INTRODUCTION ................................................................................................................................................................... 4

IT STRATEGIC PLANNING CLIMATE...................................................................................................................................................... 5

GOALS AND MAJOR ACCOMPLISHMENTS WITHIN THE UA STRATEGIC DIRECTIVES CONTEXT .......................................................... 6

THE YEAR IN REVIEW: KEY ACCOMPLISHMENTS ...................................................................................................................................... 7

THE YEAR IN REVIEW: BY THE NUMBERS .............................................................................................................................................. 9

STRATEGIC AREA 1: STUDENT LEARNING AND SUCCESS .................................................................................................................. 15

  Goal 1: Improve Student Learning and Success through Technology Related Initiatives ................................................................. 15

STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE............................................................................................ 22

  Goal 2: The network must be robust, reliable, standardized, consistent, state-of-the-art, and operating with continuous improvements and stable funding ........................................................................................................................................................................... 22

  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. .............................................................................................................................................. 23

STRATEGIC AREA 3: ADMINISTRATIVE EFFECTIVENESS ................................................................................................................... 27

  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 ......................................................................................................................................................................................... 27

STRATEGIC AREA 4: INFORMATION TECHNOLOGY SECURITY ........................................................................................................ 31

  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 ......................................................................................................................................................................................... 31

  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 ..................................................................................................................................... 38

  Goal 7: Provide an environment that encourages the use of technology to facilitate and enhance learning. ........................................ 38

STRATEGIC AREA 6: RESEARCH COMPUTING ..................................................................................................................................... 46

  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. ......................................................................................................................................................................................... 46

STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES .................................................................................. 53

  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. ......................................................................................................................................................................................... 53
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 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 2011-12 IT accomplishments mapped to UA’s strategic directives.
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 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 FY12 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>Students, Learning &amp; Success and Academic Technology</td>
<td>Improve student learning and success through technology related initiatives.</td>
<td>1 4 5 6 11 1 4 6 11 1 1 4 6 11 1</td>
</tr>
<tr>
<td></td>
<td>Provide an environment that encourages the use of technology to facilitate and enhance learning.</td>
<td>1 4 6 11 1 4 1 4 6 11 1 4 6 11</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>1 7 9 10 1 10 1 7 9 1 7 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>1 3 4 5 9 10 11 1 3 4 5 9 10 11 1 3 4 5 9 10 11 19</td>
</tr>
<tr>
<td>Administrative Effectiveness</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>2 8 13 14 5 7 2 3 10 11 2 3 10 11</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>8 11 13 14 8 11 13 14 8 11 13 14</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>8 12 13 14 8 12 13 14 8 12 13 14</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>1 9 10 1 9 10 1 9 10 1 9 10</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>1 2 7 1 7 1 2 7 13 14 1 2 7 13 14</td>
</tr>
</tbody>
</table>
The Year in Review: Key Accomplishments

1. **HIGH PERFORMANCE RESEARCH DATA CENTER**: In less than 9 months a state of the art, high performance, high efficiency research-focused data center was proposed, funded and brought live in January 2012 through the collaborative efforts of the Chief Information Officer, Vice President for Research, UA Space Committee and College Deans.

2. **UAConnect**: 13,000 faculty and staff email accounts were migrated to a campus provided service utilizing Microsoft Exchange.

3. **Mosaic Financials**: UAccess Financials went live October 5, 2011 and has been transitioned from project mode to sustaining mode.

4. **Classroom Technology Upgrades Project (CTU)**—This strategic 3-year project to replace and standardize the core technologies and infrastructure of many of our classrooms across campus attained several key milestones:
   - The CTU campus advisory and steering committee was created and will begin prioritizing classrooms and technology upgrades for the life of the project.
   - As a project jump-start an initial investment of $671,368 was made into high-priority classrooms.
   - A cross-institutional team was assembled to consider and make a recommendation for meeting the lecture capture and streaming needs of campus.

5. **Microsoft Campus Agreement Enhancements**: The Office of the CIO negotiated a new, enhanced Microsoft Campus Agreement (MCA) effective July 1, 2012, which includes:
   - Student option that covers licenses for Microsoft Office and Windows upgrades for a PC or MAC at no charge to students
   - Enterprise Server products for campus at no cost to departments and colleges
   - SQL and Systems Center server products for all campus servers at discount rates
   - Faculty/Staff option that covers licenses for Microsoft Office, Windows, Visio and Project Upgrades for a PC or MAC at no charge to departments and colleges
   - Home Use Program for faculty and staff to enjoy Microsoft Office for personal use at home for a very small fee
   - Microsoft’s free eLearning tutorials

6. **Mosaic Degree Tracker**: DegreeSearch.arizona.edu was implemented in beta and a pilot of Degree Tracker (Smart Planner) was rolled out in one college, College of Agriculture and Life Sciences.

