TECHNOLOGY STRATEGIC PLAN

For Information Technology Services

February 2013

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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. Accomplishments 2009-2012

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. 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.
8. Currently in progress is a renovation of the F Wing that will provide much needed improved science division lab space.
9. 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. 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 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.
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 2009-2013 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.
10. 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.
11. 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/
12. Implemented a self-service web portal for FDM to facilitate request submitted by end users.
13. Expanded use of document imaging to university departments, such as Procurement.
14. Implementation of functionality to deposit Accounts Payable checks electronically and functionality to email payment notifications rather than print and mail.

15. Integrated Degree Audit Reporting System (DARS) with Jenzabar CX and AnyDoc.
16. 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
17. Implemented W2 electronic consent functionality
18. Implemented electronic pay advices for employees and student workers
19. Implemented AP direct deposit for employees and students.
20. Created and implemented integration with Live Text. And Colleague
21. Upgraded Recruiter
22. Created workflows in Recruiter to follow up with prospects and applicants.
23. Created a process to identify students on the Dean's List
24. Created integration point with Diplomas on Demand and Colleague
25. Created and implemented a process to assign academic advisors to students en masse.
26. Created and implemented interface with Active Directory and Colleague for employees and students
27. Created and implemented interface with Singularity and Colleague.
28. Created and implemented interfaces with both WebCT and Blackboard and Colleague.
29. Designed and implemented process to generate SEI forms and provide results.
30. Designed and implemented process to interface with Online Course Evaluation (OCE), SEI's for distance course.
31. 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

31. Upgraded the portal to SharePoint 2010.
32. Implemented time accrual functionality in Ellucian with Leave Plan Summary available on the portal to all employees
33. 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.

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
   - Why Not? www.govst.edu/whynot
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.

I.C. One-Year Action Plans – FY2012

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.				
a. Increase the number of programs that are nationally recognized for providing a demonstrably excellent education to a diverse population. • Promote best practices in multiple modes of course delivery. • Incorporate international/global concepts into the appropriate curriculum areas to expand the knowledge, awareness, and experience of our students.	1. GSU is 12 months into a 16 month project to design the web site. An outside contractor (Mind over Media) has been fully engaged in the process. 2. Continuous ongoing plans for the Ellucian portal continue to evolve. 3. Provide students with opportunities for keeping up with best technology practices in the field. 4. Research models for web surveys that can be used by students in a variety of courses. Bruce 5. ACS 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. 6. Technology Enhanced Classroom LCD Planning for aged Equipment Replacement. Create a detail plan for the identification and replacement of obsolete	1. $200,000 2. $25,000 3. $0 4. $125,000 5. $25,000	Progress indicators could include: Increasing student satisfaction as measured in surveys and learning evaluations. Increased technology spending on student-centered projects.	FY10, FY11, FY12, FY10 FY10, FY11, FY12,

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
	equipment on an annual basis.			
	7. Cyber Café/Registration Station/Welcome Center. Enhance, expand and upgrade both the Cyber Café and the registration station kiosks-planned (annual) aged equipment replacement strategy.	6. $2,000	Technology added to classrooms that previously had none. Added technology to all new classrooms and make an attempt to upgrade 2-3 rooms each year.	FY10, FY11, FY12,
	8. A/V Equipment Management. Provide planning and management for campus-wide audio-visual equipment as well as address aged equipment replacement strategy.		Replace aging equipment as they break.	FY10, FY11, FY12,
	9. 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.	7. 80,000 8. $75,000	Consider adding technology to future renovation of space i.e., Engbretson hall and F1622.	FY13
b. Become the nation's model for an effective, integrative approach to undergraduate transfer between institutions of higher education.	1. Become a full participant in the statewide u.select. 2. Target on-site advising to colleges and universities with diverse potential transfer students using u.select to	1. $10,000 2. $0	Increased enrollments tied to use of the statewide Course Applicability System (CAS).	

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
• Create a special GSU Community College team that works collaboratively with community college faculty and advisors to identify and implement best transfer and articulation practices. • Strengthen our academic support for students needing assistance to succeed in their courses to improve retention and graduation rates. • Increase to 1000 the number of students enrolled under dual-admission agreements with partner community colleges. • Create partnerships to increase freshman/sophomore programming on campus with community college delivery. • Articulate how we have been successful in increasing diversity and share these best practices with the higher education community.	provide instant information on transfer course work. 3. Implementation of Ellucian's Degree Audit Module along with course transfer articulation is scheduled to be released to advisors May 2013.	$221,000	Increased student population diversity. Provide students with course equivalencies as they relate to their program of study.	FY12, FY13
c. Increase campus full time equivalent (FTE) students from 4,475 (41,794 student credit hours (SCH)) in Fall 2007 to 7,000 (65,376 SCH) by Fall 2014. • Develop and implement an enrollment management plan	1. Implement Instant Enrollment module to allow community members to register and pay for continuing education and non-credit workshop courses without going through the admission process.	$10,000	Regular meetings are being held to implement the functionality.	FY13

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
for the entire university. • Develop a long term plan to increase the percentage of undergraduates. • Develop and implement new support programs that increase student retention while sustaining successful activities and programs already in place. • Develop and implement a comprehensive marketing and promotion plan. • Promote interdepartmental development and cross-curriculum collaboration to develop, strengthen, and sustain emerging program areas. • Develop and implement plans that address the needs of residential students.				
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.	1. Fill several needed technology support positions and continue to hire the best qualified personnel: a. Consider terminal degrees where appropriate	1. $250,000	Highly-qualified technical staff as indicated in resumes and performance	FY11, FY12

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
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.	1. Increase University staff productivity with campus-wide project management software	1. $75,000	Increasing number of training opportunities offered campus-wide	
	2. Support grant proposals with technical consulting, including the specification of technical infrastructure	2. $0	Increasing attendance in training classes offered	
	3. Set standards and policies for students, faculty and staff including software licensing, hardware purchases, email, and telephone use.	3. $0	The presence of a definition of academic and administrative competencies	
	4. Improve faculty awareness and use of available technology services, tools, and software including electronic portfolios, materials repositories, plagiarism software and digitized content.	4. $0	Increasing efficiency in the purchasing function as reported by management	FY12, FY13
	5. Provide effective communication of training opportunities.	5. $0	Successful Implementation of business application solutions included in the tactical planning period	FY12, FY13
	6. Develop a professional development program in conjunction with setting standards for competencies.	6. $0		FY12
	7. Implement online purchase requisitions.	7. 0	7. Streamline the requisition, approval, receiving process. Elimination of paper forms.	FY12
	8. Implement E-Procurement	8. 150,000		
c. Reduce reliance on adjunct faculty.				
d. Increase the number of faculty and staff holding a terminal degree.				

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
e. Increase GSU's online course/program presence.	1. 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. 2. Work with our ERP vendor to implement seamless integration with Blackboard	1. $0 2. $50,000	Progress indicators could include: Increased online course offerings.	FY11, FY12, FY13 FY12
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.	1. Implement the Blackboard course grading system to integrate with Ellucian. 2. Expand R25 reporting functionality to publish space utilization. Upgrade from Crystal reports to web services reporting. 3. Upgrade R25 software to the latest product 25Live	1. $0	Provide better space utilization and need for additional space and tech classrooms.	FY12
b. Increase and refine the assessment of student learning to enhance academic program quality and curriculum development and revision.	1. 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.	1. $40,000	Increased use of evaluations with a more effective tool. National comparison of results.	FY12, FY13
c. Continue to seek and attain specialized accreditation for all programs where available and appropriate, or require outside review of those programs where no				

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
specialized accreditation program exists.				
d. Increase the use of technology by faculty and staff to deliver high quality instruction and services.	1. Upgrade campus technical infrastructure • Continue to consolidate and upgrade another 25% of all servers using Virtualization and SAN ($130,000) • Create and implement server/router/switch hardware replacement strategy 25% of all equipment ($160,000 Annually) • Create and implement campus desktop hardware replacement strategy 25% of all equipment ($360,000 Annually) • Upgrade Faculty and Staff Email Storage (Archiving). Implement policies for archiving email that will result in less GSU server capacity consumed by old email.($50,000) • Expand Internet connection capacity ($2,000) • 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. ($30,000) • Faculty/Staff Single Sign on/password management improvement. Research alternatives to access to all GSU systems using a single ID rather than the current multiple ID/passwords. ($10,000) • Upgrade Campus Telephony system (VoIP) ($75.000) • Upgrade current fiber backbone from 1gb to 10gb	1. $807,000 See Detail	Increasing faculty and staff satisfaction as measured in surveys Increasing student retention Increased technology spending on faculty and staff requested projects. Increasing efficiency in the purchasing function as reported by management Increasing satisfaction with institutional research capabilities Successful implementation of business applications solutions planned for the period Improvement in the speed of campus business applications, such as Ellucian Increasing satisfaction with campus desktops as measured in faculty, staff and student surveys Reduced new server acquisition costs brought about by SAN	FY11, FY12, FY13

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
	to accommodate the growing need for video services as well as to replace antiquated hardware (450,000)		and Server Virtualization Annual report created and analyzed.	
	2. 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.	2. $50,000		FY10, FY11, FY12
	3. 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.	3. $75,000		FY10, FY11, FY12,
	4. Maintain exhaustive software inventory to remain in compliance with software vendor licensing requirements. This includes monitoring of network concurrent licensing products.	4. $0		FY11
	5. Continued support of the university initiative to upgrade to a new ERP application. This initiative will continue well beyond the initial implementation.	5. $0		FY11, FY13
	6. Evaluate and implement a new document management system to replace the current non-integrated system. RFP currently being prepared.	6. $0		FY12

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
	7. New CHHS Admission Applications	7. $0	7. Nationwide exposure of CHHS programs.	FY12
	8. Implementation of online timesheets / Time accrual	8. $0	8. Eliminate paper time sheets, automate the process of time accrual and provide more timely information on employee time accrual balances	FY10, FY11, FY12,
	9. Expand use of document imaging to other university departments such as Registrar, Financial Aid, and Legal.	9. $0	9. Automated import of applications from third party.	FY12, FY13
	10. Upgrade or enhance applications to meet federal guidelines or requirements: Axciom online user verification. Follett's Booklook, and student tuition calculator	10. $0	10. Proved textbook information for specific courses via the course schedule.	FY12
	11. 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.	11. $0	11. Service catalog continues to be reviewed and updated annually.	FY12
	12. Support implementation of campus inventory management tools and with the transition to and with the new ERP system.	12. $50,000	12. Better tracking of university assets.	FY12
	13. Helpdesk frontline staffing – Based on the results of a formal development of a service catalog and service level agreements for the delivery of IT support services to the user	13. $0	13. An evening helpdesk staff hired in FY12 to address increased needs after 5pm.	FY12

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
	community (#16 above), evaluate IT staffing to meet those expectations.			
e. Develop and administer regular satisfaction surveys (including, but not limited to applicants, current students, alumni, employers, and other stakeholders).				
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.	1. Maintain a diverse technology staff	1. $0	Increased diversity. ITS continues to be a model for the entire university by hiring diversity.	FY10, FY11, FY12,
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.	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)	1. $0		FY10, FY11, FY12,

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
• Increase community service projects that build connections to the university. • Share expertise of the university with members of our regional community. • 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.	• Actively involve GSU in collaborative tools and social networking as well as business contacts through LinkedIn as an example. 2. Expand our web offerings to create a virtual public square that includes online networking for students, faculty, alumni and job seekers. In cooperation with Communication Services Department continue to provide streaming media services for university special events such as graduation ceremonies to be usable on all mobile platforms.	2. $5,000		FY11
b. Increase programming and promotion to include the wider community and to create a place for vibrant public dialogue. • Increase use of campus assets such as the Center for Performing Arts, the Family Development Center, and the Nathan Manilow Sculpture Park. • Create and expand collaborative relationships among all college's constituent groups. • Offer non-credit programming. • Use technology as a tool in GSU's efforts to create a virtual public square that serves our	1. Expand technical solution to alert the campus in the event of an emergency, and upgrade outdoor phones. 2. Develop an application to virtually tour the Nathan Manilow Sculpture park 3. Re-implement and refurbish the Why Not? Site	1. $35,000 2. $0	Emergency alert function in place, Regroup product replaced School Messenger. Opt out of emergency notification option expired for all faulty/staff and students. Increased satisfaction with web offerings for the campus as seen in student/faculty/staff survey responses	FY12

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
regional community. • Ensure a safe and secure campus setting.				
c. Enrich the student experience at GSU. • Be a model for high quality student services for adult learners. • Develop a new student center that includes: o Library facilities o Computing facilities o Small group spaces o Recreational facilities o Bookstore and other retail options. • Develop residential life opportunities.			Increasing student satisfaction as measured in surveys and learning evaluations Increasing student retention	
d. Expand the role of GSU in the regional network supporting economic development. • 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				

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
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.	1. Adopt the recommendations of climate savers campus-wide where practical http://www.climatesaverscomputing.org/learn/energy-saver-guide/ 2. Solve campus projector power management issues.	1. $0 2. $40,000	Evaluations of newly purchased equipment to assure compliance with guidelines. Evaluated Printers and printer usage on campus to identify areas of energy savings. Reviewed classroom projectors to ensure they were connected to the GSU network.	FY10, FY12, FY13
e. Develop a comprehensive, institutional action plan to achieve climate neutrality and fulfill the *American College and University Presidents Climate Commitment*				
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				

Governors State University

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
Illinois Sustainable University Compact.				
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.	1. Support grant proposals with technical consulting 2. Develop e-commerce applications to improve and enhance service to current university constituents and future university constituents which will increase opportunities for revenue growth. Example: Registration for non-credit workshops, i.e. Non-Traditional Systems (NTS). Implement Ellucian Instant Enrollment module.	1. $0 2. $100,000	Increased financial opportunities Offer non-credit classes to expand the student population.	
e. Maintain and expand governmental relations at both the state and federal levels to enable access to and opportunities for				

Institutional Goal Detail	Goals, Actions, and Priorities in Support of the Institutional Goal	Budget Estimate	Annual Progress Indicators	Year Progress Made
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.	1. Increase links to our web site to increase visibility via feeder schools, blogs and social media.	1. $0	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 four sections:

- Technical Services
- Support Services
- Application Development
- Telecommunications

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
    - ACS Lab Manager
    - Evening Help Desk Supervisor
    - 2 technical support specialists
    - 2 ACS Lab technical support specialist
    - 3 Helpdesk student workers (1.5 FTE)
    - 7 ACS Lab student workers (3.5 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 ACS Lab consists of a manager, 2 technical support specialist and 7 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 ACS Lab staff also provides supplemental Helpdesk coverage to faculty, staff, and students during evening and weekend hours of campus operation.

