

UNIVERSITY OF ARIZONA

Information Technology Strategic Plan

Fiscal Years 2009-2013



FY2010 Update



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University of Arizona Information Technology Strategic Plan

Executive Summary

THE UNIVERSITY OF ARIZONA (UA) is a public land-grant research institution dedicated to preparing students for an increasingly diverse and technological world, and to improving the quality of life for the people of Arizona and the nation.

The ability to provide advanced information technology (IT) remains a critical factor for the UA in achieving its teaching, research, and public service mission—to discover, educate, serve, and inspire. Expanded IT capability will provide the avenue to strengthen the University’s academic excellence, intellectual creativity, and spirit of community, even in these difficult economic times. To that end, it is even more important that, as a university, we adhere to the following basic IT objectives, which directly impact the mission of the University of Arizona:

- Eliminate as much redundancy as is possible and sensible
- Discover solutions, programs and partnerships that are cost effective
- Discover ways of utilizing all university IT resources, including Arizona University System (AUS) resources, more efficiently and collaboratively
- Recognize security as a common element within everything we do

This report highlights the year’s unprecedented IT accomplishments mapped to UA’s strategic directives. These accomplishments dramatically strengthen the University’s IT foundation in ways that have never been seen before.

The Year in Review: Key Accomplishments...

1. **MOSAIC HUMAN CAPITAL MANAGEMENT (HCM):** The PeopleSoft Human Resources system went live in October 2009. It provides campus with robust, state-of-the-art, sustainable functionality for Payroll, Time and Labor, Commitment Accounting, Benefits Administration, Workforce Administration, and Employee Self Service.
2. **MOSAIC STUDENT ADMINISTRATION (SA):** The PeopleSoft Student Administration System was implemented through a series of highly successful phased go-lives: Course Catalog and Schedule of Classes (September 2009), Campus Community bio/demo conversion (January 2010), Financial Aid and Student Financials part 1 (February/ March 2010), Student Records (March 2010), Admissions for Spring 2011 (May 2010), and initial Academic Advising roll out for the most populated degree programs. These implementations greatly increased hours of operation for student self-service and built a foundation for mobile computing environments for students.
3. **MOSAIC BUSINESS INTELLIGENCE:** The University’s new analytics and reporting environment saw successful implementations synchronized with HCM and SA that resulted in daily usage at or above 400 distinct users, a monthly base of nearly 1,500 users (approximately 14% of all employees with a future target of 25%), excellent adoptions of UAccess Analytics and the creation of 45 subject areas viewable for users in 169



dashboards and reports. BI also piloted the Early Alert system, a program that will identify students failing to meet minimum academic standards to facilitate intervention and boost retention.

4. **STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS):** The UA launched an initiative to standardize on a single vendor-provided response or “clicker” device for classroom use as a means to control costs for students and provide better, more consistent, training and technical support for faculty. The program rolls out during the fall of 2010, with a number of faculty serving as early adopters. A campaign will be initiated to increase awareness and usage for spring 2011.
5. **CENTENNIAL HALL ADAPTIVE USE:** Centennial Hall was adapted to accommodate lecture hall–style classes of up to 1,200 students. New technology such as receivers for response devices, dual rear-screen high definition projection, and servers to support podcasting was installed.
6. **UACONNECT:** Microsoft Business Productivity Online Standard Suite (BPOS) was selected for Faculty and Staff. Consulting with campus constituents, the BPOS toolset was chosen for implementation to campus in FY10–11. BPOS is Microsoft’s hosted offering that will include Exchange for email/calendaring, Office Communicator for instant messaging and Live Meeting as a full-featured set of tools that will provide a virtual leap-frog in productivity and collaboration tools for our campus faculty and staff.
7. **NETWORK SPEED ENHANCEMENTS:** In response to the large volumes of data that modern research and instruction generate and share, the University’s networking core was upgraded from 1 Gb to 10 Gb. This enables select buildings, based on need, to connect at speeds that exceed previous capacities by an order of magnitude.
8. **IDENTITY FEDERATION:** University members are now able to access several external online services using their NetIDs. Participation in organizations such as InCommon provided University constituents with broader access to a wide range of off-campus resources while protecting the security and privacy of our students, faculty, and staff. These resources are accessible with a UA NetID and password and include certain services at research.gov, grants.gov, NSF, NIH, ASU, NAU, Microsoft, and many others. Additionally, this technology allows designated guests—typically parents—to access to a student’s record. This completes the ATIF roadmap.
9. **ENABLING APPLICATION INTEGRATION:** Service Oriented Architecture principles and technologies were adopted that enable a new generation of application integration with and between enterprise applications systems. These technologies facilitate flexibility, transparency (where appropriate) and collaboration in ways that were inconceivable only a few years ago.
10. **TECHNOLOGY (TIER 1) SUPPORT FOR CAMPUS:** The 24/7 IT Support Center increased its volume of phone (60%), walk-in and online support (over 18,000 emails, online contacts, and walk-ins), providing extended levels of service for desktop support, network connections, and general technology issues. This year the 24/7 expanded its services with new support for CatMail and the Mosaic project. The Mobile Help Desk also provides on-site technology support for any UA department requesting a temporary satellite help desk solution.
11. **WIRELESS CONNECTIVITY:** One of our students’ highest priorities—100% WiFi coverage—continued expanding, attaining 80% coverage this year. Thirteen entire buildings were added to the list of covered spaces this year, thereby improving the mobility options for our constituents and increasing the level of standardization on campus.



- 12. UA WEBSITE LAUNCH:** The new www.arizona.edu website was launched, providing a more modern and user-friendly face to the University of Arizona with additional capacity to support the expected usage. A record 308,000 page views was set on the first day of class for Fall, 2010.
- 13. CATMAIL:** Modern communications and collaboration tools were delivered to students through the deployment of Google Applications for Education. This deployment allows our students and their faculty to collaborate in real time on documents, assignments, and research through a common and easy-to-use platform. 100% of UA students were transferred to Google this year.
- 14. STUDENT IT INVESTMENTS THROUGH STUDENT IT FEE:** Over \$3.15 million generated by the Student IT Fee were distributed among the following programs and initiatives:
- Wireless Network expansion and debt-service
 - Expansion and continued support of the 24/7 IT Support Center and OSCR labs
 - Student-related software purchases: Mathworks, RespondWare software, and Sophos
 - Google email for Students
 - Centennial Hall technology upgrades
- 15. ENHANCED ENTERPRISE INSTRUCTIONAL SUPPORT:** Substantial effort and capital were invested in maturing the supporting infrastructure for the University's learning management system, Desire 2 Learn (D2L). This maturation overcomes a myriad of issues our faculty and students encountered when attempting to utilize the resource. We have created a situation where faculty accept using D2L and the campus is open to the potential of standardizing on a single learning management system (LMS). We experienced a 55% increase in courses hosted on D2L, amounting to over 200,000 seats.

Additionally, UITs and the Office of Instruction and Assessment (OIA) formed an alliance where OIA personnel, working closely with faculty, will establish pedagogical criteria and methodologies, and UITs will contribute the necessary infrastructure and technical support to ensure success. The academic portfolio for this initiative currently contains the following services:

- **DESIRE 2 LEARN (D2L)** is a web-based learning management system offering teaching and learning tools for course development, delivery and management.
- **ILLUME** is an electronic survey tool capable of handling survey forms of any length and highly complex surveys with advanced logic patterns and sophisticated validations and error checking.
- **TURNITIN** is an online academic plagiarism detector, utilized by faculty and students to avoid plagiarism and ensure academic integrity.
- **RESPONSEWARE** is a system that allows active participation in classes via "clickers," mobile devices, and laptops.
- **ELUMINATE** is a web conferencing program that creates virtual classrooms in support of distance learning.
- **PODCAST PRODUCER** is a complete, end-to-end solution for encoding, publishing, and distributing high-quality podcasts that captures classroom presentations and makes them available almost immediately on iTunes U.
- **UA ON iTUNES U** provides access to a wide range of UA digital audio and video content. Some of the UA's most popular public lectures are featured, such as the College of Science lecture series, Steward



Observatory public evening lecture series, Department of Linguistics invited speakers lectures, UA News PodCasts, and course lectures.

- **CLASSROOM TECHNOLOGY SERVICES** (division of UITs) provides hardware and systems support, maintenance, and security for all faculty and centrally scheduled classrooms that utilize instructional technologies.

16. COMMON SOFTWARE/NEW SITE LICENSES: Through a UA Bookstore and UITs collaboration, we acquired several new software offerings including Mathworks, ResponseWare, Sophos, Remedy, Illume, Red Hat and Microsoft productivity software and operating systems, which will result in substantial cost savings to departments. There was nearly a 10% growth in available software this year with over 40,500 downloads.

17. SECURITY RISK ASSESSMENT: Security continues to be a high priority for all students, faculty and staff as we face ever-increasing threats against our privacy and resources. In response to higher scrutiny, all campus departments completed a security risk assessment and inventory of critical applications. The assessment information was used to determine high risk areas for each department, with associated security action plans and controls.

18. INFORMATION TECHNOLOGY SECURITY PERFORMANCE AUDIT: The Information Security Office (ISO) continued to implement recommendations from the Arizona Auditor General's Office for web application security, security education, the creation of an Information Security Advisory Committee, and a network of Information Security Liaisons for all departments.

19. SECURE CREDIT CARD PROCESSING: An inter-departmental team worked with all departments that process credit card payments to evaluate and enact security improvements that meet Payment Card Industry Security Standards.

...and Challenges

BUDGET CUTS: In FY09–10, the share of a campus-wide budget cut assigned to the Office of the CIO amounted to \$838,500, which resulted in a 10% reduction in personnel services funds with seven FTE positions lost.

MANAGEMENT OF DUAL ENTERPRISE SYSTEMS: In FY09–10, the Mosaic project successfully implemented numerous systems that are already streamlining university processes and creating efficiencies and cost savings across campus. Until the new enterprise replacement project reaches full implementation in 2011, however, we must continue to support and maintain many legacy systems. This will continue to put pressure on already strained resources.

NOVEMBER OPERATIONAL ISSUES: In the fall of 2009, UA experienced unplanned outages in several critical systems:

- Several machines on campus were breached, which necessitated taking the High Performance Computing system offline for several days
- The re-launched arizona.edu website experienced performance issues and had to be decommissioned for approximately four months until the problem was fully resolved
- Campus email experienced interrupted and delayed service for several days
- In response to these outages, UITs launched Operational Excellence with Risk Assessment, Change Management, and Incident Response processes to minimize the probability of outages and assured efficient response to IT incidents.

UA Strategic Directives

Our major FY09-10 accomplishments detailed on the previous pages map directly to the Strategic Directives established by UA and the IT Strategic Areas and Goals established by the Arizona Board of Regents (ABOR).

ABOR IT Strategic Areas	UA Strategic IT Goals	Expanding Access & Enhancing Educational Excellence	Increasing Achievements in Research, Scholarship & Creative Expression	Expanding Community Engagement & Workforce Impact	Improving Productivity & Increasing Efficiency
Student Learning & Success and Academic Technology	Improve student learning and success through technology related initiatives.	5 4	13 14	12	2 4
	Provide an environment that encourages the use of technology to facilitate and enhance learning.	11 15	15		14
IT Infrastructure	The communications infrastructure must be robust, reliable, standardized, consistent, state-of-the-art, and operating with continuous improvement and stable funding.	11	7	6	6
	The university-wide information technology infrastructure must become more accessible, dependable, secure, flexible and scalable with services and tools that are integrated and state-of-the-art to meet the teaching, learning, research, and organizational needs of the University of Arizona and the surrounding community.	5 9 10		9	
Administrative Effectiveness	Business operations must be supported with tools and applications that are flexible, responsive, permit real-time web access, facilitate self-help, and ensure information integrity. The applications must be interoperable, modern and poised for future changes.			1 3	1 2 3 9
IT Security	The University's information assets and technology environment must be increasingly and effectively secured in a consistent standardized manner without limiting our academic and research freedoms.	8		8 17	19
	Members of the university community must become increasingly aware of their responsibilities, and accept accountability for minimizing the university's exposure to the ongoing threats.			18	
Research Computing	In support of research, UA should provide broad support for basic collaboration technologies, continue its commitment to high performance computing and computation, and begin implementing more advanced technologies.		7	16	
Strategic Alliances	Ensure that appropriate information technology collaborations are being utilized in the support of the mission of The University of Arizona; to improve life for the people of Arizona and beyond through education, research, creative expression and community engagement	8 16	15	6	1 2 3 4 6



The economic downturn continued to present dramatic challenges in FY09–10. There were opportunities to leverage technology to make up for shrinking resources, such as growing online courses. Conversely, as demand for technology grew, state funding diminished for IT units as well.