7. **Health Sciences Education Building (HSEB) Networks**: Facilitated the occupation of the HESB with modern, robust networking and telephony equipment. The network has been designed; wiring is substantially complete; configuration and installation of networking devices has been started.

8. **ITAR, EAR, HIPAA, FISMA Assessment Methodology**: Developed knowledge and assessment methodologies for ITAR, EAR, HIPAA and FISMA as well as conducting policy mapping of HIPAA obligations to UA policies and standards.
9. **Multiprotocol Label Switching (MPLS):** Installed MPLS in the network core. Initial work on MPLS security tiers is done and will lead to more, reliable, standardized, consistent, and state-of-the-art networking infrastructure.

10. **Centralized Server Hosting, Administration and Storage:** Provided for additional growth in this area through the purchase of a 3 year Enterprise License Agreement with VMWare that includes licenses to upgrade all existing VMWare servers and add another 40 CPUs which will translate to 300 additional virtual servers, capacity planner and 500 View clients.

11. **Enterprise Instructional Support (EIS):** 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 7% increase in usage (over 252,000 seats in 6,365 courses).
   - Enhanced data integration with UAccess Student and Employee to ensure data integrity and timeliness.
   - Security, redundancy, stability, data storage and monitoring service enhancements were implemented for D2L and iTunes to maximize reliability.
   - Early Alerts was integrated with D2L.
   - Implemented a course management and fees process using automated workflow approvals.


13. **Web Application Security:** Continued enhancements in web application security posture include:

   - Web application and security scanning program established
   - Inventory database of criticality of applications under development
   - Train the Trainer program completed
   - Campus-wide scanning program implemented

14. **Centrally Managed Encryption Solution:** Pilot program completed. Encryption program has been communicated to campus, and units are in the process of working on encrypting portable devices.
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 indicated ABOR centralization metric)</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>FY2012 Actual</th>
<th>Growth FY11 to FY12</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>–</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>52</td>
<td>52</td>
<td>0%</td>
<td>52</td>
<td>100%</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>62,272</td>
<td>-11%</td>
<td>60,000</td>
<td>104%</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>92%</td>
<td>8%</td>
<td>100%</td>
<td>92%</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>–</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>164,000</td>
<td>200,313</td>
<td>222,180</td>
<td>252,000</td>
<td>13%</td>
<td>228,692</td>
<td>110%</td>
</tr>
<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>18,669</td>
<td>52%</td>
<td>13,380</td>
<td>140%</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>10,816</td>
<td>-12%</td>
<td>14,102</td>
<td>77%</td>
</tr>
</tbody>
</table>

1) The decrease is a result from some software packages that are no longer in use (for instance QWS3270 was used for individuals to access FRS and SIS, UAccess has eliminated that need).
2) Revised metrics from 2009 report
3) The increase in the online/email support requests resulted in the decreased walk-in support requests.
### 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>FY2012 Actual</th>
<th>Growth FY11 to FY12</th>
<th>FY2013 Goal</th>
<th>% of FY13 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>7 (^1)</td>
<td>-13%</td>
<td>6</td>
<td>91%</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>-</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>92% (^2)</td>
<td>8%</td>
<td>100%</td>
<td>92%</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>$15.8M</td>
<td>0%</td>
<td>$14.60</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>50</td>
<td>22%</td>
<td>29</td>
<td>172%</td>
</tr>
<tr>
<td>Implementation of a centralized, common email and calendaring system for faculty and staff</td>
<td>complete by Dec. 2011 (^3)</td>
<td>0%</td>
<td>10%</td>
<td>43%</td>
<td>100%</td>
<td>57%</td>
<td>100%</td>
<td>100%</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>48</td>
<td>2%</td>
<td>45</td>
<td>107%</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>656</td>
<td>12%</td>
<td>682</td>
<td>96%</td>
</tr>
<tr>
<td># physical servers located in central (UITS) data center(s).</td>
<td>10% growth per year (^4)</td>
<td>363</td>
<td>410</td>
<td>418</td>
<td>438</td>
<td>5%</td>
<td>585</td>
<td>75%</td>
</tr>
<tr>
<td># physical disk arrays located in central (UITS) data center(s).</td>
<td>10% reduction per year (^5)</td>
<td>27</td>
<td>23</td>
<td>19</td>
<td>19</td>
<td>0%</td>
<td>43 or Less</td>
<td>100%</td>
</tr>
</tbody>
</table>
### THE YEAR IN REVIEW: BY THE NUMBERS

<table>
<thead>
<tr>
<th>Metric</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>FY2012 Actual</th>
<th>Growth FY11 to FY12</th>
<th>FY2013 Goal</th>
<th>% of FY13 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># centrally provided storage capacity available to HPC.</td>
<td>5x with Technology Refresh</td>
<td>117 TB</td>
<td>117 TB</td>
<td>117 TB</td>
<td>472 TB</td>
<td>–</td>
<td>585</td>
<td>81%</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>54,395</td>
<td>-5%</td>
<td>41,873</td>
<td>130%</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>–</td>
<td>–</td>
<td>100%</td>
</tr>
</tbody>
</table>