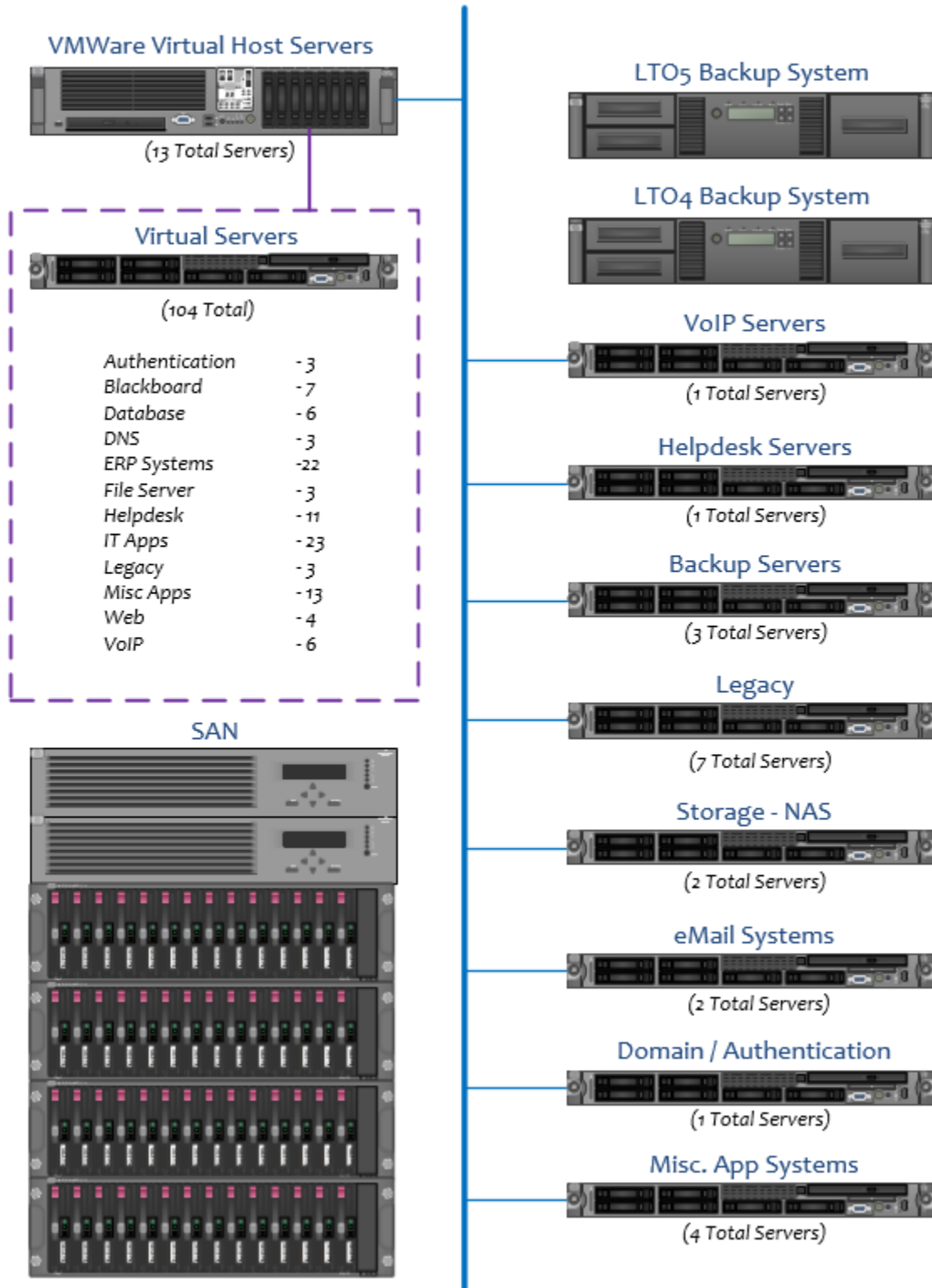## II.A.1. Network, Server-Hardware, and Telephone-System Infrastructure

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

1. 137 servers supporting in excess of 121 network applications. 72% of these network applications are on virtualized systems. (see appendix D)
2. 2593 faculty/staff email accounts and 25,472 student email accounts
3. Thirty nine (39) 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. 971 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. Twenty seven (27) security cameras
11. More than 6,500 network jacks throughout campus are connected to 13 communication closets.
12. Roughly 85% of all classroom and lounge areas have wireless network coverage.
13. The main campus has an Internet backbone connection of 100MB.
14. Remote access capability through SSL VPN connectivity is available to faculty and staff.
15. All faculty and staff are given personal network home directories (H drive).

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Server Diagram (See appendix C.)

Current Server / Storage Environment
34 Physical / 104 Virtual Servers

VMWare Virtual Host Servers

(13 Total Servers)

LTO5 Backup System

LTO4 Backup System

Virtual Servers

(104 Total)

Authentication	- 3
Blackboard	- 7
Database	- 6
DNS	- 3
ERP Systems	-22
File Server	- 3
Helpdesk	- 11
IT Apps	- 23
Legacy	- 3
Misc Apps	- 13
Web	- 4
VoIP	- 6

VoIP Servers

(1 Total Servers)

Helpdesk Servers

(1 Total Servers)

Backup Servers

(3 Total Servers)

Legacy

(7 Total Servers)

SAN

Storage - NAS

(2 Total Servers)

eMail Systems

(2 Total Servers)

Domain / Authentication

(1 Total Servers)

Misc. App Systems

(4 Total Servers)

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 36 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 Live@edu.-This system currently maintains more than 25,556 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 2,598 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.
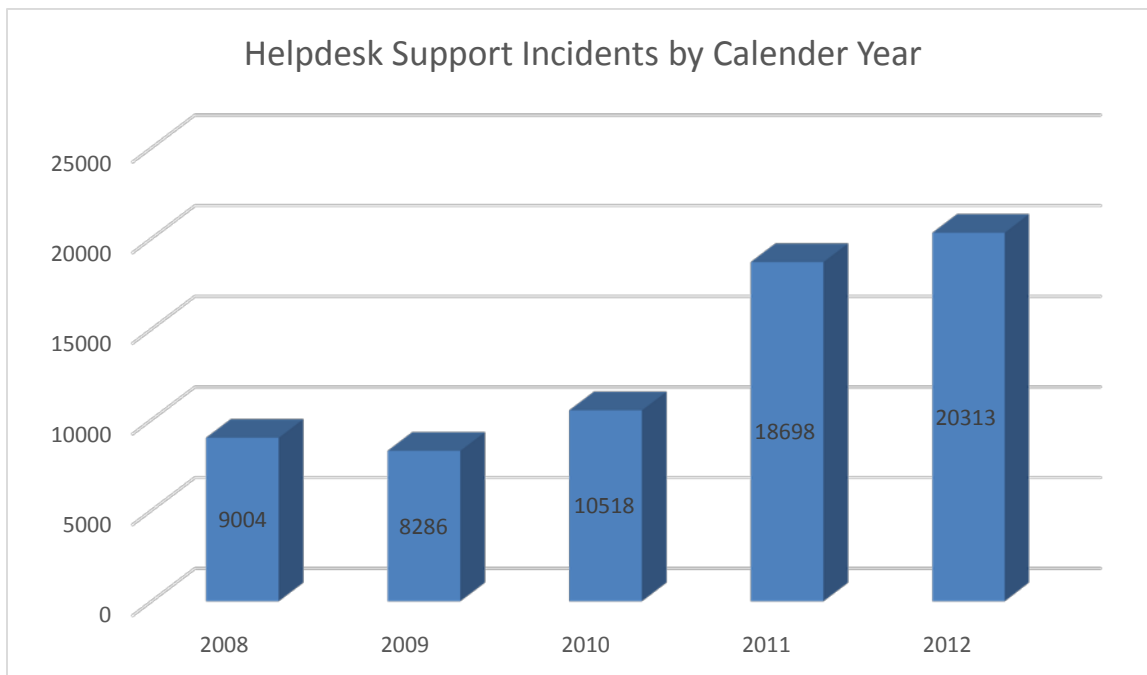
The Helpdesk utilizes a Service Management System that is designed to track incidents, resolutions documentation, and workflow management. The state-of-the-art system, HEAT, is designed to be an enterprise service management system to be used for all organization services, not just information technology. 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

Helpdesk Support Incidents by Calender Year

Year	Incidents
2008	9004
2009	8286
2010	10518
2011	18698
2012	20313

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

II.A.4.a. Helpdesk Staff—2013

Position	2009	2010	2011	2012	2013
Help Desk Manager	1 FTE	1 FTE	1FTE	1 FTE	1 FTE
Help Desk Supervisor (evening)	0 FTE	0 FTE	0FTE	1 FTE	1 FTE
Technical Support Specialists	5 FTE	3 FTE	4 FTE	4 FTE	2 FTE
Hardware Specialist	1 FTE	1 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)
Total	8 FTE	8.5 FTE	8.5 FTE	8 FTE	5.5 FTE

- Currently interviewing for 1 FTE position and another FTE position is unfunded

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

The level of support provided by the ACS Lab 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 ACS Lab facility, which consists of 177 computers in 6 computer lab rooms and open areas.

ACS Lab Layout
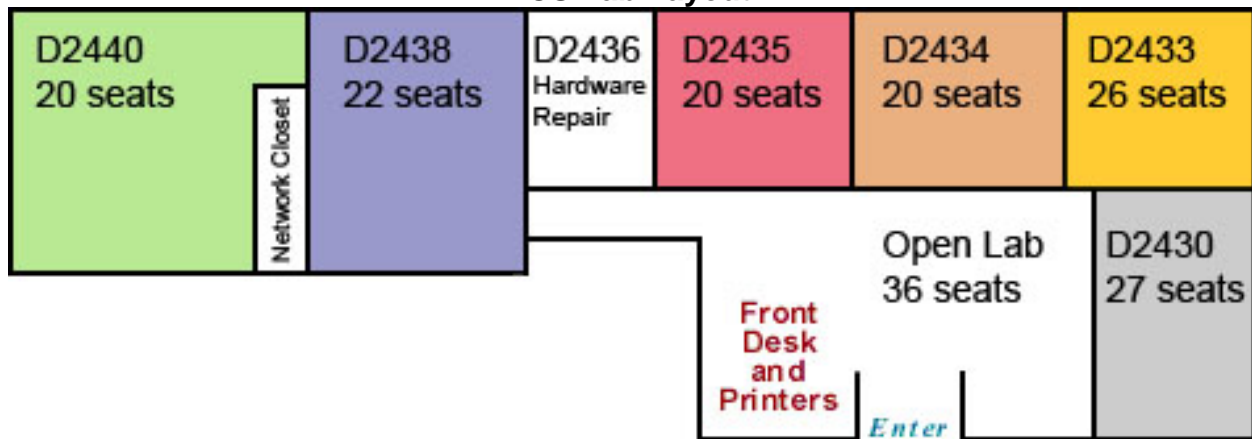
The coverage extends to support an additional 51 technology-enhanced classrooms, 4 classrooms with a mounted projector, 18 with a mounted TV and DVD\VCR, 54 open computers in the Library as well as 11 remote computer lab classrooms located throughout campus. Additional services provided by the ACS Lab staff include student software tutoring and answering Helpdesk calls during evening and weekend hours.

II.A.5.a. ACS Lab Staff—2013

6.5 total FTE staff (3 full-time employees and 7 student workers)
- Lab Manager
- 2 Technical Support Specialist
- 7 Student workers (3.5 FTE)

II.A.6. Security Cameras

ITS maintains a security camera system consisting of 48 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 systems for faculty, staff and students. This system includes the mandatory enforcement of password changes.

Windows Active Directory (AD)

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.

Current and upcoming issues with Windows XP and Windows Vista:
- Microsoft will no longer support or patch Windows XP on April 8, 2014
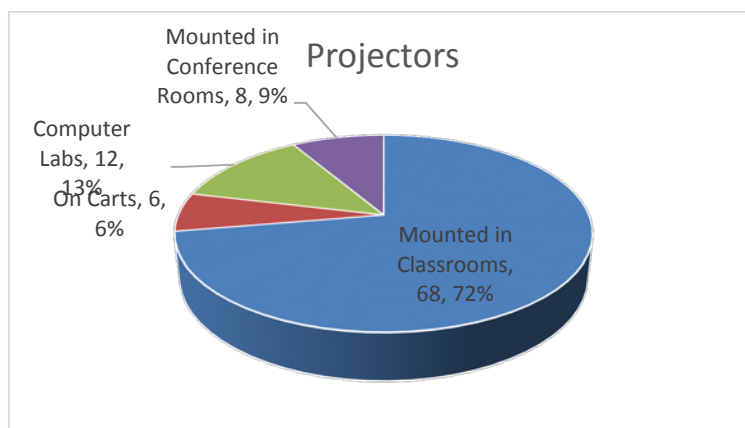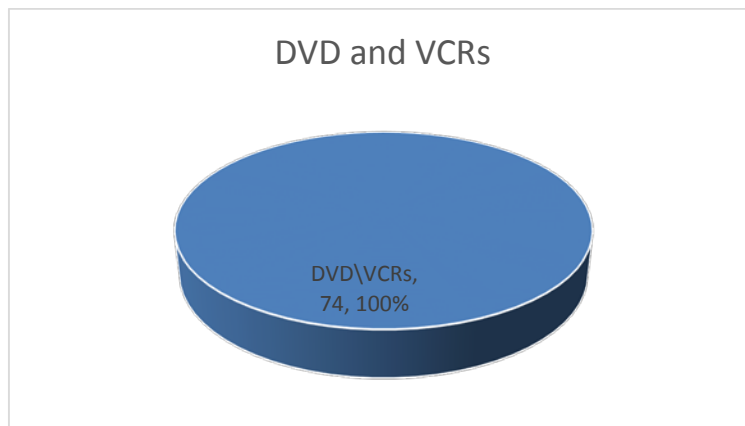- Microsoft Office 2013 will not install on Windows XP or Windows Vista

Computer Operating Systems
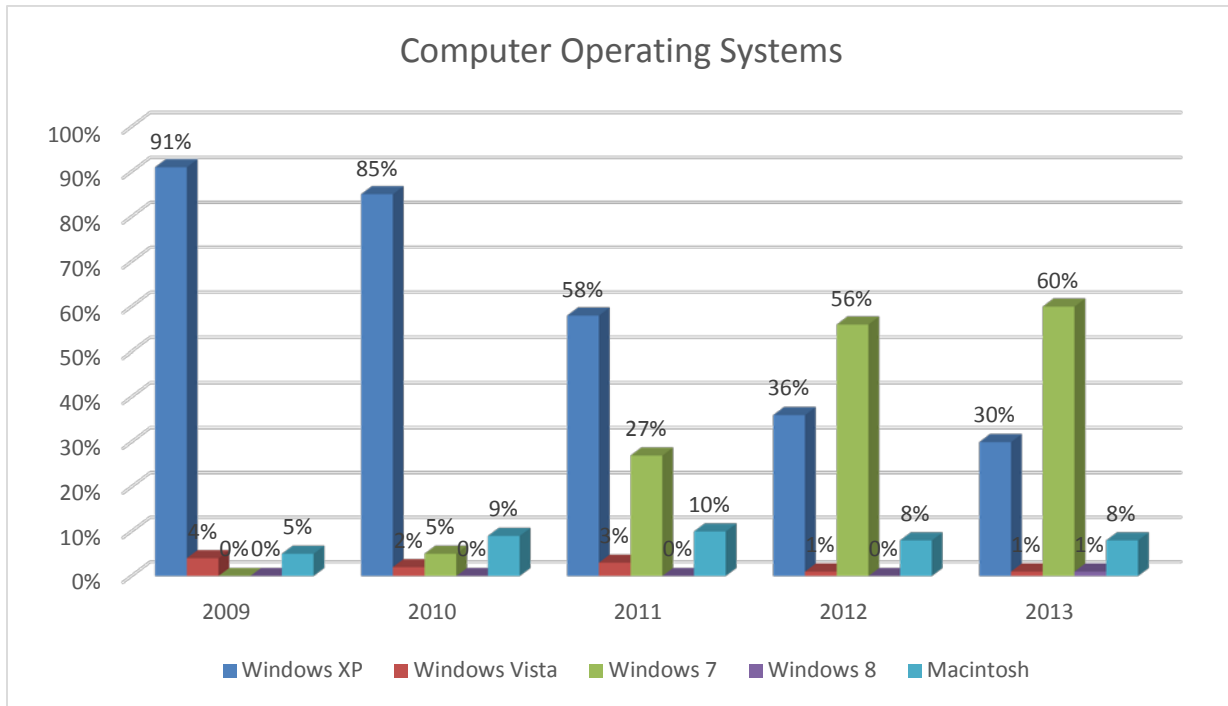
There are approximately 1,400 PC/MAC Laptops and Desktop computers on campus.