The ability to provide advanced information technology (IT) remains a critical factor for the UA in achieving its teaching, research, and public service mission—to discover, educate, serve, and inspire. Expanded IT capability will provide the avenue to strengthen the University’s academic excellence, intellectual creativity, and spirit of community, even in these difficult economic times. To that end, it is even more important that, as a university, we adhere to the following basic IT objectives, which directly impact the mission of the University of Arizona:

- Eliminate as much redundancy as is possible and sensible
- Look for solutions, programs and partnerships that are cost effective
- Find ways of utilizing all university IT resources, including Arizona University System (AUS) resources, more efficiently and collaboratively
- Recognize security as a common element within everything we do

With these objectives in mind, the following critical strategic principles are still applicable:

Leadership, Governance, and Investment Alignment to Mission

University priorities and objectives must drive information technology strategies, investments and decisions. The UA must establish an improved information technology leadership and governance model to provide a clear framework for ongoing dialogue, collaboration, and coordinated decision-making within the university, and within the larger AUS system. At the heart of the governance and leadership model must be just the right proportionality of centralized and distributed IT. Decision-making must be driven by vital mission objectives.

Security and Access as a Priority

The University’s information technology infrastructure and information environment must be stable, safe and secure. The institution must focus on making the environment more secure while maintaining the kind of access required of a public research-oriented university. Balancing security and access poses one of the greatest challenges to our ability to achieve our IT strategic vision.

Services and Infrastructure Ubiquity

To support the University mission, IT Services and Infrastructure must be integrated, accessible, and easy to use. Basic functionality must be ensured so that all University constituents are able to communicate, learn, and disseminate information within and across disciplines and campus borders. This ubiquity of services is vital to the core mission of the University.

The Year in Review: By the Numbers

The UA is tracking the following metrics to assess its progress in pursuing the strategic goals outlined in this strategic plan. Each of these indicators is listed in the following tables together with an assessment of the UA's current performance and its five-year target for that metric.

Strategic Area 1: Student Learning & Success and Strategic Area 5: Academic Technology

Metric (blue indicates ABOR centralization metric)	Goal	FY2009 (baseline)	FY2010	Growth	FY2013 Goal	% of FY2014 Goal
# students on hosted email and calendaring services (CatMail)	100% by opening of school 2010	0%	100%	100%	100%	100%
# software site or volume discount licenses available through centrally-provided services	10% growth per year	32	35	9.4%+	52	67%
# downloads of free or discounted software from Site License	10% growth per year	new metric	40,980		60,000	68%
% of campus with centrally provided wireless connectivity	10% growth per year	75%	80%	6.7%+	100%	80%
# courses hosted on central learning management system <i>* New Metric - Note Error in Last Year's Report</i>	10% growth per year	*3,750	5,800	55%+	5,073	114%
# seats hosted on central learning management system <i>*Note New Metric</i>	10% growth per year	*164,000	200,313	22%+	228,692	88%
# attendees in centrally hosted forums for exploration and showcasing of technology usage in the learning environment	10% growth per year	1,200			1,933	
# calls into central IT support center	10% growth per year	26,000	41,632	60%	41,873	99%
# online/email support requests	10% growth per year	new metric	9,139		13,380	68%
# walk-in support requests	10% growth per year	new metric	9,632		14,102	68%



Strategic Area 2: Infrastructure

Metric (blue indicates ABOR centralization metric)	Goal	FY2009 (baseline)	FY2010	Growth	FY2013 Goal	% of FY2014 Goal
# university departments using centrally provided telephone and network services (measure represents # of departments not using central equipment)*	0 by 2014	15	15	0%	0	0
Implementation of FTE-Based funding model for centrally provided services	complete by 2009	100%			100%	100%
% of campus with centrally provided wireless connectivity	10% growth per year	75%			100%	75%
\$ invested in centrally provided network maintenance, upgrades, and converged communications infrastructure	static or increased ongoing funding	\$14.6M	\$13.3M	-9%	\$14.6M	91%
# buildings with centrally provided network converged infrastructure	5% growth per year	23	27	17%+	29	93%
Implementation of a centralized, common email and calendaring system for faculty and staff	complete by Jan. 2011	10%	60%	500%+	100%	60%
# centrally hosted virtual machines	10% growth per year	28	40	43%+	45%	89%
# centrally administered servers	10% growth per year	363	410	13%+	585%	70%
# centrally hosted and administered databases	10% growth per year	59	97	64%+	95%	102%
# centrally hosted disk arrays	10% growth per year	27	23	-15%	43%	53%
Implement centrally funded Microsoft Campus Desktop Enterprise Agreement for faculty and staff	complete in 2009	100%			100%	100%

* UITS has converted portions of departments and various floors of buildings in the past year, but since no departments in their entirety converted to centralized services, the metric remains unchanged.



Strategic Area 3: Administrative Effectiveness

Metric (blue indicates ABOR centralization metric)	Goal	FY2009 (baseline)	FY2010	Growth	FY2013 Goal	% of FY2014 Goal
Deliver Mosaic on time, within budget, and in scope	by Jan. 2012	on target	on target		100%	%
# centrally hosted enterprise level applications	1 additional application per year	29	35*	21%	34	103%

* Enterprise Applications currently supports new Mosaic systems and the older legacy systems. As legacy systems are replaced and decommissioned, this number will likely decrease in the coming years.



Strategic Area 4: IT Security

Metric (blue indicates ABOR centralization metric)	Goal	FY2009 (baseline)	FY2010	Growth	FY2013 Goal	% of FY2014 Goal
Establishment of a University Information Security Officer and a management framework	complete by June 2009	100%			100%	100%
Implementation of a centrally-defined risk assessment program	complete baseline assessment in 2009 and reassess in 2012	50% of baseline	100% of baseline/ 75% reassessment	100%/75%	100% of baseline and reassessment	100%/75%
Implementation of a centrally-defined vulnerability assessment program for systems and web applications	complete by end of 2010	40%	45%	12.5%+	100%	45%
Implementation of an incident management procedure	complete by June 2009	100%			100%	100%
Implementation of a centrally-defined business continuity program	10% growth per year	0	10%	10%+	100%	10%
Implementation of a University standard for antivirus/anti-spyware protection	complete by June 2009	100%			100%	100%
# recipients of monthly user awareness newsletter	10% growth per year	55%	100%	82%+	100%	100%
# presentations and seminars delivered internally (online and in person)	varies depending upon opportunities and initiatives	87	50	42.5%-	variable	NA
Website redesign to emphasize availability of resources by roles	completed by 2010	10%	100%	90%+	100%	100%
Holding an annual awareness event	1 event per year	1 event	1 event	100%	1 event	100%
Implementation of centrally-offered initial and refresher employee training	completed by 2010	0%	50%	100%	100%	100%



Strategic Area 6: Research Computing

Metric (blue indicates ABOR centralization metric)	Goal	FY2009 (baseline)	FY2010	FY2013 goal	% of FY2014 goal
# research groups hosted on the central HPC system *Corrected Metric	10% growth per year	*108	112	138	81%
Deliver Kuali Coeus on time, on budget, and in scope	complete by January 2011	0.1			
# centrally provided storage cycles available to HPC*	5x with technology refresh	117 TB	117 TB	585 TB	20%
# centrally provided computing cycles available to HPC*	5x with technology refresh	20 Tflops	20 Tflops	100 Tflops	20%
Dollar value of external grants supported by the research groups on HPC *Corrected Metric	5% growth per year	*\$25.8M	\$30.4M	\$32.9M	92%
Framework and plan for ATIF to implement Shibboleth and join InCommon	by July 2009	0%	100%	100%	100%
# institutions with ability to permit access based on partner institution credentials (InCommon)	10% growth per year	116	244	187	130%

* No growth in HPC storage or computing cycles is anticipated until the next technology refresh, which is scheduled for spring 2011.





Strategic Area 1: Student Learning and Success

Student learning and success are at the heart of the University of Arizona mission. Today's students have grown up with technology and bring very different expectations to their educational experience. Teaching emphasis has moved away from memorizing facts and more toward finding, evaluating, and using information. UA faculty and staff have a great opportunity to explore new modes of learning and to contribute to the development of IT technologies that can augment the learning experiences of our students. The UA works diligently to understand the needs of students who are considering a UA education, as well as engage current students in various stages of their educational career.

Goal 1: Improve Student Learning And Success Through Technology Related Initiatives

Action Item 1

Provide—and, when feasible, expand in response to demand— basic technical services and connectivity for faculty and students across all fields of study. *This is an ongoing effort.*

ACCOMPLISHMENTS

MOSAIC STUDENT ADMINISTRATION (SA): The PeopleSoft Student Administration System was implemented through a series of highly successful phased go-lives: Course Catalog and Schedule of Classes (September 2009), Campus Community bio/demo conversion (January 2010), Financial Aid and Student Financials part 1 (February/ March 2010), Student Records (March 2010), Admissions for Spring 2011 (May 2010), and initial Academic Advising roll out for the most populated degree programs. These implementations greatly increased hours of operation for student self-service and built a foundation for mobile computing environments for students.

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- Expansion and continued support of the 24/7 IT Support Center and UITS Office of Student Computing Resources (OSCR)
- Student-related software purchases: Mathworks, RespondWare software, and Sophos
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COMMON SOFTWARE/NEW SITE LICENSES: Through a UA Bookstore and UITs collaboration, we acquired several new software offerings including Mathworks, ResponseWare, Sophos, Remedy, Illume, Red Hat and Microsoft productivity software and operating systems, which will result in substantial cost savings to departments. There was nearly a 10% growth in available software this year with over 40,500 downloads.

TECHNOLOGY REFRESH: Hardware (Elmos, projectors, computers, desk stations, etc) and software were refreshed and new technologies added to many centrally owned classrooms, instructional labs, the Integrated Learning Center, four sites managed by the OSCR, and 17 classrooms in Modern Languages.

OPEN COMPUTING LABS: OSCR continued to maintain 12 general and multimedia labs, open to the campus community and staffed by student consultants.

SUPPORT FOR STUDENTS WITH FINANCIAL NEED: Financial Aid, UA Admissions and Student Affairs, in conjunction with UA Bookstores Computing and Technology Store (CATS), distributed MacBook Pro laptops as scholarships to 500 incoming UA students. OSCR and the 24/7 IT Support Center contributed to the effort by imaging the machines, assisting with distribution, and providing on-site startup help at the award ceremony.

SUPPORT FOR AT-RISK STUDENTS: Mosaic piloted Early Alert, a program that identifies students failing to meet minimum academic standards, facilitate intervention, and boost retention.

MULTIMEDIA EQUIPMENT: Gear-to-Go (GtG) provides free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY09–10, GtG checked out equipment to over 2,000 people in the UA campus community.

CONNECTIVITY:

- **SPEED/CAPACITY UPGRADES:**
 - The University's networking core was upgraded from 1 Gb to 10 Gb.
 - Installed single mode long distance fiber optic cable to 12 buildings
 - Continued to upgrade buildings and wiring and telecomm rooms as funds became available
 - Developed plan to split the network core



STRATEGIC AREA 1: STUDENT LEARNING AND SUCCESS

- **REDUNDANCY/STABILITY ENHANCEMENTS:**
 - Replaced the Uninterrupted Power Supply (UPS) in the Computer Center serving the core data and voice-over-IP (VOIP) network equipment
 - Established redundant connection to the PBC
 - Continued due diligence in firewall provisioning and installation
- **AGILITY ENHANCEMENTS:**
 - Continued the routing at the edge project
 - Connected 15 remote site locations to UA network and provided combinations of voice and data support
 - New Network and Security Architecture proposal
 - Installed new FWSM in border to support IPv6
 - Replaced the UPS in the Arizona Health Sciences Center (AHSC) hub site
 - Upgraded the Gould-Simpson hub site
 - Relocated appropriate core network equipment to Gould-Simpson

WIRELESS INSTALLATION:

- **CAPACITY/SPEED ENHANCEMENTS:**
 - WiFi coverage—continued expanding, attaining 80% coverage this year
 - Added 13 buildings to the list of covered spaces this year
 - Enhanced capacity with a wireless core redesign and hardware upgrade
- **AGILITY ENHANCEMENTS:**
 - Upgraded Wireless core to support 802.11n

2010-2011 PLANS

- Assuming stable funding, we intend to continue and support the same or similar activities.
- Further define the collaborative relationship between UITS and OIA by establishing governance and oversight for instructional support and management of the portfolio.
- Continue to establish 24/7 IT Support locations throughout campus in response to increasing demand for student support.
- Launch the UAccess campus portal, which will provide students single sign-on access to administrative and instructional functions.

