# Table of Contents

- **INTRODUCTION** ................................................................................................................................. 3
- **IT STRATEGIC PLANNING CLIMATE** .................................................................................................... 4
- **GOALS AND MAJOR ACCOMPLISHMENTS WITHIN THE UA STRATEGIC DIRECTIVES CONTEXT** ....................................................... 5
- **THE YEAR IN REVIEW: KEY ACCOMPLISHMENTS** ................................................................................. 6
- **THE YEAR IN REVIEW: BY THE NUMBERS** ............................................................................................ 9
- **STRATEGIC AREA 1: STUDENT LEARNING AND SUCCESS** ..................................................................... 19
  - **GOAL 1:** IMPROVE STUDENT LEARNING AND SUCCESS THROUGH TECHNOLOGY RELATED INITIATIVES ................................................................................................................................. 19
- **STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE** ........................................... 25
  - **GOAL 2:** THE NETWORK MUST BE ROBUST, RELIABLE, STANDARDIZED, CONSISTENT, STATE-OF- THE-ART, AND OPERATING WITH CONTINUOUS IMPROVEMENTS AND STABLE FUNDING.................................................................................................................................................................................. 25
  - **GOAL 3:** THE UNIVERSITY-WIDE COMPUTING INFRASTRUCTURE MUST BECOME MORE ACCESSIBLE, DEPENDABLE, SECURE, FLEXIBLE, AND SCALABLE WITH SERVICES AND TOOLS THAT ARE INTEGRATED AND STATE-OF-ART TO MEET THE TEACHING, LEARNING, RESEARCH, AND ORGANIZATIONAL NEEDS OF THE UNIVERSITY AND THE SURROUNDING COMMUNITY. ........................................................................................................................................... 26
- **STRATEGIC AREA 3: ADMINISTRATIVE EFFECTIVENESS** ........................................................................ 29
  - **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 APPELLATIONS MUST BE INTEROPERABLE, MODERN, AND POISED FOR FUTURE CHANGES........................................................................................................................................................................ 29
- **STRATEGIC AREA 4: INFORMATION TECHNOLOGY SECURITY** ......................................................... 33
  - **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........................................................................................................................................................................ 33
  - **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. ..................................................................... 36
- **STRATEGIC AREA 5: ACADEMIC TECHNOLOGY** ............................................................................... 39
  - **GOAL 7:** PROVIDE AN ENVIRONMENT THAT ENCOURAGES THE USE OF TECHNOLOGY TO FACILITATE AND ENHANCE LEARNING........................................................................................................ 39
- **STRATEGIC AREA 6: RESEARCH COMPUTING** ..................................................................................... 45
  - **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. .................................................................................................................................................................................. 45
- **STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES** ................................... 51
  - **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. ........................................................................................................................................................................ 51
Introduction

**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

The University of Arizona is complex in both its organization and its technology, requiring that competing information technology needs be carefully evaluated and deployed to ensure the optimal investment of limited resources. The UA Information Technology (IT) Strategic Plan supports the University of Arizona’s Five Year Strategic Plan, but also stands alone to represent a comprehensive and dynamic blueprint that will serve as a foundation for future plans.

The UA possesses a first-class technology infrastructure and staff. There are many examples of excellent IT service delivery and expert project management approaches to IT throughout the University. The challenge is to weave these best practices into a transparent and comprehensive process for reaching university-level IT funding decisions while ensuring a set of common minimal service standards for all units and departments.

The purpose of The University of Arizona IT Strategic Plan is to:

- Present the guiding principles and objectives for developing and managing information technology at the University of Arizona.
- Identify the most important IT Strategic Initiatives that UA must address in the next five years in order to survive and thrive.
- Provide a prioritized list of initiatives and operational improvements to address the IT opportunities and challenges.
- Provide the pathway for faculty, staff, and students to have the latest technology tools for leadership in teaching, research, and career development.
- Position UA to equal or surpass our peer institutions in the use of technology for teaching, learning, research and overall effectiveness.

This update report highlights the 2010-11 IT accomplishments mapped to UA’s strategic directives.
IT Strategic Planning Climate

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 guiding 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.
**Goals and Major Accomplishments within the UA Strategic Directives Context**

Our major FY11 accomplishments, detailed on the following 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):

<table>
<thead>
<tr>
<th>ABOR IT Strategic Areas</th>
<th>UA Strategic IT Goals</th>
<th>UA Strategic Directives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Expanding Access &amp; Enhancing Educational Excellence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increasing Achievements in Research, Scholarship &amp; Creative Expression</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expanding Community Engagement &amp; Workforce Impact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improving Productivity &amp; Increasing Efficiency</td>
</tr>
<tr>
<td>Student Learning &amp;</td>
<td>Improve student learning and success through technology related initiatives.</td>
<td>2 3 4 5 9 10</td>
</tr>
<tr>
<td>Success and Academic</td>
<td></td>
<td>12 13 14</td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td>2 3 4 5 9 10</td>
</tr>
<tr>
<td></td>
<td>Provide an environment that encourages the use of technology to facilitate and enhance learning.</td>
<td>3 4 5 9 10 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13 3 4 5 9 10</td>
</tr>
<tr>
<td>IT Infrastructure</td>
<td>The network infrastructure must be robust, reliable, standardized, consistent, state-of-the-art, and operating with continuous improvement and stable funding.</td>
<td>2 3 4 5 9 10</td>
</tr>
<tr>
<td></td>
<td>The University-wide information computing 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.</td>
<td>5 6 11 14 5 6 11 14</td>
</tr>
<tr>
<td>Administrative</td>
<td>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.</td>
<td>1 2 8 9</td>
</tr>
<tr>
<td>Effectiveness</td>
<td></td>
<td>1 2 8 9</td>
</tr>
<tr>
<td>IT Security</td>
<td>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.</td>
<td>17 18 19 17 18 19</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td>15 16 15 16</td>
</tr>
<tr>
<td>Research Computing</td>
<td>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.</td>
<td>7 20 7 20 7 20</td>
</tr>
<tr>
<td>Strategic Alliances</td>
<td>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</td>
<td>17 19 17 19 17 19</td>
</tr>
</tbody>
</table>
The Year in Review: Key Accomplishments

1. **Mosaic Financials Progress**: After both a UA review and an ABOR initiated review, Kuali Financials was affirmed as the financial system. Implementation continued with testing, modifications, report specifications and campus readiness activities. An internal go-live date of October 1, 2011, was set and is on target.

2. **Degree Tracker**: Launched the Degree Tracker project to provide significantly enhanced degree search capability for potential and current students and to track progress towards degree for students.

3. **Significant Investment in Centrally Provided Network Upgrades and Converged Communications Infrastructure Resulting In**:
   - 52% growth in buildings with centrally provided converged communications
   - 85% campus coverage with wireless connectivity including 26 new building installations
   - 47% decrease in departments providing their own telephone and network services
   - 3 buildings had substantial upgrades and improvements that resulted in 19 substandard telecommunications rooms being reduced to 10 state-of-the-art locations.

4. **UA Mobile Application**: The UA implemented Arizona Mobile, the first official app for the University of Arizona on the iPhone.

5. **Common Software/New Site Licenses**: Through UA Bookstore and UITS collaborations, we acquired several new software offerings including Apple Education Licensing Program, which will result in substantial cost savings to departments. There are now 38 titles available and downloads increased by over 41%, to over 70,000.

6. **Continued Growth and Investment in Scalable, Centralized Server Hosting and Administration and Storage for Consolidation Efforts**:
   - 18% increase in number virtual servers owned and managed by campus units and located in central (UITS) data center(s)
   - 14% increase in the number of virtual servers owned and managed by UITS and located in central (UITS) data centers
   - Number of physical servers located in central (UITS) data center increased to 418
   - 65TB increase in general storage and 30TB D2L storage increase
   - Implemented EMC Celerra file server appliances to replace over 20 individual file servers, decreasing administration overhead by 0.3 FTE and decreasing storage usage by 40-50% due to the reduplication features and creating a highly available, extensible, fault tolerant environment that provides the necessary performance and reliability to promote collaboration across multiple platforms and user requirements.

7. **Design and Construction of Research Data Center**: New research-focused Data Center proposed and funded through CIO, VPR, UA Space Committee, and College Deans. Facility occupation is expected in early fall 2011.

8. **Human Capital Management (HCM) Major Initiatives**: While transitioning to a sustaining model of operations and staffing, the HCM initiative also delivered on several major milestones including Phase 1 of manager self-service, UA Cares, benefits open enrollment, multi-state reporting, promotion and tenure tracking, faculty requisition and offers planning and faculty voting.
9. **Student Administration (SA) Major Initiatives:** While transitioning staff and operations to a sustaining model within UITS, SA also supported students and staff through a highly successful opening of school, thereby testing all interfaces and full functionality in August 2010. Additionally, academic advising and Early Alert were implemented in a phased approach, supporting students in their career objectives and successful graduation.

