings of GSU increase and change.

To assess compliance ITS needs to gather compliance certificates for each of the payment processors and credit card merchant companies being used. A Self Assessment Questionnaire (SAQ) is a document that also needs to be filled out and archived on an annual basis for each payment processor and credit card merchant company used.

A review and verification process is being developed to ensure compliance for all areas accepting credit cards on campus. This process includes administration of SAQ documents and PCI-DSS certifications from vendors. The university's internal auditor will be included in the process and will participate in the verification and documentation of compliance.

III.C.5. User Access Rights Verification

Immaterial Finding IM2014-002

Access to university systems such as Ellucian Colleague and Blackboard is controlled and monitored by the ITS Department.

Initial access is granted after FERPA training is completed and it is removed upon separation of employment or change of assigned duties or position.

ITS needs to develop a process to verify user access to all systems on an annual basis to ensure that only those persons authorized have access, and to verify that only the minimum access necessary is granted.

ITS is developing an annual access audit and verification process that will require department heads and directors to certify all members of their units and the access levels that they hold. By implementing this verification system ITS will be able to remove access from those employees that have left GSU, changed positions or duties or no longer require access to perform their duties.

III.C.6. Software Development Change Management

Immaterial Finding IM2014-003

Jenzabar is the university's legacy ERP application. All of the data stored within the Jenzabar database was not migrated to the Ellucian product. Due to reporting requirements the data not migrated still needs to be accessible for most functional areas across the university. ITS has converted the Jenzabar Informix database to a Microsoft SQL database which is stored on the SQL cluster. Currently tools are being developed to allow users access to this data.

III.C.7. Jenzabar

Jenzabar is the university's legacy ERP application. All of the data stored within the Jenzabar database was not migrated to the Ellucian product. Due to reporting requirements the data not migrated still needs to be accessible for most functional areas across the university. ITS has converted the Jenzabar Informix database to a Microsoft SQL database which is stored on the SQL cluster. Currently tools are being developed to allow users access to this data.

III.C.7. Projects

- Blackboard Service Pack Upgrade
- 25Live Implementation
- Student Evaluation of Instruction (SEI) RFP
- Document Imaging RFP
- Recruiter 3.5.1 upgrade
- Ektron 9.1 upgrade
- SharePoint 2013 upgrade
- WebAdvisor 3.1.8 upgrade
- Colleague UI 4.5 upgrade
- UniData 7.3.7 upgrade - Colleague

III.D. Staffing—Open Positions

Information technology continues to be an integral part of how faculty/staff and students work and learn. Not only are new applications and functionality added every year, demand for new ways of computing and new devices add to the need for technical staff to support them. Additionally, the use of technology has in the past 5-7 years expanded beyond the walls of the university. Connectivity to GSU systems has expanded to home computers, laptops, and mobile devices.

ITS has always maintained minimal staffing levels, but the past 5 years have been exceptionally challenging. A number of positions have remained unfilled due to budget constraints. This has greatly affected ITS' ability to keep up with growth and delivery our core services that are provided to every faculty, staff, and student. A summary of those core services are listed below.

III.D.1. Director, Support Services

This key position would provide administrative leadership to build on existing dynamic and growing programs, incorporating innovative, user-centered products and services for faculty, staff, and students.

The director would develop and build the foundation for the technical trainer position as well as the publications editor/documentation specialist, who will assist the director in carrying out marketing campaigns to educate faculty, staff, and students in the use of IT products and services. The director would supervise the writing of technical documentation for ITS staff and the GSU community in general.

The director would engage ITS staff in planning and shaping user-oriented services to support the use and development of information technology and facilitate collaboration with key campus constituents. This position will also function as an ombudsperson for faculty/staff/students with regard to all uses of technology on campus. The position will provide key communication between faculty/staff and students in areas of technology system changes and enhancements.

S/he will be prepared to tap the potential in emerging information technologies by encouraging the development of tools and strategies to enhance the delivery of high-quality instructional support.

The Director would report to the CIO/Associate Vice President of Information Technology and work collaboratively with the Director of Technical Services, Director of Application Development, and Manager of Telecommunications to advise the CIO/Associate Vice President on the budget, product selection, service initiatives, special projects, and unit coordination and communication. S/he would provide supporting statistical analysis and data.



The director would be active in the following areas.

- Assures fulfillment of high-priority user needs in technology.
- Collaborates with ITS staff to identify and plan for the use of current and cutting-edge technologies for the delivery of end-user services.
- Serves as a member of the ITS management team, contributing to planning, program development and assessment, budget formulation, and allocation of resources in support of the university's mission.
- Stays current with research in higher-education trends and user needs in the context of rapidly developing technologies.
- Represents ITS within the university and on committees and forums at both state and national levels.
- Builds a technically astute Support Services staff (technology trainer and technical/grant writer).

III.D.2. Technical Trainer

Each system and product demands that the user learn specific steps and, in the case of product enhancements, learn additional steps and acquire new skills. Training and orienting new employees and employees who change positions is also ongoing and is one of our biggest challenges.

Requests for help in using GSU's standard computer systems and products are continuous. ITS wants to anticipate and meet GSU users' IT needs. Most IT questions are filtered through the ITS-based Helpdesk. The Technical Trainer would work with the Helpdesk staff to compile frequently asked questions and keep users informed of solutions to those questions.

The Technical Trainer would be active in the following areas:

- Train GSU employees (staff and faculty)—in classroom settings, one-on-one, and online—in computer and telecommunications technology used at GSU, including, but not limited to:
 - MS Office Suite (e.g., Word, Excel, Access, Outlook, PowerPoint)
 - Ellucian administrative computing system
 - Business Objects/Web Intelligence and Crystal Reporting
 - Ektron's CMS (content management system) for the Web sites
 - VOIP phone system
- Orient and train new employees.
- Improve communication between ITS and GSU community members and contribute to demystifying computer and telecommunications technology.

III.D.3. Publications Editor/Documentation Specialist

The Publications Editor/Documentation Specialist would be active in the following areas:

- Revive the ITS newsletter (online and in hard copy) to keep the GSU community informed of developments in computer technology, including developments within the Ellucian administration system; to announce products that have been approved for use and support at GSU; and to announce scheduled training sessions and opportunities for learning technical skills.
- Document ITS procedures to enable cross-training employees within ITS to protect the university community from losing information critical to running the campus and recruiting and retaining students.

III.D.4. Database Administrator

All modern computer systems today employ databases to store and retrieve application data. At GSU we have a vast amount of databases that require constant maintenance and monitoring. The role of the Database Administrator includes ensuring that these databases and the data contained are safeguarded and operate at peak performance. S/he is also responsible for writing and maintaining data interfaces to move information between computerized systems.

This position provides leadership in planning how current and new technologies will be used to best support business processes as it pertains to the university ERP application. As the database administrator, the incumbent maintains the enterprise information systems that support the University's administrative functions, including student information systems, course and curriculum management, payroll, personnel, accounting, accounts receivable, accounts payable, general ledger and advancement.

The Database Administrator would be active in the following areas:

- Studies existing information processing systems to evaluate effectiveness and develops new systems within Ellucian to improve production or workflow.
- Advises and counsels the end user on the solution to their application needs.
- Provides end-user training in the use of the Ellucian Colleague application suite.
- Produce technical and end user documentation that is consistent with the standard ITS environment.
- Work with IT leadership to define technical requirements to support changes and new functionality within the Ellucian application.
- Administer and support database servers. This includes knowledge of SQL, triggers, stored procedures, database security, backup and maintenance plans, etc. Must possess a working understanding of Ellucian technology such as but not limited to, utilizing SQL, working on Windows servers, using HTML, ASP.NET, XML, MS SharePoint, Colleague



Studio or Visual Studio, exposure to IIS, exposure to Microsoft XP O/S, supporting MS SQL Server database, support application built in .Net platform.

- Responsible for supporting the Business Objects reporting tool. This tool is an end-user reporting tool used to create ad-hoc reports from the Ellucian Colleague data.

III. D.5. Director, Application Development - BC

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Currently, ITS employs only two web administrators, who coordinate the work of 100 web content contributors and whose project list exceeds 110 projects. There is an urgent need for an additional (third) web specialist who can assist in managing the communications between the different systems, maintain the university's look, and to comply with the federal governments Americans with Disabilities Act (ADA).

III.D.6. IT Security Officer

Data security extends to every operation on campus and there currently is not a proactive strategy in place to address this and the increasing number of security related audit findings described in the Challenges Section III.B.9 above.

Currently the responsibility of computer, application and network security management is split between the departments senior and mid-level managers and their staff. The trend in the Information Technology industry is to split the management of security from the operations/support function within the IT department. This trend has extended to Higher Education where all other state of Illinois universities have established a separate security group within their IT organization lead by an IT Security Officer. Some of them have this person or group reporting to a Chief Security Officer who examine all campus operations from an IT security perspective. They establish strategy and policy to protect the entire university's data assets. Neither an IT Security Officer or Chief Security Officer should have involvement with managing internetworking equipment (i.e. servers, switches). This is so they can better remain neutral in order to scrutinize all campus practices and policies.

III.D.6. Funding for Student Workers

ITS maintains a core group of student workers to provide first level support on the helpdesk as well as provide support for students using the Cube. This is a vital service every university provides for students who are looking to supplement their educations in Management Information Systems or Computer Science with practical, real-world work experience.

It is something the university should continue to support and fund. ITS has designed its staffing structure around requiring that a level of student workers are maintained to provide necessary support to faculty, staff and students. The trend over the past few years is to lessen the reliance



on student workers as an alternative to hiring experience full-time staff. As new full-time staff positions are hired, the budget for student workers has been cut.

For FY14 the Helpdesk and the Cube had a sharp decrease in funds from the Federal Work Study program. This caused around a 40% drop in the number of student workers each team used from FY13.

III.E. ITS Staff Training

ITS staff supports a variety of technologies that is implemented at the university. Technology consistently changes through upgrades or implementation of new resources. Formal training for the ITS staff is integral to continuing the high level of service to the university community and technologies change. The absence of staff training introduces a reliance on third-party vendors to support the technologies at the university. These contractors can be very expensive and when they leave, their expertise leaves with them.

Certifications are very common in the IT industry. Incentives should exist for staff to obtain industry certifications. Investing in our own staff will better support university technology investments and maximize its usage.

III.F. University Staff Training

In January 2012, ITS created the New Hire Technical Orientation. The orientation is designed for new staff members to become familiar with Ellucian, help desk, and telecommunications' procedures. An introduction to Ellucian's portal and navigation of vital employee areas is presented to the new hire. Faculty has a separate orientation that provides them with the necessary training to assist them with their specific needs.