Action Item 2

Support the trend toward a mobile computing environment that allows students to manage more effectively with fewer devices. *This is an ongoing effort.*

ACCOMPLISHMENTS

MOSAIC STUDENT ADMINISTRATION: The PeopleSoft Student Administration System was implemented through a series of highly successful phased go-lives: Course Catalog and Schedule of Classes (September 2009), Campus Community bio/demo conversion (January 2010), Financial Aid and Student Financials part 1 (February/ March 2010), Student Records (March 2010), Admissions for Spring 2011 (May 2010), and initial Academic Advising roll out for the



most populated degree programs. These implementations greatly increased hours of operation for student self-service and built a foundation for mobile computing environments for students.

TECHNOLOGY (TIER 1) SUPPORT: The 24/7 IT Support Center increased its volume of phone (60%), walk-in and online support (over 18,000 emails, online contacts, and walk-ins), providing extended levels of service for desktop support, network connections, and general technology issues. This year the 24/7 expanded its services with new support for CatMail and the Mosaic project. The Mobile Help Desk also provides on-site technology support for any UA department requesting a temporary satellite help desk solution.

CATMAIL: Modern communications and collaboration tools were delivered to students through the deployment of Google Applications for Education. This deployment allows our students and their faculty to collaborate in real time on documents, assignments, and research on a common and easy-to-use platform. 100% of UA students were transferred to Google this year.

COMMON SOFTWARE/NEW SITE LICENSES: Through a UA Bookstore and UITs collaboration, we acquired several new software offerings including Mathworks, ResponseWare, Sophos, Remedy, Illume, Red Hat and Microsoft productivity software and operating systems, which will result in substantial cost savings to departments. There was nearly a 10% growth in available software this year with over 40,500 downloads.

LAPTOPS FOR STUDENTS: The MacBook Scholars program provided 500 laptops to incoming freshmen. Loaner laptop programs through UITs, the Library, and many departments allow students to check out laptops if their own devices are lost, stolen, or broken.

2010-2011 PLANS

- Assuming stable funding, we intend to continue and support all activities above.
- Implement a university portal to facilitate service for faculty and students.
- Continue to provide enhanced student and faculty services for administrative functions through Mosaic.
- Explore integration of central applications to mobility devices such as iPhone and Blackberry.

Action Item 3

Augment IT orientations for incoming students. *This is an ongoing effort.*

ACCOMPLISHMENTS

ORIENTATION EVENTS: Continued outreach to new students by maintaining the online self-help Getting Started website and video, linking to the new students' Next Steps process, and ensuring that online resources are available to students. These resources were promoted to new students via marketing collateral at Orientation expos and other outreach events.



2010- 2011 PLANS

- Assuming stable funding, we intend to continue and support all activities above.

Action Item 4

Offer ongoing university-wide materials, references, tutorials, and other training resources in common technologies to facilitate faculty and student success in their curricular pursuits. *This is an ongoing effort.*

ACCOMPLISHMENTS

ONLINE RESOURCES: Continued support of University of Arizona Computer Based Training (UACBT) where all UA faculty, students, and staff have access to over 700 free software and tech courses that can be taken online. Implemented UAnswers, a searchable online knowledgebase managed by the 24/7 IT Support Center.

MOSAIC TRAINING: Continued to offer ongoing training in new staff and student enterprise applications.

CLASSROOM TRAINING AND WORKSHOPS: Conducted in-house workshops and open lab sessions for programs such as Drupal. Outside vendors were brought in to host week-long intensive workshops in Drupal and Adobe Photoshop.

2010- 2011 PLANS

- Assuming stable funding, we intend to continue and support all activities above.
- Launch UAnswers, an online knowledge database accessible through the 24/7 website that contains FAQs and how-tos for general computing, networking and WiFi access, popular software titles, UAccess functions, and more.

Action Item 5

Hold periodic informal sessions with students to discuss technology issues and solicit feedback. *This is an ongoing effort.*

ACCOMPLISHMENTS

INFORMATION TECHNOLOGY STUDENT ADVISORY BOARD (ITSAB): Continued sponsorship of ITSAB, whose mission is to provide advice on student technology related issues.

IT SURVEYS: Administered the annual student ITSAB survey report.

ROAD SHOWS: Hosted open forums for specific projects such as Google for students.

ASSOCIATED STUDENTS OF THE UNIVERSITY OF ARIZONA: Conducted frequent and specific interactions with Associated Students of the University of Arizona.

2010- 2011 PLANS

- Assuming stable funding, we intend to continue and support all activities above.

Action Item 6

Increase the opportunities for faculty and students to experience and evaluate new technologies. *This is an ongoing effort.*

ACCOMPLISHMENTS

TECHNOLOGY REFRESH: Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed and new technologies added to many centrally owned classrooms, instructional labs, the Integrated Learning Center, four sites managed by OSCR, and 17 classrooms in Modern Languages.

STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS): The UA launched an initiative to standardize on a single vendor-provided response or “clicker” device for classroom use as a means to control costs for students and provide better, more consistent, training and technical support for faculty. The program rolls out during the fall of 2010, with a number of faculty serving as early adopters. A campaign will be initiated to increase awareness and usage for spring 2011.

CENTENNIAL HALL ADAPTIVE USE: Centennial Hall was adapted to accommodate lecture hall–style classes of up to 1,200 students. New technology such as receivers for response devices, dual rear-screen high definition projection, and servers to support podcasting was installed.

ENHANCED ENTERPRISE INSTRUCTIONAL SUPPORT: Substantial effort and capital were invested in maturing the supporting infrastructure for the University’s learning management system, Desire 2 Learn (D2L). This maturation overcomes a myriad of issues our faculty and students encountered when attempting to utilize the resource. We have created a situation where faculty accept using D2L and the campus is open to the potential of standardizing on a single learning management system (LMS). We experienced a 55% increase in courses hosted on D2L, amounting to over 200,000 seats.

MULTIMEDIA EQUIPMENT: Gear-to-Go (GtG) provides free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY09–10, GtG checked out equipment to over 2,000 people in the UA campus community.

AZLIVE: Continued support of AZLive—3-D environment for graphics, stereoscopic projection technology, acoustical tracking devices, and four-channel audio to create the illusion of being present in a virtual world.

RESOURCE WEBSITE: Created a new website for OIA, which identifies and describes new learning and teaching technologies and resources available to faculty at UA.

FACULTY EDUCATION COMMITTEE: This newly formed committee has launched initiatives such as teaching assistant preparation through seminars and brown bags.



STRATEGIC AREA 1: STUDENT LEARNING AND SUCCESS

TEACHING ACADEMY: A symposium offered every Fall and Spring where faculty and instructional staff can explore instructional practices, technologies, and planning and assessment tools. Teaching Academy seminars cover a wide variety of topics including assessment, classroom management, technology, distance education and much more. The Academy also provides an opportunity to meet OIA consultants, and see examples of OIA's resources for support of teaching.

ONLINE RESOURCES: Continued support of University of Arizona Computer Based Training (UACBT) where all UA faculty, students, and staff have access to over 700 free software and tech courses that can be taken online.

ENHANCED TEACHING RESOURCES: Expanded the volume and quality of reference materials and tutorials available to faculty. These materials focus on teaching methodologies and issues related to technology rather than "tool-centric" manuals that were created in the past.

NEW FACULTY ORIENTATIONS: OIA continued new faculty orientations previously held by LTC to familiarize new faculty with technology resources at UA.

TECHNOLOGY SHOWCASE: OIA continued the annual event, an open forum where emerging technologies, new learning tools and methodologies, and available resources are on view for students, faculty, and staff.

2010-2011 PLANS

- Assuming stable funding, we intend to continue and support all activities above.



Strategic Area 2: Information Technology Infrastructure

The UA is an engine of discovery and advancement for society. Our IT infrastructure must support this vital role. We must enhance the university-wide information technology infrastructure and make it more accessible, dependable, secure, flexible, and scalable to meet the teaching, learning, research, and organizational needs of the University of Arizona and the community.

The UA network must minimally keep up with and preferably exceed the speed demands of the university and community. In 2003, the UA set in place a 10-year Network Master Plan which serves as a strategic direction for infrastructure improvements for the University. The UA has transitioned to an FTE-based funding model (July, 2008) with the core of this business model focused on upgrading the campus network, the internal building networks, and the quality of service components, which includes redundancy and stability.

The University's computing and storage infrastructure must also keep pace with the demands for reliable, interoperable, and scalable capacity. The UA community increasingly relies on systems for administration, collaboration, communication, computation, learning, and reporting. Computing facilities, data storage systems, middleware, and systems integration services are crucial components on which application systems and IT services are built.

Goal 2: The communications infrastructure must be robust, reliable, standardized, consistent, state-of-the-art, and operating with continuous improvements and stable funding.

Action Item 1

Conduct upgrades to the core network, the internal building networks, and the quality of service components, which include redundancy and stability. *This is an ongoing effort.*

ACCOMPLISHMENTS

SPEED/CAPACITY UPGRADES:

- In response to the large volumes of data that modern research and instruction generate and share, the University's networking core was upgraded from 1 Gb to 10 Gb, enabling select buildings, based on need, to connect at speeds that exceed previous capacities by an order of magnitude
- Installed single mode long distance fiber optic cable to 12 buildings
- Continued to upgrade buildings and wiring and telecomm rooms as funds became available
- Developed plan to split the network core

REDUNDANCY/STABILITY ENHANCEMENTS:

- Replaced the Uninterrupted Power Supply (UPS) in the Computer Center serving the core data and voice-over-IP (VOIP) network equipment
- Established redundant connection to the PBC
- Continued due diligence in firewall provisioning and installation

AGILITY ENHANCEMENTS:

- Continued the routing at the edge project

STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE

- Connected 15 remote site locations to UA network and provided combinations of voice and data support
- New Network and Security Architecture proposal
- Installed new FWSM in border to support IPv6
- Replaced the UPS in the Arizona Health Sciences Center (AHSC) hub site
- Upgraded the Gould-Simpson hub site
- Relocated appropriate core network equipment to Gould-Simpson

2010-2011 PLANS

- Upgrade buildings and wiring and telecomm rooms as funds become available
- Complete hubsite upgrades
- Complete the network core split
- Continue the routing at the edge project
- Implement Multiprotocol Label Switching (MPLS)

Action Item 2

Complete the installation of wireless. *This is an ongoing effort.*

ACCOMPLISHMENTS

CAPACITY/SPEED ENHANCEMENTS:

- One of our students' highest priorities—100% WiFi coverage—continued expanding, attaining 80% coverage this year
- Added 13 buildings to the list of covered spaces this year, thereby improving the mobility options for our constituents and increasing the level of standardization on campus
- Enhanced capacity with a wireless core redesign and hardware upgrade

AGILITY ENHANCEMENTS:

- Upgraded Wireless core to support 802.11n

2010-2011 PLANS

- Continue installation as funding becomes available

Goal 3: The university-wide IT infrastructure must become more accessible, dependable, secure, flexible, and scalable with services and tools that are integrated and state-of-the-art to meet the teaching, learning, research, and organizational needs of the University and the surrounding community.

Action Item 1

Develop infrastructure and processes for collaborative development of common solutions and governance across units. *This is an ongoing effort.*

This includes:

- Collaboration in IT governance, standards and processes
- Evaluation of localized management
- Optimizing server and systems administration investments where appropriate
- Optimize computing and storage investments by consolidating services where appropriate



- Optimizing and consolidating network management where appropriate
- Optimizing and consolidating other IT support functions where appropriate

ACCOMPLISHMENTS

ENHANCED THE IT GOVERNANCE, STANDARDS AND PROCESSES COLLABORATION:

- Mosaic continued its strong governance and collaboration process to review and approve priorities, modifications and customizations, including the Executive Steering Committee, Functional Council, and the Mosaic Community
- Continued the Information Security Advisory Committee (ISAC)
- Formed the Information Security Liaisons, a network of departmental liaisons
- Created the HPC Technology Refresh Advisory Committee (HPC TRAC) as part of the HPC 2010 Technology Refresh project
- Collaborated closely with External Relations to launch new UA Website

EVALUATION OF LOCALIZED MANAGEMENT: As opportunities arose in localized IT groups, UITs worked closely with the groups to identify appropriate areas of collaboration

CONTINUED GROWTH AND INVESTMENT IN SCALABLE, CENTRALIZED SERVER HOSTING AND ADMINISTRATION

- Realized 43% increase in centrally hosted virtual machines
- Increased centrally administered servers by 13%
- Implemented additional technology for centralized managed web services hosting and administration
- Built server infrastructure for the Mosaic Project (50 Physical Servers; 103 Virtual Servers)
- Installed a test VMWare View environment
- Deployed Avamar as the replacement backup solution
- Improved and consolidated load balancing services for Matrix, Student Link and Amavis by moving to the ACE
- Campus Sophos upgrade to Sophos Endpoint and Enterprise Manager 4.5