10. **Approval of Additional Student IT Investments:** While continuing to focus over $5 million on student priorities (Wireless, Tier 1 Support for Campus, OSCR Student Computing Labs, Desire2Learn, and student related software purchases), the additional funding, expected to make available an additional $3 million, will focus specific efforts in much needed classroom technology enhancements and online learning.

11. **UAConnect:** After collaboration with campus constituents, Microsoft Business Productivity Online Standard Suite (BPOS) was selected for faculty and staff email, calendaring and messaging solution. 6,500 of the 13,000 faculty / staff accounts are now in UAConnect.

12. **Continued Enhancement of Enterprise Instructional Support:** Extensive effort and capital were invested in the continued support for infrastructure and development of the University's instructional support portfolio with the following outcomes:
   - Desire2Learn (D2L) realized a 13% increase in usage (over 220,000 seats in 5,800+ courses).
   - Student Administration was integrated with D2L.
   - Employees were loaded into D2L allowing self-enrollment in courses.
   - D2L and Illume were fully Shibboleth-enabled allowing for NetID authentication.
   - Various security, redundancy, and stability enhancements were implemented for D2L and iTunes.
   - Integration of Elluminate and D2L was completed.
   - Numerous D2L play spaces created for faculty to explore additional tool sets and features within the learning management system.
   - Worked with several faculty members to develop solutions for migrating responder data into D2L for student assessment activities.

13. **Standardized Classroom Response Device (Clickers):** Standard clicker technology (Turning Technologies) was selected by faculty committee, mandated by the Provost, and implemented through The University Bookstores.

14. **Technology (Tier 1) Support for Campus:** Continued 24/7 tier 1 support with notable increases in service requests including over 57,000 calls, more than 12,000 emails, and over 12,000 walk-ins. The 24/7 IT Support Center added UAConnect as a tier 1 supported system and eliminated the mobile help desk due to lack of utilization.

15. **Computer-Based Security Staff Training:** 10,835 employees have completed mandatory security awareness training.

16. **Web Developer Security Education:** Web developer training is completed and available at the ISO website.

17. **Web Application Security:** Implemented web application security review based on criticality of applications, as determined in the risk assessment. Instituted a Train-the-Trainer program for application scanning; began holding on-campus scanning training; and revised and documented more detailed process for security reviews for servers and applications.
THE YEAR IN REVIEW: KEY ACCOMPLISHMENTS

18. **CENTRALLY MANAGED ENCRYPTION SOLUTION**: Pilot group has set up central management process, created documentation, and worked through procedures needed for UA campus.

19. **UA RISK ASSESSMENT**: Based on the results of the University-wide risk assessment, assisted 167 UA departments in developing mitigation plans to reduce risk.

20. **HIGH PERFORMANCE COMPUTING (HPC) METRICS AND SUPPORT**: Research usage of the HPC support, visualization, and infrastructure continued to exceed expectations:
   - HPC systems %-Use: expected 85-90%, actual 95.6%.
   - HPC system PIs: expected 50, actual 132.
   - HPC PI awards: expected $18.0M, actual $30.4.
   - AZ-LIVE research projects: 15 projects were expected, 16 projects were actually realized.
   - AZ-Live PI awards: $1.5M expected, $21.0 actual
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:

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY13 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># students on hosted email and calendaring services (CatMail)</td>
<td>100% by opening of school 2010</td>
<td>0%</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td># software site or volume discount licenses available through centrally-provided services</td>
<td>10% growth per year</td>
<td>32</td>
<td>35</td>
<td>38</td>
<td>16%+</td>
<td>52</td>
<td>73%</td>
</tr>
<tr>
<td># downloads of free or discounted software from Site License</td>
<td>10% growth per year</td>
<td>new metric</td>
<td>40,980</td>
<td>70,183</td>
<td>71%</td>
<td>60,000</td>
<td>117%</td>
</tr>
<tr>
<td>% of campus with centrally provided wireless connectivity</td>
<td>10% growth per year</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>5%+</td>
<td>100%</td>
<td>85%</td>
</tr>
<tr>
<td>Form and continue the CIO’s Information Technology Student Advisory Board (ITSAB)</td>
<td>By June, 2009</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td># seats hosted on central learning management system</td>
<td>10% growth per year</td>
<td>164,000¹</td>
<td>200,313</td>
<td>222,180</td>
<td>11%+</td>
<td>228,692</td>
<td>97%</td>
</tr>
</tbody>
</table>
## Strategic Area 1: Student Learning & Success:

<table>
<thead>
<tr>
<th>Metric</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY13 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># online/email support requests</td>
<td>10% growth per year</td>
<td>new metric</td>
<td>9,139</td>
<td>12,280</td>
<td>34%</td>
<td>13,380</td>
<td>92%</td>
</tr>
<tr>
<td># walk-in support requests</td>
<td>10% growth per year</td>
<td>new metric</td>
<td>9,632</td>
<td>12,324</td>
<td>28%</td>
<td>14,102</td>
<td>87%</td>
</tr>
</tbody>
</table>

1) Revised metrics from 2009 report
## Strategic Area 2: Infrastructure

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY2013 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># university departments using centrally provided telephone and network services (measure represents # of departments not using central equipment)</td>
<td>0 by 2013</td>
<td>15</td>
<td>15</td>
<td>8</td>
<td>47%(^2)</td>
<td>0</td>
<td>53%</td>
</tr>
<tr>
<td>Implementation of FTE-Based funding model for centrally provided services</td>
<td>complete by 2009</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>% of campus with centrally provided wireless connectivity</td>
<td>10% growth per year</td>
<td>75%</td>
<td>80%</td>
<td>85%</td>
<td>5%</td>
<td>100%</td>
<td>85%</td>
</tr>
<tr>
<td>$ invested in centrally provided network maintenance, upgrades, and converged communications infrastructure</td>
<td>static or increased ongoing funding</td>
<td>$14.6M</td>
<td>$12.3M</td>
<td>$15.8M</td>
<td>28%</td>
<td>$14.6M</td>
<td>108%</td>
</tr>
<tr>
<td># buildings with centrally provided network converged communications infrastructure</td>
<td>5% growth per year</td>
<td>23</td>
<td>27</td>
<td>41</td>
<td>52%+</td>
<td>29</td>
<td>141%</td>
</tr>
<tr>
<td>Implementation of a centralized, common email and calendaring system for faculty and staff</td>
<td>complete by Dec. 2011</td>
<td>0%</td>
<td>10%</td>
<td>43%</td>
<td>23%+</td>
<td>100%</td>
<td>43%</td>
</tr>
<tr>
<td># virtual servers owned and managed by campus units and located in central (UITS) data center(s)</td>
<td>10% growth per year</td>
<td>28</td>
<td>40</td>
<td>47</td>
<td>18%+</td>
<td>45</td>
<td>104%</td>
</tr>
<tr>
<td># virtual servers owned and managed by UITS and located in central (UITS) data centers</td>
<td>10% growth per year</td>
<td>new metric FY2011</td>
<td>513</td>
<td>588</td>
<td>14%</td>
<td>682</td>
<td>86%</td>
</tr>
</tbody>
</table>
**Strategic Area 2: Infrastructure**

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY2013 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># physical servers located in central (UITS) data center(s)</td>
<td>10% growth per year</td>
<td>363</td>
<td>410</td>
<td>418</td>
<td>2%+</td>
<td>585</td>
<td>71%</td>
</tr>
<tr>
<td># physical disk arrays located in central (UITS) data center(s)</td>
<td>10% growth per year</td>
<td>27</td>
<td>23</td>
<td>19</td>
<td>-17%</td>
<td>43</td>
<td>44%</td>
</tr>
<tr>
<td># centrally provided storage cycles available to HPC</td>
<td>5x with Technology Refresh</td>
<td>117 TB</td>
<td>117 TB</td>
<td>No growth until completion of Tech Refresh FY2012</td>
<td>–</td>
<td>585 TB</td>
<td>20%</td>
</tr>
<tr>
<td># calls into central IT support center</td>
<td>10% growth per year</td>
<td>26,000</td>
<td>41,632</td>
<td>56,994</td>
<td>37%</td>
<td>41,873</td>
<td>136%</td>
</tr>
<tr>
<td>Implement centrally funded Microsoft Campus Desktop Enterprise Agreement for faculty and staff</td>
<td>complete in 2009</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

1) 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.
2) Though actual metric decreased from 15 to 8, 47% represents progress toward goal of 0.
3) This metric decreases as servers are consolidated.
**Strategic Area 3: Administrative Effectiveness**

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY2013 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliver Mosaic on time, within budget, and in scope</td>
<td>by Jan. 2012</td>
<td>on target</td>
<td>on target</td>
<td>on target</td>
<td>–</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td># centrally hosted enterprise level applications</td>
<td>1 additional application per year</td>
<td>29</td>
<td>35(^1)</td>
<td>30</td>
<td>-14(^1)</td>
<td>34</td>
<td>88%</td>
</tr>
</tbody>
</table>