Technology has inundated the university. It is used in almost all the jobs on campus. Training in the different technologies has not kept up with the need. This has created several problems. Users get frustrated and they sometimes incorrectly use technology, or they don't use technology up to its capabilities.

Staff training is also necessary for new employees. When employees leave, there is usually a gap in the hiring of replacements. Since the university method of training is to have the functional experts train in their areas, a knowledge gap is created when this doesn't happen or when the functional expert leaves.

ITS provides training in the absence of turnover training. ITS does not have the staff to provide the level of training that the university requires. ITS earnestly attempts to train any users in need; however, more structure is needed by the university in this area.



III.G. Bandwidth

GSU's bandwidth utilization has increased dramatically over the last several years resulting in a slower internet browsing experience. This slowness is most noticeable during peak times when the majority of classes are in session starting at 4:30pm and ending approximately at 10:30pm.

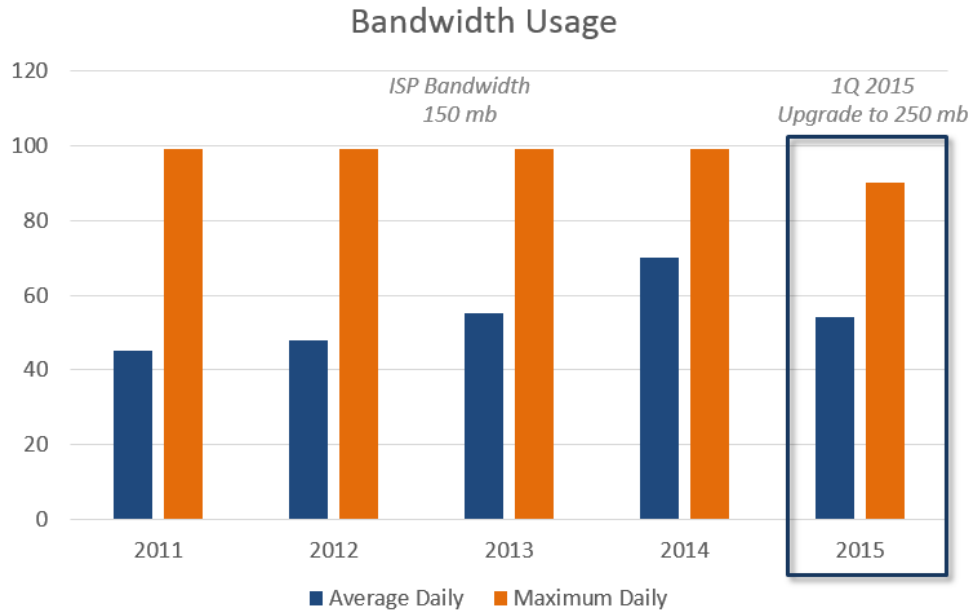
- Steady increase in number of computers and laptop use on campus
- Increase of video-rich web pages on Internet
- More wireless coverage added to campus in last year
- Expanded use of Blackboard and Collaborate
- Expanded use of VPN and remote-desktop capability
- Increase of downloading music and movies

To address the growing need for bandwidth GSU implemented the following technical solutions:

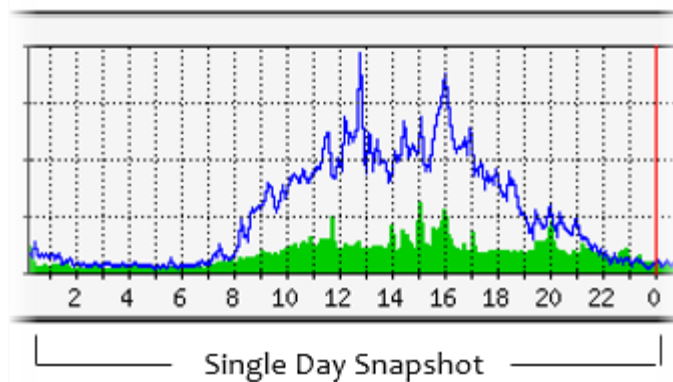
- Upgraded primary ISP bandwidth from 150mb to 250mb.
- Implemented a bandwidth shaping product that traffics student and wireless traffic on a separate network allowing 100-150mb of overall bandwidth depending on the time of day. This was done to prevent this area of the campus from fully consuming all available bandwidth and to allow critical GSU applications, Blackboard/Ellucian, the ability to function for general public use without interruption.

Additionally a 25mb 'hot' backup ISP line was purchased allowing for seamless failover in case of primary ISP failure.

The chart below summarizes the average and maximum daily bandwidth percentage usage from 2011 until 1Q 2015. Prior to 1Q 2015 the bandwidth pipe to the primary ISP was approximately 150mb. It was upgraded to 250mb. It is important to note that each day bandwidth spikes to nearly 100% several times a day. Regardless of the amount of bandwidth it is all used. The amount consumed greatly varies depending on the time of day.



The graph below illustrates a typical single day snapshot of bandwidth usage. As the day progresses, as expected, more bandwidth is utilized. The amount varies day to day but the general activity depicted below is typical.



In FY15, to address high bandwidth utilization, GSU deployed a network appliance to traffic GSU internet bandwidth. A bandwidth policy was put in place that allows a GSU community member the ability to use up to 85% of the total available bandwidth if it is available. If not the total traffic utilized is equalized amongst all users so that not one entity can utilize all bandwidth. University application traffic and wireless/student traffic are separated and controlled by different policies.



III.H. Policy

The development and oversight of policies related to the use of technology by faculty, staff, and students are the responsibility of PBAC-IT, which, along with the former entity ITPPC, has developed a number of policies to ensure the equitable use of technology across campus and to comply with federal and state agency requirements. Additionally, all approved policies need to be reviewed on a regular basis.

1. Policy 63 (Technology Enhanced Classrooms Usage)
2. Policy 64 (Networking and Computing, Network Security, and Wireless Computing)
3. Policy 65 (Web-Based Publications).

All university policies, including the ones mentioned above, have been approved by the administration and can be found on the Provost's website.

During FY 2014 the PBAC-IT committee updated Policy 64 to reflect the new password expiration policy as well as drafted separate student and faculty/staff email policies. The committee has since forwarded these policy drafts on to PBAC.

Below is a list of new policies and/or policy changes that ITS will be recommending and providing drafts for review by PBAC-IT in FY15 and FY16.

III.H.1. Desktop and Mobile Device Policy (Acceptable Use)

Immaterial Finding IM2014-001

This policy can either be its own policy or incorporated into Policy 64 to address the following. This Policy addresses

- a. security requirements on desktops and mobile devices
- b. acceptable software, e.g., games and P2P (HOA compliance)
- c. required software, e.g., anti-virus
- d. restrictions on how desktops are to be used, e.g., for GSU business only
- e. responsibility for backup and storage of data on desktops
- f. desktop hardware selection (standardization) decision process
- g. desktop disposal, replacement, and purchase process

III.H.2. Software Policy

This policy addresses the challenges defined in III.B.8 (Centralization of Software Licensing on Campus).

- a. software installation process, i.e., by ITS Helpdesk only
- b. what can be installed, e.g., only GSU-owned software (not personal)
- c. software purchase and approval process
- d. license management, i.e., managed centrally by ITS

- e. software selection (standardization) decision process
- f.

III.H.3. Personal Identity and Security Breach Policy

Immaterial Finding IM2014-001

The policy addresses a current ITS Audit immaterial finding. Failure to finalize a breach of security procedure and failure to formalize a statement of purpose to comply with the Identity Protection Act.

III.H.4. Faculty, Staff and Student Email Policy

The policy addresses acceptable use of email communication. A draft was drafted and reviewed by PBAC-IT in June 2012. However, email has become a repository of not only communications, but file storage. The policies do not address the storage and security management of this data.

III.I. ACS Lab Redesign/Relocation

There have been several attempts over the years to redesign/relocate the ACS Labs. The space was never appropriate for computer labs, and has been an issue for years. There is not enough space to adequately schedule class needs as to quantity and size. Issues are:

- Classroom size
- Number of classrooms
- Aesthetics/ambience (furniture, curtains, etc.)
- Specialty classrooms (i.e. Hardware repair lab, Network lab)
- Lighting/HVAC

In order to continue to maintain and grow with the needs of faculty and teaching programs of the colleges the ACS lab will need to be expanded and/or relocated.

During the Summer of 2014, the Library and ACS Lab was renovated and addressed all of the issues above. The ACS Lab was rebranded to the Cube and went from 6 classrooms to 10 classrooms. With the renovation we also increased the number of computers in the Cube from 177 to 383. All print services for both the ACS Lab and Library were relocated into the Cube as well. Additionally, new furniture, computers and AV electronics was replaced in most rooms as part of this renovation.



III.J. Network Infrastructure

Prior to FY2015 the state of the university's network infrastructure was over 10 years old. With the change in computing to high definition video and mobile computing, there was a need to increase the throughput of the wired network as well as upgrade and enhance the wireless network.

For FY14 a detailed plan was drafted to upgrade the network backbone and wireless infrastructures. The plan was approved and implementation begun FY15. The outline of improvements and status is outlined below:

III.J.1. Network Backbone

The pre-existing 1GB network wired backbone was replaced with a 10GB network. All data closet wiring was removed and replaced along with all of the switching gear. 10GB uplinks now exist between the access and core layer switches. [Collapsed core design]

Firewall and intrusion prevention systems were upgraded in 2015 with more robust appliances that can accommodate the increase in ISP bandwidth and further future proof this area of concern.

A bandwidth 'equalizer' was put in line with GSU's edge routing infrastructure and our primary ISP to allow GSU to more efficiently traffic it's bandwidth.

Taking into consideration all of the above improvements there are always needs for higher bandwidth and GSU should continually increase every 2-3 years incrementally based on needs reflected in year to year metrics.

III.J.2. Wireless Mesh

The existing wireless infrastructure has served the university well. However, the technology is multiple generations behind and cannot keep up with the demands of increased usage created by the needs of mobile computing and wireless capable infrastructure devices. Like the wired infrastructure it is in need of an upgrade. The current wireless infrastructure is a hot-spot design with coverage of only 65-75% of the campus. A wireless mesh design would not only provide for the latest technology and speeds, but provide seamless coverage inside and outside the main campus.

Updated Status:

- In 2013, GSU deployed stage one of its wireless redesign to the F-Wing [science wing] and allows employees/students access via GSU credentials and also general open guest access.
- In 2014 the new wireless model was deployed to GSU's first residence hall.
- In Q4 of 2014, GSU begin full migration/implementation of the upgraded wireless infrastructure to campus with the expected completion in Q2.