CONTINUED GROWTH AND INVESTMENT IN SCALABLE STORAGE FOR CONSOLIDATION EFFORTS

- Upgraded D2L with reconfigured storage and major file systems
- Upgraded the VMWare infrastructure to ESX 4
- Upgraded the SAN infrastructure from to a CX4-960 at site 1 and a CX4-480

CONTINUED CONSOLIDATION OF NETWORK MANAGEMENT

- Continued to invest over \$13M annually in centrally provided network maintenance, upgrades and converged communications infrastructure
- Continued to see university departments transition telephone and network services to central equipment on a unit by unit basis.
- **CONNECTIVITY:**
 - **SPEED/CAPACITY UPGRADES:**
 - The University's networking core was upgraded from 1 Gb to 10 Gb.
 - Installed single mode long distance fiber optic cable to 12 buildings
 - Continued to upgrade buildings and wiring and telecomm rooms as funds became available
 - Developed plan to split the network core



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 - Relocated appropriate core network equipment to Gould-Simpson
- **WIRELESS INSTALLATION:**
 - **CAPACITY/SPEED ENHANCEMENTS:**
 - WiFi coverage—continued expanding, attaining 80% coverage this year
 - Added 13 buildings to the list of covered spaces this year
 - Enhanced capacity with a wireless core redesign and hardware upgrade
 - **AGILITY ENHANCEMENTS:**
 - Upgraded Wireless core to support 802.11n
 - Implemented Control-M in production as the workload processing tool for the enterprise applications support

CONSOLIDATION OF OTHER IT SUPPORT FUNCTIONS:

- **MOSAIC STUDENT ADMINISTRATION (SA):** The PeopleSoft Student Administration System was implemented through a series of highly successful phased go-lives.
- **STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS):** The UA launched an initiative to standardize on a single vendor-provided response or “clicker” device for classroom use as a means to control costs for students and provide better, more consistent, training and technical support for faculty.
- **CENTENNIAL HALL ADAPTIVE USE:** Centennial Hall was adapted to accommodate lecture hall–style classes of up to 1,200 students.
- **IDENTITY FEDERATION:** University members are now able to access several external online services using their NetIDs. This completes the ATIF roadmap.
- **TECHNOLOGY (TIER 1) SUPPORT FOR CAMPUS:** The 24/7 IT Support Center increased its volume of phone (60%), walk-in and online support (over 18,000 emails, online contacts, and walk-ins), providing extended levels of service for desktop support, network connections, and general technology issues. This year the 24/7 expanded its services with new support for CatMail and the Mosaic project. The Mobile Help Desk also



provides on-site technology support for any UA department requesting a temporary satellite help desk solution.

- **UA WEBSITE LAUNCH:** The new www.arizona.edu website was launched, providing a more modern and user-friendly face to the University of Arizona with additional capacity to support the expected usage.
- **CATMAIL:** Modern communications and collaboration tools were delivered to students through the deployment of Google Applications for Education. 100% of UA students were transferred to Google this year.
- **STUDENT IT INVESTMENTS THROUGH STUDENT IT FEE:** Over \$3.15 million generated by the Student IT Fee were distributed among the following programs and initiatives:
 - Wireless Network expansion and debt-service
 - Expansion and continued support of the 24/7 IT Support Center and UITS Office of Student Computing Resources (OSCR)
 - Student-related software purchases: Mathworks, RespondWare software, and Sophos
 - Google email for Students
 - Centennial Hall technology upgrades
- **ENHANCED ENTERPRISE INSTRUCTIONAL SUPPORT:** Substantial effort and capital were invested in maturing the supporting infrastructure for the University’s learning management system, Desire 2 Learn (D2L). We experienced a 55% increase in courses hosted on D2L, amounting to over 200,000 seats.
- **UITS AND THE OFFICE OF INSTRUCTION AND ASSESSMENT ALLIANCE:** UITS and the Office of Instruction and Assessment (OIA) formed an alliance where OIA personnel, working closely with faculty, will establish pedagogical criteria and methodologies, and UITS will contribute the necessary infrastructure and technical support to ensure success. The academic portfolio for this initiative currently contains:
 - **DESIRE 2 LEARN (D2L):** a web-based learning management system offering teaching and learning tools for course development, delivery and management
 - **ILLUME:** an electronic survey tool capable of handling any length, highly complex surveys with advanced logic patterns and sophisticated validations and error checking
 - **TURNITIN:** an online academic plagiarism detector, utilized by faculty and students to avoid plagiarism and ensure academic integrity
 - **RESPONSEWARE:** a system that allows active participation in classes via “clickers,” mobile devices, and laptops
 - **ILLUMINATE:** a web conferencing program that creates virtual classrooms in support of distance learning



STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE

- **PODCAST PRODUCER:** a complete, end-to-end solution for encoding, publishing, and distributing high-quality podcasts that captures classroom presentations and makes them available almost immediately on iTunes U
- **UA ON iTUNES U:** provides access to a wide range of UA digital audio and video content. Some of the UA's most popular public lectures are featured, such as the College of Science lecture series, Steward Observatory public evening lecture series, Department of Linguistics invited speakers lectures, UA News PodCasts, and course lectures
- **CLASSROOM TECHNOLOGY SERVICES:** a division of UITs that provides hardware and systems support, maintenance, and security for all faculty and centrally scheduled classrooms that utilize instructional technologies
- **COMMON SOFTWARE/NEW SITE LICENSES:** Through a UA Bookstore and UITs collaboration, we acquired several new software offerings including Mathworks, ResponseWare, Sophos, Remedy, Illume, Red Hat and Microsoft productivity software and operating systems, which will result in substantial cost savings to departments. There was nearly a 10% growth in available software this year with over 40,500 downloads.
- **TECHNOLOGY REFRESH:** Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed and new technologies added to many centrally owned classrooms, instructional labs, the Integrated Learning Center, four sites managed by OSCR, and 17 classrooms in Modern Languages.
- **OPEN COMPUTING LABS:** OSCR continued to maintain 12 general and multimedia labs, open to the campus community and staffed by student consultants.
- **SUPPORT FOR STUDENTS WITH FINANCIAL NEED:** Financial Aid, UA Admissions and Student Affairs, in conjunction with UA Bookstores Computing and Technology Store (CATS), distributed MacBook Pro laptops as scholarships to 500 incoming UA students.
- **SUPPORT FOR AT-RISK STUDENTS:** Mosaic piloted Early Alert, a program that identifies students failing to meet minimum academic standards, facilitates intervention, and boosts retention.
- **MULTIMEDIA EQUIPMENT:** Gear-to-Go (GtG) provides free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY09–10, GtG checked out equipment to over 2,000 people in the UA campus community.

2010-2011 PLANS

- Continue to enhance, expand, and support all above activities
- Develop new tiered service model for desktop support services
- Re-engineer campus web hosting environment to provide more cost-effective, secure and robust services
- Prepare a plan to continue to reduce backup and storage costs for campus



- As opportunities arise, continue the discussions between central and de-centralized information technology units to eliminate redundancies in service offerings and streamline process

Action Item 2

Provide state-of-the-art tools and infrastructure for real-time collaboration environments accessible from multiple departments, campuses, and private enterprise. This should include new learning tools and spaces that support multi-level interactions among students, instructors, and other academic partners. *This is an ongoing effort.*

ACCOMPLISHMENTS

UACONNECT: Microsoft Business Productivity Online Standard Suite (BPOS) was selected for Faculty Staff. Consulting with campus constituents, the BPOS toolset was chosen for implementation to campus in FY10–11. BPOS is Microsoft’s hosted offering that will include Exchange for email/calendaring, Office Communications for instant messaging and Live Meeting as a full-featured set of tools that will provide a virtual leap-frog in productivity and collaboration tools for our campus faculty and staff.

IDENTITY FEDERATION: University members are now able to access several external online services using their NetIDs. Participation in organizations such as InCommon provided University constituents with broader access to a wide range of off-campus resources while protecting the security and privacy of our students, faculty, and staff. These resources are accessible with a UA NetID and password and include certain services at research.gov, grants.gov, NSF, NIH, ASU, NAU, Microsoft, and many others. Additionally, this technology allows designated guests—typically parents—to access to a student’s record. This completes the ATIF roadmap.

ENABLING APPLICATION INTEGRATION: Service Oriented Architecture principles and technologies were adopted that enable a new generation of application integration with and between Enterprise Applications Systems. These technologies enable flexibility, transparency (where appropriate), and collaboration in ways that were inconceivable previously.

CATMAIL: Modern communications and collaboration tools were delivered to students through the deployment of Google Applications for Education. This deployment allows our students and their faculty to collaborate in real time on documents, assignments, and research through common and easy to use platform. 100% of UA students were transferred to Google this year.

ILLUME: Implemented campus-wide Illume software, an electronic survey tool capable of handling survey forms of any length and highly complex surveys with advanced logic patterns and sophisticated validations and error checking.

LEARNING SPACES: Continued support of UA’s Second life, iTunes U, and YouTube for instruction, recruitment and promotion

CONFLUENCE: Continued production support activities, upgraded Confluence to the latest version, and improved performance with increased memory and processor capacity.



STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE

MACE GROUPEER SOFTWARE: Researched, prototyped, and implemented Internet2's MACE Grouper software, which is currently providing group data for tens of thousands of course sections, across multiple terms

WORKFLOW: Designed, developed, and implemented a BPEL-based workflow process, and supporting applications, for submitting, routing, and approving security access requests for UAccess Employee, Student, and Analytics

SHIBBOLETH AUTHENTICATION INTEGRATION: Consulted with numerous UITS business partners/vendors (including, in some cases, in-depth technical analysis and troubleshooting) regarding integration of Shibboleth authentication into their products/services:

- RightAnswers
- BRG/Archibus
- WEPA
- Illume
- Regroup

ASU/UA HPC: Designed technical architecture to support ABOR-sponsored ASU/UA HPC collaboration initiative

GOOGLE APPS FOR EDUCATION: Implemented SAML authentication and password-reset infrastructure for Google Apps for Education implementation

2010-2011 PLANS

- Continue to enhance, expand, and support all above activities
- Complete the UAConnect implementation
- Continue integration work for Mosaic initiatives, leveraging common middleware infrastructure and best practices
- Complete implementation and deployment of technical infrastructure necessary to support ASU/UA HPC Collaboration initiative
- Continue exploring opportunities to leverage our InCommon membership and Shibboleth for authentication and access control (with external vendors/service providers)
- Provide technical guidance/implementation support for authentication and integration aspects of UAConnect project
- Begin planning for Identity Management infrastructure
- Implement opt-in two-factor authentication mechanism for NetID password changes
- Enable "immediate NetID creation" capabilities, based on real-time EDS provisioning



Strategic Area 3: Administrative Effectiveness

There is an ever-increasing need for accurate, integrated information not limited by existing functional boundaries. Our ability to address this need is restricted by systems that are aged and technologically out of date. Our administrative systems are surrounded by extensions, augmentations, and supplemental distributed systems maintained by individual departments and other operating units. There is no controversy at all over the need to replace our entire suite of administrative systems. With certain administrative systems in need of attention and growing dependencies, the institution has identified a strategy for modernizing the UA's administrative systems.

In February 2008, the UA CIO introduced the "Enterprise Systems Replacement Proposal" which outlines the roadmap for the replacement of the UA's administrative systems. The roadmap includes targeted solutions, resource requirements, high-level implementation timeline, and projected budget. Many of the goals and actions listed here are a reflection of the actions to occur in a replacement effort.

Goal 4: Business operations must be supported with tools and applications that are flexible, responsive, permit real-time web access, facilitate self-help, and ensure information integrity. The applications must be interoperable, modern, and poised for future changes.

Action Item 1

Describe the overall blue-print for our ongoing and envisioned administrative systems and how they are and/or will be inter-connected. *Percent Complete: 100% and ongoing*

ACCOMPLISHMENTS

MOSAIC HUMAN CAPITAL MANAGEMENT (HCM): The PeopleSoft Human Resources system went live in October 2009. It provides campus with robust, state-of-the-art, sustainable functionality for Payroll, Time and Labor, Commitment Accounting, Benefits Administration, Workforce Administration and Employee Self Service.

MOSAIC STUDENT ADMINISTRATION (SA): The PeopleSoft Student Administration System was implemented through a series of highly successful phased go-lives: Course Catalog and Schedule of Classes (September 2009), Campus Community bio/demo conversion (January 2010), Financial Aid and Student Financials part 1 (February/ March 2010), Student Records (March 2010), Admissions for Spring 2011 (May 2010), and initial Academic Advising roll out for the most populated degree programs. These implementations greatly increased hours of operation for student self-service and built a foundation for mobile computing environments for students.