1) Enterprise Applications currently supports new Mosaic systems and the legacy systems. As legacy systems are replaced and decommissioned, this number will likely decrease in the coming years.
<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY2013 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment of a University Information Security Officer and a management framework</td>
<td>complete by June 2009</td>
<td>100%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of a centrally-defined risk assessment program</td>
<td>complete baseline assessment 2009 &amp; reassess 2012</td>
<td>50%</td>
<td>100%</td>
<td>0% (next assessment scheduled for FY12)</td>
<td>-</td>
<td>100% of baseline and reassessment</td>
<td>-</td>
</tr>
<tr>
<td>Implementation of a centrally-defined vulnerability assessment program for systems and web applications</td>
<td>complete by end of 2010</td>
<td>40%</td>
<td>45%</td>
<td>100%</td>
<td>55%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of an incident management procedure</td>
<td>complete by June 2009</td>
<td>100%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of a centrally-defined business continuity program</td>
<td>10% growth per year</td>
<td>40%</td>
<td>45%</td>
<td>25%</td>
<td>-20%</td>
<td>100%</td>
<td>25%</td>
</tr>
</tbody>
</table>
### Strategic Area 4: IT Security

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY2013 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of a University standard for antivirus/anti-spyware protection</td>
<td>complete by June 2009</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td># recipients of monthly user awareness newsletter</td>
<td>10% growth per year</td>
<td>55%</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td># presentations and seminars delivered internally (online and in person)</td>
<td>varies depending upon opportunities</td>
<td>87</td>
<td>50</td>
<td>115</td>
<td>130%</td>
<td>variable</td>
<td>NA</td>
</tr>
<tr>
<td>Website redesign to emphasize availability of resources by roles</td>
<td>completed by 2010</td>
<td>10%</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Holding an annual awareness event</td>
<td>1 event per year</td>
<td>1 event</td>
<td>1 event</td>
<td>1 event</td>
<td>–</td>
<td>1 event per year</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of centrally-offered initial and refresher employee training</td>
<td>complete by 2010</td>
<td>0%</td>
<td>50%</td>
<td>90%</td>
<td>40%</td>
<td>100%</td>
<td>90%</td>
</tr>
</tbody>
</table>

1) Revised assessment of progress based on complexity of initiative as encountered during implementation. Application scanning tool is complex, requires training for campus to use it, is intrusive and must be carefully carried out with only two desktop licenses to share across campus. Revised completion date is during fiscal year 2011-2012.
### Strategic Area 5: Academic Technology

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 Goal</th>
<th>% of FY2013 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># courses hosted on central learning management system</td>
<td>10% growth per year</td>
<td>3,750</td>
<td>5,800</td>
<td>5,857</td>
<td>1%+</td>
<td>5,073</td>
<td>115%</td>
</tr>
<tr>
<td># attendees in centrally hosted forums for exploration and showcasing of technology usage in the learning environment</td>
<td>10% growth per year</td>
<td>1,200</td>
<td>1,200+</td>
<td>1,446</td>
<td>20%</td>
<td>1,933</td>
<td>75%</td>
</tr>
<tr>
<td># calls into central IT support center</td>
<td>10% growth per year</td>
<td>26,000</td>
<td>41,632</td>
<td>56,994</td>
<td>37%</td>
<td>41,873</td>
<td>136%</td>
</tr>
</tbody>
</table>
### Strategic Area 6: Research Computing

<table>
<thead>
<tr>
<th>Metric (blue indicates ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>Growth FY10 to FY11</th>
<th>FY2013 goal</th>
<th>% of FY2013 goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># research groups hosted on the central HPC system</td>
<td>10% growth per year</td>
<td>108</td>
<td>112</td>
<td>132</td>
<td>18%</td>
<td>138</td>
<td>96%</td>
</tr>
<tr>
<td>Deliver Kuali Coeus on time, on budget, and in scope(^1)</td>
<td>complete by January 2011</td>
<td>10%</td>
<td>See note 1 below</td>
<td>50%</td>
<td>–</td>
<td>Complete initial rollout by June 2012</td>
<td>50%</td>
</tr>
<tr>
<td># centrally provided storage cycles available to HPC</td>
<td>5x with Technology Refresh</td>
<td>117 TB</td>
<td>117 TB</td>
<td>No growth until completion of Tech Refresh FY2012</td>
<td>–</td>
<td>585 TB</td>
<td>20%</td>
</tr>
<tr>
<td># centrally provided computing cycles available to HPC</td>
<td>5x with Technology Refresh</td>
<td>20 TFLOPs</td>
<td>20 TFLOPs</td>
<td>No growth until completion of Tech Refresh FY2012</td>
<td>–</td>
<td>100 TFLOPs</td>
<td>20%</td>
</tr>
<tr>
<td>Dollar value of external grants supported by the research groups on HPC *Corrected Metric</td>
<td>5% growth per year</td>
<td><em>$25.8M</em></td>
<td>$30.4</td>
<td>$32.4 M</td>
<td>08%</td>
<td>$32.9M</td>
<td>98%</td>
</tr>
<tr>
<td>Framework and plan for ATIF to implement Shibboleth and join InCommon</td>
<td>by July 2009</td>
<td>0%</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>100%-</td>
<td>100%</td>
</tr>
<tr>
<td># institutions with ability to permit access based on partner institution credentials (InCommon)</td>
<td>10% growth per year</td>
<td>116</td>
<td>244</td>
<td>290</td>
<td>119%</td>
<td>187</td>
<td>115%</td>
</tr>
</tbody>
</table>

\(^1\) Revised go-live date to reflect delivery of software from foundation. Initial campus rollout includes ability to construct grant proposals and submit them online, as well as the ability to track awards.
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

**STUDENT ADMINISTRATION (SA):** While transitioning staff and operations to a sustaining model within UITS, SA also supported students and staff through a highly successful opening of school, thereby testing all interfaces and full functionality in August 2010. Additionally, academic advising and Early Alert were implemented in a phased approach, supporting students in their career objectives and successful graduation.

**STANDARDIZED CLASSROOM RESPONSE DEVICE (CLICKERS):** Standard clicker technology (Turning Technologies) was selected by faculty committee, mandated by the Provost, and implemented through The University Bookstores.

**IDENTITY FEDERATION:** Continued investment in Shibboleth and membership in InCommon Federation provided enhanced efficiencies and security for students, parents, faculty, and employees through use of UA’s NetID:

- Enabled access to an increased number of education/research resources such as NIH’s National Center for Biotechnology Information (NCBI); NCSA’s CILogin (access to research CyberInfrastructure); and Teragrid (open scientific discovery computational infrastructure).
- Enforced our institutional authentication, authorization, and privacy requirements when implementing third-party, hosted, or cloud-based services, including Archibus (space management), WebSwami (distance learning), Desire2Learn (course management), TerraDotta (travel authorization/tracking), and others.
- Developed the infrastructure for an ASU/UA HPC portal, leveraging Shibboleth and InCommon.

**TECHNOLOGY (TIER 1) SUPPORT FOR CAMPUS:** Continued 24/7 tier 1 support with dramatic increases in service requests including over 57,000 calls, more than 12,000 emails, and over 12,000 walk-ins. The 24/7 IT Support Center added UAConnect as a tier 1 supported system and eliminated the mobile help desk due to lack of utilization.
**STRATEGIC AREA 1: STUDENT LEARNING AND SUCCESS**

**STUDENT IT INVESTMENTS THROUGH STUDENT IT FEE:** Over $5.1 million generated by the Student IT Fee were distributed among the following programs and initiatives:

- Wireless Network (85% coverage)
- Technology (Tier 1) Support for Campus (24/7)
- OSCR Student Computing Laboratories, including the addition of a new lab in the Campus Recreation Center
- D2L Programming, licensing and data storage
- Student-related software purchases: Mathworks; Webswami, used for web-based language instruction and D2L software
- Video Conference classroom (McClelland Hall)

**APPROVAL OF ADDITIONAL STUDENT IT INVESTMENTS:** While continuing to focus over $5 million on student priorities (Wireless, Tier 1 Support for Campus, OSCR Student Computing Labs, Desire 2 Learn, and student related software purchases), the additional funding, expected to make available an additional $3 million, will focus specific efforts in much needed classroom technology enhancements and online learning.

**CONTINUED ENHANCEMENT OF ENTERPRISE INSTRUCTIONAL SUPPORT:** Extensive effort and capital were invested in the continued support for infrastructure and development of the University's instructional support portfolio with the following outcomes:

- Desire 2 Learn (D2L) realized a 13% increase in usage (over 220,000 seats in 5,800+ courses).
- Student Administration was integrated with D2L.
- Employees were loaded into D2L allowing self-enrollment in courses.
- D2L and Illume were fully Shibboleth-enabled allowing for NetID authentication.
- Various security, redundancy, and stability enhancements were implemented for D2L and iTunes.
- Integration of Elluminate and D2L was completed.
- Numerous D2L play spaces created for faculty to explore additional tool sets and features within the learning management system.
- Worked with several faculty members to develop solutions for migrating responder data into D2L for student assessment activities.