IV. Tactical Plan

IV.A. Introduction

ITS provided potential projects to PBAC-IT for review every year. These projects have been refined, categorized, and prioritized by PBAC-IT. The ITS Strategic Plan considers not only the high priority placed upon services to our students, faculty and staff but also the technical infrastructure, staffing and training needs outlined in the “Challenges” section of this document.

The highest priority items upgrade the GSU infrastructure to allow ITS to continue current service levels and allow for the exponential growth of network utilization the campus is experiencing.

A high priority has been assigned to addressing the campus-wide issues related to aging and sometimes absent technology on the GSU campus.

The final level of high priorities has been allocated to previously unfulfilled needs for enhancements to campus applications such as Blackboard and additional online admission applications. In this category, improvements include, among others, a technology trainer position and business process improvement such as E-Procurement.

The projects included in the detail appendices are presented in the order of the PBAC-IT priorities. This plan will be enhanced with timelines and performance indicators once projects are approved and funded. Also, there will be an annual review/revision of this plan due to the nature and rate of change in technology.

A detailed list of the projects sorted by priority, and indicating corresponding directive from strategy 2015, can be found in appendix F.

IV.A.1. Funding Estimates for New Initiatives

The spreadsheet that follows breaks out estimates the necessary funding projected for the next several years as follows:

IV.A.1.a. Non-Funded Projects

These are prioritized by year. This encompasses all 44 projects listed in appendix C, detail as to cost estimates can be found in appendix D. The estimates total to implement all 44 projects for FY15 is \$1,976,200.00.

IV.A.1.b. Funding for ERP

This project is funded and currently in process.

IV.A.1.c. Increased Operating Costs

While the budget has been decreasing, facility expansion, maintenance costs, commodities, hardware, and the rest have not. The table below is an example of the increasing costs in just one application. Since 2011, Ellucian’s yearly maintenance has increased by nearly \$75,000, and yet there has been no corresponding increase in the ITS budget which, in turn, means that the proverbial “taking money from Peter to pay Paul” has been occurring for the past several years and has lead us to, among other things, six-year-old computers in some classrooms for students, when at one point we were upgrading one or two classrooms a year. To this end, non-personal dollars are increasing on a yearly average of eight percent (8%).

Fiscal Years	1112	1213	1314	1415	1516	1617	Total
Ellucian Maintenance	204,366.00	227,576.00	236,218.00	264,272.00	267,918.00	278,929.00	1,479,279.00
Increased by		23,210.00	8,642.00	28,054.00	3,646.00	11,011.00	74,563.00

The FY16 maintenance cost for Ellucian is \$278,929.00. This amount does not include all the third party products that accompany it. Operating costs for any ERP system is quite expensive.

IV.A.1.d. Personnel-New

ITS staffing has also been relatively flat, and in some areas down for quite some time, the details for these positions are described in section III.D. The estimated salary for additional personal to reach adequate levels and to support growth is \$300,000 annually, factoring in a modest 3% yearly increase of the total through 2015 is \$1,942,000.00

In total the estimated funding for all areas comes to \$26,596,000.00 through 2015. The reality is that it is highly unlikely that our existing revenue sources can accommodate an increase such as this albeit disbursed over several years. New and creative funding sources need to be researched: long term loans, the sale of bonds, redirection/ consolidation of all technology fee dollars, grants, endowments, or a combination of all.

To compound the situation even more is the addition of a freshman class and on-site housing which will require an extension of support staff to accommodate the new demand.



IV.B. Summary *Needs some work*

Funding Estimates for New Initiatives

	FY2013 (2012-13)	FY2014 (2013-14)	FY2015 (2014-15)	Total
Non-Funded Projects, Excluding New ERP	(000's)	(000's)	(000's)	(000's)
Highest Priority	\$180	\$55	\$95	\$330
Higher Priority	\$140	\$250	\$200	\$590
High Priority	\$940	\$892	\$897	\$2,729
Medium Priority	\$329	\$502	\$116	\$947
Low Priority	\$30	\$60	\$30	\$120
Non-Funded Projects, Excluding New ERP Total :	\$1,619	\$1,759	\$1,338	\$4,716
Non-Funded ERP Project Total :	\$2,450	\$1,500	\$500	\$4,450
Increased Operating Costs	\$1,228	\$1,326	\$1,422	\$3,976
Personnel-New	\$328	\$338	\$348	\$1,014
Grand Total	\$5,625	\$4,923	\$3,608	\$14,156

The above summary was drafted during the initial creation of this strategic plan in February 2009. It should be understood that ITS does not receive any guaranteed or direct funding for



these new initiatives. ITS is not each year funding to address the initiatives outlined in this strategic plan. Any money received is most likely tied to other university project initiatives or ITS has been able to find creative solutions and funding sources sometimes through cost cutting measures to accomplish goals.

The exercise of forecasting needs 6 years out is designed to make some educated predictions based on system utilization, hardware lifecycles, and university wide strategies of what funding will be required to maintain and grow the use of technology. Given the current state of the state of Illinois and the direct appropriations, plus revenue from enrollment, it is unrealistic to assume that there will be funding each year available to address most of these initiatives during the 6 year period. Below is a summary breakdown of the efforts each year to fund initiatives.

FY2010

Technology fee revenue from PBAC process:

- Upgrade the server hardware and SAN storage infrastructure for learning management system - Blackboard (High Priority).
- These funds were also used to add additional storage capacity to our SAN infrastructure (Highest Priority).
- These funds were also used to add an Apple Media server to enhance iTunes capabilities (Low Priority).
- Technology fee revenue was also used to acquire over 200 computers for the ACS Lab (Higher Priority) and computers in the cyber café (High Priority).

ITS purchased from its budget through cost saving measures:

- 1 new server to continue the initiative to upgrade and consolidate servers using virtualization technology (Highest Priority).
- 1 new server to replace Jenzabar CX database server. (High Priority).
- 5 new LCD projectors to replace aging units in technology enhanced classrooms (Medium Priority) which helped with moving closer towards achieving automated A/V equipment management (Higher Priority).

FY2011

Technology fee revenue from PBAC process:

No funds were acquired this budget year to address any new initiative defined in the plan. However, funds were acquired to address increased use of existing software products by faculty/staff and students (Adobe & SPSS). Additional licenses were required to remain in compliance with vendor licensing policies.

ITS was able to purchase out of its budget through cost saving measures:

- 2 new server to continue the initiative to upgrade and consolidate servers using virtualization technology (Highest Priority).
- ITS upgraded the faculty & staff email system – Exchange 2010 (High Priority).

The ERP replacement efforts (to be fully implemented in FY2012) will positively address the following initiatives:

- Student Portal (High Priority)
- Enhance Web Schedule/Directory (High Priority)
- CX 8.1 Implementation (High Priority)
- Upgrade Student View/Faculty View (High Priority)
- Non-traditional Workshop registration (High Priority)
- Online Requisitioning (High Priority)
- E-Procurement (High Priority)
- P-Card (High Priority)
- Faculty/Staff single sign on (Medium Priority)
- Intranet (Medium Priority)
- Data Entry Automation (Low Priority)

FY2012

Technology fee revenue from PBAC process:

No funds were acquired this budget year to address any new initiative defined in the plan. However, funds were acquired to address increased use of existing hardware and software products by faculty/staff and students.

ITS was able to purchase out of its budget through cost saving measures:

- Student Portal (High Priority)
- Enhance Web Schedule/Directory (High Priority)
- Non-traditional Workshop registration (High Priority)
- Online Requisitioning (High Priority)
- Faculty/Staff single sign on (Medium Priority)
- Upgraded VPN/Remote control system (Medium Priority)
- Created 5 new Technology Enhanced Classrooms plus an additional 4 more in Module 2 (Higher Priority)
- Upgraded the Campus Phone (VoIP) system (Highest Priority)
- Enhanced Server Virtualization: Increased by 30% (Highest Priority)
- Enhance file backup system (Highest Priority)
- Increased Storage Area Network (SAN) capacity (Highest Priority)

FY2013

Technology fee revenue from PBAC process:

No funds were acquired this budget year to address any new initiative defined in the plan. However, funds were acquired to address increased use of existing hardware and software products by faculty/staff and students.

ITS was able to purchase out of its budget through cost saving measures:

Systems (Servers and LAN)

- Data Center & Physical Infrastructure
 - Cisco SSL VPN client base install upgraded
 - Firewall redundancy configured and tested
 - New redundant internet edge routers deployed
 - New redundant glue switching infrastructure deployed
 - Additional LTO5 drive installed to tape library system to reduce backup windows
 - Upgraded Cell Repeater system in sub-basement tunnel system

- Servers & Virtualization
 - Reduction of physical servers by 46%
 - Increased amount of physical virtual hosting servers by two
 - Increased the amount of virtual servers by 30%
 - All VMWare [virtualization] servers we upgraded across the board to 98GB of RAM
 - Installed redundant Microsoft SQL Cluster – Reduced amount of SQL servers by three.
 - Deployed Blackboard Intercession servers
 - Replaced legacy external DNS servers with three virtual Microsoft DNS servers
 - Deployed new virtualized hardware and test environment for SharePoint 2010/Ellucian.

- Wireless
 - Deployed additional 802.11n access points to increase wireless coverage

- Labs and Classrooms
 - Upgraded Computers in ITS 104, ITS 107, D2440, and D34060
 - Installed Papercut as a pay per print system replacing OCS

FY2014

Technology fee revenue from PBAC process:

No funds were acquired this budget year to address any new initiative defined in the plan. However, funds were acquired to address increased use of existing hardware and software products by faculty/staff and students.

ITS was able to purchase out of its budget through cost saving measures:

Systems (Servers and LAN)

- Data Center & Physical Infrastructure
 - Data Center UPS (funded with university emergency funds)

- Servers & Virtualization
 - Reduction of physical servers an additional 9%
 - Deployed Backup Ellucian and Microsoft AD infrastructure
 - Upgraded SAN controllers and added drive space

- Wireless
 - Deployed MESH in cafeteria

- Labs and Classrooms
 - Upgraded two classrooms with technology – E2522 and D34063
 - The University completely renovated the ACS Lab and Library areas. This work increased the size of 4 existing rooms in Lab and added 4 additional computer classrooms. The ACS Lab was renamed to the Computer Connections Central or CCC or the Cube for short.

V. Future Direction

V.A. Green Computing

In March of 2007, President Maimon signed an agreement along with a number of other university presidents called the American College & University Presidents Climate Commitment (ACUPCC) initiative. This commitment suggests the university will pursuit every option available to reduce the amount of energy consumed with the use to technology. ITS has made a

number of changes in their purchasing recommendations and desktop configuration policies to comply. While good progress has been made, more work can be done.