MOSAIC BUSINESS INTELLIGENCE (BI): The University's new analytics and reporting environment saw successful implementations synchronized with HCM and SA that resulted in daily usage at or above 400 distinct users, a monthly base of nearly 1,500 users (approximately 14% of all employees with a future target of 25%), excellent adoptions of UAccess Analytics, and the creation of 45 subject areas viewable for users in 169 dashboards and reports. BI also piloted

the Early Alert system, a program that will identify students failing to meet minimum academic standards to facilitate intervention and boost retention.

2010-2011 PLANS

Mosaic will implement:

- Financial Systems (FS) with the Quali Financial System
- HR Phase I
- Research Administration (RA) with Quali Coeus Research Administration
- Space management with ARCHIBUS
- IT Support Management with BMC Remedy IT service Management Suite

Action Item 2

Based on the blueprint architecture, define a comprehensive roadmap for the integration and interoperability of the UA's administrative systems. *Percent Complete: 85%*

ACCOMPLISHMENTS

ENABLING APPLICATION INTEGRATION: Service Oriented Architecture principles and technologies were adopted that enable a new generation of application integration with and between Enterprise Applications Systems. These technologies enable flexibility, transparency (where appropriate), and collaboration in ways that were inconceivable previously.

ENHANCED ENTERPRISE INSTRUCTIONAL SUPPORT: Substantial effort and capital were invested in maturing the supporting infrastructure for the University's learning management system, Desire 2 Learn (D2L). This maturation overcomes a myriad of issues our faculty and students encountered when attempting to utilize the resource. We have created a situation where faculty accept using D2L and the campus is open to the potential of standardizing on a single learning management system (LMS). We experienced a 55% increase in courses hosted on D2L, amounting to over 200,000 seats.

COMMON DATA INITIATIVE: Continued the Common Data Initiative within Mosaic to provide for the integration and interoperability between the Mosaic initiatives on a data definition level

SPACE MANAGEMENT: Worked in collaboration with the Office of Real Estate Administration to integrate the UAccess Space project using the ARCHIBUS application with Mosaic applications

IT HELPDESK: Initiated the IT HelpDesk project focused on IT support management using the BMC Remedy IT Service Management Suite

PORTAL: Selected CampusEAI as the portal solution and began development, in support of Mosaic and other auxiliary UA applications for implementation in 2010.

LEGACY APPLICATION SUNSETTING:

- Schedule of Classes
- 1098T
- Student Information System set to view mode



- University Information System and Integrated Information Warehouse - for HR and Student systems
- Personnel Services Operating System/Payroll set to view mode
- Budget System set to view mode

LOGICAL ACCESS PROVISIONING: Completed access provisioning for HR and Student systems implementations.

2010-2011 PLANS

- Implement the ARCHIBUS application for space management
- Implement the BMC Remedy IT Service Management Suite for enterprise applications in UITS and further rollout to campus (UAssist)
- Implement the CampusEAI portal solution, in support of Mosaic and other auxiliary UA applications for implementation in 2010
- Pilot the Early Alert program in order to assess the system
- Continue development of end-of-life plans and implementing tactics for legacy applications as appropriate
- Implement comprehensive logical access provisioning processes to ensure compliance with Information Security Office policies and procedures

Action Item 3

Identify the most cost-effective solutions for improving business operations and systems on the road map. *Percent Complete: 75%*

ACCOMPLISHMENTS

IMPLEMENTATIONS: Maintained strong focus on “Regent’s Vanilla” implementation of the Financial Systems, Human Resources, Research Administration, Student Administration, and Business Intelligence. Strongly biased toward using the software as provided, with minimal customizations/modifications. Re-engineering current business processes when required.

CENTRALLY HOSTED APPLICATIONS: Continued to increase the number of centrally hosted applications, resulting in a 21% increase this year.

CUSTOMIZATIONS: Continued utilization of a well-defined process to evaluate and propose Mosaic customizations that are required in order to accommodate business best practices or specific UA requirements that may not be addressed in the software—compared with ERP projects at other universities, we are keeping the number of modifications very low

TRAINING: Delivered hands-on UAccess training workshops to over 3700 faculty and staff attendees for Analytics, Employee, and Student implementations

COMMUNITY WEBSITE: Continued development and expansion of Mosaic Community website—a professional networking site to connect end-users of the Mosaic applications to training,



STRATEGIC AREA 3: ADMINISTRATIVE EFFECTIVENESS

workshops, and team members to provide forums for discussion and learning. Over 2,000 members active in 13 groups covering all aspects of the UAccess suite of applications.

2010-2011 PLANS

- Continue with “Regent’s Vanilla” implementation of the initiatives
- Continue to explore opportunities to improve business processes in the Student Administration, Financials, HR Phase II, Research, HelpDesk, and Space Management implementations
- Evaluate various administrative systems, such as Early Alert for future integration with the Mosaic Project

Action Item 4

Continually explore opportunities for collaboration on a Tri-University basis on administrative systems. *This is an ongoing effort.*

ACCOMPLISHMENTS

TRAINING: The HR team hosted a networking and information sharing session for Tri-University HR functional and technical staff members

COLLABORATION: The BI team engaged key ASU personnel as consultants on Mosaic, visited ASU to share information on Data Warehousing with UNLV, and co-presented at HEUG with ASU

OUTREACH: SPS met with NAU and ASU to demonstrate KFS functionality

2010-2011 PLANS

- Continue the collaboration and sharing of information with NAU and ASU
- Host the UA, ASU, NAU Integration Day to share information on integration environments: Identity & Access Management, Access to institutional data, EPM, Enterprise Directory, Web Services, Security/Access provisioning workflow, Data synchronization/messaging inventory

Action Item 5

Describe data warehouse architecture, capability, and usability as a support for administrative system operations as well as its current role in reporting and analysis. *Percent Complete: 50%*

ACCOMPLISHMENTS

MOSAIC BUSINESS INTELLIGENCE: The University’s new analytics and reporting environment saw successful implementations synchronized with HCM and SA that resulted in daily usage at or above 400 distinct users, a monthly base of nearly 1,500 users (approximately 14% of all employees with a future target of 25%), excellent adoptions of UAccess Analytics, and the creation of 45 subject areas viewable for users in 169 dashboards and reports. BI also piloted the Early Alert system, a program that will identify students failing to meet minimum academic standards to facilitate intervention and boost retention.



2010-2011 PLANS

- Implement Hyperion
- Continuation of integration with the Mosaic initiatives (Kuali Financial System, Kuali Coeus and Archibus)
- Continuation of collaboration with senior management to map out a sustainable BI program for the UA

Action Item 6

Implement significant human resources–related improvement projects on payroll, time capture, and other elements of the related road map by adopting PeopleSoft Human Capital Management. *Percent Complete: 70%*

ACCOMPLISHMENTS

HCM INITIATIVE: Implemented the following modules in Phase One in October 2009:

- Payroll
- Time and Labor
- Commitment Accounting
- Benefits Administration
- Workforce Administration
- Employee Self Service

2010-2011 PLANS

Implement HCM Phase II to include:

- Manager Self Service
- Business Manager Toolkit
- UA Cares
- Benefits Open Enrollment
- Multi-state Reporting
- Promotion and Tenure Tracking
- Faculty Requisition and Offers Planning
- Enhancements to implemented system components

Action Item 7

Implement significant student information system–related improvement projects for calendaring, course enrollment and management, and process automation, e.g., prerequisites, and then other elements of the related roadmap by adopting PeopleSoft Campus Solutions. *Percent Complete: 65%*

ACCOMPLISHMENTS

STUDENT ADMINISTRATION INITIATIVE: Implemented the Student Administration modules:

- September 2009—Course Catalog and Schedule of Classes
- January 2010—Campus Community bio/demo conversion



STRATEGIC AREA 3: ADMINISTRATIVE EFFECTIVENESS

- February/March 2010—Financial Aid and Student Financials part 1, for the Fall 2010 aid year
- March 2010—Student Records
- May 2010—Admissions, for Spring 2011
- June 2010—Initial Academic Advising roll out for the most populated degree programs

2010-2011 PLANS

Implement the following Student Administration modules:

- July 2010—Student Financials part 2, Billing
- August 2010—Academic Advising
- December 2010—Academic Advising roll out complete

Action item 8

Replace the Financial Record System with the Kualu Financial System. *Percent Complete: 60%*

ACCOMPLISHMENTS

SYSTEM VERIFICATION: Reaffirmed Kualu Financial System as the replacement for Financial Record System

TESTING: Completed initial testing phase with KFS 3.0

MODIFICATIONS: Continued development of modifications to meet business requirements

REPORT SPECIFICATIONS: Completed Report Specs for required Business Intelligence report specs

2010-2011 PLANS

- Determine a Kualu Financial System Go Live Date in conjunction with newly formed Project Steering Committee
- Implement the Kualu Financial System:
 - Chart, General Ledger, and Financial Processing
 - Purchasing/AP
 - Capital Assets
 - Labor
 - Accounts Receivables
 - Effort Certification

Action Item 9

Replace the Sponsored Projects Information System (SPINS) with Kualu Coeus Research Administration. *Percent Complete: 20%*

ACCOMPLISHMENTS

INSTALLATION PROGRESS: Installed Kualu Coeus 2.0 in UA environments

2010-2011 PLANS

- Implement Kualu Coeus 2.0 back-office for Proposal Development, Institute Proposal and Award
- Start rollout of Proposal/Budget development to campus (mid to end of Fiscal year)



Strategic Area 4: Information Technology Security

UA is engaged in designing and implementing a comprehensive security program to protect sensitive information, reduce risk, and define roles and responsibilities. This vision will require sustained, broad-based effort for a number of years. Communication and collaboration among the Information Security Office, University IT Services and the university community will serve as its foundation. The conversation will establish the values and principles, set the risk tolerances and help define the environment that the security program supports and protects. Evolution and integration of security services and policies into University service and information architecture will serve to reduce the likelihood of security incidents and to increase the university community's participation in securely managing and disseminating information.

Goal 5: The University's information assets and technology environment must be increasingly and effectively secured in a consistent standardized manner without limiting our academic and research freedoms.

Action Item 1

Conduct University wide Security Risk Assessment. This is an ongoing effort. *Baseline 100%. Reassessment 75%.*

ACCOMPLISHMENTS

MOSAIC PROJECT:

- Continued Mosaic security review
- Converted primary student identifiers from SSNs in the student transaction system as part of the Phase I go-live for Bio-Demo.

RISK ASSESSMENT: Implemented university-wide risk assessment procedures, which included conducting a university-wide inventory, risk assessment and compliance check, and provided a process for inventorying web applications

DATA CLASSIFICATION AND RISK ASSESSMENT STANDARDS: Received approval from UAISAC for the Data Classification and Risk Assessment Standards publication and implementation

CRITICAL SYSTEM REGISTRATION: Increased critical system registration via hardcopy form

UNIVERSITY NETWORK: Reduced the points of exposure on the university network

2010-2011 PLANS

- Based on the results of the university-wide risk assessment, assist UA departments in developing a mitigation plan to reduce risk
- Complete roll-up reporting on risk assessment data to Deans, Vice President, the Provost, and the President



STRATEGIC AREA 4: INFORMATION TECHNOLOGY SECURITY

- Implement Web Application Security Review based on criticality of applications, as determined in the risk assessment
- Eliminate the storage of SSNs as primary student identifiers for inactive students during conversion from the current data warehouse to the new data warehouse
- Ongoing – continual collaboration with Enterprise Applications for security review of Mosaic and other enterprise systems from a risk management perspective

Action Item 2

Develop and implement a University Wide Security Applications Review Process. *This is an ongoing effort.*

ACCOMPLISHMENTS

PROCEDURES: Published and implemented the Web Application Security Assessment Procedure and Critical Device Scanning Procedure

MOSAIC PROJECT: Scanned and remediated PeopleSoft Human Capital Management (HCM), PeopleSoft Student Administration (SA), PeopleSoft Business Intelligence (BI), and Quali Financial System for network and application vulnerabilities

WEBSITES: Instituted process to scan all new UITs built websites and applications prior to go-live

2010-2011 PLANS

- Analyze data on critical devices and establish a prioritized inventory list for the purpose of security review
- Conduct periodic application scans of PeopleSoft HCM and SA, as well as other modules in post-production
- Scan PeopleSoft Business Intelligence (BI) for network and application vulnerabilities prior to go-live
- Scan Quali Financial System for network and application vulnerabilities

Action Item 3

Improve Security Practices and Monitoring of Network Traffic. *This is an ongoing effort.*

ACCOMPLISHMENTS

PENETRATION TESTING TOOL: Acquired a penetration testing tool and improved methods for analyzing general network traffic across the network border

SITE LICENSE: Acquired site license for ExpanDrive to allow users to mount remote file systems from any server to which the user connects via SSH

FIREWALL SERVICES: Continued work on network firewalls at the university network perimeter and on departmental subnets



VPN: Increased use of VPN by VLAN to limit access to university resources

2010-2011 PLANS

- Continue to increase use of VPN to limit access to university resources
- Continue network firewalling at the university network perimeter and on departmental subnets
- Contingent on funding—engage a security analyst to deploy and manage enterprise intrusion detection and prevention systems

Action Item 4

Set strategic direction for identity management and deploy access management system for Mosaic. *This is an ongoing effort.*

ACCOMPLISHMENTS

NETID: Moved Data Warehouse systems (i.e., UIS, DAPS and IIW) under the NetID common authentication system

IDENTITY FEDERATION: University members are now able to access several external online services using their NetIDs. Participation in organizations such as InCommon provided University constituents with broader access to a wide range of off-campus resources while protecting the security and privacy of our students, faculty, and staff. These resources are accessible with a UA NetID and password and include certain services at research.gov, grants.gov, NSF, NIH, ASU, NAU, Microsoft, and many others. Additionally, this technology allows designated guests—typically parents—to access to a student’s record. This completes the ATIF roadmap.