**COMMON SOFTWARE/NEW SITE LICENSES:** Through UA Bookstore and UITS collaborations, we acquired several new software offerings including Apple Education Licensing Program, which will result in substantial cost savings to departments. There are now 38 titles available and downloads increased by over 41%, to over 70,000.

**CLASSROOM TECHNOLOGY SERVICES:** Supported the use of classroom technology for over 75,000 instructional hours with the management of over 15,213 equipment orders. Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed in three classrooms, Gallagher Theatre and a large lecture hall.

**SUPPORT FOR THE WILDCAT MAC SCHOLARSHIP PROGRAM:** iPods, iPads, and MacBooks were awarded to over 1,000 UA students who demonstrated high academic achievement and met other factors as identified by a review committee. 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.
CONNECTIVITY:

SPEED/CAPACITY UPGRADES:
- Major renovations in 3 buildings had dramatic upgrades and improvements that resulted in 19 substandard telecommunications rooms being reduced to 10 state-of-the-art locations.

AGILITY ENHANCEMENTS:
- 52% growth in buildings with centrally provided converged communications
- 47% decrease in departments providing their own telephone and network services

WIRELESS INSTALLATION:
- 85% campus coverage with wireless connectivity including 26 new building installations

2011-2012 PLANS

- Using new Student IT Fee revenue, investments will be made in:
  - Installing and enhancing classrooms with modern technologies
  - Expanding and enhancing online learning environments
- Implement a Course Management feature that will provide more efficient approval of new courses and fees.
- The 24/7 will build a service model and offer Tier 1 support for departmental IT units increasing campus IT support efficiencies.
- Assess the ongoing demand for Podcast Producer and formalize the support model.
- Create new standards for classroom technology and implement in all centrally scheduled classrooms per plan, add technology to newly identified classrooms, and implement a remote assistance system for remote classrooms (i.e. downtown).
- Move to standard dual-boot Macintosh lab environments through scheduled refresh providing more diversity in environments to better enable students to choose the technology they need.
- Expand open access, staffed hours in multimedia labs to better meet student needs.
- Refresh Gear-to-Go, adding capacity for increased reservations.

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

COMMON SOFTWARE/NEW SITE LICENSES: Through UA Bookstore and UITS collaborations, we acquired several new software offerings including Apple Education Licensing Program, which will result in substantial cost savings to departments. There are now 38 titles available and downloads increased by over 41%, to over 70,000.

STUDENT ADMINISTRATION (SA): Student Administration supported students through a highly successful Opening of School, thereby testing all interfaces and full functionality in August 2010 including Admissions, Registration, Financial Aid, and Bursar functions. Academic Advising was implemented in a phase approach, supporting students in their career objectives and successful
graduation. 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 for Campus:** Continued 24/7 tier 1 support with notable increases in service requests including over 57,000 calls, more than 12,000 emails, and over 12,000 walk-ins. The 24/7 IT Support Center added UAConnect as a tier 1 supported system and eliminated the mobile help desk due to lack of utilization.

**Support for the Wildcat Mac Scholarship Program:** iPods, iPads and MacBooks were awarded to over 1,000 UA students who demonstrated high academic achievement and met other factors as identified by a review committee. 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.

**Degree Tracker:** Launched Degree Tracker project to provide significantly enhanced degree search capability for potential and current students and to track progress towards degree for students.

**Mobile Apps:**
- The UA implemented Arizona Mobile, the first official app for the University of Arizona on the iPhone.
- Piloted a mobile instructional application with Chemistry faculty.

**2011-2012 Plans**
- Create web portal for mobile apps.
- Extend Mobile Arizona app.
- Develop a campus-wide mobile coordination and governance plan to facilitate rapid development and launch of a variety of applications.
- Develop a Mobile governance process for prioritization and assessment.

**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. The Information Security Office distributed email to all students in Fall 2010 regarding protecting their computers with free resources at UA.

**2011-2012 Plans**
- Plan for next year’s orientation events.
**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 online software and tech courses that can be taken online. UAnswers, a web-based online knowledge database was implemented and made available to all NetID holders.

**MOSAIC TRAINING:** Continued to offer and develop ongoing training as needed for go-live and sustaining activities.

**CLASSROOM TRAINING AND WORKSHOPS:** UAConnect training was developed and offered to campus; Drupal training continued.

**2011-2012 PLANS**
- Assess UACBT content in comparison to other hosted tutorial providers.
- Continue to expand online resources.

**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.

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

**2010-2011 PLANS**
- Relaunch ITSAB with a new focus on education and member involvement.
- Conduct the annual ITSAB survey and report results.
- Hold focus groups as needed on relevant student IT issues.

**Action Item 6**
Increase the opportunities for faculty and students to experience and evaluate new technologies. *This is an ongoing effort.*
ACCOMPLISHMENTS

**Standardized Classroom Response Device (Clickers):** Standard clicker technology (Turning Technologies) was selected by Faculty committee, mandated by the Provost, and implemented through The University Bookstores.

**Continued Enhancement of Enterprise Instructional Support:** Extensive effort and capital were invested in the continued support for infrastructure and development of the University’s instructional support portfolio with the following outcomes:
- Desire 2 Learn (D2L) realized a 13% increase in usage (over 220,000 seats in 5,800+ courses).
- Student Administration was integrated with D2L.
- Employees were loaded into D2L allowing self-enrollment in courses.
- D2L and Illume were fully Shibboleth-enabled allowing for NetID authentication.
- Various security, redundancy, and stability enhancements were implemented for D2L and iTunes.
- Integration of Elluminate and D2L was completed.
- Numerous D2L play spaces created for faculty to explore additional tool sets and features within the learning management system.
- Worked with several faculty members to develop solutions for migrating responder data into D2L for student assessment activities.

**Multimedia Equipment:** Gear-to-Go (GtG) provided free check out of audio, visual, and lighting equipment to students, faculty, and staff in support of coursework or UA business. In FY 10-11 over 1,000 pieces of Gear-to-Go equipment were loaned to students, staff or faculty.

**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. This year saw 16 class projects completed in the center.

**Teaching Academy:** A symposium was offered every fall and spring where faculty and instructional staff can explore instructional practices, technologies, and planning and assessment tools.

**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**
- Assess the ongoing demand for Podcast Producer and formalize the support model.
- Create new standards for classroom technology and implement in all centrally scheduled classrooms per plan, add technology to newly identified classrooms, and implement a remote assistance system for remote classrooms (i.e. downtown).
- Expand open access, staffed hours in multimedia labs to better meet student needs.
- Refresh gear for Gear-To-Go, replacing broken or retired equipment and adding greater capacity for more reservations.
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 that 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 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 network 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:
- Major renovations in three buildings had substantial upgrades and improvements that resulted in 19 substandard telecommunications rooms being reduced to 10 state-of-the-art locations.

Agility Enhancements:
- 52% growth in buildings with centrally provided converged communications
- 47% decrease in departments providing their own telephone and network services

2011-2012 Plans

- Begin implementation of MPLS.
- Develop plan for Voice messaging system.
- Develop plan for IPS/IDS system.
- Expand fiber infrastructure in order to provide faster 10g service.
- Provide environmental monitoring of telecom rooms in critical locations.
**STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE**

**Action Item 2**

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

**ACCOMPLISHMENTS**

**CAPACITY/SPEED ENHANCEMENTS:** 85% campus coverage with wireless connectivity including 26 new building installations

**2010-2011 PLANS**

- Using the student IT fee, continue to expand coverage.

---

**Goal 3:** The university-wide computing infrastructure must become more accessible, dependable, secure, flexible, and scalable with services and tools that are integrated and state-of-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.
- Optimizing 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 GROWTH AND INVESTMENT IN SCALABLE, CENTRALIZED SERVER HOSTING AND ADMINISTRATION**

- Implemented and standardized on Cisco UCS as the standard virtual server platform.
- # virtual servers owned and managed by campus units and located in central (UITS) data center(s) increased by 18% to 47
- # virtual servers owned and managed by UITS and located in the central (UITS) data center increased by 14% to 588
- # physical servers located in central (UITS) data center(s) increased to 418
- Implemented the W6 service with cPanel for self-managed websites available for departments, campus organizations, and faculty.
- The VMWare View environment pilot program started with 20 licenses and has expanded to 50.
- Avamar installation has been completed and is in use by all the Mosaic environments. 27TB of data is being protected.
- All Mosaic and Amavar services that require load balancing are now utilizing ACE.