V.A.1. Data Center

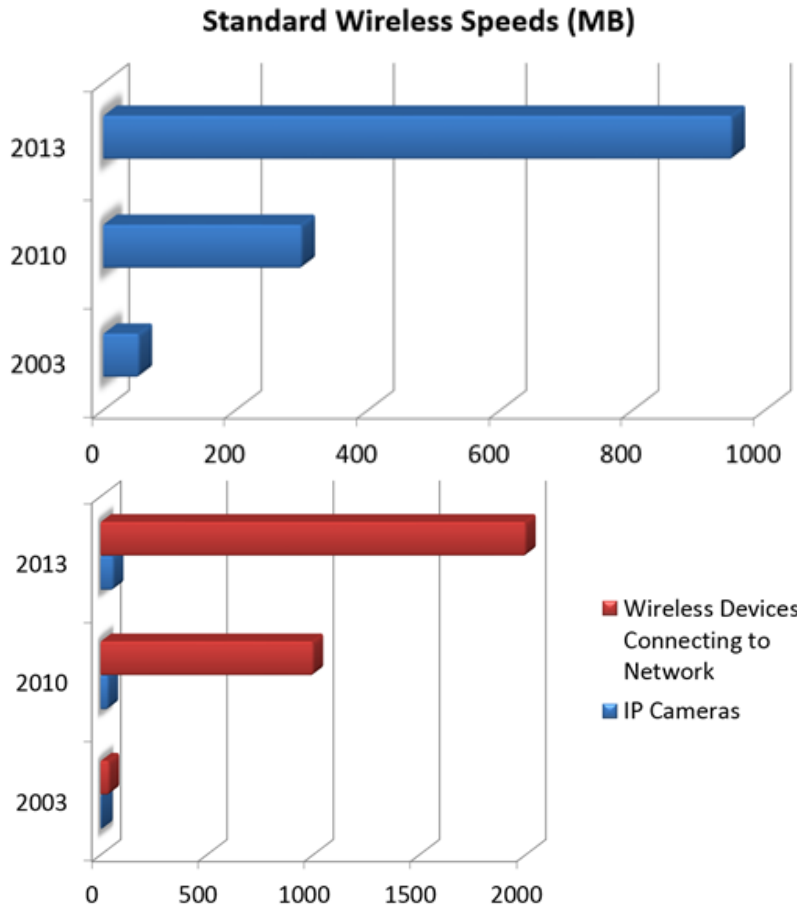
- Eliminate unnecessary or inefficient use of energy.
- Use innovative and more efficient cooling methods.
- Continue to replace high-density servers with virtual servers.
- Continue to use alternative storage tactics-centralized storage.
- Resize data center floor layout to match reduction in number of servers to support.
- Explore alternative energy sources.

V.A.2. End-User Computing

- Alter purchasing practices for IT assets to include only “Energy Star” rated technology.
- Continue policies that implement energy-saving settings on computers.
- Practice proper disposal and recycling practices of IT assets.
- Continue policy to shut down monitors/PCs during off hours.
- Reduce or eliminate the number of stand-alone printers on campus
- Move all or most printing to network printers

V.B. Wireless Mesh

Work began and should be completed by June 2015 to implement a wireless mesh network (WMN) throughout campus. With this mesh topology faculty, staff and students can connect to one SSID and be able to roam throughout the university and remain connected. The wireless access points (APs) installed supports all current standards (802.11a/b/g/n/ac). However, this technology is advancing quickly as it works towards matching and surpassing wired technology speeds. The transition is nearly complete and should reach that point in the next 5 years. Cisco has announced the release of the next generation AP technology to support a standard that is called 802.11ac wave 2. And work has begun developing the 802.11ah standard that is expected by 2020. A replacement of the APs on campus will be required to support these future standards. The industry has also speculated that these future APs will require a second Ethernet cable. To accommodate this, a second cable is being run to the 802.11ac APs currently being installed. Below is a chart shows the evolution of wireless technology speeds over the past twelve years as well as growth on campus of wireless devices.



V.C. SaaS / Cloud Computing

Software as a Service (SaaS) is a model of software deployment where an application is hosted as a service provided to customers across the Internet. By eliminating the need to install and run the application on the customer's own computer, SaaS alleviates the customer's burden of software maintenance, ongoing operation, and support. Conversely, customers relinquish control over software versions or changing requirements; moreover, costs to use the service become a continuous expense, rather than a single expense at time of purchase.

FERPA does not prohibit the use of cloud computing solutions for the purpose of hosting education records. It does however, recommend that universities “should take care that their

security plans adequately protect student data regardless of where the data are hosted” (Family Educational Rights and Privacy, Final Rule, 76 Federal Register 75612 [December 2, 2011]).

SaaS has been a model for a number of years now and hosting and using a software solution “in the cloud” has become the only option available for a number of software market segments. This trend will continue, and the university has had no choice but to accept this as a strategy. As long as a software vendor continues to provide an option to allow their solution to run on local GSU servers, this should continue as it provides the lowest cost option over time. GSU currently maintains over 160 servers in its data center. The ITS staff responsible for these servers is highly trained and capable.

However, what university data is out in the cloud is a security concern as it becomes difficult to know where data exists and have complete control of its security. Some of these SaaS solutions are purchased and access managed by departments outside of ITS. GSU and ITS must develop a strategy to better monitor and secure the access to this data.

V.D. Mobile Computing

The use of technology has over the past several years been shifting to more mobile device based. A development strategy has been put in place to insure that all GSU websites are to be optimized to work on mobile devices. In addition, the university has implemented Ellucian Mobile which is a mobile platform designed to provide some functionality of the full Ellucian Colleague system. As Ellucian develops this platform it will eventually over time provide even more Colleague functionality for staff, students, and prospective students.

The university campus wireless MESH currently shows that 4,000 devices (printers, laptops, smartphones and tablets) connect on campus daily. With the improved performance and reach of the new MESH topology, this number will continue to grow. The university and ITS will need to continue the strategy to optimize its software environment for this growth. It must also keep up with the advancements in the 802.11 standard as well as the increased bandwidth needed to support a growing number of wireless devices on the GSU network.



V.E. Security

As mentioned in several locations previously in this document, security is a growing and constant challenge due to the inherent openness allowed to exist on the client side of the infrastructure. Many things have contributed to this.

- Growth of mobile computing devices, bring your own device (BYOD) phenomenon.
- Remote access capabilities (Access anywhere at any time)
- Growth of SaaS (cloud) and disbursement of university data
- Growth of Security related state of Illinois Audit findings

The ITS staff is highly trained and capable to secure the university systems from outside threats. A number of technologies are in place to protect not only the systems, but the devices that the university owns. However, because of the openness of the access to sensitive data, there remains areas of weakness that need not be overlooked. For example:

- University data residing locally on end-user devices. This includes data residing on GSU devices and devices that are owned and managed by end-users directly (home computers, mobile devices, cloud storage locations)
- Campus data, including personal credit card information that may be printed out and not kept physically secured.
- Information emailed out to external entities not password protected or encrypted.
- Lack of and poor password security on mobile devices

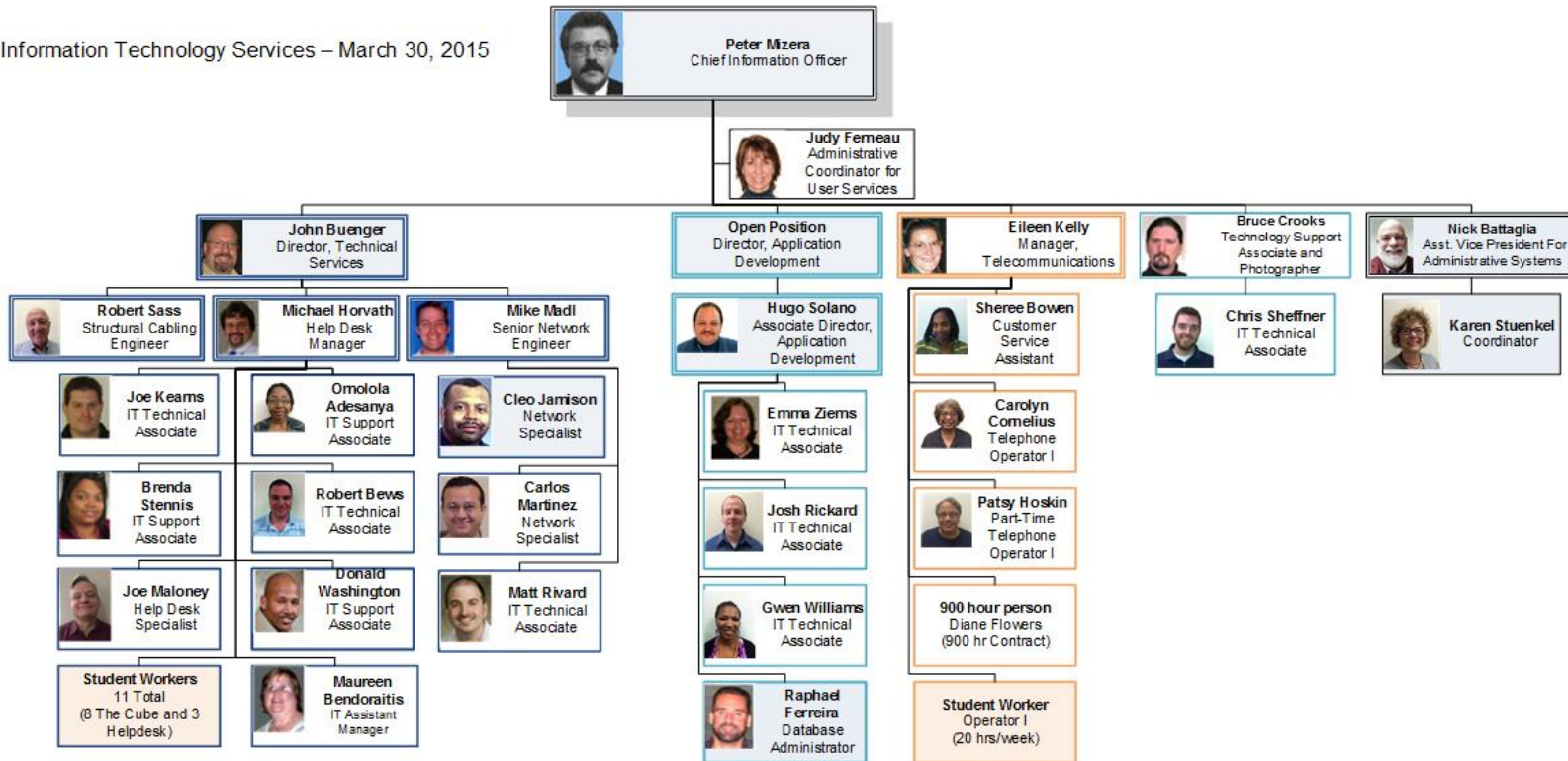
A strategy needs to be put in place for a greater campus-wide focus on security. This can be accomplished through a number of solutions. For example:

- Establishing a stronger university acceptable use policies
- Adopting a campus-wide security awareness program
- Encrypting hard drives on all types of mobile devices
- Increasing password complexity and enforcing/extending on mobile devices
- Establish a university managed and secured alternative to cloud storage solutions (OneDrive, GoogleDrive, iCloud, etc.).
- Establish solution to password protect and encrypt email
- Remove administrative rights to campus computers so end-users cannot install software themselves.
- Adopt protocol filtering technology to eliminate types of data downloads from internet (copyright infringements).