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.

2013 Audio Video

Televisions

On Carts, 2, 5%

Mounted, 41, 95%

DVD and VCRs

DVD\VCRs, 74, 100%

Projectors

Mounted in Conference Rooms, 8, 9%

Computer Labs, 12, 13%

On Carts, 6, 6%

Mounted in Classrooms, 68, 72%

Video Conference Units

Portable Unit, 1, 11%

Classrooms, 4, 45%

Conference rooms, 4, 44%
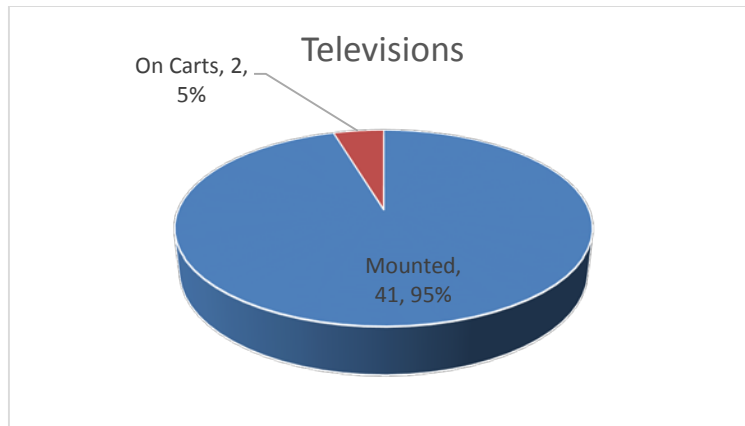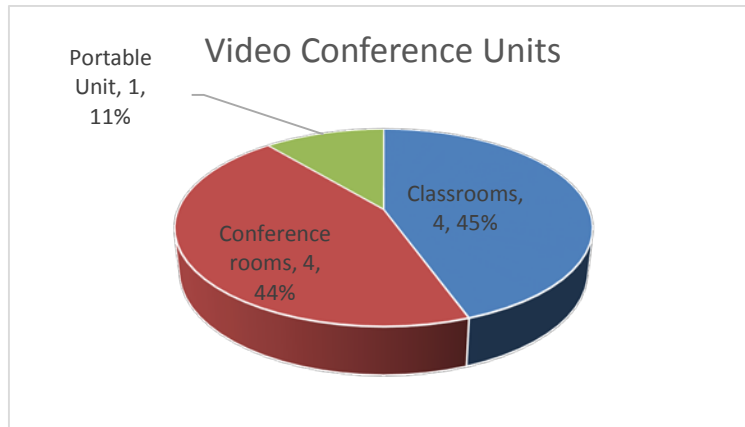
II.A.10. Wireless

A hybrid wireless solution is currently in operation on campus. The legacy autonomous access points, 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 this spring encompassing 53 access points. 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.
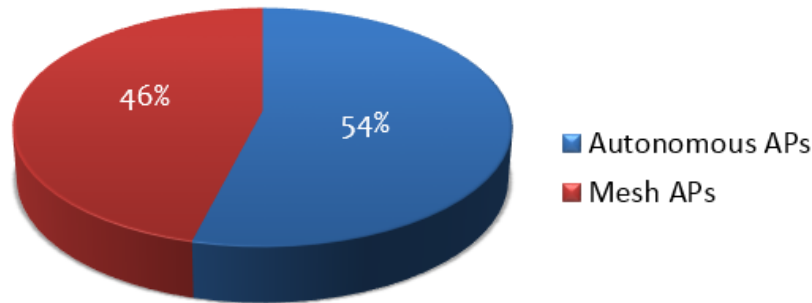
The graphic below details the number of autonomous access points (not managed by a central controller) and their wireless standard type.

Wireless Access Point Types

Qty - 7

Qty - 54

■ 802.11 a/b/g
■ 802.11 n
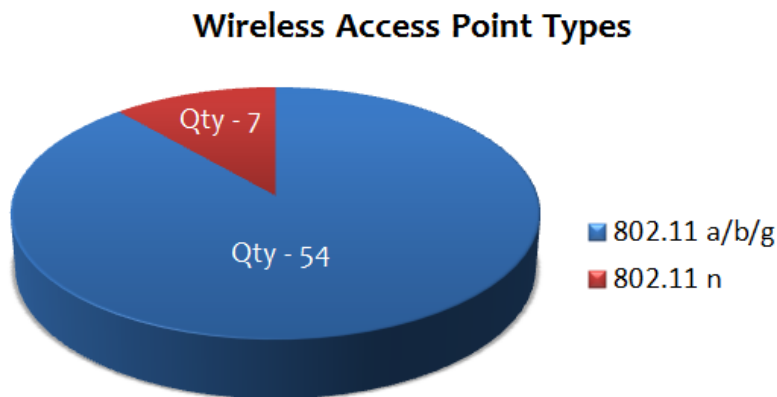
The graphic below details the comparisons of autonomous vs. the mesh access points.

Autonomous vs. Mesh Access Points
Total Campus Count = 114

- 46%
- 54%
- Autonomous APs
- Mesh APs

The graphic below illustrates a general map of the main campus collection of buildings. Even though the wireless mesh accounts for 46% of the total campus access points it covers a small amount of the actual total square footage.

Wireless Mesh Coverage
802.11n/ac

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Wireless Traffic

The graphic below shows a snapshot of a typical day's worth of wireless connections to the most utilized autonomous access points on campus.

Access Points with Most Users
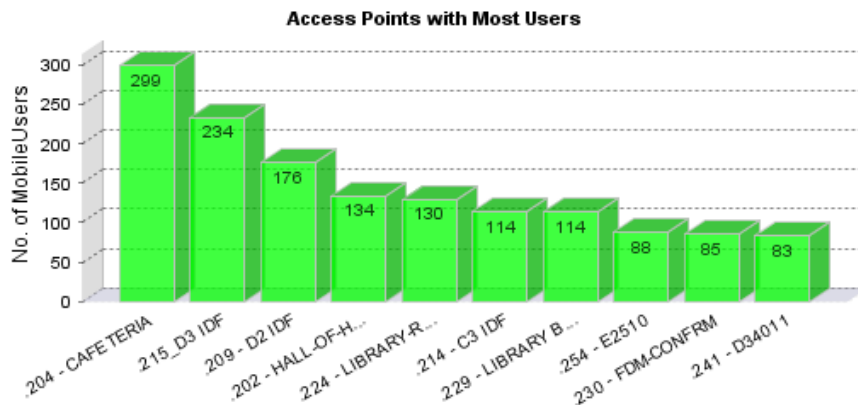
The graphic below shows a snapshot of a 5 day time period of wireless connections to the most utilized autonomous access points on campus.

Access Points with Most Users

II.A.11. Disaster Recovery Testing

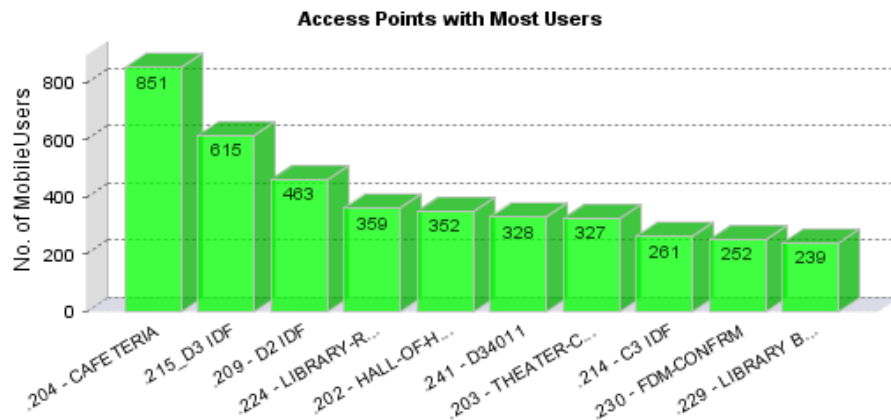ITS conducts a semi-annual off-site disaster recovery test to execute a fully functional restore of GSU's applications. GSU contracts with SunGard and performs this exercise at their Wood Dale facility which is 50 miles away from main campus. This test includes ITS personal and critical administrative 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 plan is being discussed in another PBAC group and is not part of this ITS plan. 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 seven years, since 2006 and unstaffed partially for approximately eight years. When fully staffed, Support Services should consist of the following:

- Director
  - o Technical trainer
  - o Publications editor/documentation specialist
  - o 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 ColleagueSuite of Products – UI, CORE, Admissions, General Ledger, Student Records, A/R, A/P, Purchasing, Payroll, HR, Financial Aid, Regulatory/Federal Reporting, WebAdvisor,, e-Commerce Services, Recruiter, and Portal
- Jenzabar CX (Legacy)
- SharePoint 2010 (Portal)
- Microsoft SQL Server 2008 (Reports, Queries, Custom Procedures, Import/Export of data)
- Operational Data Stores (ODS) - (Reporting database known as DataOrchestrator
- 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

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. 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, Visual Basic 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 UI 4 client. The remaining faculty and staff, as well as students utilize Ellucian Online Services (Web Advisor)   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 work together to support most of the university's administrative functions. These are described below.

II.C.1.a. Ellucian Colleague

Ellucian's 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 (2012) Ellucian Colleague remains one of the most competitive ERP platforms for higher education institutions. In the past 12 months, the company previously known as Datatel merged with SunGard Higher Education to form what is known today as Ellucian. This merger brings additional resources and technology to Colleague clients. 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.

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 still remains in the legacy system which is still needed by various departments for reporting purposes..

ITS has crafted a plan to migrate all Jenzabar CX data out of that legacy system and to 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 server will be shut down permanently.

II.C.1.c. 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.

II.C.1.d. Degree Audit

The Degree Audit module from Ellucian has been under deployment during the last year. 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 is implementing the undergraduate audits, which will be 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.

II.C.1.f. Interfaces

Each of the systems described above have 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 to ensure validity and constantly maintained as university needs change.

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;
- Remove 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;
- Refine the student schedule to display pertinent registration dates for each class.
- The Official Transcript and Purchase Order forms have been modified to enhance layout and readability.

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. DataOrchestrator ODS

DataOrchestrator 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 can be expanded to include fields of 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. Cutting edge 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 at their fingertips to investigate issues, identify the root causes of problems, and explore new opportunities – without relying on IT to create reports. And 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.

II.C.1.j. Crystal Reports

Crystal Reports is a technical report development tool used to generate reports that uses can then utilize in the BusinessObjects (WEBI) portal. Different than WEBI, where users build their own reports, Crystal Reports have been 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.

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.

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 100 content contributors from throughout the university. The web technology, as well as support for the 100 content contributors, is provided by ITS.

The CMS consists of two main elements:

1. 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.

2. 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 10,000 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.

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. Recruiter 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. In preparation for the first freshmen class at GSU, high school institutions have been provisioned to the Recruiter platform.

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 form, 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.

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 theatre tickets, pay their tuition, and pay the admission fee during the application process. The university uses Official Payments Corporation and Authorize.net as credit card validation and process authority. No credit card or e-check numbers are stored by any university system.

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

Blackboard is the Learning Management system 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.

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 need for separate layered environments for testing, development, intersession classes, and production became apparent. Three new environment have been deployed and are now available to IT and to the COTL team (Center for Online Teaching and Learning), adding up to a total of four environments. Three environments are comprised of our regular Production servers, our Development servers (for cutting edge technology experimentation and development), and our Test servers (for testing of updates to be applied in production). A fourth environment has also been deployed for use during our intersession terms. The intersession environment was necessary due to the fact that Production needs to be made 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.
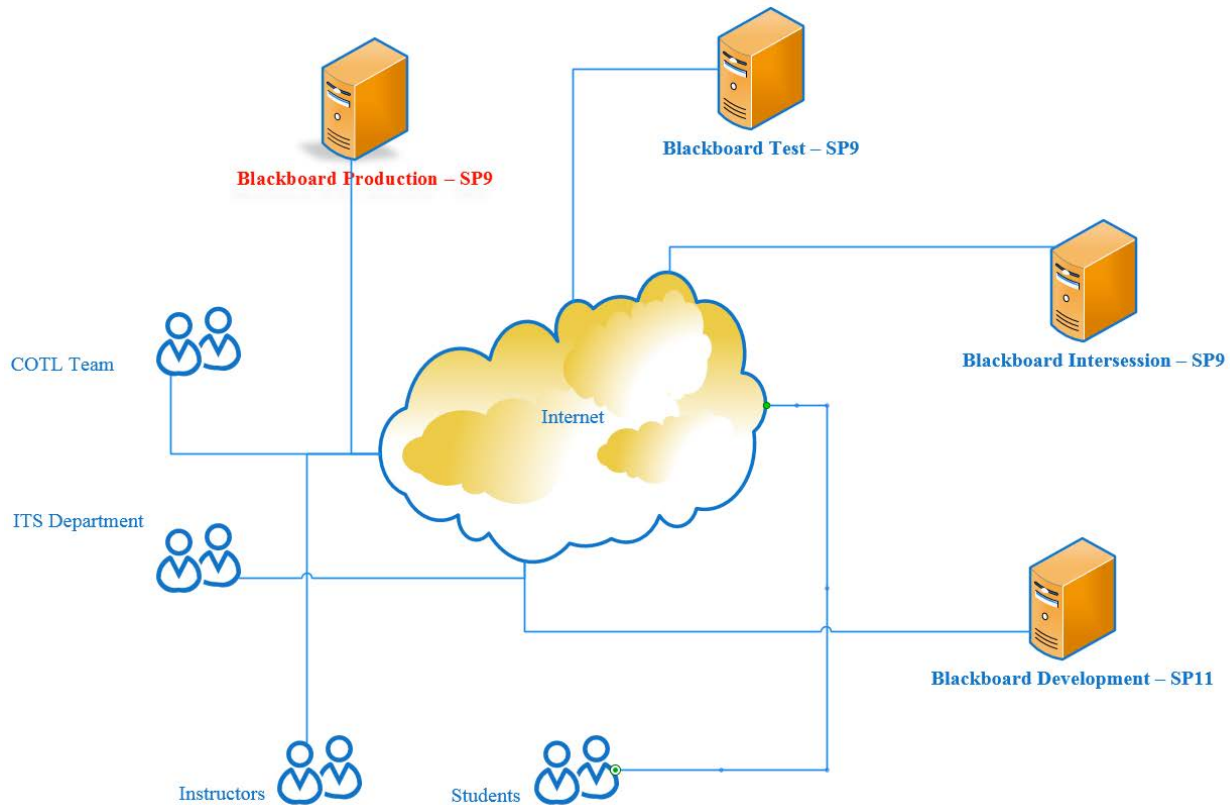
II.C.2.h. Online Event Calendar

The university calendar is maintained using the R25 product described above. This information can be accessed via the R25 webviewer 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.

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 students (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. 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.

II.C.2.k. Intranet

The Intranet is the web presence for the internal members of the university. Although underdeveloped and underutilized, it provides resources to faculty and staff, such as travel vouchers, HR forms, and ITS documentation. This platform also resides within Ektron CMS. The Intranet site is being phased out by the implementation of the SharePoint Portal.

II.D. Telecommunications

II.D.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. 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:

- 983 Cisco IP Office phones
- 57 classroom Cisco IP telephone
- 5 parking lot emergency telephone/blue light strobe stanchions
- 24 yellow external building entrance emergency telephones
- 106 red emergency hallway telephones
- 35 ivory campus house telephones
- 10 elevator telephones
- 15 Conference phones
- 75 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.D.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.D.3. Mobile Devices

Over the past few years, GSU has expanded its inventory of cell phones and smartphones*. Currently there are 119 cell phones and smartphones, 13 air cards for laptops and 70 iPads with 3G/4G service being managed by ITS and issued to appropriate staff.