**Continued Growth and Investment in Scalable Storage for Consolidation Efforts**
- Increased storage by 65TB
- Replaced the Cisco MDS 9509 Multilayer Director, adding expansion capabilities and increasing bandwidth from 2GB to 8 GB per port.
- Implemented EMC Celerra file server appliances to replace over 20 individual file servers, decreasing administration overhead by 0.3 FTE and storage usage by 40-50% due to the reduplication features and creating a highly available, extensible, fault tolerant environment that provides the necessary performance and reliability to promote collaboration across multiple platforms and user requirements.
- The overall storage increase for D2L over FY10-11 was 30TB.

**Consolidation of Other IT Support Functions:**
- **Identity Federation:** Continued investment in Shibboleth and membership in InCommon Federation provided enhanced efficiencies and security for students, parents faculty and employees through UA’s NetID including:
  - Enabling access to an increased number of education/research resources such as NIH’s National Center for Biotechnology Information (NCBI); NCSA’s CILogin (access to research CyberInfrastructure); and Teragrid (open scientific discovery computational infrastructure).
  - Enforcing our institutional authentication, authorization and privacy requirements when implementing third-party, hosted, or cloud-based services, including Archibus (space management), WebSwami (distance learning), Desire2Learn (course management), TerraDotta (travel authorization/tracking), and others.

- **Technology (Tier 1) Support for Campus:** Continued 24/7 tier 1 support with dramatic increases in service requests including over 57,000 calls, more than 12,000 emails and over 12,000 walk-ins. 24/7 IT Support Center added UAConnect as a tier 1 supported system and eliminated the mobile help desk due to lack of utilization.

- **Common Software/New Site Licenses:** Through UA Bookstore and UITS collaborations, we acquired several new software offerings including Apple Education Licensing Program, which will result in substantial cost savings to departments. There are now 38 titles available and downloads increased by over 41%, to over 70,000.

- **Classroom Technology Services:** Supported the use of classroom technology for over 75,000 instructional hours with the management of over 15,213 equipment orders. Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed in three classrooms, Gallagher Theatre, and a large lecture hall.

- **Desktop Support Services:** Over 25 campus departments are supported by centralized services.

- **Web Services:** 417 websites for 140 departments are centrally hosted.
2011-2012 PLANS

- Specific focus for new business models will be directed at web services, desktop support services, classroom technology services and technology (Tier 1) support for campus

**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:** After collaboration with campus constituents, Microsoft Business Productivity Online Standard Suite (BPOS) was selected for faculty and staff email, calendaring and messaging solution. 6,500 of the 13000 faculty / staff accounts are now in UAConnect.

**Identity Management Infrastructure:** Began efforts to refactor existing identity service management processes (e.g., provisioning application accounts, registration of service metadata); created separate IAM test environment; planned for upgrades of WebAuth and Shibboleth environments.

**Two-factor Authentication Mechanism for NetID Password Changes:** Implemented opt-in SMS-based second-factor authentication mechanisms for NetID password and account management. To date, approximately 14,000 users have opted-in.

**Immediate NetID Creation:** Through use of PeopleSoft web services and SOA integration, we can now provision the necessary information for NetID creation as soon as a new student/employee record is created in PeopleSoft.

**Enabling Application Integration:** Through the implementation of Oracle’s Service-Oriented Architecture (SOA) Suite, and the adoption of key SOA principles UA has made progress towards a more service-oriented application ecosystem. Through the combination of SOA Suite’s capabilities with PeopleSoft’s and Kuali’s web services support, UA has been able to extend the functionality and business logic of our UAccess application suite to external departments, applications and processes—including UA’s new mobile application. Developed SOA for P-Card cover sheets for KFS, Docuware, and Bottomline technologies.

**Learning Spaces:** Second Life license was discontinued June 30, 2011 due to lack of utilization.

**MACE Grouper Software:** Grouper-provisioned data, including course/section-groups and affiliation-based groups, is currently being used by several applications across campus. Additionally, we began supporting departmental/workgroup and application-specific groups.

2010-2011 PLANS

- Expand the use of new features available in the new email/calendaring environment, which includes IM, distribution lists, video chat, and file sharing.
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 appellations 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%

ACCOMPLISHMENTS
This action item is complete.

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: 100%

ACCOMPLISHMENTS
This action item is complete.

Action Item 3
Identify the most cost-effective solutions for improving business operations and systems on the road map. Percent Complete: 100%

ACCOMPLISHMENTS
This action item is complete.
**Action Item 4**

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

**ACCOMPLISHMENTS**

**TRAINING:** Regular and on-going communications with ASU and NAU on both business and technology aspects of administrative systems.

**COLLABORATION:** Engaged ASU personnel in organizational development of the Business Intelligence (BI) team.

**OUTREACH:** Visited ASU to learn about eAdvisor system.

**2011-2012 PLANS**

- Continue the collaboration and sharing of information with NAU and ASU.

**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: 100%*

**ACCOMPLISHMENTS**

*This action item is complete.*

**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: 95%*

**ACCOMPLISHMENTS**

**MANAGER SELF SERVICE:** Transactions for Release 0 and 1 have been completed and work is underway on transactions for Release 2, which is 50% completed. Transactions completed to date include Position Funding/Distribution, Position Creation, Terminations, and Notices of Appointment and Reappointment.

**UA CARES:** Worked with the Office of Community Relations to develop an online program employees can use to select agencies and contribution amounts for the annual UA Cares campaign.

**BENEFITS OPEN ENROLLMENT:** Completed the first annual PeopleSoft benefits open enrollment during which 5,365 enrollments were processed for the 10,751 benefits-eligible population.

**MULTI-STATE REPORTING:** Using an outside vendor, this new service provides local and state tax information for employees working in states other than Arizona.
**Promotion and Tenure Tracking:** Established a program for the Provost's Office to track faculty promotion and tenure activity.

**Faculty Requisition and Offers Planning:** Established a program for University departments to use to plan faculty recruitments, approve plans, and track associated offers.

**Faculty Voting:** Elections held February 28, 2011. 602 individual voters cast 10,344 votes in elections. 286 individual voters participated in the proposition. This project was a pilot for outsourcing development to a third party, with requirements and project management remaining with the University. This was very successful and sets the stage for additional projects of this nature.

**2011-2012 Plans**

- **Manager Self Service:** Complete Release 2 and 3.

  **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: 100%*

**Accomplishments**

*This action item is complete.*

- **Action item 8**
  Replace the Financial Record System with the Kuali Financial System. *Percent Complete: 80%*

**Accomplishments**

- **System Verification:** After UA review, ABOR initiated a review by Huron Consulting, which affirmed UA conclusions, provided that risks were monitored and managed.

- **Testing:** Completed initial testing phase with KFS 3.0 and began final full-scale scripted integration test.

- **Modifications:** Completed all identified modifications.

- **Report Specifications:** Designed and built subject areas in BI environment and developed ~200 reports.

- **Business Processes and Campus Readiness:** Reviewed and documented business processes and implemented a campus liaison structure.
**Strategic Area 3: Administrative Effectiveness**

**Go Live Set:** October 1, 2011.

**Training:** Started development of training materials.

**2011-2012 Plans**

- **Implementation:** Complete by October 1, 2011.

**Action Item 9**

Replace the Sponsored Projects Information System (SPINS) with Kuali Coeus (KC) Research Administration. *Percent Complete: 40%*

**Accomplishments**

**Backoffice Function Implemented:** KC release 2 in place as "back office" function to be used by Sponsored Projects to enter proposals and awards.

**Dashboards:** BI dashboards that provide campus visibility to proposals and designed similar for awards.

**2011-2012 Plans**

- Upgrade to KC release 3 in "back office" mode.
- Make awards data available through Analytics.
- Roll out proposal functions to campus including automated submission via grants.gov.
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% complete.

Accomplishments

Tri-U Risk Assessment: Tri-U Risk Assessment is a process to review risk assessment methodology and determine gaps that may need to be addressed. Participated in review process, presentations, and responses.

Annual Security Roadmap: Created annual security plan that can be prioritized into timeline and published so that Information Security Liaisons (ISLs) and campus are aware of program elements for the year and their approximate timeline.

UA Risk Assessment: Based on the results of the University-wide risk assessment, assisted 167 UA departments in developing mitigation plans to reduce risk.

Priority Security Reviews: Conducted via the partnership program. This year marked year one of a three-year cycle for risk assessment and management. The partnerships for this three-year cycle are College of Medicine, College of Engineering, UA South, UAPD, Risk Management and Safety, and The College Union.

2011-2012 Plans

- Review recommendations in final report and begin implementations depending on priority, resources and funding.
- Develop and publish annual security roadmap and initiatives.
- Continue working with partnership departments and with departments who have not contacted us nor completed a risk mitigation plan.
- Develop and implement compliance programs as needed for HIPAA and research compliance.
Action Item 2

Develop and implement a University-wide Security Applications Review Process. This is an ongoing effort.