Appendix A—ITS Organizational Chart

Information Technology Services – March 30, 2015

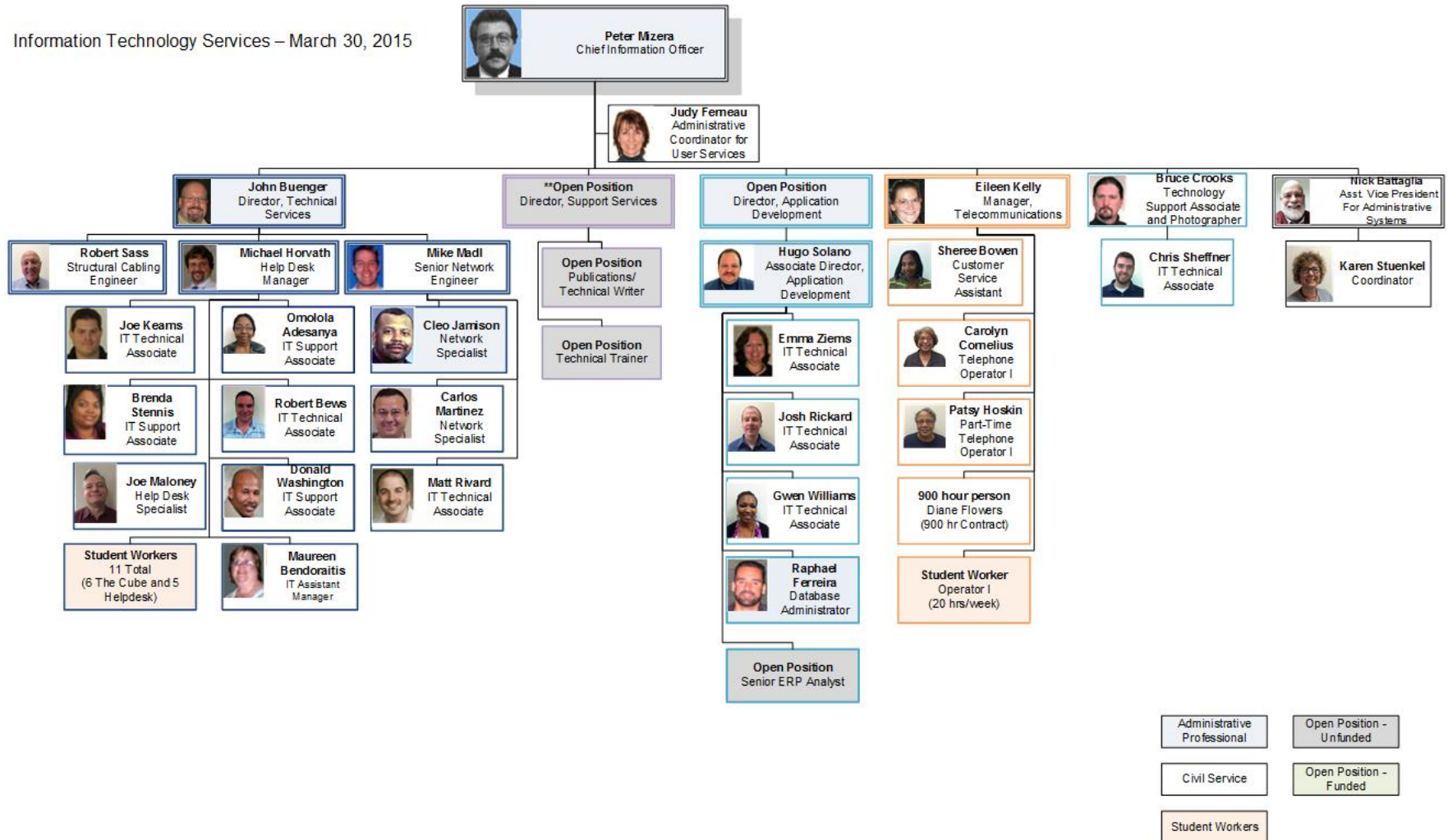


Administrative Professional	Open Position - Unfunded
Civil Service	Open Position - Funded
Student Workers	



Appendix B—ITS Organizational Chart – Optimal Plan

Information Technology Services – March 30, 2015



Appendix C —Tactical Plan Details by Priority

Highest Priority

- Wireless Campus: Supplementing the current wireless connectivity provided, implement a mesh solution to provide uninterrupted wireless connectivity for faculty, staff and students on the GSU campus. Upgrade to latest technology speed (802.11N/AC). As of FY15 approximately 15% of campus upgraded.
- Wired Campus: Upgrade the current wired infrastructure to support increased throughput speeds to support high definition video (increase backbone from 1GB to 10GB).
- Data and Server File Backup: Enhance the current backup processes with expanded capacity to allow greater efficiency. – Ongoing.
- Server Virtualization Hardware/Software: Obtain solutions that will allow allocating applications across all servers rather than a single server/single application. This will result in more effective use of existing capacity. – Ongoing.
- Storage Area Network (SAN): Acquire a SAN solution that will enhance disaster recovery as well as storage administration. – Ongoing.
- Campus Backup Internet Connection: The dependency upon the Internet by GSU teaching and learning mandates that a backup connection be planned for an implementation with redundancy. – Completed in FY12. Should be reviewed for increase in FY15.
- IP Telephony (VOIP) System Version Upgrade: Acquire, implement and test upgrades to the existing VOIP system. – Completed in FY12.
- Online SEI System: Select, license and implement software to provide online access to evaluations of courses and instruction by GSU students. This will save money, particularly for the current practice of mailing evaluation forms to students taking online GSU courses. Currently being piloted by SXL for distance courses. – FY13[SH4]

Higher Priority

- ACS Lab-Planning for Equipment Replacement: Create a detailed plan for identification and replacement of aged equipment on an annual basis. – Completed in FY10 and FY12, Ongoing. For FY15 the lab is to be completely renovated to include all new computer and AV equipment.
- Technology-Enhanced Classroom LCD Planning for aged Equipment Replacement: Create a detail plan for the identification and replacement of obsolete equipment on an annual basis. No plan in place as of FY15.
- A/V Equipment Management: Provide planning and management for campus-wide audio-visual equipment as well as address aged equipment replacement strategy. – Ongoing.
- Technology-Enhanced Auditoriums: Add technical equipment to Sherman Recital Hall, Engbretson Hall, Hall of Governors, F lecture hall, E-lounge, and F-lounge to increase the availability of spaces where technical presentations can occur. In FY14, Engbretson Hall and F1622 were renovated.

High Priority

- Blackboard (WebCT): Acquire and implement available upgrades for the GSU learning management systems. – Completed in FY12.
- Resource 25 University Calendar: Enhance the current implementation of Resource 25.
- Student Portal: Implement a comprehensive student portal to improve and expand upon online services to students. – Completed in FY11.
- Upgrade Online Orientation: Add student orientation services to the online orientation
- Enhance Web Schedule/Directory: Upgrade current offerings on the GSU web site for the class schedule and faculty/staff directory. – Completed FY12
- Rollout Graduate/Doctoral Online Admission Application: Expand the current implementation of undergraduate online admission applications to include graduate and doctoral applications. – Completed FY12



- Non-traditional Workshop Registration: Provide for the registration of students in non-traditional workshop sessions.- FY13
- Business Intelligence Solution: Acquire and implement a business intelligence solution to expand reporting capabilities.[SH5]
- Technology Trainer: Hire a person to perform training in Ellucian Colleague and other campus technologies.
- Online Requisitioning: Engage in business process improvement including online requisitioning. Completed in FY12
- E-Procurement: Engage in business process improvement including the acquisition and implementation of an e-procurement solution.
- Campus-wide Project Management Server: Provide a campus-wide solution to task and workflow management. No plans as of FY15.
- P-Card Implementation: Acquire and implement a purchasing and budget management solution.
- Aged Server Hardware Replacement Strategy: Create a detail plan for identification and replacement of obsolete equipment on an annual basis. No plans as of FY15.
- Cyber Café/Registration Station: Enhance, expand and upgrade both the Cyber Café and the registration station - planned aged equipment replacement strategy. – Completed in FY12, Ongoing.
- Upgrade Faculty and Staff Email Storage (Archiving): Implement policies for archiving email that will result in less GSU server capacity consumed by old email. – Completed in FY12, Ongoing. Expansion needed and no plans as of FY15.
- Faculty/Staff Desktop Computer Hardware Replacement Strategy: Create an inventory and a detail plan for identification and replacement of aging equipment on an annual basis. No plan as of FY15.
- D2440 Network Lab: Upgrade the technology available in Dr. Shih's primary computer laboratory. Partially completed in FY12. No plan as of FY15.

Medium Priority

- Web Enhancements: Enhance the GSU web site for students using tools such as blog capabilities, upgraded online orientation, web analytics, wikis and social networking. – completed FY12, ongoing
- Web Metrics: Implement tools to measure use of the GSU web site in order to better position web offerings and better understand utilization. - Ongoing
- Emergency Notification System(s): While a telephone emergency notification system is in place, supplement this with electronic notification of emergencies. – Completed FY10. In FY14 a plan for expansion was drafted to include all classrooms and hallways.
- Campus Emergency Outdoor Phone Upgrade: Acquire and implement a gateway device for outdoor emergency phones that will allow integration with our IP phone system as well as monitoring for outages. In FY14 a plan for expansion was drafted.
- Disaster Recovery/Business Continuity: The technical implementation of the recovery of GSU systems has been completed and tested but requires a corresponding business plan for recovery of functionality by other GSU business units. In FY12 and FY14 RFPs were drafted and posted. No funding available as of FY15.
- ACS Lab Expansion/Relocation: In order to provide greater student access to computer laboratory facilities, expand and/or relocate the existing ACS laboratories. Renovation began FY15.
- Upgrade VPN/Remote Access for Faculty/Staff: Implement remote access upgrades to enhance the current connectivity provided to the GSU network for faculty and staff. – Completed in FY12, Ongoing.
- Intranet: Review the current contents of the GSU intranet, solicit suggestions from faculty and staff and upgrade the content accordingly.- Completed FY11
- Faculty/Staff Single Sign-on: Research alternatives to access to all GSU systems using a single ID rather than the current multiple ID/passwords. – Completed in FY12.
- Technology Enhanced Classroom LCD Projector Power Management: Acquire and implement a power management solution to minimize purchases of replacement equipment. Completed FY14.