Department.	iPhone Users	Non-iPhone Users	Air Cards (Laptops)	Total Devices
ITS	18	9	2	29
FDM	1	36	0	37
Executive	17	3	4	24
Auxiliary	0	5	0	5
Other	27	3	7	37
Total Devices	63	56	13	132

*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.E. Budget

The ITS budget has not received any significant increases in the past several years. Except in FY10, PBAC awarded ITS $125,000 to purchase software for the university. This was the only increase that was provided to ITS' appropriated funds account. The sole purpose for the funding was to keep the university compliant with the existing licenses.

With the implementation of Ellucian, new positions were needed for the project. In FY11, PBAC awarded ITS by funding for two Ellucian positions, Database Administrator and ERP Specialist. Those positions were filled in FY11.

In FY12, ITS did not receive additional funding. With the use of the carry forward account, the ITS department was able to accomplish many projects. 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.

II.E.1. Personnel vs. Non-Personnel

The pie chart below depicts the breakdown of the ITS budget for FY2012. The following page contains the same type of chart for FY2013.

FY2012 - ITS Appropriated Account (10-302000)

FY2013 - ITS Appropriated Account (10-302000)

Legend:
- Contractual Services
- Commodities
- Auto Operations
- Travel
- Equipment
- Telecommunications
- Personal Services

Pie chart values:
- $704,658 — 24%
- $20,325, 1%
- $235, 0%
- $20,500, 1%
- $59,000 — 2%
- $154,900 — 5%
- $1,957,607 — 67%
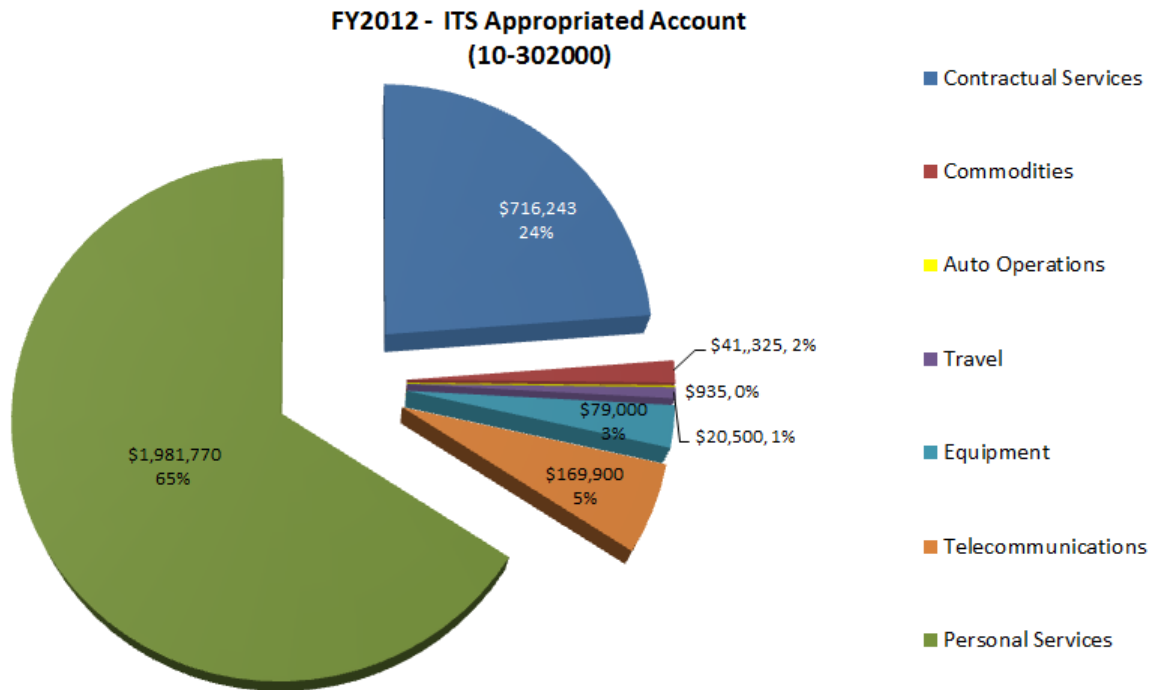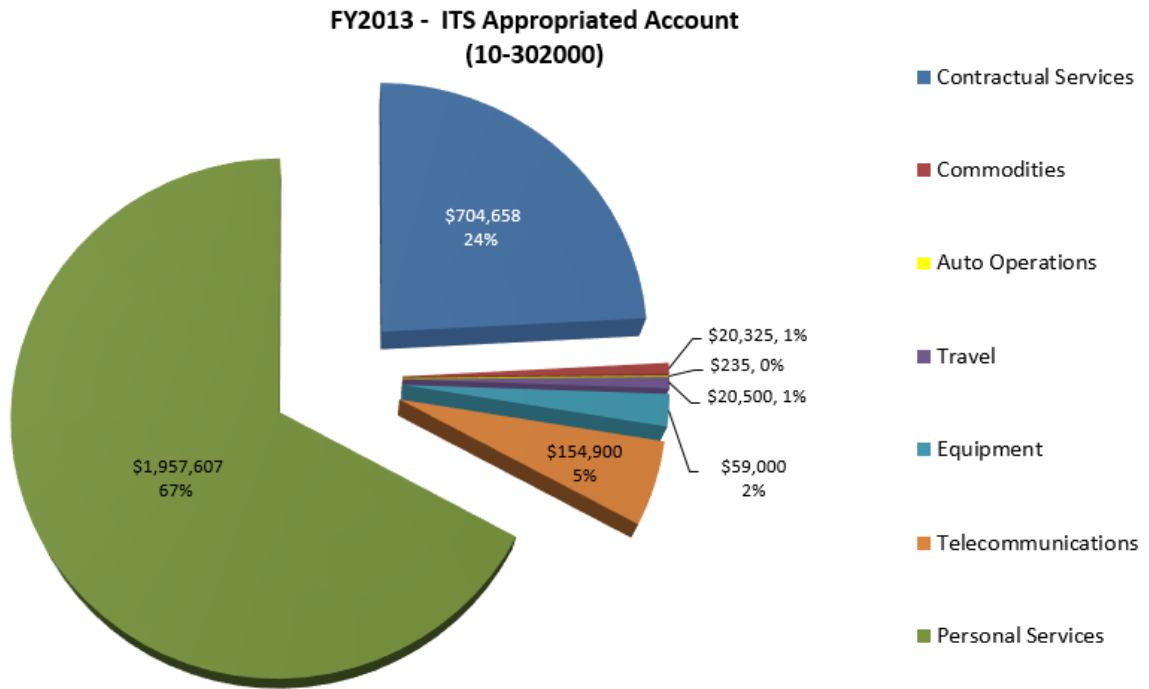
II.E.2. Blanket PO Increase

The ITS Department has numerous maintenance renewals each year. The renewals costs continually increase at a rate of 5-8% per year. Unfortunately, the budget does not inflate as the same rate of increase compared to the reoccurring ITS' expenses. In FY13, ITS acquired additional maintenance agreements from FY12 purchases of equipment and software. As the department prepares a budget for FY14, the realization of a flat or shrinking budget is evident. Each year it gets increasingly more difficult to pay for all renewals.

II.E.3. Student Technology Fee Account

The lack of increase in ITS appropriated funds 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 FY12, the Student Tech Fee Account received even fewer funds than FY11. One of the ERP systems, Jenzabar, absorbed 48% of this account. From the previous year, recurring software maintenance/license costs and campus wide internet services continue to increase.
ITS budget has not been adjusted for yearly increases in vendor maintenance.

Governors
State
University

FY2012 - Student Tech Fee Account
(17-100050)

$16,000.00 $12,250.00

$17,000.00

$25,920.00

6%

7%

5%

$59,317.52

10%

22%

48%

$7,500.00

$138,507.00

- Emergency Notification Systems

- Campus Wide Internet Service and Back Up

- Jenzabar

- Misc. Software Cost and Hardware Replacement/Repair

- Reoccurring Software Maintenance/Licensing

- Personal Services

- Disaster Recovery
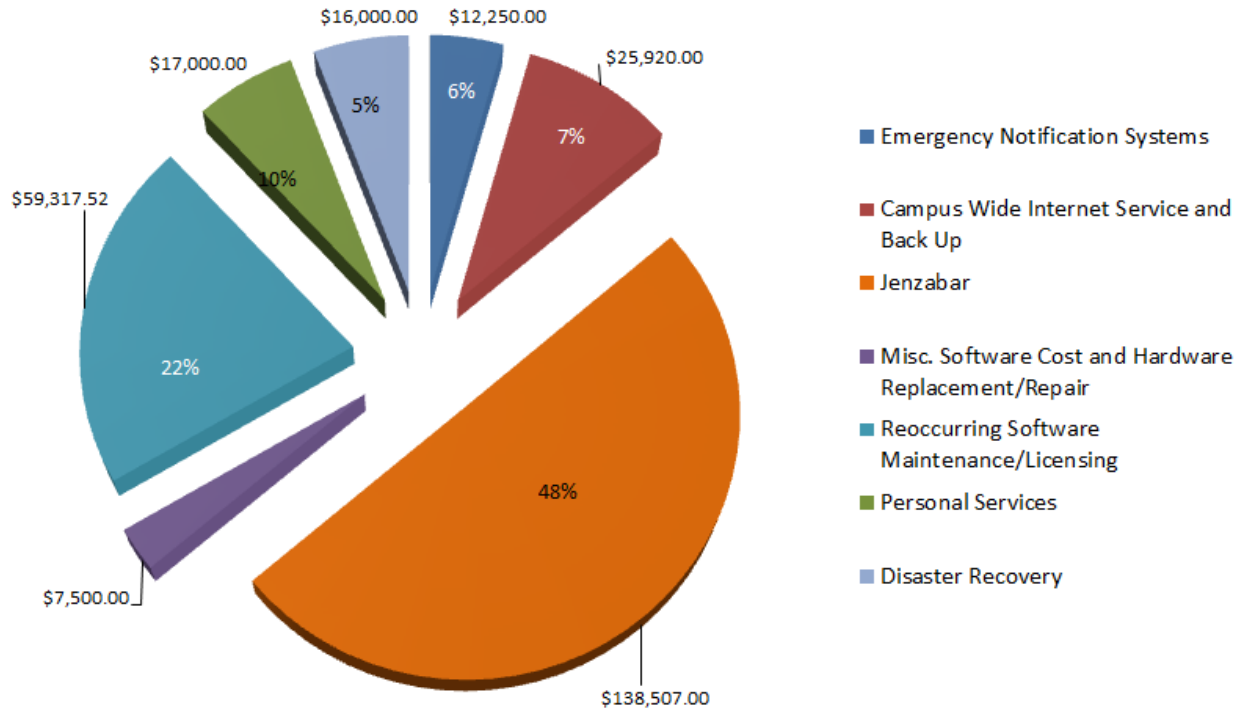
In FY13, the Student Tech Fee Account received the same amount of funds as the previous fiscal year. The ERP system, Ellucian, absorbed 43% of this account. The recurring software maintenance/license costs and campus wide internet services continue to increase each year while the budget remains flat.

**FY2013 - Student Tech Fee Account
(17-100050)**

- Emergency Notification Systems
- Campus Wide Internet Service and Back Up
- Ellucian
- Misc. Software Cost and Hardware Replacement/Repair
- Reoccurring Software Maintenance/Licensing
- Personal Services
- Disaster Recovery
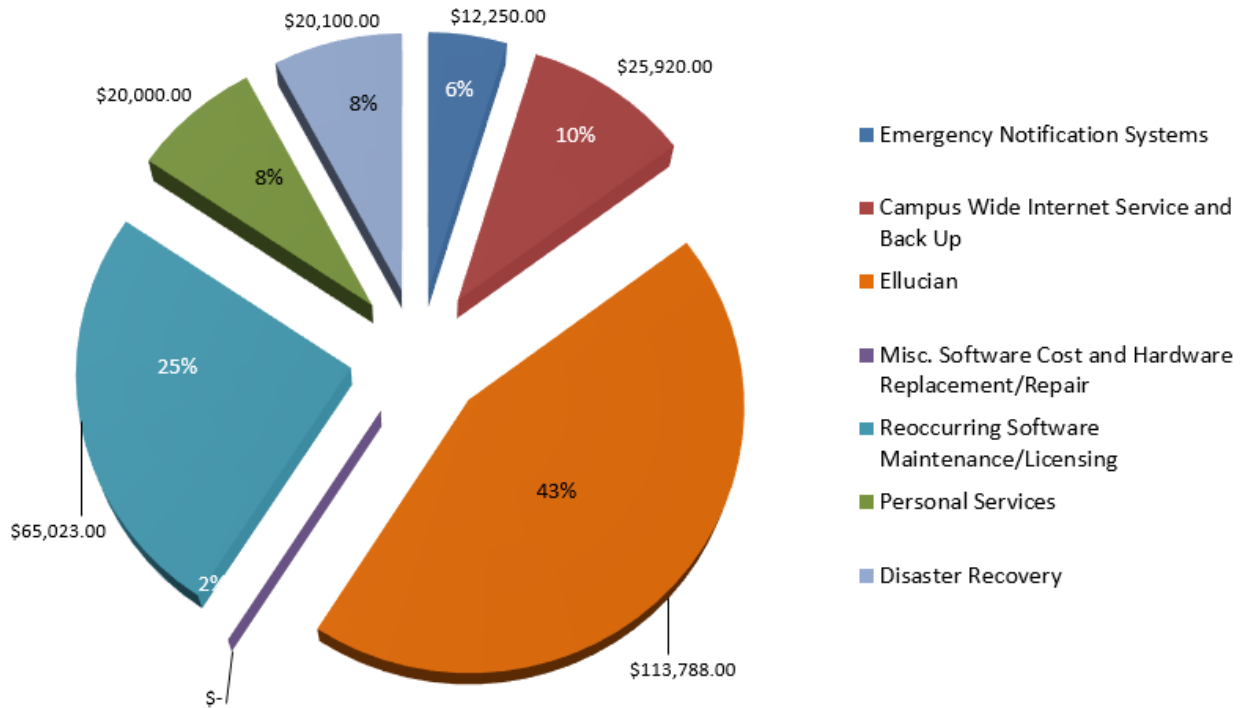
III. Major Issues/Challenges

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. In FY13, the ITS Department had to reduce its budget by five percent to accommodate the unstable state funding to the university.

This document had identified many areas of needs and a project list this quite expensive. Addressing all of these needs is quite costly. Marginal increases in the department budget will not provide realistic financial resources to address our 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 soon.
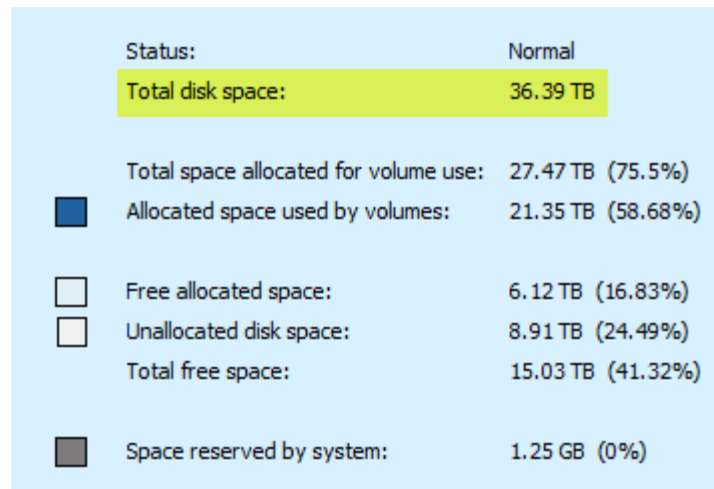
III.B. Infrastructure -

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. As of July 1, 2012. The product is no longer supported by the vendor.