ACCOMPLISHMENTS

ENTEPRISE APPLICATIONS: Continual collaboration with Enterprise Applications for security review of Mosaic and other enterprise systems from a risk management perspective.

PROCEDURES: Instituted Train the Trainer program for application scanning; began holding on-campus scanning training; and revised and documented more detailed process for security reviews for servers and applications.

MOSAIC PROJECT: Applications were scanned quarterly and servers annually. Documentation of procedures and frequency were put in place. Not all servers and applications have completed scans this FY. The Kuali Financial System was scanned in March 2010.

WEB APPLICATION SECURITY: Implemented Web Application Security Review based on criticality of applications, as determined in the risk assessment. Instituted a Train the Trainer program for application scanning; began holding on-campus scanning training; and revised and documented more detailed process for security reviews for servers and applications.

2011-2012 PLANS

- Complete campus-wide scanning of internet facing servers and applications.
- Continue working with partnership units to assist with mitigation plans and security review scanning for servers and applications.
- Conduct periodic application scans of PeopleSoft HCM and SA, as well as other modules in post-production. Scan Kuali Financial System and servers prior to go-live.

Action Item 3

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

ACCOMPLISHMENTS

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

PCI WORKGROUPS AND LISTSERVS: Provided leadership and collaboration among SAQC (Self-Assessment Questionnaire, ‘C’ level) merchants to facilitate PCI (Payment Card Industry) certification for campus in February 2011; created SAQC workgroup for collaboration and oversight for annual PCI assessment.

INCIDENT MANAGEMENT: Mitigated ten security incidents with follow-up actions for units to improve security posture. Shared generalized incident information with NetManagers and to improve incident awareness and mitigation.
VPN USAGE: VPN usage was addressed as part of risk mitigation plans this year. Peak traffic has increased while average traffic load has decreased. Peak traffic for SSL increased 31%; IPSec traffic increased 9% as measured during a one-month interval. However, the average traffic for SSL decreased 7% and the average IPSec traffic decreased by 13%.

2011-2012 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.
- Implement campaign for faculty-sensitive data cleanup and encryption of research PI data.
- Workgroup will meet quarterly to review work plans and address compliance issues of new PCI DSS 2.0 regulation. Research, collaborate on, and implement mobile device security.
- Implement due diligence and contracting requirements for third-party service providers that have access to confidential UA data or that develop software applications for UA.

Action Item 4

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

ACCOMPLISHMENTS

IDENTITY FEDERATION: Continued investment in Shibboleth and membership in InCommon Federation provided enhanced efficiencies and security for students, parents, faculty, and employees through use of UA's NetID:

- Enabled access to an increased number of education/research resources such as NIH's National Center for Biotechnology Information (NCBI); NCSA's CILogin (access to research CyberInfrastructure); and Teragrid (open scientific discovery computational infrastructure).
- Enforced our institutional authentication, authorization and privacy requirements when implementing third-party, hosted, or cloud-based services, including Archibus (space management), WebSwami (distance learning), Desire2Learn (course management), TerraDotta (travel authorization/tracking), and others.
- Developed the infrastructure for an ASU/UA HPC portal, leveraging Shibboleth and InCommon.

UPGRADE PATHS: Identified initiative as a priority for Infrastructure Services. Initiated discussions with Oracle. Participated in a conference call and webinar with AegisUSA.

2011-2012 PLANS

- Continue gathering information for fit and move forward with RFP.

Action Item 5

Facilitate Business Continuity Plan. This is an ongoing effort.
STRATEGIC AREA 4: INFORMATION TECHNOLOGY SECURITY

ACCOMPLISHMENTS

**AWARENESS:** Incorporated business continuity planning in awareness efforts. This is addressed in risk mitigation action plans.

2011-2012 PLANS

- Determine time frame for University-wide use of UC Ready project given current resources and priorities.
- Determine time frame for reviews of business continuity plans and disaster recovery plans given current resources and priorities.

**Action Item 6**

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

ACCOMPLISHMENTS

**ENCRYPTION WORKING GROUP:** Re-formed working group to move in the direction of working with Sophos to extend contract for laptop and removable device encryption.

**CENTRALLY MANAGED ENCRYPTION SOLUTION:** Pilot group has set up central management process, created documentation, and worked through procedures needed for UA campus.

2011-2012 PLANS

- Roll out to departments during Fiscal Year 2011-2012.
- 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:**

- Incorporated information in electronic newsletters and other publications for employees and organizations.
- Distributed email to all students in Fall 2010 regarding protecting their computers with free resources at UA.
- Created UA Information Security Facebook page to post online security information that is current and relevant to UA community
**Computer-Based Staff Training:** 10,835 employees have completed mandatory security awareness training. Employees who do not use computers as part of their job are exempt. Metric is based on approximation of employees at 12,000.

**Web Developer Security Education:** Web developer training is completed and available at the ISO website. Information Security Liaisons and application scanning program have been the impetus for developers to complete the training.

**Information Security Awareness Day:** Annual Information Security Awareness Day held on the Mall during Parents Weekend. Pamphlets are supplied to HR for new employees. ISO meets with students and parents during Orientation at table in Student Union.

### 2010-2011 Plans

- Complete and deliver mandatory computer-based all-staff training: *metric 75%
- Web developer training will continue to be stressed as part of the ISL program and required prior to getting application scanning training.
- 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.
- Create and deliver mandatory security training for all employees with privileged access to UAccess systems.
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.

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

Online Instructional Resources: Began development of online instructional resources as part of the Office of Instruction and Assessment website. The site includes a searchable taxonomy of various tutorials, articles, demonstrations, and other sites to assist in the development of effective teaching and learning strategies and practices. Initial roll-out planned for fall 2011 semester. Completed three online tutorials for teacher preparation of teaching assistants.

Continued enhancement of Enterprise Instructional Support: Extensive effort and capital were invested in the continued support for infrastructure and development of the University's instructional support portfolio with the following outcomes:

- Desire 2 Learn (D2L) realized a 13% increase in usage (over 220,000 seats in 5,800+ courses).
- Student Administration was integrated with D2L.
- Employees were loaded into D2L allowing self-enrollment in courses.
- D2L and Illume were fully Shibboleth-enabled allowing for NetID authentication.
- Various security, redundancy, and stability enhancements were implemented for D2L and iTunes.
- Integration of Elluminate and D2L was completed.
- Numerous D2L play spaces created for faculty to explore additional tool sets and features within the learning management system.
- Worked with several faculty to develop solutions for migrating responder data into D2L for student assessment activities.
**Common Software/New Site Licenses:** Through UA Bookstore and UITS collaborations, we acquired several new software offerings including Apple Education Licensing Program, which will result in substantial cost savings to departments. There are now 38 titles available and downloads increased by over 41%, to over 70,000.

**Classroom Technology Services:** Supported the use of classroom technology for over 75,000 instructional hours with the management of over 15,213 equipment orders. Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed in three classrooms, Gallagher Theatre and a large lecture hall.

**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.

### 2011-2012 Plans

- Publication of the Office of Instruction and Assessment website planned for fall 2011 semester.
- Create new standards for classroom technology and implement in all centrally scheduled classrooms per plan. Add technology to newly identified classrooms. Implement a remote assistance system for remote classrooms (i.e. downtown).
- Bring in outside training for Outlook (UAConnect).

### Action Item 2

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

**Student Administration (SA):** Student Administration supported students through a highly successful Opening of School, thereby testing all interfaces and full functionality in August 2010 including Admissions, Registration, Financial Aid, and Bursar functions. Academic Advising was implemented in a phased approach, supporting students in their career objectives and successful graduation.

**Standardized Classroom Response Device (Clickers):** Standard clicker technology (Turning Technologies) was selected by faculty committee, mandated by the Provost and implemented through The University Bookstores.

**Identity Federation:** Continued investment in Shibboleth and membership in InCommon Federation, provided enhanced efficiencies and security for students, parents, faculty, and employees through use of UA’s NetID:

- Enabled access to an increased number of education/research resources such as NIH’s National Center for Biotechnology Information (NCBI); NCSA’s CILogin (access to research CyberInfrastructure); and Teragrid (open scientific discovery computational infrastructure).
Enforced our institutional authentication, authorization, and privacy requirements when implementing third-party, hosted, or cloud-based services, including Archibus (space management), WebSwami (distance learning), Desire2Learn (course management), TerraDotta (travel authorization/tracking), and others.

Developed the infrastructure for an ASU/UA HPC portal, leveraging Shibboleth and InCommon.

**Technology (Tier 1) Support for Campus:** Continued 24/7 tier 1 support with dramatic increases in service requests including over 57,000 calls, more than 12,000 emails and over 12,000 walk-ins. 24/7 IT Support Center added UAConnect as a tier 1 supported system and eliminated the mobile help desk due to lack of utilization.