Low Priority

- Document Imaging: Expand document imaging beyond the current student admissions applications.
- iTunes University: Participate in the Apple offering of audio and video downloads available from universities.
- Resource 25 Automated Classroom Scheduling: Expand the implementation of Resource 25.
- Distribution and Availability of Lab Software for Students: Provide connectivity that allows students to access software currently available only in the GSU laboratories from their homes and offices. No plans as of FY15.



Appendix D—Tactical Plan Details by Priority and Cost Estimate

Project	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low (000's)	Cost Est.- High (000's)	(2012-13) (000's)	(2013-14) (000's)	(2014-15) (000's)	
Highest Priority						
Wired Campus: Upgrade the current wired infrastructure to support increased throughput speeds to support high definition video (increase backbone from 1GB to 10GB).	\$850	\$1,000	\$0	\$500	\$350	FY14
Wireless Campus. Supplementing the current wireless connectivity provided, implement a mesh solution to provide uninterrupted wireless connectivity for faculty, staff and students on the GSU campus. Upgrade to latest technology speed (802.11N/AC)	\$850	\$1,000	\$250	\$300	\$300	FY14
Data and Server File Backup. Enhance the current backup processes with expanded capacity to allow greater efficiency.	\$35	\$40	\$0	\$20	\$15	FY12, FY13
Server Virtualization Hardware/Software. Obtain solutions that will allow allocating applications across all servers rather than a single server/single application. This will result in more effective use of existing capacity.	\$40	\$60	\$20	\$0	\$20	FY10, FY11, FY12, FY13, FY14
Storage Area Network (SAN). Acquire a SAN solution that will enhance disaster recovery as well as storage administration.	\$95	\$125	\$0	\$35	\$60	



Project	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low (000's)	Cost Est.- High (000's)	(2012-13) (000's)	(2013-14) (000's)	(2014-15) (000's)	
Campus Backup Internet Connection. The dependency upon the Internet by GSU teaching and learning mandates that a backup connection be planned for an implemented with redundancy.	\$0	\$15	\$0	\$0	\$0	FY10, FY11, FY12, FY13, FY14 FY12
SEI's online. Select, license and implement software to provide online access to evaluations of courses and instruction by GSU students. This will save money, particularly for the current practice of mailing evaluation forms to students taking online GSU courses.	\$150	\$250	\$150	\$0	\$0	FY12
Higher Priority						
ACS Lab-Planning for Equipment Replacement. Create a detail plan for identification and replacement of aged equipment on an annual basis.	\$300	\$400	\$50	\$150	\$100	FY10
Technology Enhanced Classroom LCD Planning for aged Equipment Replacement. Create a detail plan for the identification and replacement of obsolete equipment on an annual basis.	\$50	\$70	\$10	\$20	\$20	FY10, FY11, FY13
A/V Equipment Management. Provide planning and management for campus-wide audio-visual equipment as well as address aged equipment replacement strategy.	\$90	\$150	\$30	\$30	\$30	FY12, FY13



Project	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low (000's)	Cost Est.- High (000's)	(2012-13) (000's)	(2013-14) (000's)	(2014-15) (000's)	
Technology Enhanced Auditorium. Add technical equipment to the GAU Auditorium to increase the availability of spaces where technical presentations can occur.	\$150	\$200	\$50	\$50	\$50	FY12, FY13, FY14
High Priority						
Blackboard (Webct). Acquire and implement available upgrades for the GSU learning management systems.	\$0	\$150	\$0	\$0	\$0	FY12, FY14
Resource 25: University Calendar. Enhance the current implementation of Resource 25.	\$5	\$10	\$5	\$0	\$0	
Student Portal. Implement a comprehensive student portal to improve and expand upon online services to students.	\$10	\$50	\$10	\$0	\$0	FY11, FY12
Upgrade Online Orientation. Add student orientation services to the online orientation including planning guides provided by the degree audit software.	\$5	\$10	\$5	\$0	\$0	
Enhance Web Schedule/Directory. Upgrade the current offerings on the GSU web site for the class schedule and faculty/staff directory.	\$8	\$12	\$0	\$0	\$8	FY12
Rollout Graduate/Doctoral Online Admission Application. Expand the current implementation of undergraduate online admission applications to include graduate and doctoral applications.	\$8	\$10	\$8	\$0	\$0	FY12
Enhance CX to admit for more than one term. Implement the CX functionality for student admission to more than a single term at GSU.	\$0	\$0	\$0	\$0	\$0	FY11



Project	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low (000's)	Cost Est.- High (000's)	(2012-13) (000's)	(2013-14) (000's)	(2014-15) (000's)	
CX 8.1 Implementation. Continue implementation of the windows-based interface to Jenzabar CX as requested on the GSU campus.	\$0	\$0	\$0	\$0	\$0	FY11
Non-traditional Workshop registration. Provide for the registration of students in non-traditional workshop sessions.	\$25	\$75	\$25	\$0	\$0	FY13
Business Intelligence Solution. Acquire and implement a business intelligence solution to expand reporting capabilities.	\$100	\$150	\$75	\$25	\$0	
Online Requisitioning. Engage in business process improvement including online requisitioning.	\$75	\$100	\$0	\$75	\$0	FY12
E-Procurement. Engage in business process improvement including the acquisition and implementation of an e-procurement solution.	\$200	\$300	\$150	\$50	\$0	
Campus-wide Project Management Server. Provide a campus-wide solution to task and workflow management.	\$50	\$75	\$0	\$50	\$0	
P-Card Implementation. Acquire and implement a purchasing and budget management solution.	\$5	\$8	\$0	\$5	\$0	
Aged Server Hardware Replacement Strategy. Create a detail plan for identification and replacement of obsolete equipment on an annual basis.	\$480	\$960	\$160	\$160	\$160	
Cyber Café/Registration Station. Enhance, expand and upgrade both the Cyber Café and the registration station - planned aged equipment replacement strategy.	\$8	\$12	\$2	\$2	\$4	FY10, FY12, FY13



Project	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low (000's)	Cost Est.- High (000's)	(2012-13) (000's)	(2013-14) (000's)	(2014-15) (000's)	
Upgrade Faculty and Staff Email Storage (Archiving). Implement policies for archiving email that will result in less GSU server capacity consumed by old email.	\$50	\$75	\$0	\$25	\$25	FY12
IP Telephony (VOIP) System Version Upgrade. Acquire, implement and test upgrades to the existing VOIP system.	\$0	\$0	\$0	\$0	\$0	FY12
Faculty/Staff Desktop Computer Hardware Replacement Strategy. Create an inventory and a detail plan for identification and replacement of aging equipment on an annual basis.	\$1,500	\$2,160	\$500	\$500	\$500	
Upgrade Faculty and Staff Email System (Exchange 2007). Acquire and implement available upgrades to the faculty and staff email system.	\$0	\$0	\$0	\$0	\$0	FY11
D2440 Network Lab. Upgrade the technology available in Dr. Shih's primary computer laboratory.	\$200	\$300	\$0	\$0	\$200	FY12
Medium Priority						
Web Enhancements. Enhance the GSU web site for students using tools such as blog capabilities, upgraded online orientation, web analytics, wikis and social networking.	\$5	\$15	\$2	\$0	\$3	FY12
Web Metrics. Implement tools to measure use of the GSU web site in order to better position web offerings and better understand utilization.	\$7	\$12	\$2	\$2	\$3	



<u>Project</u>	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low <u>(000's)</u>	Cost Est.- High <u>(000's)</u>	(2012-13) <u>(000's)</u>	(2013-14) <u>(000's)</u>	(2014-15) <u>(000's)</u>	
Emergency Notification System(s). While a telephone emergency notification system is in place, supplement this with electronic notification of emergencies.	\$0	\$0	\$0	\$0	\$0	
Campus Emergency Outdoor Phone Upgrade. Acquire and implement a gateway device for outdoor emergency phones that will allow integration with our IP phone system as well as monitoring for outages.	\$100	\$165	\$0	\$0	\$100	
Disaster Recovery / Business Continuity. The technical implementation of the recovery of GSU systems has been completed and tested but requires a corresponding business plan for recovery of functionality by other GSU business units.	\$75	\$300	\$75	\$0	\$0	
ACS Lab Expansion/Relocation. In order to provide greater student access to computer laboratory facilities, expand and/or relocate the existing ACS laboratories.	\$500	\$1,000	\$0	\$500	\$0	FY12
Upgrade VPN/Remote Access for Faculty/Staff. Implement remote access upgrades to enhance the current connectivity provided to the GSU network for faculty and staff.	\$0	\$0	\$0	\$0	\$0	FY12
Intranet. Review the current contents of the GSU intranet, solicit suggestions from faculty and staff and upgrade the content accordingly.	\$10	\$15	\$0	\$0	\$10	FY10, FY11



Project	Implementation	Implementation	FY2013	FY2014	FY2015	Budget Year with Funding Impact
	Cost Est.- Low (000's)	Cost Est.- High (000's)	(2012-13) (000's)	(2013-14) (000's)	(2014-15) (000's)	
Faculty/Staff Single Sign on. Research alternatives to access to all GSU systems using a single ID rather than the current multiple ID/passwords.	\$0	\$0	\$0	\$0	\$0	FY11, FY12
Technology Enhanced Classroom LCD Projector Power Management. Acquire and implement a power management solution to minimize purchases of replacement equipment.	\$0	\$20	\$0	\$0	\$0	
Low Priority						
Document Imaging. Expand document imaging beyond the current student admissions applications.	\$0	\$0	\$0	\$0	\$0	FY12
iTunes University. Participate in the Apple offering of audio and video downloads available from universities.	\$15	\$40	\$5	\$5	\$5	FY11
Data Entry Automation. Acquire and implement a data entry solution that could be used for duplicate checking in CX as well as test score entry and other applications.	\$0	\$0	\$0	\$0	\$0	FY11
Resource 25: Automated Classroom Scheduling. Expand the implementation of Resource 25.	\$30	\$60	\$0	\$30	\$0	
Distribution and Availability Of Lab Software for Students. Provide connectivity that allows students to access software currently available only in the GSU laboratories from their homes and offices.	\$75	\$125	\$25	\$25	\$25	



<u>Project</u>	<u>Implementation</u> <u>Cost Est.- Low</u> <u>(000's)</u>	<u>Implementation</u> <u>Cost Est.- High</u> <u>(000's)</u>	<u>FY2013</u> <u>(2012-13)</u> <u>(000's)</u>	<u>FY2014</u> <u>(2013-14)</u> <u>(000's)</u>	<u>FY2015</u> <u>(2014-15)</u> <u>(000's)</u>	<u>Budget</u> <u>Year with</u> <u>Funding</u> <u>Impact</u>
Total:	\$6,166	\$9,519	\$1,619	\$2,559	\$1,988	

Appendix E —Previous Year Accomplishments

E.A. Accomplishments 2009-2011

Goal 1 - Academic Excellence: Provide distinctive academic programs that effectively prepare students to become leaders and productive citizens in the global community.