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

Status:	Normal
Total disk space:	36.39 TB
Total space allocated for volume use:	27.47 TB (75.5%)
Allocated space used by volumes:	21.35 TB (58.68%)
Free allocated space:	6.12 TB (16.83%)
Unallocated disk space:	8.91 TB (24.49%)
Total free space:	15.03 TB (41.32%)
Space reserved by system:	1.25 GB (0%)

GSU has been experiencing a data explosion – email, document imaging, ERP systems and Blackboard data are the largest contributors to this. The screen shot above illustrates the current capacity of GSU's central storage system. Currently GSU has allocated 75% of the 36TB storage capacity available.

- With the advent of virtualization GSU has been able to consolidate almost 75% 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.

New methods of managing and storing data have evolved over the past few years. The emerging architecture—Storage Area Network (SAN)—allows for the centralization of files/data as well as flexibility to increase and move data partitions "on the fly."

III.B.3. Server Replacement Strategy/Virtualization

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

With now more than 100+ virtual servers housed on sixteen 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.

Below illustrates a historical perspective from 2008 to present on the active production servers running within the GSU environment. The amount of servers at present that are 4+ years old have been reduced dramatically to 10%. The majority of servers are three years of age with just under 20% of servers being 2 years older or newer.
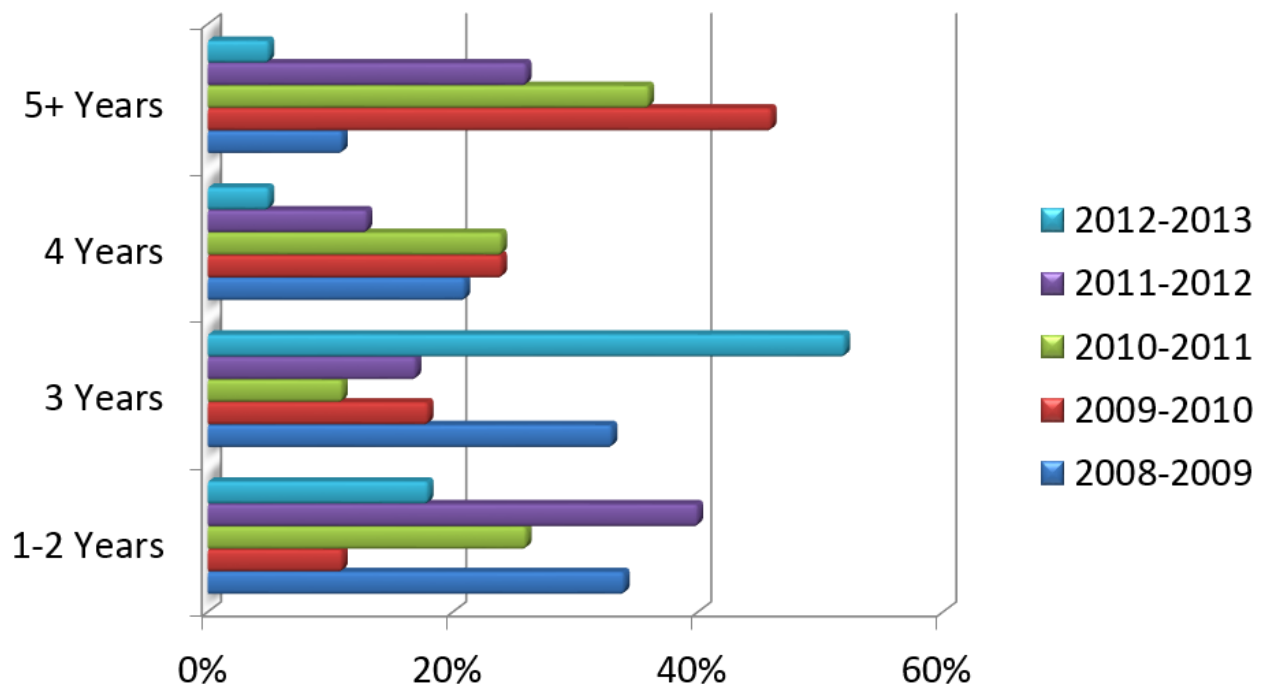
Server Type Comparison
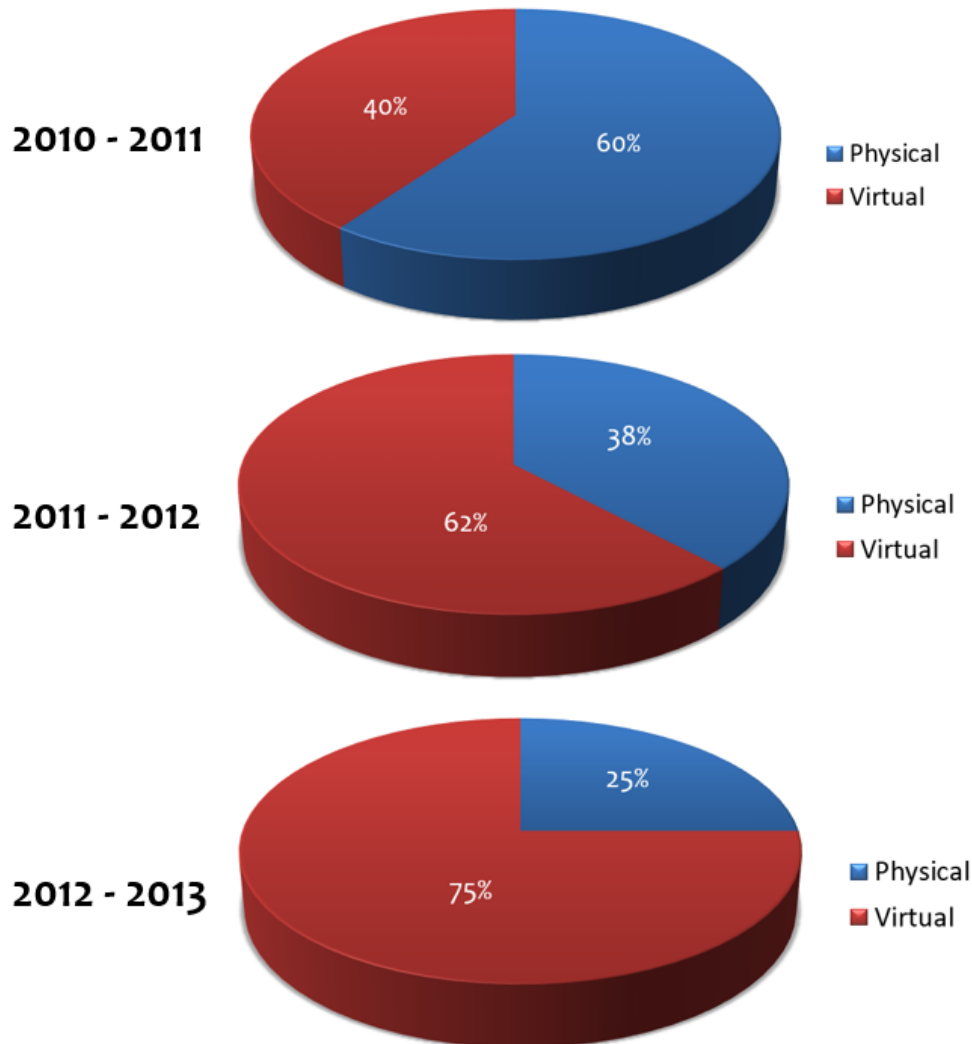
Over the last three year period there has been a reduction of 35% in physical servers maintained within the environment.

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. ACS Lab Equipment

Computers in the ACS Lab were almost completely replaced in 2009. As you can see in 2009 there was an even distribution of age of the computers in the labs. At that point a planned obsolescence strategy should have been implemented where ¼ of the computers get replaced every year. Instead, in 2010 the majority of the computers in the lab were replaced which eliminated the conditions where a desired gradual replacement approach could take place.
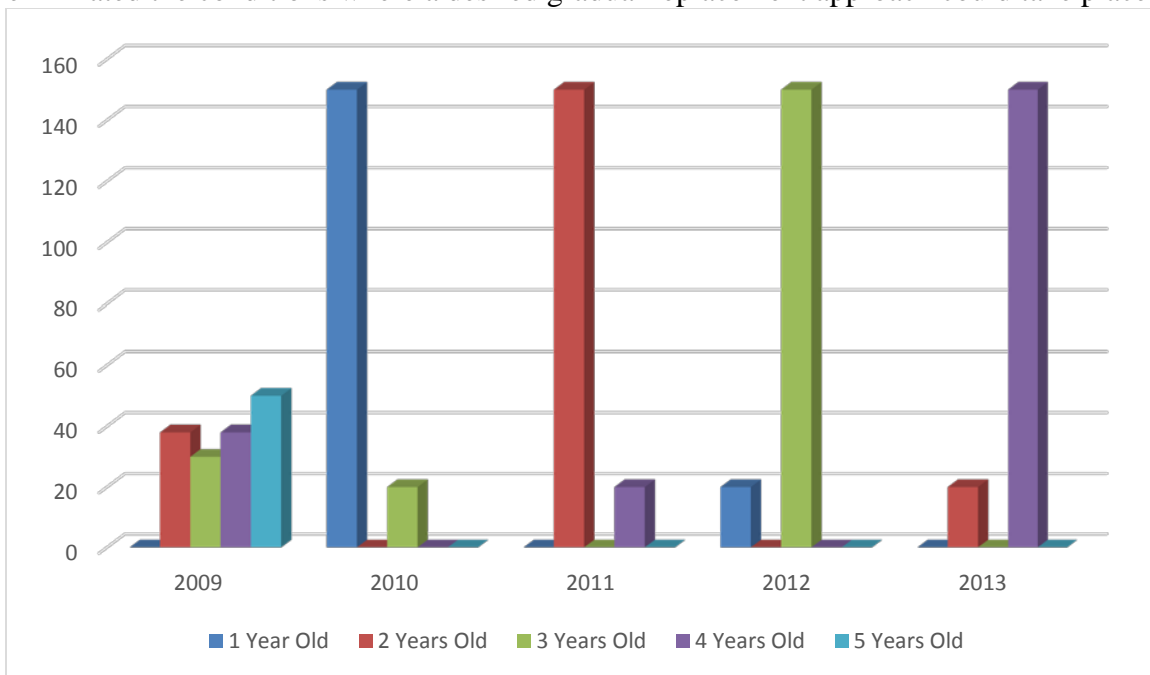
III.B.5. Technology Enhanced - Classroom Equipment Replacement Strategy

First group of classrooms implemented nine years ago, much of this equipment has been replaced to date.
41% of the equipment in classrooms are 7+ years old. An additional 37% is between 4-6 years old. Frequency of repairs was stead up until this past year where it really accelerated. Repairs and equipment replacement amounted to over $35k during the 2012/2013 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.

Age of GSU TE Classroom Equipment - Feb. 2013
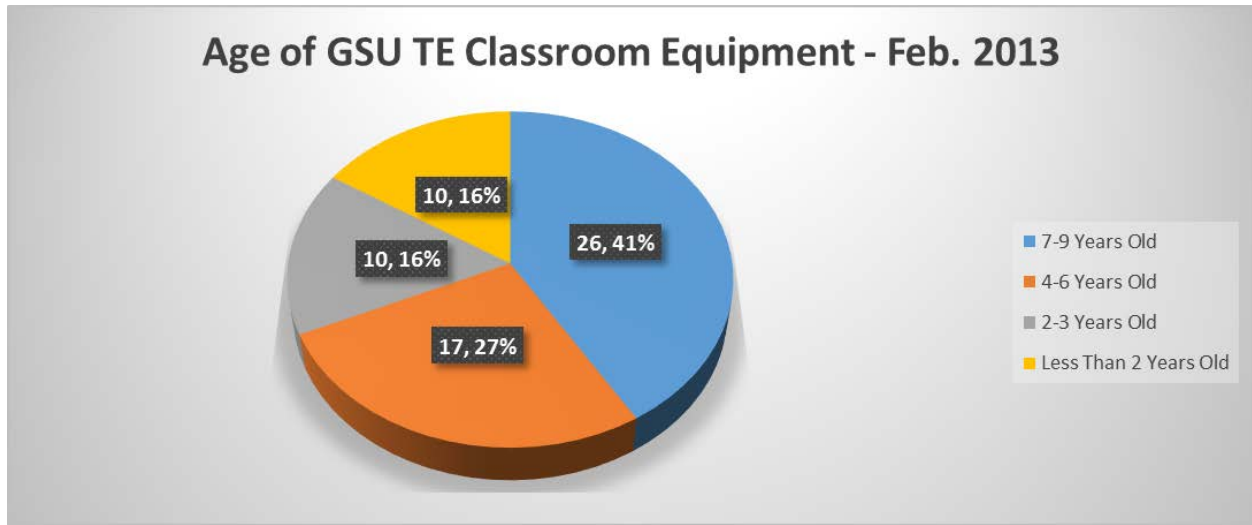
All of the computers in the podiums in the 63 technology enhanced classrooms were replaced four years ago and should be planned for upgrade during calendar year 2013.

Technology Enhanced Classroom Podium Computers
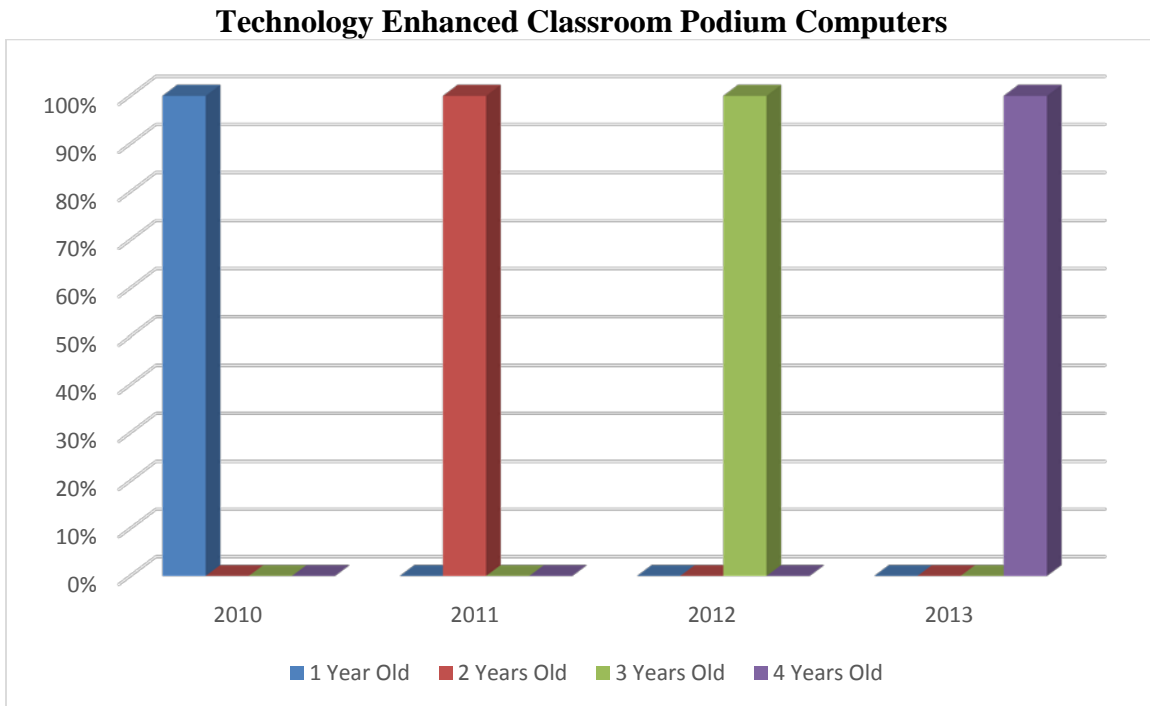
III.C. Applications

III.C.1. Ellucian

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

III.C.2. 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.3. Projects

- Mind Over Media (MOM)

- Student Evaluation of Instruction (SEI)

- Document Imaging

- SharePoint 2010 upgrade

- Web Advisor 3.X upgrade

- Convert Jenzabar CX Database

- One Card system

- Student Housing

- ITWorks

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.