**Student IT Investments through Student IT Fee:** Over $5.1 million generated by the Student IT Fee were distributed among the following programs and initiatives:

- Wireless Network (85% coverage)
- Technology (Tier 1) Support for Campus (24/7)
- OSCR Student Computing Laboratories, including the addition of a new lab in the Campus Recreation Center
- D2L Programming, licensing and data storage
- Student-related software purchases: Mathworks; Webswami, used for web-based language instruction and D2L software
- Video Conference classroom (McClelland Hall)

**Continued Enhancement of Enterprise Instructional Support:** Extensive effort and capital were invested in the continued support for infrastructure and development of the University's instructional support portfolio with the following outcomes:

- Desire 2 Learn (D2L) realized a 13% increase in usage (over 220,000 seats in 5,800+ courses).
- Student Administration was integrated with D2L.
- Employees were loaded into D2L allowing self-enrollment in courses.
- D2L and Illume were fully Shibboleth-enabled allowing for NetID authentication.
- Various security, redundancy, and stability enhancements were implemented for D2L and iTunes.
- Integration of Elluminate and D2L was completed.
- Numerous D2L play spaces created for faculty to explore additional tool sets and features within the learning management system.
- Worked with several faculty to develop solutions for migrating responder data into D2L for student assessment activities.

**Common Software/New Site Licenses:** Through UA Bookstore and UITS collaborations, we acquired several new software offerings including Apple Education Licensing Program, which will result in substantial cost savings to departments. There are now 38 titles available and downloads increased by over 41%, to over 70,000.

**Classroom Technology Services:** Supported the use of classroom technology for over 75,000 instructional hours with the management of over 15,213 equipment orders. Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed in three classrooms, Gallagher Theatre and a large lecture hall.
OPEN COMPUTING LABS: Continued to maintain 12 general and multimedia labs, open to the campus community and staffed by student consultants. A new Macintosh lab in Campus Recreation Center was opened and a training lab in the Computer Center was closed.

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 FY 10-11, over 1,000 pieces of equipment were loaned to students, staff, and faculty.

CONNECTIVITY:

SPEED/CAPACITY UPGRADES:
- Major renovations in three buildings had substantial upgrades and improvements that resulted in 19 substandard telecommunications rooms being reduced to 10 state-of-the-art locations.

REDUNDANCY/STABILITY ENHANCEMENTS:
- Continued due diligence in firewall provisioning and installation.

AGILITY ENHANCEMENTS:
- Continued the routing at the edge project, 15 installations complete.
- 52% growth in buildings with centrally provided converged communications
- 47% decrease in departments providing their own telephone and network services

2011-2012 PLANS

- Using new Student IT Fee revenue, investments will be made in:
  - Installing and enhancing classrooms with modern technologies
  - Expanding and enhancing online learning environments
- Implement a Course Management feature that will provide more efficient approval of new courses and fees.
- Provide all students with Turning Technologies hardware/license bundle during new student orientation.
- The 24/7 will build a service model and offer Tier 1 support for departmental IT units increasing campus IT support efficiencies.
- Assess the ongoing demand for Podcast Producer and formalize the support model.
- Continue support of iTunesU and formalize the support model.
- Create new standards for classroom technology and implement in all centrally scheduled classrooms per plan, add technology to newly identified classrooms, and implement a remote assistance system for remote classrooms (i.e. downtown).
- Expand open access, staffed hours in multimedia labs to better meet student needs.
- Refresh gear for Gear-To-Go, replacing broken or retired equipment and adding greater capacity for more reservations.
**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):** Continued the 71-member, campus-wide faculty support group, organized to investigate and support emerging technologies in education. Special Interest Groups (SIGs) are spin-off groups within LATTe and complete collaborative cross-campus projects related to instructional technology. Membership includes faculty, teaching assistants, administrators, and support staff.

**Teaching Academy:** Continued the Bi-Annual Teaching Academy events each fall and spring semester. Conducted hands-on workshops during the bi-annual Teaching Academy in various teaching and learning strategies enhanced with technology.

**Mobile Apps:** Piloted a mobile instructional application with Chemistry faculty.

**Elluminate:** Fully launched a virtual classroom tool (Elluminate) and created tutorials and practice sessions for faculty to explore this technology.

**D2L:** Created numerous D2L play spaces for faculty to explore additional tool sets and features within the learning management system and worked with several faculty to develop solutions for migrating responder data into D2L for student assessment activities.

**Tool Integration:** Completed integration of Elluminate and Turn It In with D2L.

**AZLive:** Continued support of AZLive—a 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. 16 AZ-LIVE class projects FY2010-2011.

**Multimedia Learning Laboratory:** Continued growth and support of Multimedia Learning Laboratory, which provides lab space, software, and consultation for creation of multimedia projects. Completed audio room addition to new MLL location in Music Building.

**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.

**2011-2012 Plans**

- Create new standards for classroom technology and implement in all centrally scheduled classrooms per plan, add technology to newly identified classrooms, and implement a remote assistance system for remote classrooms (i.e. downtown).
**Action Item 4**

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

**ACCOMPLISHMENTS**

**Enhanced Teaching Resources:** Continued expansion of 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.

**Faculty Speak Series:** Launched four new videos in the Faculty Speak series: a series of short videos of faculty describing their use of instructional technologies.

**OIA Website:** Included examples of instructional technology usage in all areas of the OIA website.

**Learning and Teaching with Technology (LATTE.oia.arizona.edu):** Provided 12 presentations on instructional technology integration at the LATTe meetings.

**Faculty Forums:** Hosted faculty forums to share ideas and stimulate innovative and exploratory ideas.

**2011-2012 Plans**

- Continued growth of D2L usage, D2L data storage investment, and expansion of the product capabilities in order to better serve our community.

**Action Item 5**

Organize and facilitate faculty forums to present new approaches in teaching. *This is an ongoing effort.*

**ACCOMPLISHMENTS**

**Outreach to Faculty:** OIA hosted the annual 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 Plans**

- As funding allows, continue to enhance, expand, and support all above activities.
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

**Design and Construction of Research Data Center:** New research-focused Data Center proposed and funded through CIO, VPR, UA Space Committee, and College Deans. Facility occupation is expected in early fall 2011.

**Re-develop RC and HPC/HTC Websites:** Initiated project to re-develop Research Computing and HPC/HTC websites to facilitate better access to new shared Data Storage and Research Data Center resources acquired through 2010 HPC Technology Refresh Project.

**HPC Storage:** Created HPC Storage “rental” service for TB level storage requirements.
- Added High Capacity and High Performance Storage subsystem for HPC.
- DDN GridScaler and SFA 10000 high capacity > (2PB capable) and high performance, parallel (GPFS) storage purchased as a component of the HPC Tech Refresh Project. This storage will be implemented when the new Research Data Center is available.
**STRATEGIC AREA 6: RESEARCH COMPUTING**

**HPC/HTC REFRESH:** In collaboration with the research community authored, assessed and awarded an RFP for the next generation central HPC/HTC and Storage environments.

**NETWORKING RESOURCES:**

**Speed/Capacity Upgrades:**
- Major renovations in three buildings had substantial upgrades and improvements that resulted in 19 substandard telecommunications rooms being reduced to 10 state-of-the-art locations.

**Redundancy/Stability Enhancements:**
- Continued due diligence in firewall provisioning and installation.

**Agility Enhancements:**
- Continued the routing at the edge project, 15 installations complete.
- 52% growth in buildings with centrally provided converged communications
- 47% decrease in departments providing their own telephone and network services

**Identity Federation:** Continued investment in Shibboleth and membership in InCommon Federation providing enhanced efficiencies and security for students, parents, faculty, and employees through use of UA’s NetID, including enabled access to an increased number of education/research resources. Enforced our institutional authentication, authorization, and privacy requirements when implementing third-party, hosted, or cloud-based services, and developed the infrastructure for an ASU/UA HPC portal.

**2011-2012 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.
- 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**

**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 132.
  - HPC PI awards: expected $18.0M, actual $30.4.
  - AZ-LIVE research projects: 15 projects were expected, 16 projects were actually realized.
AZ-Live PI awards: $1.5M expected, $21.0 actual
- Conducted projects and demonstrations to provide user support and resource information.
  - 14 Visualization Projects.
  - 16 AZ-LIVE Research Projects.
  - 16 AZ-LIVE Instructional Projects.
  - 32 AZ-LIVE Tours.
  - 28 Workshops, Conferences, and Outreach.

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

**ONLINE SURVEY TOOLS**: Provided support for DatStat Illume online survey tools, staff provided user consulting and support for research related Illume surveys.

**2011-2012 PLANS**
- As the new HPC/HTC systems are brought online, job monitoring/visibility tools will be implemented to enhance researchers’ ability to utilize the central compute facilities.
- During the 2011 HPC refresh cycle, introduce High Throughput Computing (Grid, Cloud), a type of computing in demand by an increasing number of UA researchers.