1. Implemented comprehensive Degree Audit and Transfer Course Articulation software for students admitted for Winter 2010 and thereafter.
2. GSU is currently generating program planning documents for newly admitted students.
3. GSU is now producing Timely and consistent evaluation of general education requirements for new students as well as their progress toward the completion of their degree programs.
4. Provided ongoing support for Web access to critical information.
5. Created, renovated, and/or enhanced websites.
6. Student Research Conference: www.govst.edu/src/
7. Labs built in lower level of FOC building in 2009 creating new lab space dedicated for Nursing program.

Goal 2 – High Quality Faculty and Staff: Provide students access to a highly qualified, motivated, and diverse faculty and staff.

1. Information Technology Services (ITS) has filled needed technology support positions with the best qualified personnel as evidenced by both qualifications and subsequent performance.
2. ITS has continued to support and expand online course offerings as evidenced by the increases in offerings.
3. Implemented “Smart Forms” for faculty and staff members in the four colleges, providing students with convenient Web access to contact and background information for academic faculty and staff.
 - CAS: www.govst.edu/cas/t_cas_faculty.aspx?id=547
 - CBPA: www.govst.edu/cbpa/t_cbpa_faculty.aspx?id=496
 - CHHS: www.govst.edu/chhs/faculty/
 - COE: www.govst.edu/coe/faculty/
4. Online tutoring
5. Created, renovated, and/or enhanced websites.
 - Writing Center www.govst.edu/writingcenter/.
 - Academic Advising www.govst.edu/academicadvising/
6. Provided tools and applications to meet federal mandated guidelines to collect and store data on ethnicity of students, faculty and staff.

Goal 3 – Continuous Process Improvement: Develop and sustain a climate of continuous improvement that is defined by evidence-based decision-making focused on enriching the student experience.

1. Learning evaluations have been successfully expanded to include and online course and instructor evaluation process.
2. The utilization of the Windows-based CX 8.1 has expanded during the past year.
3. Disaster recovery tests are conducted regularly at a remote location.
4. Continue writing RFPs for the consideration of upgrading GSU applications.
5. Singularity has been upgraded and is currently being evaluated for possible replacement.



6. Increased technology spending on student-centered projects including the replacement of obsolete equipment in the ACS Laboratories. In Summer 2009, there were 148 computers updated in the ACS Lab facility. This represents approximately 85% of all the computers in that area. In 2012 the remaining 15% were replaced.
7. SAN - The SAN infrastructure continued to grow from 2009 through 2012 as all critical systems have started utilizing this system which makes better use of disk space, provide better redundancy and flexibility for expansion of network application storage.
8. WebCT was migrated to Blackboard Learn version 9 on a new hardware platform consisting of new servers and a Storage Area Network (SAN).
9. Virtualization technology and methodology continues to be implemented from 2009-2012 in efforts to reduce the number of servers. The reduction of servers contributes to the reduction of energy required to run these systems in the GSU data center.
10. Created, renovated, and/or enhanced websites.
 - Catalog www.govst.edu/catalog/
 - CBPA redesign www.govst.edu/cbpa/ and www.govst.edu/mba/
 - Commencement streaming webcast at www.govst.edu/commencement/
 - DLMD www.govst.edu/dlom/dlmd/
 - Dual Degree Program www.govst.edu/dualdegree/
 - eLearning www.govst.edu/elearning/
 - Experience Biology www.govst.edu/experiencebiology/
 - Performance Indicators www.govst.edu/ir/dashboard/
 - Policy E-Library www.govst.edu/policy/
 - Visual Arts Gallery www.govst.edu/gallery/
11. Implemented a self-service web portal for FDM to facilitate request submitted by end users..
12. Expanded use of document imaging to university departments, such as Procurement.
13. Implementation of functionality to deposit Accounts Payable checks electronically and functionality to email payment notifications rather than print and mail.
14. Integrated Degree Audit Reporting System (DARS) with Jenzabar CX and AnyDoc.
15. Implemented the Ellucian suite of products:
 - a. Colleague
 - b. Recruiter
 - c. Portal
 - d. Web Advisor
 - e. ODS
 - f. Web Intelligence Reports
 - g. Dashboards
 - h. Synoptix Financial Reporting tool.
16. Implemented W2 electronic consent functionality
17. Implemented electronic pay advices for employees and student workers
18. Implemented AP direct deposit for employees and students.
19. Created and implemented integration with Live Text. And Colleague
20. Upgraded Recruiter
21. Created workflows in Recruiter to follow up with prospects and applicants.
22. Created a process to identify students on the Dean's List
23. Created integration point with Diplomas on Demand and Colleague
24. Created and implemented a process to assign academic advisors to students en mass.



25. Created and implemented interface with Active Directory and Colleague for employees and students
26. Created and implemented interface with Singularity and Colleague.
27. Created and implemented interfaces with both WebCT and Blackboard and Colleague.
28. Designed and implemented process to generate SEI forms and provide results.
29. Created portal sites for the following organizations:
 - a. Academic Master Plan
 - b. CHHS Research Toolbox
 - c. Colleague project management office
 - d. Faculty Scholarship and teaching center
 - e. Nexus
 - f. Graduate Council
 - g. GSU Supervisor
 - h. IRIS Project Site
 - i. PBAC-IT

Goal 4 – Visibility, Outreach, and Economic Catalyst: Pursue initiatives that make GSU a preferred destination in the region, that create a vibrant public dialogue, and that increase the university's effectiveness as an economic catalyst in the region.

1. GSU students are currently being provided consistent evaluation of their transfer work, general education requirements, and degree progress using software implemented this year.
2. Worked with Carol Fox Associates to redesign The Center for Performing Arts www.centertickets.net: home page; embedded YouTube videos on most event pages; added “Like” Facebook tool on most event pages. Maintained/Updated website throughout seasons. Added Opera and Cabaret series.
3. Created, renovated, and/or enhanced websites.
 - Community www.govst.edu/community/
 - Family Development Center www.govst.edu/children/
 - R25 Calendar www.govst.edu/calendar/
 - SLATE (Southland Area Theatre Ensemble) www.slatetheatre.org/
 - Military www.govst.edu/military/
 - Sculpture Park www.govst.edu/sculpture/
 - Veterans www.govst.edu/veterans/

Goal 5 – Social, Ethical, and Environmental Responsibility: Build an institution that is socially, ethically, and environmentally responsible.

1. Self-service functionality to maintain emergency contact information has been added to GSU databases for faculty/staff/students.
2. Desktop Energy savings
3. Created, renovated, and/or enhanced websites.
 - 40th Anniversary www.govst.edu/40years
 - Counseling Lab www.govst.edu/counselinglab/
 - Council of Councils: www.govst.edu/coc/
 - Diversity: www.govst.edu/diversity/
 - ECHO (Educating Citizens to Help Others): www.govst.edu/echo/
 - Gender Matters Conference: www.govst.edu/gendermatters/



- H1N1 www.govst.edu/h1n1/
 - It Just Makes Cents www.govst.edu/itjustmakescents/
 - Latino Center www.govst.edu/latinocenter/
 - Project HOPE (Hispanic Opportunity Program Enhancement) www.govst.edu/phope/
 - Recreation and Fitness Center: www.govst.edu/recfit/
 - TRIO Programs www.govst.edu/trio/
 - AMHEC
 - ACS Lab Survey
 - New Home Page
 - Financial Aid Office
 - Tuition Estimator
4. Enforced and developed energy saving hardware specs
 5. Implemented a new Emergency Contact system.
 6. Implemented commencement streaming
 7. Implemented event streaming to include all supported mobile platforms
 8. Increase Internet bandwidth for campus computing.
 9. Upgraded password management system for all faculty/staff and student to better secure sensitive data.

Goal 6 – Financial Growth and Sustainability: Diversify GSU's revenue streams to ensure resources that are necessary for institutional growth and fiscal sustainability.

1. Support social networking on campus
2. Created, renovated, and/or enhanced websites.
 - Vacation Education www.govst.edu/vacationeducation/
3. Integrated PTCAS (Physical Therapy Common Application System), with Jenzabar CX.
4. Upgraded eCommerce solution for student bill payment and application fee payment.

E.B. Accomplishments 2012

Goal 1 - Academic Excellence: Provide distinctive academic programs that effectively prepare students to become leaders and productive citizens in the global community.

1. Implementing Ellucian degree audit and transfer course articulation software for undergraduate students admitted fall 2012 and later.
2. Provided ongoing support for Web access to critical information.
3. Created, renovated, and/or enhanced websites.
4. Student Research Conference: www.govst.edu/src/
5. Currently in progress is a renovation of the F Wing that will provide much needed improved science division lab space.
6. Replaced all tube TVs and VCRs on campus with flat panel screens and DVD/VCR Combo players.

Goal 2 – High Quality Faculty and Staff: Provide students access to a highly qualified, motivated, and diverse faculty and staff.

1. Information Technology Services (ITS) has filled needed technology support positions with the best qualified personnel as evidenced by both qualifications and subsequent performance.
2. ITS has continued to support and expand online course offerings as evidenced by the increases in offerings.
3. Created, renovated, and/or enhanced websites.

- Writing Center www.govst.edu/writingcenter/.
- Academic Advising www.govst.edu/academicadvising/

Goal 3 – Continuous Process Improvement: Develop and sustain a climate of continuous improvement that is defined by evidence-based decision-making focused on enriching the student experience.