Service Desk
    Incident management, service request & dispatch services (Technical Support)
    Administrative and Student Login ID management
IT Infrastructure Services
    Network and internet connectivity
    Server support
    Central data storage, file backups and restores
Printing Services
    Administrative printing
    Student pay printing
Telecommunication Services
    General telecom
    Mobility services (cell phones, 3G for Laptops, iPads, etc)
Desktop Services
    Administrative software images
    Academic (Labs) software images
    Administrative computer provisioning and management
    Computer lab provisioning and management
    Hardware warranty and repair
    IT asset inventory
Messaging Services
    E-mail and calendaring and Mobile synchronization
Application, Web and Database Services
    Learning management systems
    Business applications
    Web content system
    Mobile platforms
    Document Imaging systems
Strategic Practices
    Enterprise IT security
    Project management
Business Continuity
    Business continuity and disaster recovery planning

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. Web Architect

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.5. IT Technical Associate – 1st Shift

During the past year the helpdesk and ACS Lab staff has shifted 2 1st shift FTE to the 2nd shift in order to balance out the level of support provided to faculty/staff and students. The 2nd shift provides campus and phone support for those hours outside of M-F, 8am-5pm. This is most helpful given the fact that the majority of courses offered on campus take place during the 4:30pm and 7:30pm time slot. The result of the shift balance is a shortage of staff available during the 1st shift to handle incoming phone support calls from faculty/staff and students. It is the 1st shift when the bulk of these calls are received.

Phone Calls by Hour
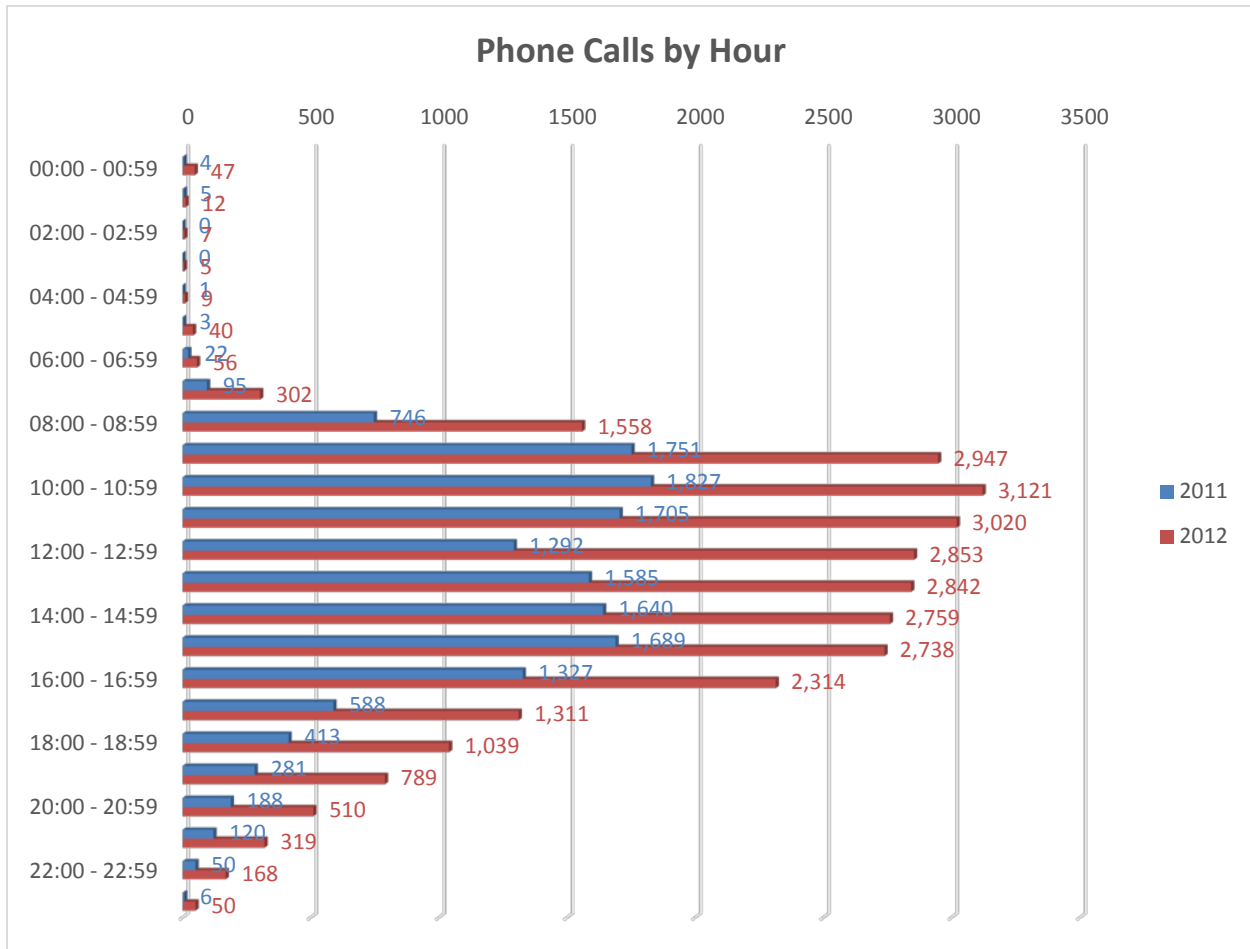
III.D.6. Funding for Student Workers

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 ACS Lab. 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.

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.

Several training vendors exist in the Chicago area which makes overnight stays and air travel will rarely be necessary. 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 10:00pm.

- 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 upgraded its 20mb connection to its primary ISP to 100mb. Local GSU wireless data traffic was also separated and is now being sent to a secondary ISP (10mb). With these two initiatives there has been a noticiable and quantifiable improvement in browsing times. The consumption of bandwidth has not changed.

The first graph details out a single day snapshot of typical utilization before the 100mb upgrade.

Single Day Snapshot of Bandwidth Utilization with **20 MB** pipe to the internet

20 MB Pipe to Internet

Bits per Second

Outbound traffic Peaks starting from noon until almost 10pm

Single Day Snapshot
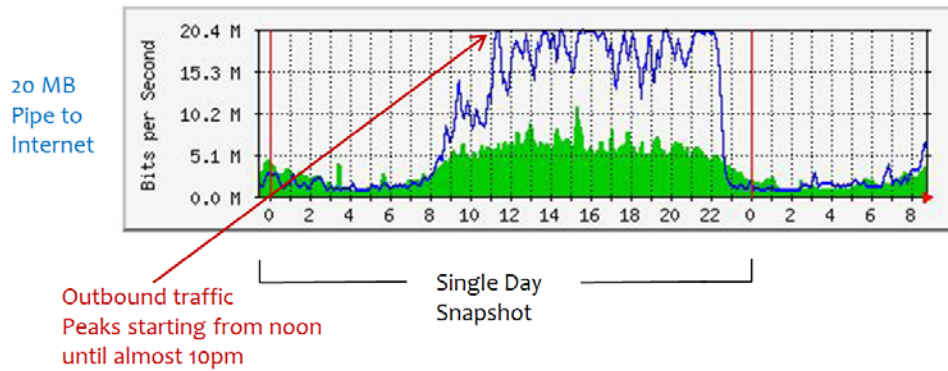
The second set of graphs below detail a week long snapshot after the upgrade in bandwidth from 2011 to present. The amount of average utilization has steadily increased over the last two years.

Weekly Average Snapshot of Bandwidth Utilization

2011-2012

Maximum average traffic utilization
Typically peaks at around 25% each day with a max
peak of 50% as shown above.

*100 MB
Connection to the public
internet*

2012-2013

Maximum average traffic utilization
Typically peaks at around 34% each day with a max
peak of 65% as shown above.
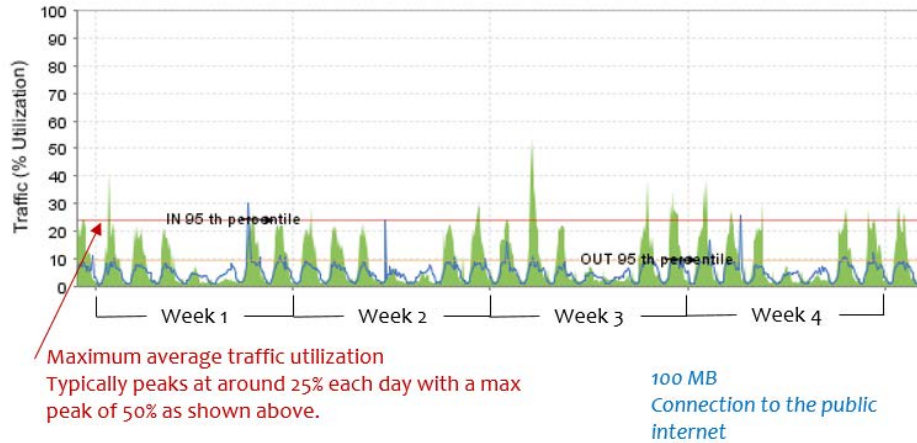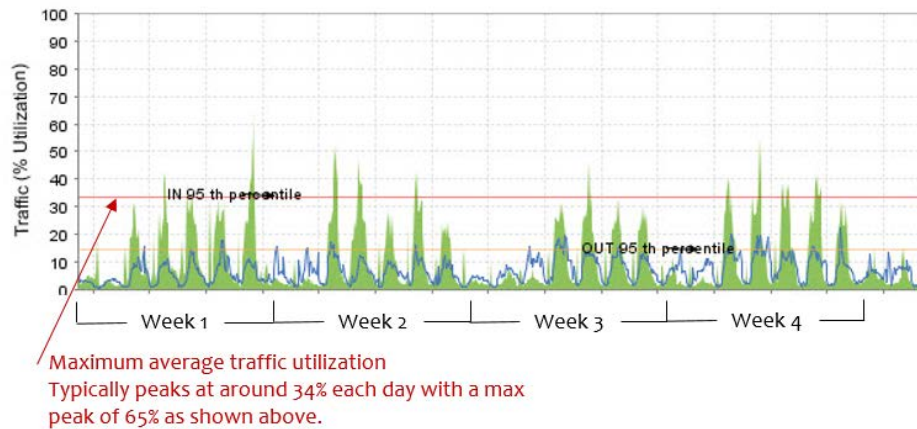
The chart and graph below were recorded to illustrate the 'type' of traffic that passes through the GSU network and out to the public internet. The primary traffic signature is HTTP [basic web browser traffic) with more secured (https) traffic following behind. Other notable traffic signatures are video and email but not to the extent of the first two traffic types.

Top protocol usage over a four week period

Top Application

Web browsing traffic consumes approximately 63% of available bandwidth

Application		Traffic	% of total traffic
http	(Web Traffic)	29.04 GB	63%
https	(Secured Traffic)	12.19 GB	26%
Adobe Flash Media Server_RTMP	(Media)	739.55 MB	2%
TCP_App		712.05 MB	2%
smtp	(eMail)	642.51 MB	1%
ESP_App		348.43 MB	1%
domain		302.59 MB	1%
microsoft-ds		168.51 MB	0%
Netflow		151.71 MB	0%
UDP_App		94.46 MB	0%

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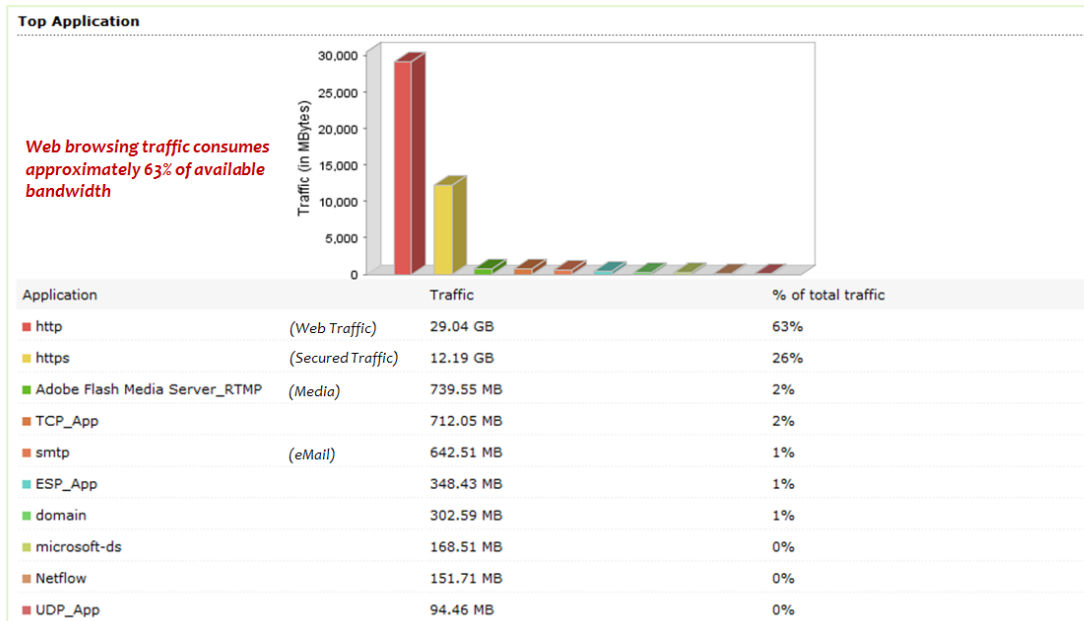
1. Policy 63 (Technology Enhanced Classrooms Usage)
2. Policy 64 (Networking and Computing, Network Security, and Wireless Computing)
3. Policy 65 (Web-Based Publications).

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 2012 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. During 2013 PBAC-IT will forward these policy drafts on to PBAC.

Below is a list of policies that ITS has submitted to PBAC-IT as still needing development.

III.H.1. Desktop Policy

a. security requirements on desktop
b. acceptable software, e.g., games and P2P
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. Telephone/Mobile Device Use Policy

a. carrier (standardization) decision process
b. ordering process, i.e., through ITS
c. approval, e.g., department head or dean
d. how to handle personal vs. business usage
e. security requirements and devise holders' responsibilities
f. enforcement of current on campus telephone usage policy

III.H.3. Software Policy

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

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.

III.J. Network Infrastructure

The university's network infrastructure is beginning to show signs of age. The cabling and closet electronics technology is over 10 years old. With the change in computing to high definition video and mobile computing, there is a need to increase the through out of the wired network as well as upgrade and enhance the wireless network.

III.J.1. Network Backbone

The existing 1GB network wired backbone has been in place for over 10 years now and has served the university well. However, in the past 10 years most all application use has shifted to internet based as well as includes more video content in course delivery. Video content, particularly in the form of high definition has pushed the limits of the 1GB backbone. If a new network were to be put in place today, the minimum requirement would be for a 10GB or 40GB backbone. Fortunately for GSU, the cabling put in 10 years ago can support communication closet electronics to support a 10GB or 40GB backbone. The first implementation of a 10GB backbone compatible infrastructure recently began with the renovation of the F-Wing building. Stackable switches with the capability to communicate on a 10GB interface were installed.