IDENTITY AND ACCESS MANAGEMENT (IAM): Deployed three new IAM infrastructure solutions (EDS, Shibboleth and Grouper) to assist with implementation of the Application Security Standard. These technologies complement the existing authentication infrastructure technologies (the NetID LDAP directory and WebAuth), by providing access via multiple protocols typically used in authorization decision making and policy enforcement. Adoption of these new IAM infrastructure services has been rapid, with over 100 campus services being provisioned access to EDS and/or Shibboleth since February, 2009.

2010-2011 PLANS

- Expansion of the role played by Grouper, including inclusion of more “institutional” groups as well as delegation of “local” ad-hoc group management to campus departments
- Exploit opportunities to leverage InCommon membership and ATIF relationships
- Investigate upgrade paths for core identity and account management infrastructure
- Investigate InCommon’s “identity assurance profiles” and the feasibility of conducting an “identity assurance assessment”



Action Item 5

Facilitate Business Continuity Plan. *This is an ongoing effort.*

ACCOMPLISHMENTS

STANDARD: Published and implemented the Business Continuity and Disaster Recovery Planning Standard and associated guidelines with a university-wide effort to complete departmental plans.

AWARENESS: Incorporated business continuity planning in awareness efforts.

2010-2011 PLANS

- Contingent on Funding – Modify and rebrand for university-wide use UC Ready, a free, open-source application, to replace the university’s currently licensed business impact analysis and disaster recovery software, which has not been widely adopted
- Ongoing – Assist campus units in reviews of business continuity plan and disaster recovery plans

Action Item 6

Investigate and recommend encryption solution for campus. *This is an ongoing effort.*

ACCOMPLISHMENTS

ENCRYPTION SOLUTIONS: Formed Encryption Working Group in order to find recommended campus-wide or unit encryption solutions and facilitated efforts of the Export Control Officer relating to encryption

2010-2011 PLANS

- Submit the Encryption Working Group’s recommendations to the CIO
- Contingent on Funding – Implement a centrally managed encryption solution
- Implement encrypted authentication requirements established by the Minimum Security for Networked Devices and Application Security Standards



Goal 6: Members of the university community must become increasingly aware of their responsibilities, and accept accountability for minimizing the university's exposure to the ongoing threats.

Action Item 1

Education and Awareness. *This is an ongoing effort.*

ACCOMPLISHMENTS

PROGRAMS:

- Distributed pamphlets during new employee and student orientations
- Incorporated information in electronic newsletters and other publications for employees and organizations
- Distributed monthly newsletters on information security topics to employees: metric 100% (ISLs forward to their staff listservs)
- Held annual Information Security Awareness Day: metric 100%
- Distributed email to all students regarding protecting their computers with free resources at UA
- Established and launched new design of Information Security website to organize material by user role: metric 100%

2010-2011 PLANS

- Complete and deliver mandatory computer-based all-staff training: metric 75%
- Complete and deliver web developer security education: metric 50%
- Ongoing – Hold annual Information Security Awareness Day
- Ongoing – Distribute awareness information via new employee and student orientations, departments and monthly electronic newsletters and other publications for employees and organizations





Strategic Area 5: Academic Technology

UA must continue to refine and develop instructional technologies and resources to provide instructors and students with a first class infrastructure for teaching and learning. As advancing technologies provide new opportunities for scholarship, the University must proactively and strategically pursue and develop these instructional tools with active input from students, faculty, and staff to meet their evolving needs.

Goal 7: Provide an environment that encourages the use of technology to facilitate and enhance learning.

In late 2009, a strategically new organization was formed to provide exceptional resources and support to all those engaged in instructional activities at the University of Arizona. The Office of Instruction and Assessment (OIA), reporting to the Vice Provost for Academic affairs, offers support to the UA teaching community in course and curriculum design, online course development, program and classroom assessment and evaluation, instructional strategies, and learning technologies. UITS continues to contribute the necessary infrastructure and technical support to ensure the success of the OIA mission.

As a newly formed entity, OIA efforts during the 2009–2010 planning year were focused primarily on establishing vision, resources, and setting goals for the 2010–2011 academic year. It is expected that these efforts will result in redefined goals and actions for the upcoming period. This report reflects the combined efforts for OIA and UITS in this year of transformation.

Action Item 1

Offer ongoing university-wide materials, references, tutorials, and other training resources for faculty and students in the common technologies they will need to be successful in their curricular pursuits. *This is an ongoing effort.*

ACCOMPLISHMENTS

STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS): The UA launched an initiative to standardize on a single vendor-provided response or “clicker” device for classroom use as a means to control costs for students and provide better, more consistent, training and technical support for faculty. The program rolls out during the fall of 2010, with a number of faculty serving as early adopters. A campaign will be initiated to increase awareness and usage for spring 2011.

TECHNOLOGY (TIER 1) SUPPORT FOR STUDENTS AND FACULTY: The 24/7 Support Center increased its volume of phone (60%), walk-in and online support (over 18,000 emails, online contacts, and walk-ins), providing extended levels of service for desktop support, network connections, and general technology issues. This year the 24/7 expanded its services with new support for CatMail and the Mosaic project. The Mobile Help Desk also provides on-site technology support for any UA department requesting a temporary satellite help desk solution.

CATMAIL: Modern communications and collaboration tools were delivered to students through the deployment of Google Applications for Education. This deployment allows our students and



their faculty to collaborate in real time on documents, assignments, and research on a common and easy-to-use platform. 100% of UA students were transferred to Google this year.

ENHANCED ENTERPRISE INSTRUCTIONAL SUPPORT: Substantial effort and capital were invested in maturing the supporting infrastructure for the University’s learning management system, Desire 2 Learn (D2L). This maturation overcomes a myriad of issues our faculty and students encountered when attempting to utilize the resource. We have created a situation where faculty accept using D2L and the campus is open to the potential of standardizing on a single learning management system (LMS). We experienced a 55% increase in courses hosted on D2L, amounting to over 200,000 seats.

COMMON SOFTWARE/NEW SITE LICENSES: Through a UA Bookstore and UITS collaboration, we acquired several new software offerings including Mathworks, ResponseWare, Sophos, Remedy, Illume, Red Hat, and Microsoft productivity software and operating systems, which will result in substantial cost savings to departments. There was nearly a 10% growth in available software this year with over 40,500 downloads.

OPEN COMPUTING LABS: OSCR continued to maintain 12 general and multimedia labs, open to the campus community and staffed by student consultants.

TECHNOLOGY REFRESH: Hardware (Elmos, projectors, computers, desk stations, etc) and software were refreshed and new technologies added to many centrally owned classrooms, instructional labs, the Integrated Learning Center, four sites managed by OSCR, and 17 classrooms in Modern Languages.

ENHANCED TEACHING RESOURCES: Expanded the volume and quality of reference materials and tutorials available to faculty. These materials focus on teaching methodologies and issues related to technology rather than “tool-centric” manuals that were created in the past.

RESOURCE WEBSITE: Created a new website for OIA, which identifies and describes new learning and teaching technologies and resources available to faculty at UA.

PODCAST PRODUCER EXPANSION: Extended the usage of Podcast Producer, a tool that efficiently produces educational audio and video tracks for iTunesU. Podcasts can be audio or video recordings of classroom lectures, a series of videos on a particular topic, or presentations using PowerPoint or Keynote that are exported to Apple’s podcasting format. Over 50 clients were supported in a pilot program.

ONLINE RESOURCES: Continued support of University of Arizona Computer Based Training (UACBT) where all UA faculty, students, and staff have access to over 700 free software and tech courses that can be taken online. Implemented UAnswers, a searchable online knowledgebase managed by the 24/7 IT Support.

MULTIMEDIA EQUIPMENT: Gear-to-Go (GtG) provides free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY09–10, GtG checked out equipment to over 2,000 people in the UA campus community.

ORIENTATION EVENTS: Continued outreach to new students by maintaining the online self-help Getting Started website and video, linking to the new students' Next Steps process, and ensuring that online resources are available to students. These resources were promoted to new students via marketing collateral at Orientation expos and other outreach events.

CLASSROOM TRAINING AND WORKSHOPS: Conducted in-house workshops and open lab sessions for programs such as Drupal. Outside vendors were brought in to host week-long intensive workshops in Drupal and Adobe Photoshop.

2010-2011 PLANS

- Assuming stable funding, we will continue the efforts above.
- Complete Clicker initiative.
- Launch UAnswers, an online Knowledge Database for IT Frequently Asked Questions and How To's.
- OIA, with support from UITS as appropriate, will develop strategic plans and appropriate goals for the upcoming year.

Action Item 2

Identify an ongoing technology education, training and literacy program to constantly update and improve the skills of faculty and instructional support staff in the use of instructional tools, software, databases, and other technologies. *This is an ongoing effort.*

ACCOMPLISHMENTS

OFFICE OF INSTRUCTION AND ASSESSMENT (OIA): Formed OIA as an entity in late 2009, to provide exceptional resources and support to all those engaged in instructional activities at the University of Arizona.

STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS): The UA launched an initiative to standardize on a single vendor-provided response or "clicker" device for classroom use as a means to control costs for students and provide better, more consistent, training and technical support for faculty. The program rolls out during the fall of 2010, with a number of faculty serving as early adopters. A campaign will be initiated to increase awareness and usage for spring 2011.

TECHNOLOGY REFRESH: Hardware (Elmos, projectors, computers, desk stations, etc) and software were refreshed and new technologies added to many centrally owned classrooms, instructional labs, the Integrated Learning Center, four sites managed by OSCR, and 17 classrooms in Modern Languages.

MULTIMEDIA EQUIPMENT: Gear-to-Go (GtG) provides free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY09–10, GtG checked out equipment to over 2,000 people in the UA campus community.

RESOURCE WEBSITE: Created a new website for OIA, which identifies and describes new learning and teaching technologies and resources available to faculty at UA.



STRATEGIC AREA 5: ACADEMIC TECHNOLOGY

FACULTY EDUCATION COMMITTEE: This newly formed committee has launched initiatives such as teaching assistant preparation through seminars and brown bags.

TEACHING ACADEMY: A symposium offered every Fall and Spring where faculty and instructional staff can explore instructional practices, technologies, and planning and assessment tools. Teaching Academy seminars cover a wide variety of topics including assessment, classroom management, technology, distance education and much more. The Academy also provides an opportunity to meet OIA consultants, and see examples of OIA's resources for support of teaching.

ONLINE RESOURCES: Continued support of University of Arizona Computer Based Training (UACBT) where all UA faculty, students, and staff have access to over 700 free software and tech courses that can be taken online.

ENHANCED TEACHING RESOURCES: Expanded the volume and quality of reference materials and tutorials available to faculty. These materials focus on teaching methodologies and issues related to technology rather than "tool-centric" manuals that were created in the past.

NEW FACULTY ORIENTATIONS: OIA continued new faculty orientations previously held by LTC to familiarize new faculty with technology resources at UA.

TECHNOLOGY SHOWCASE: OIA continued the annual event, an open forum where emerging technologies, new learning tools and methodologies, and available resources are on view for students, faculty, and staff.

2010-2011 PLANS

- Assuming stable funding, we will continue the efforts above.
- Complete the Clicker Initiative.
- OIA, with support from UITS as appropriate, will develop strategic plans and appropriate goals for the upcoming year.

Action Item 3

Provide opportunities for faculty to explore and pilot new technology initiatives. *This is an ongoing effort.*

ACCOMPLISHMENTS

LEARNING AND TEACHING WITH TECHNOLOGY (LATTE.OIA.ARIZONA.EDU): Formed a 70-member, campus-wide faculty support group, organized to investigate and support emerging technologies in education.

CENTENNIAL HALL ADAPTIVE USE: Centennial Hall was adapted to accommodate lecture hall-style classes of up to 1,200 students. New technology such as receivers for response devices, dual rear-screen high definition projection, and servers to support podcasting was installed.

STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS): The UA launched an initiative to standardize on a single vendor-provided response or "clicker" device for classroom use as a means to control



costs for students and provide better, more consistent, training and technical support for faculty. The program rolls out during the fall of 2010, with a number of faculty serving as early adopters. A campaign will be initiated to increase awareness and usage for spring 2011.

ENHANCED ENTERPRISE INSTRUCTIONAL SUPPORT: Substantial effort and capital were invested in maturing the supporting infrastructure for the University's learning management system, Desire 2 Learn (D2L). This maturation overcomes a myriad of issues our faculty and students encountered when attempting to utilize the resource. We have created a situation where faculty accept using D2L and the campus is open to the potential of standardizing on a single learning management system (LMS). We experienced a 55% increase in courses hosted on D2L, amounting to over 200,000 seats.

TOOL INTEGRATION: Piloted initiatives to integrate Elluminate and TurnItIn with D2L.

VR ANNEX: Upgraded equipment in the Virtual Reality Annex, which makes Virtual Reality equipment and instruction available for any academic endeavor that would benefit from this technology.

ILLUME: Provided a pilot for Illume, a web-based survey tool.

SECOND LIFE: Provided Second Life for academic exploration.

DESIRE 2 LEARN: Hosted open lab sessions for instructors to obtain enhanced skills in the D2L environment.

MULTIMEDIA EQUIPMENT: Gear-to-Go (GtG) provides free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY09–10, GtG checked out equipment to over 2,000 people in the UA campus community.

AZLIVE: Continued support of AZLive—3-D environment for graphics, stereoscopic projection technology, acoustical tracking devices, and four-channel audio to create the illusion of being present in a virtual world.

MULTIMEDIA LEARNING LABORATORY: Continued growth and support of Multimedia Learning Laboratory, which provides lab space, software, and consultation for creation of multimedia projects.

OUTREACH TO FACULTY: OIA hosted the Learning Technologies Showcase for faculty to share best practices of the use in learning technologies and hosted the Online Technologies Speed-Learning Event for faculty to experience online teaching tools.

FACULTY EDUCATION COMMITTEE: This newly formed committee has launched initiatives such as teaching assistant preparation through seminars and brown bags.

TEACHING ACADEMY: A symposium offered every Fall and Spring where faculty and instructional staff can explore instructional practices, technologies, and planning and assessment tools. Teaching Academy seminars cover a wide variety of topics including assessment, classroom



management, technology, distance education and much more. The Academy also provides an opportunity to meet OIA consultants, and see examples of OIA's resources for support of teaching.

2010-2011 PLANS

- Assuming stable funding, we will continue the efforts above.
- OIA, with support from UITS as appropriate, will develop strategic plans and appropriate goals for the upcoming year.

Action Item 4

Provide the faculty with instructional examples to stimulate imagination and creativity in teaching. *This is an ongoing effort.*

ACCOMPLISHMENTS

STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS): The UA launched an initiative to standardize on a single vendor-provided response or "clicker" device for classroom use as a means to control costs for students and provide better, more consistent, training and technical support for faculty. The program rolls out during the fall of 2010, with a number of faculty serving as early adopters. A campaign will be initiated to increase awareness and usage for spring 2011.

RESOURCE WEBSITE: Created a new website for OIA, which identifies and describes new learning and teaching technologies and resources available to faculty at UA.

ENHANCED TEACHING RESOURCES: Expanded the volume and quality of reference materials and tutorials available to faculty. These materials focus on teaching methodologies and issues related to technology rather than "tool-centric" manuals that were created in the past

ONLINE COURSE TOURS: Created tours which include faculty testimonials and introductions to tech tools as a means to introduce this technology to faculty using traditional courses exclusively.

GREAT COURSES/GREAT INSTRUCTORS: Created a segment on iTunes U to demonstrate superlative examples of classroom and learning technologies.

CENTENNIAL HALL ADAPTIVE USE: Centennial Hall was adapted to accommodate lecture hall-style classes of up to 1,200 students. New technology such as receivers for response devices, dual rear-screen high definition projection, and servers to support podcasting were installed.

2010-2011 PLANS

- Assuming stable funding, we will continue the efforts above.
- OIA, with support from UITS as appropriate, will develop strategic plans and appropriate goals for the upcoming year.

Action Item 5

Offer annual forums for faculty to showcase technology usage in their courses. This is an ongoing effort.

ACCOMPLISHMENTS

OUTREACH TO FACULTY: OIA hosted the Learning Technologies Showcase for faculty to share best practices of the use in learning technologies and hosted the Online Technologies Speed-Learning Event for faculty to experience online teaching tools.

2010-2011 PLAN

- Assuming stable funding, we will continue the efforts above.
- OIA, with support from UITS as appropriate, will develop strategic plans and appropriate goals for the upcoming year.





Strategic Area 6: Research Computing

As a Research University, it is critical to the mission of the UA that we maintain a competitive position among our peers. Research serves to interconnect the UA campus with our community and university partners. Research today has an increased emphasis on interdisciplinary research and on research collaborations with industry. Our reliance on high performance computing and the need for sophisticated visualization, simulation, and modeling software has far surpassed our expectations. Research computing is strategically important for the UA, is critical to the success of faculty research programs, and is an important factor in faculty recruitment and retention. Through high performance computing and technological collaborations, we can increase achievement in research, scholarship and creative expression.

An important component of any research institution is the reliance and interaction with external entities. Funding agencies, foundations, and corporate sponsors provide a major fraction of the support for the University of Arizona. These entities, through reporting and auditing requirements, evaluate some parts of information technology use at the UA. To respond effectively, we need to streamline financial reporting systems to allow principal investigators to track expenditures and usage as efficiently as possible. Additionally, grant funding agencies are scrutinizing the availability of a robust networking and computing infrastructure as criterion in funding decisions. In all, our challenge remains to define where to make the investment of additional resources to support our researchers' needs.

Goal 8: In support of research, the UA should provide broad support for basic collaboration technologies, continue its commitment to high performance computing (HPC), high throughput computing (HTC) and computation, and begin implementing more advanced technologies.

Action Item 1

Provide sufficient networking and computing resources to enable access to HPC and HTC environments. *This is an ongoing effort.*

ACCOMPLISHMENTS

HIGH PERFORMANCE COMPUTING (HPC): Extended the HPC systems operational, support contract for HPC systems extended to 4th year (through Feb 2011)

NETWORKING RESOURCES:

- **SPEED/CAPACITY UPGRADES:**
 - The University's networking core was upgraded from 1 Gb to 10 Gb.
 - Installed single mode long distance fiber optic cable to 12 buildings
 - Continued to upgrade buildings and wiring and telecomm rooms as funds became available
 - Developed plan to split the network core
- **REDUNDANCY/STABILITY ENHANCEMENTS:**
 - Replaced the Uninterrupted Power Supply (UPS) in the Computer Center serving the core data and voice-over-IP (VOIP) network equipment
 - Established redundant connection to the PBC



- Continued due diligence in firewall provisioning and installation
- **AGILITY ENHANCEMENTS:**
 - Continued the routing at the edge project
 - Connected 15 remote site locations to UA network and provided combinations of voice and data support
 - New Network and Security Architecture proposal
 - Installed new FWSM in border to support IPv6
 - Replaced the UPS in the Arizona Health Sciences Center (AHSC) hub site
 - Upgraded the Gould-Simpson hub site
 - Relocated appropriate core network equipment to Gould-Simpson
- **CAPACITY/SPEED ENHANCEMENTS:**
 - WiFi coverage—continued expanding, attaining 80% coverage this year
 - Added 13 buildings to the list of covered spaces this year
 - Enhanced capacity with a wireless core redesign and hardware upgrade
- **AGILITY ENHANCEMENTS:**
 - Upgraded Wireless core to support 802.11n

2010-2011 PLANS

- Assuming stable funding, we will continue to enhance, expand and support all above activities
- Complete implementation and deployment of technical infrastructure necessary to support ASU/UA HPC Collaboration initiative
- Continue exploring opportunities to leverage our InCommon membership and Shibboleth for authentication and access control (with external vendors/service providers)
- Prepare a plan to continue to reduce backup and storage costs for campus
- As opportunities arise, continue the discussions between central and de-centralized information technology units to eliminate redundancies in service offerings and streamline process

Action Item 2

Provide and enhance user support to ensure the university community is able to access the university network and research computing resources. *This is an ongoing effort.*

ACCOMPLISHMENTS

HIGH PERFORMANCE COMPUTING (HPC): Increased number of research groups hosted on central HPC systems by 3.7%

HPC METRICS AND SUPPORT:

- Exceeded metrics and continued support of HPC, visualization and statistics needs:
- HPC systems %-Use: expected 85-90%, actual 95.6%
- HPC system PIs: expected 50, actual 112
- HPC PI awards: expected \$18.0M, actual \$30.4
- AZ-LIVE research projects: 15 expected, 17 actual

- PI awards: \$1.5M expected, \$21.0 actual
- Conducted projects and demonstrations to provide user support and resource information
- 15 Visualization Projects
- 17 AZ-LIVE Research Projects
- 16 AZ-LIVE Instructional Projects
- 33 AZ-LIVE Tours
- 33 Workshops, Conferences and Outreach

TECHNOLOGY REFRESH: Created the HPC Technology Refresh Advisory Committee (HPC TRAC) as part of the HPC 2010 Technology Refresh project

EXTERNAL RESEARCH GRANT PROGRAMS: Supported 17.8% more dollar value in external research grant programs

INCOMMON CREDENTIALS ACCESS: Increased number of institutions with ability to permit access based on InCommon credentials by over 200% including TeraGrid authentication with UA NetID (Shibboleth, InCommon mechanism)

UA GRID PROJECT: Proposed and initiated UA Grid Project. Participated in TeraGrid Campus Champions program to assist researchers in use of TeraGrid resources

ONLINE SURVEY TOOLS: Provided support for DatStat Illume online survey tools

2010-2011 PLANS

- Assuming stable funding, continue activities above
- Continue to investigate new technologies support
- Complete the HPC 2010 Technology Refresh Project, 4-fold increase in HPC and HTC capacity and increased capabilities
- Add High Throughput Computing (Grid, Cloud) as research resource as a component of the HPC 2010 Technology Refresh Project
- Establish real-time HPC systems use reports/dashboards
- Implement the UA Grid Project with these proposed outcomes:
 - Condor Grid capability available on HPC systems
 - Condor Grid capability available on stand-alone high throughput cluster
 - Condor Grid flocking capability implemented on UA campus

Action Item 3

Provide options for storing very large data sets that can be actively accessed by multiple research groups. *This is an ongoing effort.*

ACCOMPLISHMENTS

TERAGRID CAMPUS CHAMPIONS PROGRAM: Participated in TeraGrid Campus Champions program to assist researchers in use of TeraGrid resources



HPC STORAGE: Created HPC Storage “rental” service for TB level storage requirements

2010-2011 PLANS

- Assuming stable funding, continue activities above
- Add High Capacity and High Performance Storage subsystem for HPC
- Participate in campus-wide activities focused on data management and curation

Action Item 4

Replace the Sponsored Projects Information System (SPINS) with Quali Coeus Research Administration. *This is an ongoing effort.*

ACCOMPLISHMENTS

RESEARCH ADMINISTRATION: Installed Quali Coeus 2.0 in UA environments.

2010-2011 PLANS

- Implement Quali Coeus 2.0 back-office for Proposal Development, Institute Proposal and Award

Action Item 5

Continuously upgrade and replace the HPC and HTC systems to ensure a level of performance that satisfies the increasing demand for computational power. *This is an ongoing effort.*

ACCOMPLISHMENTS

HPC SUPPORT: Extended the HPC systems operational, support contract for HPC systems extended to 4th year (through Feb 2011)

2010-2011 PLANS

- Complete the HPC and HTC 2010 Technology Refresh Project, 4-fold increase in HPC and HTC capacity and increased capabilities
- Establish real-time HPC systems use reports/dashboards
- Implement the UA Grid Project with these proposed outcomes:
 - Condor Grid capability available on HPC systems
 - Condor Grid capability available on stand-alone high throughput cluster
 - Condor Grid flocking capability implemented on UA campus

Action Item 6

UITS should continue to participate with faculty on major research initiatives involving information technology, where it is appropriate and of institutional advantage. Further, UITS should provide proactive encouragement and supportive services that create opportunities where faculty from diverse disciplines might come together on collaborative projects involving information technology. *This is an ongoing effort.*



ACCOMPLISHMENTS

ASU-UA HPC PORTAL PROJECT: Re-initiated the ASU-UA HPC Portal project to develop the capability of sharing ASU and UA HPC resources among the three Arizona State Universities

HPC DATA CENTER: Collaborated as co-PI for Biosphere 2 research technology and data center construction proposal

NSF ENVIRONMENTAL SYNTHESIS CENTER: Participated in the development of the pre-proposal for the NSF Environmental Synthesis Center, P.I. Prof. Russell K. Monson, School of Natural Resources and the UA Institute of the Environment

RESEARCH CYBERINFRASTRUCTURE: Proposed development of a campus-wide Research Cyberinfrastructure

2010-2011 PLANS

- Assuming stable funding, we will continue the activities above
- Establish Research Cyberinfrastructure Strategic Advisory Board
- Participate in campus-wide activities focused on data management and duration

Action Item 7

Continue the development of the Arizona Tri-University Identity Federation (ATIF) management project and produce a roadmap for each university to make research and academic collaboration easier and provide the ability to enter into other university and governmental identity management federations, nationally and internationally. *100% Complete*

ACCOMPLISHMENTS

IDENTITY FEDERATION: University members are now able to access several external online services using their NetIDs. Participation in organizations such as InCommon provided University constituents with broader access to a wide range of off-campus resources while protecting the security and privacy of our students, faculty, and staff. These resources are accessible with a UA NetID and password and include certain services at research.gov, grants.gov, NSF, NIH, ASU, NAU, Microsoft, and many others. Additionally, this technology allows designated guests—typically parents—to access to a student’s record. This completes the ATIF roadmap.