1. Disaster recovery tests are conducted regularly at a remote location.
2. Continue writing RFPs for the consideration of upgrading GSU applications.
3. Singularity has been upgraded and is currently being evaluated for possible replacement.
4. SAN - The SAN infrastructure continues to grow from 2009 through 2013 as all critical systems have started utilizing this system which makes better use of disk space, provide better redundancy and flexibility for expansion of network application storage.
5. Virtualization technology and methodology continues to be implemented from 2009-2013 in efforts to reduce the number of servers. The reduction of servers contributes to the reduction of energy required to run these systems in the GSU data center.
6. In 2012 the GSU phone system received a much needed upgrade in order to ensure it remained a critical communication system for emergency and nonemergency requirements.
7. Designed and implemented process to generate SEI forms and provide results.
8. Designed and implemented process to interface with Online Course Evaluation (OCE), SEI's for distance course.
9. Upgraded the portal to SharePoint 2010.
10. Implemented time accrual functionality in Ellucian with Leave Plan Summary available on the portal to all employees
11. Implemented online 1098T access and consent for students.

Goal 4 – Visibility, Outreach, and Economic Catalyst: Pursue initiatives that make GSU a preferred destination in the region, that create a vibrant public dialogue, and that increase the university's effectiveness as an economic catalyst in the region.

1. GSU students are currently being provided consistent evaluation of their transfer work, general education requirements, and degree progress using software implemented this year.

Goal 5 – Social, Ethical, and Environmental Responsibility: Build an institution that is socially, ethically, and environmentally responsible.

1. Desktop Energy savings
2. Created, renovated, and/or enhanced websites.
 - Why Not? www.govst.edu/whynot
3. Enforced and developed energy saving hardware specs.

E.C. Accomplishments 2013

Goal 1 - Academic Excellence: Provide distinctive academic programs that effectively prepare students to become leaders and productive citizens in the global community.

1. GSU is currently generating program planning documents for newly admitted students.



2. GSU is now producing timely and consistent evaluations of general education requirements for new students as well as their progress toward the completion of their degree programs.
3. Enhanced and modified the Follet Bookstore course list project.
4. Created and deployed Colleges and Divisions distribution lists in Global Address List.
5. Completed Test Scores (TST) migration from CX to Colleague.
6. Worked with Registration to resolve long standing issues with the way academic standings are calculated for graduate students.
7. Added the refund, drop and withdrawal dates to Online Services.
8. Added Course Comments to Online Courses to aid students in course selection.
9. Worked with Registration on several rule changes including 'Priority Registration for Veterans' and 'First Year Students excluded from Orientation'.
10. Finalized implementation for Undergraduate Academic Standing.
11. Provided assistance to Degree Audit team by Importing Transfer Equivalencies.
12. Provided ongoing support for Web access to critical information.
13. Replaced all tube TVs and VCRs on campus with flat panel screens and DVD/VCR Combo players.
14. Created data files for SEIs in spring, summer and fall 2013 terms.
15. Printed and sent SEI forms for spring, summer and fall 2013 as well as spring 2014 terms.
16. Corrected the calculation of CUEs for Instructional Method SV, large enrollments and doctoral courses – Student -Provost – May, 2013.
17. Created automated process to email scores to academic advisors when student completes the Direct Placement tests using Communications Management.
18. In 2013, upgraded computers in several classrooms – GMT-104, GMT-107, D2440 and D34060 labs.

Goal 2 – High Quality Faculty and Staff: Provide students access to a highly qualified, motivated, and diverse faculty and staff.

1. Information Technology Services (ITS) has filled needed technology support positions with the best qualified personnel as evidenced by both qualifications and subsequent performance.
2. ITS has continued to support and expand online course offerings as evidenced by the increases in offerings.
3. Created menu option for Degree Audit for advisors only in WebAdvisor.
4. Developed a weekly report for each advisor so that they receive a list of changes made to each of their advisees' transcripts.
5. Provided tools and applications to meet federal mandated guidelines to collect and store data on ethnicity of students, faculty and staff.
6. Created reports for Admissions on Students admitted and not registered and New or Returning Students.
7. Created new distribution codes based on new bargaining codes.
8. Modified College and Division distribution lists to come only from primary position from HR records.
9. Created a HR Payroll Audit report that allow users to compare payroll data from two different payroll cycles.
10. Merged LMP & LOP deduction for the Imputed Life Calculation.
11. Implemented Payroll Encumbrance Functionality.
12. Added New Health Codes to the Illinois CMS file per Human Resources
13. Cleared and populated Leave Plans for new fiscal year.
14. Modified Assignment Contracts Subroutine per HR requirements.
15. Update UPI Dues (Faculty Dues) per Human Resources/Benefits.



Goal 3 – Continuous Process Improvement: Develop and sustain a climate of continuous improvement that is defined by evidence-based decision-making focused on enriching the student experience.

1. Learning evaluations have been successfully expanded to include and online course and instructor evaluation process.
2. Automated user account creation – created an automated procedure for provisioning new student and employee AD accounts and email addresses 7 days a week.
3. Liaised between Multimedia Design Team and ITS to maintain Blackboard in all 4 environments (8 total servers) including Production, Test, Development, Intersession.
4. Maintained Blackboard interfaces for course creation, user import, student/instructor enrollment for spring, summer and fall of 2013 and 2014.
5. Created new interface to populate Blackboard for OCE courses.
6. Created new interface to populate Blackboard for Six Sigma courses.
7. Added new Blackboard interface population code so all students are enrolled into the new student orientation shell.
8. Upgraded Blackboard Production, Intersession and Test to service pack 11.
9. Upgraded Blackboard Production, Intersession and Test to service pack 13.
10. Upgraded Blackboard Development to service pack 14
11. Supported for all system related issues of all Blackboard environments.
12. Disaster recovery tests are conducted regularly at a remote location.
13. Updated Dashboards for the Director of Admissions and VP of Enrollment Management.
14. Finalized the implementation of SAP rules for Financial Aid.
15. Developed new state mandated Illinois Longitudinal Data System report.
16. Continue writing RFPs for the consideration of upgrading GSU applications.
17. Enhanced ODS/WEBI reporting – added additional data elements for use in WEBI for Registration, HR, IR and the Colleague Project Management Office.
18. Singularity has been upgraded and is currently being evaluated for possible replacement.
19. SAN - The SAN infrastructure continues to grow from 2009 through 2013 as all critical systems have started utilizing this system which makes better use of disk space, provide better redundancy and flexibility for expansion of network application storage.
20. Virtualization technology and methodology continues to be implemented from 2009-2013 in efforts to reduce the number of servers. The reduction of servers contributes to the reduction of energy required to run these systems in the GSU data center.
21. Imported FICE/CEEB codes into Ellucian Recruiter.
22. Upgraded Ellucian Recruiter from version 2.0 to 2.6.
23. Added links to international applications and freshmen applications in Ellucian Recruiter.
24. Added Recruiter events messages.
25. Upgraded Recruiter for Colleague Test environments.
26. myOneCard Implementation Project:
 - a. Developed administrative documentation.
 - b. Installed SQL database for IDMS.
 - c. Developed interface from Colleague to IDMS.
 - d. Installed of IDMS Software on printer workstations.
 - e. Configured printers and print specifications for myOneCard.
 - f. Created layout and proofs of custom ID cards, including magnetic stripe and barcode validation.
 - g. Programmed and deployed portable tracking units (PocketTracker).

- h. Programmed and deployed scanning stations (RapidTracker).
- 27. In 2013, replaced battery backup system (UPS) for data center.
- 28. In 2013, deploy wireless MESH and 10GB ready switches to F wing, Literary zone (C3), Engbretson Hall and Cafeteria areas as part of campus renovation projects.
- 29. In FY2013 upgrades over 300 XP computers to Windows 7 operating system.

Goal 4 – Visibility, Outreach, and Economic Catalyst: Pursue initiatives that make GSU a preferred destination in the region, that create a vibrant public dialogue, and that increase the university's effectiveness as an economic catalyst in the region.

- 1. GSU students are currently being provided consistent evaluation of their transfer work, general education requirements, and degree progress using software implemented this year.
- 2. Implemented Instant Enrollment module using stand-alone Colleague WebAdvisor

Goal 5 – Social, Ethical, and Environmental Responsibility: Build an institution that is socially, ethically, and environmentally responsible.

- 1. Desktop Energy savings
- 2. Enforced and developed energy-saving hardware specifications.
- 3. Facilitated commencement online video/audio streaming.
- 4. Facilitated university event online video/audio streaming, including supported mobile platforms.
- 5. Increase Internet bandwidth for campus computing.
- 6. Added additional functionality requested for LIVETEXT extract
- 7. Regroup (Emergency Contact System)
 - a. Added new groups for FDC and ERT.
 - b. Added addition telephone types in the selection for GSU employees
 - c. Training DPS and FDC to use Regroup
- 8. Upgraded password management system for all faculty/staff and student to better secure sensitive data.^[SH6]

Goal 6 – Financial Growth and Sustainability: Diversify GSU's revenue streams to ensure resources that are necessary for institutional growth and fiscal sustainability.

- 1. Support social networking on campus.
- 2. Uploaded Fixed Assets to the university reporting system (WEBI).
- 3. Assisted Financial Services to close Fiscal Year 2012
- 4. Updated W-2 Box 12 DD data, added the employer cost of health care to all benefits codes.
- 5. Created a security key for refunds in Accounts Receivable.
- 6. Corrected balance for Sponsor Billing Accounts with overpayment in Accounts Receivable.
- 7. Expanded check stub of AP check in Source4.
- 8. Updated GL Security in Colleague.
- 9. Modified requisition to print additional fields.
- 10. Provided support for the processing of the 2013 W-2, 1098-T and 1099-R filings.
- 11. Produced 4th quarter Unemployment Compensation file for State reporting.
- 12. Migrated Fixed Assets to Colleague using Fixed Assets Utility.
- 13. Participated in e-Commerce (OPC) upgrade coordinating and working with users during the process.
- 14. Worked with Finance to troubleshoot various billing issues as well as configure differential billing rates for several graduate student programs.



15. Implemented of separate AR billing subsidiary for Continuing Education.
16. Developed custom automated discount rules and codes for TKE program in Continuing Education.
17. Housing Software
 - a. Developed technical documentation for housing software.
 - b. Installed software and databases for housing software Test and Production environments.
 - c. Implemented Single Sign-on (SSO) from myGSU portal to housing software.
 - d. Implemented LDAP integration interface to housing software.
 - e. Implemented secure access (HTTPS and SSL certificate) integration for housing pages.
 - f. Programmed and deployed custom demographic data interface from Colleague to RMS.
 - g. Programmed and deployed custom financial charges interface from housing to Colleague.