III.J.2. Wireless Mesh

The existing wireless infrastructure has served the university well. However, the technology is one generation behind and cannot keep up with the demands of smartphone technology. 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. As of 2013 GSU will be deploying stage 1 of a new wireless mesh. This mesh will encompass the newly renovated F-Wing and allow employees/students access via GSU credentials and also general open guest access.

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 51 projects listed in appendix D, detail as to cost estimates can be found in appendix E. The estimates total to implement all 51 projects is $8,513,000.00.

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 remained flat, facility expansion, maintenance costs, commodities, hardware, and the rest have not. The tables below are an example of the increasing costs in just one application. Since 2005, Jenzabar's yearly maintenance has increased by nearly $105K, 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, five-year-old computers in our labs for students, when at one point we were replacing a new lab or two every year. To this end, non-personal dollars are increased yearly by 8% for a total through 2015 of $7,141,000.00.

Please note: In FY10, the degree audit module was removed from the Jenzabar's maintenance agreement which reflected a decrease in maintenance cost.

Fiscal Years	0405	0506	0607	0708	0809	0910	1011	1112	Total
Jenzabar Maintenance	155,098.80	169,494.36	209,462.16	225,593.76	238,382.64	245,716.92	259,845.64	277,014.00	1,780,608.28
Increased by		14,395.56	39,967.80	16,131.60	12,788.88	7,334.28	14,128.72	31,297.08	104,746.84

Fiscal Years	1112	1213	1314						Total
Ellucian Maintenance	204,366.00	227,576.00							431,942.00
Increased by		23,210.00							23,210.00

In FY12, Governors State University replaced its current ERP system, Jenzabar CX, to a new system, Ellucian Colleague. The FY13 cost for Ellucian is $227,576.00. 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

Funding Estimates for New Initiatives

Non-Funded Projects, Excluding New ERP	FY2013 (2012-13)	FY2014 (2013-14)	FY2015 (2014-15)	Total
	(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

V. Future Direction

V.A. Green Computing

V.A.1. Data Center

- Eliminate unnecessary or inefficient use of energy.
- Use innovative and more efficient cooling methods.
- Replace high-density servers with virtual servers.
- Use alternative storage tactics-centralized storage.
- Reconfigure data center floor layouts.
- Explore alternative energy sources.

V.A.2. Documentation and Monitoring

- Meters are used to break down energy usage to the level of components (such as a 2U server, a 4U server, a switch, a SAN, and a UPS) and which business units are charged for the power being used by those components.
- Energy usage is continuously monitored to determine peak- and low-energy demands.
- Energy capacities are monitored on a total data-center level all the way down to circuits to make sure all circuits are within acceptable limits.
- The energy savings plan is documented and rewarded.
- The energy savings plan is reviewed regularly and corrective action is taken to address failures.
- Thermal profiling is used to identify hot spots and overcooling.
- IT performance engineering includes energy efficiency measurements.
- Feedback of live data is available to individual organizations, allowing them to react appropriately.
- Administrative logging as part of a broader change management documentation strategy was a recommendation included in the Audit findings for FY10. In FY12 an administrative logging solution was purchased and is currently being implemented.

V.A.3. End-User Computing

- Alter purchasing practices for IT assets.
- Adopt energy-saving settings on computers.

- Practice proper disposal and recycling practices of IT assets.
- Telecommuting: Reduce number of on-site work days.
- Shut down monitors/PCs during off hours.
- Installing a hard drive encryption software solution on all laptops was insured that IDs and passwords are required to access laptops off campus was a recommendation of the FY10 audit. The future trend is to expand the capabilities of these tools to smartphones and tablet devices.
- Secure mobile devices; enforce password protection on all smartphones and tablets.

V.B. Wireless Mesh

A wireless mesh network (WMN) is a communications network made up of radio nodes organized in a mesh topology. Universities can take advantage of this technology in that it allows the student or faculty member to roam the interior or exterior of a campus without losing connectivity. The coverage area of the radio nodes working as a single network is sometimes called a mesh cloud. Access to this mesh cloud is dependent on the radio nodes working in harmony with each other to create a radio network. A mesh network is reliable and offers redundancy. When one node can no longer operate, the rest of the nodes can still communicate with each other, directly or through one or more intermediate nodes.

WMN solution uses wireless links to connect access points installed inside or outside to provide secure, seamless access to wireless broadband or internal University LAN services. This solution allows universities, to install wireless LANs in areas where it is difficult or cost-prohibitive to run cables. This innovative approach is designed to reduce the complexity and cost of deploying a traditional wireless LAN. A wireless mesh architecture is being proposed for the E&F wing renovation project which is currently underway.

In 2013 the beginnings of a WMN will be deployed in the F Wing. This is the first step towards a dynamic WMN environment. The network will provide much needed security, bandwidth patrolling, and the ability to track peer to peer file sharing via authenticated credentials. The cost to complete a full campus mesh is high and estimated at approximately $800K. The future of campus access is steering towards a highly flexible and resilient WMN and thus identified as a urgent need on campus.

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.

Using SaaS also can conceivably reduce that up-front expense of software purchases, through less costly, on-demand pricing. From the software vendor's standpoint, SaaS has the attraction of providing stronger protection of its intellectual property and establishing an ongoing revenue stream. The SaaS software vendor may host the application on its own web server, or this function may be handled by a third-party application service provider (ASP). This way, end users may reduce their investment on server hardware too.

For example, beginning in FY12, student email resources were transitioned to a SaaS. Student email and file storage will be outsourced to Microsoft (Live@edu).

The key characteristics of SaaS software, according to IDC, include the following.

- Network-based access to, and management of, commercially available software
- Activities that are managed from central locations rather than at each customer's site, enabling customers to access applications remotely via the web
- Application delivery that typically is closer to a one-to-many model (single-instance, multi-tenant architecture) than to a one-to-one model, including architecture, pricing, partnering, and management characteristics
- Centralized feature updating, which obviates the need for downloadable patches and upgrades
- SaaS is often used in a larger network of communicating software—either as part of a mash-up or as a plug-in to a platform as a service. Service-oriented architecture is naturally more complex than traditional models of software deployment.

SaaS applications are generally priced on a per-user basis, sometimes with a relatively small minimum number of users and often with additional fees for extra bandwidth and storage. SaaS revenue streams to the vendor are therefore lower initially than traditional software license fees, but are also recurring, and therefore viewed as more predictable, much like maintenance fees for licensed software. As of FY12 a cloud computing solution is reviewed for most all new initiatives and upgrades. In most all cases the advantage has favors leveraging existing personnel and equipment resources. The future direction is unclear. However, the industry has suggested that over time these solution will become less expensive and offerings improved.

Starting in FY11 GSU began to move its server and storage resources into a design model commonly referred to as 'Private Cloud'. As of FY13 GSU now has the ability to deploy new applications utilizing server virtualization and centralized storage. This has dramatically reduced

the amount of servers from approximately 120 physical servers to 30. Not only has ITS removed the need to replace more servers on a year to year basis but has reduced its power requirement footprint in the GSU datacenter. Even though the public cloud market is pushing SaSS GSU now has the ability to keep data in house more effectively, securely and is flexible enough to deploy new applications at a minimal cost to both the in house IT staff and the University as a whole.

V.D. Mobile Computing

- Touch-screen devices
- Location-based services
- Ellucian Mobile and Blackboard Mobility Services

Now that many handsets have built-in GPS or can use the cellular network to pinpoint their location. But the real driver will be mash-ups. Mashing up your application with location data and overlapping adverts based on the location will become much more possible. Either as an iPhone/Android application or websites, the ability to share location information and get back location specific data about local services, other people, events, classes or anything else adds a new dimension to mobile applications.

Ellucian Mobile is a fully integrated mobile application for prospective students, faculty, staff, and alumni. Mobile devices using the module can access both public and personal data. Public data is stored on a public web server, and includes building information and important numbers. It includes information about classes and personal notifications.

Ellucian Mobile Features GSU may choose to implement:
- **News**. View public news available off GSU's website in the app. If logged into the app, see personalized news only accessible for students, faculty, or staff.
- **Events**. View public news available off GSU's website in the app with same granularity if logged in, to target for correct audience.
- **Maps**. Easily locate buildings and find directions using Google Maps.
- **Important numbers**. Mobile users can access phone numbers such as the campus police or health center. This can include university assistance such as the bursar, student affairs, admissions, or financial offices.
- **Friends**. Mobile users can "friend" someone and the contact information will remain up-to-date, including social networking information, if desired.
- **Campus**. Browse or search to find students, faculty, or staff (important contact information for each is provided).

- **Courses**. See a list of your courses for each term and click into each course to get detailed information including course description, professors, location and time, class roster, assignments, announcements, and events.
- **Notifications**. Messages are pushed to the app and you can drill into each to get details. Notifications can include personal messages from GSU.

The next version of the GSU web site that is being developed will be mobile aware. The structure of the page will change based on the device that is viewing the website. This is called responsive design and is on the leading edge of web development.

A phenomenon that has occurred across all college campuses is the concept of "Bring Your Own Device" or BYOD for short. This is the phenomenon where faculty, staff and students bring in their own smart mobile technology (laptops, smartphones, tablets, etc.) to campus and connect to the GSU wireless infrastructure. Over the past few years we have seen over a 300% increase in the number of devices connecting to the GSU network on a daily basis.

V.E. Security

Higher-education security is a constant challenge due to the inherent openness allowed to exist on the client side of the infrastructure. Today users are allowed administrative access to PCs, the ability to download programs at will and not precluded from participating in peer to peer file sharing network.

These challenges open up universities to threats involving bot networks, email spoofing due to uninhibited web browsing, peer to peer legal violations and the proliferation of spam. Once these threats are allowed to enter into the university infrastructure it is only a matter of time until the primary server and networking infrastructure are adversely affected. Current and future trends to assist in elevating these issues can be successfully implemented with administrative support. Another future trend with securing networks and computers in an enterprise is through policy management. Examples of these policies are described later in this document.

The following is a sampling of security technologies available today.

V.E.1. Password Strengthening

Microsoft and SANs security recommend a minimum password length of 8random characters incorporating symbols, letters and numerals. Current audit standards do not meet this requirement.
Also not meeting auditor standards (a FY10 University material audit finding) are the level of administrator accounts and passwords. Just like end user passwords, administrators should not

share accounts. By having a dedicate administrator account per administrator allows for better change management tracking of activity on server systems.

The strengthening of administrative passwords was addressed in FY11 as well as strengthening of faculty/staff and student passwords in FY12. Not only are password lengths complex 8 characters they also are forced to expire every 60 days for administrative accounts and for faculty and staff, and every 120 days for students. The future direction could see the minimum length increase to 15 characters. The details of the current password policy can be found in Section II.A.7c of this document.

V.E.2. Mobile Anti-Virus / Hard drive encryption

Mobile devices such as laptops and PDAs can be securely deployed utilizing virus protection already deployed in the marketplace. Additionally, the encryption protections of laptop hard drives will ensure protection of data should laptop become stolen. This has become a requirement as defined in a FY10 university audit finding. A hard drive encryption solution was implemented in FY12 for all laptops. The future direction could see this technology expand to smartphone and tablet devices.

V.E.3. Removing Administrative rights for Users

This will help eliminate non-business use applications that can be corrupted with viruses, bot software and Trojan malware. As of FY12 this has not been initiated and would still be a huge help in helping to secure the desktop devices on campus.

V.E.4. SPAM Filtering

All email entering a university should be scrubbed by an edge device to remove all suspected SPAM. Typically SPAM will carry links to phishing sites that assist in the propagation of downloadable viruses that allow the high jacking of client PCs.

V.E.5. IPv6 Implementation

Ingress filtering is made easier with the implementation of IPv6 addressing. The filtering allows the blocking of spoofed addresses that enter into the internet service providers IP space. Primary filtering typically occurs at the ISP level and not on the university side. Universities will be required to employ IPv6 at on their edge devices at a minimum to take advantage of this security feature. As of FY12 this has not become a critical need. However, in FY12 the pool of IPv4 address has been depleted for any new requests. With this event the need to begin planning for devices with an IPv6 address needing to access GSU server resources will be needed soon. It is still unclear if this will be done at the ISP level of will it need to be at the organization level.

V.E.6. Protocol Filtering

There are several software as well as appliance editions that can be utilized to assist in the filtering of network protocols associated with peer to peer (P2P) file sharing. Currently there is legislation (Higher Education Equal Opportunity Act of 2008) that requires Illinois state universities to implement at least one piece of technology to block illegal file downloading on their campus. In order to become compliant involves the purchasing of a solution to prohibit such activities.

V.E.7. Traffic Encryption

Encryption should be imposed on several levels; Email, file serving, internal networking devices, SMTP access and mobile devices. Guaranteeing the security of communications will prevent password theft, SMTP misuse, mobile device security and breaches of sensitive personal data. Unfortunately a complete encryption infrastructure entails a great deal of pre-planning and maintenance. In the end the gains vastly outweigh the cost and man hours associated with an implementation.

V.E.7. Traffic Shaping/Filtering

Currently there are no mechanisms in place to filter or shape traffic based on protocol or source/destination. Simple traffic shaping schemes shape all traffic uniformly by rate. More sophisticated shapers first *classify* traffic. Classification is achieved by various means. Matching bit patterns of data to those of known protocols is a simple, yet widely-used technique. By employing a

shaping device GSU can more effectively prioritize traffic and reduce potential bottlenecks on the edge of the network. There will be a near future need to prioritize video, http, and traffic to mission critical applications that are served out to the public internet.

V.F. Communications

With the increase of mobile computing comes the ability to communicate more easily and from anywhere. Unified messaging has steadily gained popular momentum because of this and because of a need to integrate the systems that are used for communicating. Unified Messaging (or UM) is the integration of different streams of communication (e-mail, text messaging, fax, voicemail, video, etc.) into a single unified message store, accessible from a variety of different devices.

Also, with the expansion of mobile devices such as smartphones and tablets, it has become necessary to look at tools to help with the deployment and remote management of these devices. Mobile device management systems such as those offered by vendors LANDesk, Symantec and McAfee allow for this capability.

A phenomenon that has occurred across all college campuses is the concept of "Bring Your Own Device" or BYOD for short. This is the phenomenon where faculty, staff and students bring in their own smart mobile technology (laptops, smartphones, tablets, etc.) to campus and connect to the GSU wireless infrastructure. Over the past few years we have seen over a 300% increase in the number of devices connecting to the GSU network on a daily basis.

VI. Committees (Guidance/Oversight)

VI.A. Colleague Operational Governance Group (COGG)

The Colleague Operational Governance Group (COGG) comprises the power users of the Ellucian application. It is a forum to discuss issues that are common to all users and try and find solutions as well as determine priorities for projects and requests. 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.

VI.B. 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.

VI.C. Disaster Recovery

The information technology disaster recovery (DR) committee structure is divided into two groups; the Network group and Application group. From the activities of these groups a third group of end-users are identified for each test. These end-users are individuals from various functional departments on campus.

1. Technical staff (Network and Application Groups) responsible for recovering GSU's most critical systems in the event of a disaster or incident requiring the recovery of computer server systems at a recovery facility, which is 50 miles away from the main campus

2. Administrative staff (End-users) from key areas such as the business office, financial aid, registration, purchasing, and others that are involved in the bi-annual testing of the ITS DR plan.

The Information Technology disaster recovery plan and testing requirement of the state of Illinois Auditor's Office is a beginning for compliance and readiness of the university to be able to recover from a disaster. What is missing is the creation of a business continuity plans for all areas of the university. This has become a FY10 immaterial audit finding for the university and has yet to be addressed as of FY13.