**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.
- Added High Capacity and High Performance Storage subsystem for HPC.
- DDN GridScaler and SFA 10000 high capacity > (2PB capable) and high performance, parallel (GPFS) storage purchased as a component of the HPC Tech Refresh Project. This storage will be implemented when the new Research Data Center is available.

**DATA MANAGEMENT AND CURATION ADVISORY COMMITTEE**: Charged to provide input to CIO, Dean of Libraries, and VPR regarding a possible institutional approach to the management and curation of research data.

**2011-2012 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.
**STRATEGIC AREA 6: RESEARCH COMPUTING**

- 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 4**

Replace the Sponsored Projects Information System (SPINS) with Kuali Coeus (KC) Research Administration. *Percent Complete: 40%*

**ACCOMPLISHMENTS**

**BACKOFFICE FUNCTION IMPLEMENTED:** KC release 2 in place as "back office" function to be used by Sponsored Projects to enter proposals and awards.

**DASHBOARDS:** BI dashboards that provide campus visibility to proposals and designed similar for awards.

**2011-2012 PLANS**

- Upgrade to KC release 3 in "back office" mode.
- Make awards data available through Analytics.
- Roll out proposal functions to campus including automated submission via grants.gov.

**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**

**HIGH PERFORMANCE COMPUTING (HPC):** Extended the HPC systems operational, support contract for the current HPC systems.

**HPC/HTC REFRESH:** In collaboration with the research community authored, assessed and awarded an RFP for the next generation central HPC/HTC and Storage environments.

**HPC STORAGE:** Created HPC Storage “rental” service for TB level storage requirements.
- Added High Capacity and High Performance Storage subsystem for HPC.
- DDN GridScaler and SFA 10000 high capacity > (2PB capable) and high performance, parallel (GPFS) storage purchased as a component of the HPC Tech Refresh Project. This storage will be implemented when the new Research Data Center is available.

**2011-2012 PLANS**

- HPC/HTC colocation facilities: Establish process and practices around collocating research computing systems from various research groups into the newly constructed facility.
- HPC/HTC Systems implementation: Implement the computing and storage systems that were chosen by the HPC Technical Refresh Advisory Committee.
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

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 132.
  - HPC PI awards: expected $18.0M, actual $30.4.
  - AZ-LIVE research projects: 15 projects were expected, 16 projects were actually realized.
  - AZ-Live PI awards: $1.5M expected, $21.0 actual
- Conducted projects and demonstrations to provide user support and resource information.
  - 14 Visualization Projects.
  - 16 AZ-LIVE Research Projects.
  - 16 AZ-LIVE Instructional Projects.
  - 32 AZ-LIVE Tours.
  - 28 Workshops, Conferences, and Outreach.

ASU-UA HPC Portal Project: Collaborated on 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: Assisted with development of research technology and data center construction proposal.

Design and Development of Research Computing Governance: Proposed creation and implementation of IT Governance structure for central HPC/HTC, Storage and Research Data Center.

Security Plans and Assessments:
- Performed FISMA assessment for NIH Children’s Study grant.
- Created and began use of compliance checklist for HIPAA HITECH compliance.
- Joined ITAR Workgroup to provide security expertise and assist with ITAR initiatives.

2011-2012 Plans

- Re-initiate UA Research Cyber Infrastructure project; develop first steps and project approval through UITS leadership.
- Establish Research Cyber Infrastructure Strategic Advisory Board.
- Establish Research Technology Governance structures and process to facilitate faculty and UITS interaction in establishing direction for research-focused technologies.
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. Percent Complete: 100%

ACCOMPLISHMENTS

This item is complete.
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: Continued investment in Shibboleth and membership in InCommon Federation provided enhanced efficiencies and security for students, parents, faculty, and employees through use of UA’s NetID:

- Enabled access to an increased number of education/research resources such as NIH's National Center for Biotechnology Information (NCBI); NCSA's CILogin (access to research CyberInfrastructure); and Teragrid (open scientific discovery computational infrastructure).
Strategic Area 7: Information Technology Strategic Alliances

- Developed the infrastructure for an ASU/UA HPC portal, leveraging Shibboleth and InCommon.
- Presented information with UA CIO at Arizona Community Colleges Tech Officers' meeting in March 2010 on federated identity management.

Collaboration: Held Tri-U Security retreat in May 2011. Collaboration initiatives were agreed upon for FY 2011-12.

Outreach: Degree Tracker team visited ASU to learn about eAdvisor system. Organized and hosted one-day session with ASU and NAU to review mutual progress and plans and identify opportunities for collaboration.

2011-2012 Plans

- Assuming stable funding, we will continue to enhance, expand, and support all above activities.
- Provide leadership and participation to support collaborations in 5 areas (Application Scanning, Encryption, Sensitive Data Cleanup, Metrics, and Mobile Devices).
- Establish a co-managed (ASU & UA) data center on the Phoenix Biomedical Campus.
- Join and participate in the University Community Next Generation Innovation Project ("Gig.U") which seeks to accelerate the deployment of ultra high-speed networks to leading U.S. universities and their surrounding communities.

Action Item 2

Collaborate on the selection, provisioning, and operation of network and application vulnerability scanning solutions. Percent Complete: 100%

Accomplishments

This item is complete.

Action Item 3

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

Accomplishments

Mandatory Security Training Program: As we created the all employee mandatory security training program, we leveraged the all employee mandatory training programs at ASU and NAU. Published and implemented the Web Application Security Assessment Procedure and Critical Device Scanning Procedure.

Risk Assessment: Collaborated with and assisted UA departments in developing mitigation plans to reduce risk based on the results of the University-wide risk assessment.
**WEB APPLICATION SECURITY REVIEW:** In collaboration with campus constituencies, implemented a Web Application Security Review based on criticality of applications, as determined in the risk assessment.

**2011-2012 Plans**

- Continue working with partnership departments and with departments who have not contacted us nor completed a risk mitigation plan.

**Action Item 4**

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

**Accomplishments**

**Training:** Regular and on-going communications with ASU and NAU with both business and technology aspects of administrative systems.

**Collaboration:** Engaged ASU personnel in organizational development of BI team. Also, engaged ASU personnel in PeopleTools upgrade planning, resulting in early awareness of potential pitfalls on the UA project.

**Outreach:** Visited ASU to learn about eAdvisor system.

**2011-2012 Plans**

- Establish a Tri-University co-sponsorship model for the Internet2 SEGP program.

**Action Item 5**

Continue the UA/ASU joint membership in CENIC (Corporation for Education Network Initiative in California) and National Lambda Rail. *Percent Complete: 100%. This project was completed in 2008-09, and continues to be funded as needed.*

**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.

**GovNet:** Continued work on deploying a statewide broadband system for government, education, and healthcare

**Broadband Governance Council:** Continued participation with state-level group to coordinate statewide networking efforts
STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES

2011-2012 PLANS

- Internet2 SEGP: expand upon the existing CENIC collaboration to enable the provisioning of access to high speed research and educational networks in surrounding communities, including K12 and community colleges.
- Working with regional networking initiatives to enhance the statewide and national network access and capabilities.

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. Percent Complete: 100%

ACCOMPLISHMENTS

This item is complete.

Action Item 7

Continue to strengthen the interface between the Arizona Universities Network (AZUN). Percent Complete: 100%

ACCOMPLISHMENTS

This item is complete.

Action Item 8

Define a new comprehensive and sustainable IT environment and support model that will take into account non-UA occupants and continual expansion of facilities, students, and occupants. This is an ongoing effort.

ACCOMPLISHMENTS

IT SUPPORT POSITIONS: New IT support positions jointly funded by UITS and PBC COM Discussions and planning have begun in identifying a new campus data facility

2011-2012 PLANS

- Continue to support these activities and others as opportunities arise.
- Facilitate the occupation of the Health Sciences Education Building with modern, robust networking and telephony equipment.
- Formulate a cross-unit working group to define the new support model, identify issues, and coordinate solutions and operations.
**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 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). This is complete and continues as part of ongoing operational activities.

**2011-2012 PLANS**

- Assuming stable funding, we will continue to enhance, expand, and support all above activities.

**Action Item 10**

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

**ACCOMPLISHMENTS**

**State of Arizona-Counties Communication Network (SACCNET):** Provided letters of endorsement to the statewide networking initiative SACCNET to enhance the statewide and national network access and capabilities.

**GovNet:** Continued participation in the deployment of a statewide broadband system for government, education, and healthcare

**Broadband Governance Council:** Continued participation in state-level group to coordinate statewide networking efforts

**2011-2012 PLANS**

- Join and participate in the University Community Next Generation Innovation Project ("Gig.U") which seeks to accelerate the deployment of ultra high-speed networks to leading U.S. universities and their surrounding communities.
- Establish IGA with the city of Tucson to connect our networks.
- Continue to work with regional networking initiatives to enhance the statewide and national network access and capabilities.