TERAGRID AUTHENTICATION: Implemented TeraGrid authentication using Identity federation

ASU-UA HPC PORTAL PROJECT: Re-initiated the ASU-UA HPC Portal project to develop the capability of sharing ASU and UA HPC resources among the three Arizona State Universities

2010-2011 PLANS

- Completion of the ASU-UA HPC Portal project





Strategic Area 7: Information Technology Strategic Alliances

UA can nurture a collaborative environment by improving and formalizing communications between central and distributed information technology areas. The UA and ASU share expertise in supercomputing and have agreed to share the physical resources needed to provide for researcher needs.

One of the more intriguing collaborative efforts ongoing nationally among universities is the Open Source movement to write administrative software specifically for higher education. UA has established itself as a partner in the Kuali project, which is developing an open source university financial system (Kuali Financials System) and a related open source research administration system (Kuali Research Administration). Both ASU and UA have joined the Sakai open source initiative to write a course management system.

A tri-university initiative was launched to develop an Arizona Tri-University Identity Management Federation (ATIF). The goal is to establish a plan for forming the federation and produce a roadmap for each university to meet the goals of ATIF. Such a federation will make research and academic collaboration easier among the universities and will give them the ability to enter into other university and governmental identity management federations, nationally and internationally.

Our ongoing commitment to the joint establishment, design, and maintenance of the Phoenix Biomedical campus between UA and ASU, and now NAU has reinforced the need for partnering with our sister institutions to provide information technology services to our community and the state.

The information security leaders of the three universities regularly share information to leverage their collective knowledge and experience, and collaborate in developing policies and initiatives. In this manner, they have assisted in drafting an information security policy and supporting guidelines for the Arizona Board of Regents. Another initiative involves the selection of network and application vulnerability scanning solutions.

Goal 9: Ensure that appropriate information technology collaborations are being utilized in the support of the mission of the University of Arizona: to improve life for the people of Arizona and beyond through education, research, creative expression and community engagement.

Action Item 1

Improve technological collaborations with ASU and NAU as well as Arizona's community colleges to facilitate interactions and build synergies that strengthen each University and the system as a whole. *This is an ongoing effort.*

ACCOMPLISHMENTS

IDENTITY FEDERATION: University members are now able to access several external online services using their NetIDs. Participation in organizations such as InCommon provided University constituents with broader access to a wide range of off-campus resources while protecting the security and privacy of our students, faculty, and staff. These resources are accessible with a UA NetID and password and include certain services at research.gov, grants.gov, NSF, NIH, ASU,



STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES

NAU, Microsoft, and many others. Additionally, this technology allows designated guests—typically parents—to access to a student’s record. This completes the ATIF roadmap.

HIGH PERFORMANCE COMPUTING (HPC): Extended the HPC systems operational, support contract for HPC systems extended to 4th year (through Feb 2011)

NETWORKING RESOURCES:

▪ **SPEED/CAPACITY UPGRADES:**

- The University’s networking core was upgraded from 1 Gb to 10 Gb.
- Installed single mode long distance fiber optic cable to 12 buildings
- Continued to upgrade buildings and wiring and telecomm rooms as funds became available
- Developed plan to split the network core

▪ **REDUNDANCY/STABILITY ENHANCEMENTS:**

- Replaced the Uninterrupted Power Supply (UPS) in the Computer Center serving the core data and voice-over-IP (VOIP) network equipment
- Established redundant connection to the PBC
- Continued due diligence in firewall provisioning and installation

▪ **AGILITY ENHANCEMENTS:**

- Continued the routing at the edge project
- Connected 15 remote site locations to UA network and provided combinations of voice and data support
- New Network and Security Architecture proposal
- Installed new FWSM in border to support IPv6
- Replaced the UPS in the Arizona Health Sciences Center (AHSC) hub site
- Upgraded the Gould-Simpson hub site
- Relocated appropriate core network equipment to Gould-Simpson

TRAINING: The HR team hosted a networking and information sharing session for Tri-University HR functional and technical staff members

OUTREACH: SPS met with NAU and ASU to demonstrate KFS functionality

MOSAIC PROJECT COLLABORATIONS: The BI team engaged key ASU personnel as consultants on Mosaic, visited ASU to share information on Data Warehousing with UNLV, and co-presented at HEUG with ASU

ARIZONA TRI-UNIVERSITY IDENTITY FEDERATION: The HR team hosted a networking and information sharing session for Tri-University HR functional and technical staff members. The BI team engaged key ASU personnel as consultants on Mosaic, visited ASU to share information on Data Warehousing with UNLV, and co-presented at HEUG with ASU. SPS met with NAU and ASU to demonstrate KFS functionality

2010-2011 PLANS

Continue to support these activities and others as opportunities arise



Action Item 2

Collaborate on the selection, provisioning, and operation of network and application vulnerability scanning solutions. *This is an ongoing effort.*

ACCOMPLISHMENTS

PENETRATION TESTING TOOL: Acquired a penetration testing tool and improved methods for analyzing general network traffic across the network border

SITE LICENSE: Acquired site license for ExpanDrive to allow users to mount remote file systems from any server to which the user connects via SSH

FIREWALL SERVICES: Continued work network firewalls at the university network perimeter and on departmental subnets

VPN: Increased use of VPN by VLAN to limit access to university resources

2010-2011 PLANS

- Ongoing – Continual collaboration with Enterprise Applications for security review of Mosaic and other enterprise systems from a risk management perspective
- Expansion of the role played by Grouper, including inclusion of more “institutional” groups as well as delegation of “local” ad-hoc group management to campus departments
- Exploit opportunities to leverage InCommon membership and ATIF relationships
- Investigate upgrade paths for core identity and account management infrastructure
- Investigate InCommon’s “identity assurance profiles” and the feasibility of conducting an “identity assurance assessment”

Action Item 3

Collaborate on information security awareness and training initiatives. *This is an ongoing effort.*

ACCOMPLISHMENTS

PROCEDURES: Published and implemented the Web Application Security Assessment Procedure and Critical Device Scanning Procedure

MOSAIC PROJECT: Scanned and remediated PeopleSoft Human Capital Management (HCM), PeopleSoft Student Administration (SA), PeopleSoft Business Intelligence (BI), and Quali Financial System for network and application vulnerabilities

WEBSITES: Instituted process to scan all new UITS built websites and applications prior to go-live

2010-2011 PLANS

- Based on the results of the university-wide risk assessment, assist UA departments in developing a mitigation plan to reduce risk



STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES

- Complete roll-up reporting on risk assessment data to Deans, Vice President, the Provost, and the President
- Implement Web Application Security Review based on criticality of applications, as determined in the risk assessment
- Eliminate the storage of SSNs as primary student identifiers for inactive students during conversion from the current data warehouse to the new data warehouse
- Ongoing – Continual collaboration with Enterprise Applications for security review of Mosaic and other enterprise systems from a risk management perspective

Action Item 4

Continually explore opportunities for collaboration on a Tri-University basis on administrative systems. *This is an ongoing effort.*

ACCOMPLISHMENTS

TRAINING: The HR team hosted a networking and information sharing session for Tri-University HR functional and technical staff members

COLLABORATION: The BI team engaged key ASU personnel as consultants on Mosaic, visited ASU to share information on Data Warehousing with UNLV, and co-presented at HEUG with ASU

OUTREACH: SPS met with NAU and ASU to demonstrate KFS functionality

2010-2011 PLANS

Continue to support these activities and others as opportunities arise

Action Item 5

Continue the UA/ASU joint membership in CENIC (Corporation for Education Network Initiative in California) and National Lambda Rail. *This is an ongoing effort.*

ACCOMPLISHMENTS

NETWORK UPGRADE: Continued to fund and work with CENIC and National Lambda Rail on plans to upgrade the network from campus to our Phoenix router, and from the Phoenix router to CENIC

2010-2011 PLANS

- Complete the upgrade of the network from campus to our Phoenix router, and from the Phoenix router to CENIC. Connection will be increased from 1Gb to 10Gb to the research and education network, increasing data transfer speeds between UA and peer institutions by an order of magnitude.

Action Item 6

Continue the development of the Arizona Tri-University Identity Federation (ATIF) management project and produce a roadmap for each university to make research and academic collaboration easier and provide the ability to enter into other university and governmental identity management federations, nationally and internationally. *This is an ongoing effort.*

ACCOMPLISHMENTS

IDENTITY FEDERATION: University members are now able to access several external online services using their NetIDs. Participation in organizations such as InCommon provided University constituents with broader access to a wide range of off-campus resources while protecting the security and privacy of our students, faculty, and staff. These resources are accessible with a UA NetID and password and include certain services at research.gov, grants.gov, NSF, NIH, ASU, NAU, Microsoft, and many others. Additionally, this technology allows designated guests—typically parents—to access to a student’s record. This completes the ATIF roadmap.

TERAGRID AUTHENTICATION: Implemented TeraGrid authentication using Identity federation

ASU-UA HPC PORTAL PROJECT: Re-initiated the ASU-UA HPC Portal project to develop the capability of sharing ASU and UA HPC resources among the three Arizona State Universities

2010-2011 PLANS

- Continue to support these activities and others as opportunities arise
- Completion of the ASU-UA HPC Portal project

Action Item 7

Continue to strengthen the interface between the Arizona Universities Network (AZUN). *This is an ongoing effort.*

ACCOMPLISHMENTS

AZUN SUPPORT AND INFORMATION: Continued to support the courses currently offered online through the UA and AZUN and inform the students about the expanded options offered through AZUN

2010-2011 PLANS

- Continue to support these activities and others as opportunities arise

Action Item 8

Continue the joint design and management of the Phoenix Biomedical Campus (PBC) between the UA, ASU, and NAU. *This is an ongoing effort.*

ACCOMPLISHMENTS

CAPACITY/SPEED ENHANCEMENTS:

- Added 13 buildings to the list of covered spaces this year, thereby improving the mobility options for our constituents and increasing the level of standardization on campus
- Enhanced capacity with a wireless core redesign and hardware upgrade

AGILITY ENHANCEMENTS:



STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES

- Upgraded Wireless core to support 802.11n
- Installed single mode long distance fiber optic cable to 12 buildings
- Continued to upgrade buildings and wiring and telecomm rooms as funds became available
- Developed plan to split the network core

2010-2011 PLANS

- Continue to support these activities and others as opportunities arise

Action Item 9

Create an inventory of open-source collaborations and potential open source solutions. *This is an ongoing effort.*

ACCOMPLISHMENTS

KUALI FOUNDATION: UA has been a long-established partner in the Kualu project, which is developing an open source university financial system (Kuali Financials System) and a related open source research administration system (Kuali Research Administration)

2010-2011 PLANS

- Continue to support these activities and others as opportunities arise

Action Item 10

Expand partnerships and programs throughout the state such as telemedicine and statewide networking. *This is an ongoing effort.*

ACCOMPLISHMENTS

SUPPORT OF EXPANDED PARTNERSHIPS AND PROGRAMS:

- Held stakeholder meetings with College of Medicine, college of Agriculture, and Telemedicine
- Participated in Arizona Telecommunications & Information Council (ATIC) Strategy Committee
- Condor Grid flocking capability implemented on UA campus
- Supported and provided information technology perspective to stimulus grant proposals state-wide
- Held meetings and/or obtained information from vendors such as Qwest and PAETEC regarding their capabilities to provide connectivity to remote locations

2010-2011 PLANS

- Continue to support these activities
- Explore opportunities to obtain federal stimulus grant funding for connectivity improvements