VI.D. 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. The next phase will include the upgrade which will replace the Crystal Reporting tool with a web services reporting tool.

VI.E. ITS Ellucian Committee

This ongoing committee comprised of ITS staff, reviews issues with the system and projects initiated by the users in the form of PRT requests. The team has a standing Wednesday weekly meeting and keeps a detailed log of the status of all issues and projects being completed.

VI.F. WEBI Users

This is a user group training session. This group meets every other week to discuss best practices in the usage of the reporting tool and issues that may arise. But primarily this is training in the use of the tool. The group is currently going through a re-organization to better prepare users.

VI.G. 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.

VI.H. Ellucian Committees

ITS is represented on every committee.
- Colleague Operational Governance Group (COGG)
- Colleague CORE Users Group (CCUG)
- Colleague Users Group (CUG)
- Human Resources Core
- Advancement Core
- Registration, Recruitment & Admissions, Financial Aid & Student Accounts
- Student Records-Degree Audit
- Curriculum-Scheduling-Workload
- Financial Aid & Student Accounts
- Portal
- Reporting
- ITS
- Finance Core
- Student Core

• *VI.H. Colleague User Group (CUG)*

The Colleague User Group is a forum for all Colleague users to learn of new functionality and upcoming changes relative to the Colleague system. Attendees are encouraged to bring questions and ideas to share with CUG members.

Appendix A—ITS Organizational Chart

Information Technology Services - April 10, 2013 - Funded
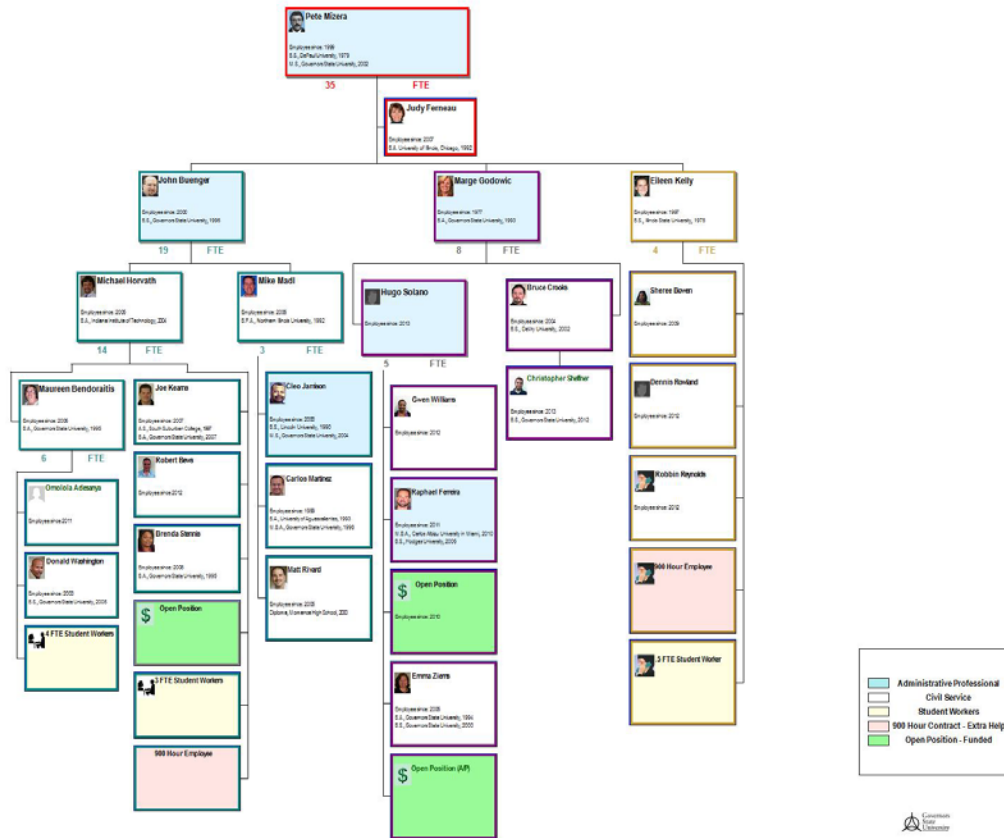
Appendix B—ITS Organizational Chart – Optimal Plan

Information Technology Services - April 10, 2013 - Ideal
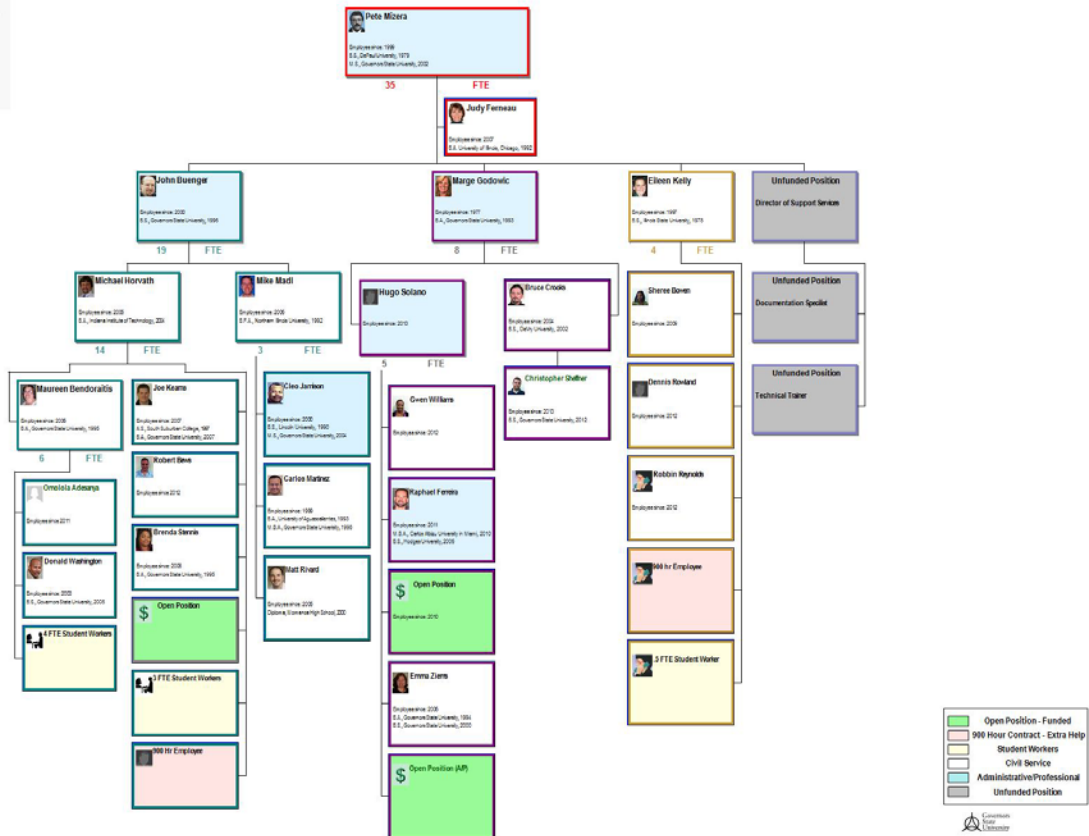
Appendix C—Hiring/Growth and Maintaining ITS Staff Levels

Hiring Staff

ITS has been able to hire and retain a number of highly qualified individuals. GSU is located close to a major metropolitan area, within 10 miles of the city limits of Chicago. This provides us with a large pool of qualified applicants to choose from. We also benefit in that the core skillset needed to maintain GSU systems can be found with individuals with backgrounds in a number of other industries. All of this benefit also presents a challenge in our ability to pay salaries similar to many other State-of-Illinois universities.

Growth

There has been a steady increase in the volume of equipment, applications and facilities the Helpdesk and Network Services has supported over the last seven years. In many cases the increase is substantial. In addition to a steady increase in volume to core services, many new services and scope have been added to the overall services portfolio during this same timeframe.

1. **ITS Helpdesk / Network Services—New Services**

   - Video Conferencing (7 units)
   - Wireless LAN infrastructure (114 access points)
   - Support for IP network phone system (1100 phones)
   - Support for mobile technology (Cell phones/smart-phones - 132)
   - Support of emergency notification equipment and services
   - Support of video security systems (48 cameras)
   - Support for cyber café, Hall of Governors, Student Services (22 computers)
   - Support for all A/V equipment on campus (previously handled by Communication Services Dept.)
   - Support for all Mac computers and printer component level repairs (previously outsourced)
   - Support for CBPA, COE and Library (previously decentralized with own support staff)

2. **Staffing Levels**

Through the establishment of good practices and a commitment to continuous quality improvements, ITS has over the years been able to do more with less. With substantial and steady increases in level and coverage of service, this area of the University has not seen any real increase in staffing levels. As in the previous section this can best be describes by comparing some of the staffing in 2001 with current levels.

a. Helpdesk

	2001	2009	2010	2011	2012	2013
Full Time Employees	5	7	5	5	6	4
Student Workers	4	2	7	7	2	3
FTE Total	7	8	8.5	8.5	8	5.5

Like the Helpdesk, the ACS Lab area has also seen steady growth over the years without any real increase in staff levels. The services now covered by the Lab staff are no longer confined to the ACS Lab facility which consists of 6 computer lab rooms and 40 open lab computers. The coverage now extends to support an additional 38 technology enhanced classrooms, 54 open computers in Library as well as 7 remote computer lab classrooms located throughout campus.

b. ACS Lab

	2001	2009	2010	2011	2012	2013
Full Time Employees	2	2	2	2	3	3
Student Workers	4	5.5	6.5	6.5	5.5	7
FTE Total	6	7	8.5	8.5	8.5	6.5

The ACS Lab also has to maintain coverage in the lab for its hours of operation. The ACS Lab uses student workers heavily to maintain a presence in the ACS Lab at all times and to have someone available to assist in the classrooms if needed.

	Monday – Friday 8 am – 10:30 pm		Saturday 8 am – 4 pm	Sunday 1 pm – 9 pm
	1st Shift	2nd Shift	1 Shift	1 Shift
Full Time Employee	1	1	0	0
Student Workers	2	3	2 – 3	2

The ACS Lab hours of operation span a period of 14 hours a day M-F, plus another 15 hours to cover both Saturday and Sunday hours. In order to have the minimum coverage for this many hours requires a large number of students - a minimum of 10-12 student workers each semester.

Appendix D—Server Functions

Server List as of February 4, 2013

Physical Server	
Virtual Server	
L - Legacy P - Production D - Development	Function
P	DSPACE service
P	Operator Call Attendant Software
D	Development VMWare Host
P	GSU External DNS
P	GSU External DNS
P	GSU External DNS
P	AAM Application
L	Ellucian (Legacy Portal)
L	Ellucian (Legacy Portal)
L	Ellucian (Legacy Portal)
L	Ellucian (Legacy Portal)
P	Authentication Server
P	Domain Controller
P	Domain Controller
P	ITS Applications
P	ITS Auditing
D	Portable Device Mirroring Server
P	Enterprise Backup System
P	Blackboard
D	Blackboard
P	Blackboard
D	Blackboard
P	Blackboard
D	Blackboard
D	Blackboard
P	Blackberry Mobile Management
P	Center for Performing Arts App
P	ITS Chat
P	Microsoft SQL Cluster
P	Microsoft SQL Cluster
P	Microsoft SQL Cluster
P	GSU Website
L	GSU Website
P	Family Development Center App
P	Faculty / Staff

P	Legacy CARS Server
P	Microsoft Exchange
P	Ellucian ERP Server
P	Helpdesk Deep Freeze App
P	Document Imaging
P	Department of Public Safety App
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
D	VMWare ESXi Host Server
D	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	VMWare ESXi Host Server
P	FTP Server
P	Laptop Encryption Server
L	Legacy CARS Server
P	Ellucian ERP Server
D	Ellucian ERP Server
P	Ellucian ERP Server
P	Ellucian ERP Server
P	Ellucian ERP Server
P	Faculty Web Hosting
P	Communications Services App
P	Forefront Identidy Manager
P	Forefront Identidy Manager
P	File Server
P	File Server
P	File Server
L	Helpdesk Imaging Server
P	Helpdesk Ticketing System

P	Helpdesk Ticketing System
P	Student eMail Authentication
L	Legacy Student eMail
P	Microsoft Licensing
P	Helpdesk Lab Statistical Server
P	Helpdesk Asset Management
P	Blog Server
P	Licensing
P	GSU Mass eMailing Server
D	Apple MAC Server
P	Apple MAC Server
P	Faculty and Staff eMail
P	Faculty and Staff eMail
P	IT Bandwidth Monitoring
P	Lab Netsupport Lab Management
P	IT Monitoring
P	Notification System
P	Self Service Password Server
P	Printshop App
P	Library Proxy
P	R25 Web Calendar System
P	R25 Web Calendar System
P	Ellucian ERP Recruiter System
P	Ellucian ERP Recruiter System
D	Ellucian ERP Recruiter System
P	Ellucian ERP Recruiter System
P	SAN Management System
P	Small Business Administration Server
P	Notification System
P	eMail Gateway
P	Ellucian ERP Server
D	Ellucian ERP Server
P	Ellucian ERP Server
P	Ellucian ERP Server
D	Ellucian ERP Server
D	Ellucian ERP Server
P	Microsoft SQL Mirroring Server
P	File Server
P	File Server

P	Terminal Server
D	Terminal Server - Development
P	Portal Server
P	Virus Protection
P	Virus Protection
P	Virus Protection
P	VMWare vCenter Server
P	VMWare Application Server
P	Web Server
P	Ellucian ERP Server
P	Ellucian ERP Server
L	WebCT Legacy Server
L	WebCT Legacy Server
P	Honeywell App Server
P	Landesk Communication Gateway
P	Call Reporting
D	Oracle - Faculty Development
P	VMWare Application Server
P	Wireless DHCP
P	VoIP Application
P	VoIP Application
P	VoIP Application
P	VoIP Application
P	VoIP Application

Appendix E—Technical 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).
- 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.
- IP Telephony (VOIP) System Version Upgrade: Acquire, implement and test upgrades to the existing VOIP system. – Completed in 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. Currently being piloted by SXL for distance courses. – FY13

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.
- 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.
- 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.

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.
- Technology Trainer: Hire a person to perform training in Jenzabar CX and other campus technologies.
- Online Requisitioning: Engage in business process improvement including online requisitioning.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.
- 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.
- 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.
- 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.
- D2440 Network Lab: Upgrade the technology available in Dr. Shih's primary computer laboratory. Partially completed in 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. – 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.
- 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.
- 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.
- ACS Lab Expansion/Relocation: In order to provide greater student access to computer laboratory facilities, expand and/or relocate the existing ACS laboratories.
- 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.

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.

Appendix F—Technical Plan Details by Priority and Cost Estimate

Project	Implementation Cost Est.- Low (000's)	Implementation Cost Est.- High (000's)	FY2013 (2012-13) (000's)	FY2014 (2013-14) (000's)	FY2015 (2014-15) (000's)	Budget Year with Funding Impact
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	
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	
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
Storage Area Network (SAN). Acquire a SAN solution that will enhance disaster recovery as well as storage administration.	$95	$125	$0	$35	$60	FY10, FY11, FY12, FY13
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	FY12
	$150	$250	$150	$0	$0	

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.

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
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

High Priority

Blackboard (Webct). Acquire and implement available upgrades for the GSU learning management systems.	$0	$150	$0	$0	$0	FY12
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

Initiative						
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
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	

Description						
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
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

Description						
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	

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
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	
Total:	**$6,166**	**$9,519**	**$1,619**	**$2,559**	**$1,988**	