1) Though actual metric decreased from 15 to 7, 43% represents progress toward goal of 6.
2) Wireless Network 92% is an average of 99% indoor coverage and 85% of outdoor wireless planning area.
3) Implementation of a centralized, common email and calendaring system in the cloud for faculty and staff scheduled for Dec. 2011 was completed by June 2012 with an on-premise Exchange solution.
4) This number should decrease or increase slowly as more servers are virtualized.
5) *Modified Goal 10% Growth to 10% Reduction. This metric should decrease or stay constant as we consolidate storage into bigger more efficient arrays. Represents progress toward goal to minimize the number of different arrays and to decrease the FTE allocation for management.
6) The 472TB does not include the 117 TB on the old system as they will be retired in July of 2012.

### Strategic Area 3: Administrative Effectiveness

<table>
<thead>
<tr>
<th>Metric</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>FY2012 Actual</th>
<th>Growth FY11 to FY12</th>
<th>FY2013 Goal</th>
<th>% of FY13 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>75%</td>
<td>95%</td>
<td>21%</td>
<td>100%</td>
<td>95%</td>
</tr>
<tr>
<td># centrally hosted enterprise level applications</td>
<td>1 additional application per year</td>
<td>29</td>
<td>35</td>
<td>30</td>
<td>32</td>
<td>6%</td>
<td>34</td>
<td>94%</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.
### Strategic Area 4: IT Security

<table>
<thead>
<tr>
<th>Metric</th>
<th>Goal</th>
<th>FY2009 (baseline)</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>FY2012 Actual</th>
<th>Growth FY11 to FY12</th>
<th>FY2013 Goal</th>
<th>% of FY13 Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment of a University Information Security Officer and a management framework</td>
<td>complete by June 2009 100%</td>
<td>–</td>
<td>–</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 50%</td>
<td>100%(^1)</td>
<td>100%</td>
<td>100%</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of a centrally-defined vulnerability assessment program for systems and web applications</td>
<td>complete by end of 2010 40%</td>
<td>45%</td>
<td>50(^2)%</td>
<td>60%</td>
<td>10%</td>
<td>100%</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td>Implementation of an incident management procedure</td>
<td>complete by June 2009 100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of a centrally-defined business continuity program</td>
<td>10% growth per year 40%</td>
<td>45%</td>
<td>25%</td>
<td>0(^3)</td>
<td>0</td>
<td>100%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>Implementation of a University standard for antivirus/anti-spyware protection</td>
<td>complete by June 2009 100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td># recipients of monthly user awareness newsletter</td>
<td>10% growth per year 55%</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</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 87</td>
<td>50</td>
<td>115</td>
<td>--</td>
<td>variable</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Website redesign to emphasize availability of resources by roles</td>
<td>complete by 2010 10%</td>
<td>100%</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Holding an annual awareness event (#events per year)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>400%</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 0%</td>
<td>50%</td>
<td>90%</td>
<td>–</td>
<td>75%</td>
<td>100%</td>
<td>90%</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Corrected metric scheduled for FY2012-2013
\(^2\) Corrected metric. 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
\(^3\) No growth due to focus during 2011-12 was on the security review program, which emphasized campus wide server and application vulnerability scanning, as well as developing and maintaining accurate server and application inventory.
### 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>FY2012 Actual</th>
<th>Growth FY11 to FY12</th>
<th>FY2013 goal</th>
<th>% of FY2013 goal</th>
</tr>
</thead>
<tbody>
<tr>
<td># courses hosted on central learning management system 10% growth per year</td>
<td>3,750</td>
<td>5,800</td>
<td>5,857</td>
<td>6,365</td>
<td>9%</td>
<td>5,073</td>
<td>125%</td>
<td></td>
</tr>
<tr>
<td># attendees in centrally hosted forums for exploration and showcasing of technology usage in the learning environment 10% growth per year</td>
<td>1,200</td>
<td>1,200</td>
<td>1,446</td>
<td>1,542</td>
<td>7%</td>
<td>1,933</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td># calls into central IT support center 10% growth per year</td>
<td>26,000</td>
<td>41,632</td>
<td>56,994</td>
<td>54,395</td>
<td>-5%</td>
<td>41,873</td>
<td>130%</td>
<td></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>FY2012 Actual</th>
<th>Growth FY11 to FY12</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>117</td>
<td>15%</td>
<td>138</td>
<td>85%</td>
</tr>
<tr>
<td>Deliver Kuali Coeus on time, on budget, and in scope</td>
<td>complete by January 2011</td>
<td>10%</td>
<td>See note 1 below</td>
<td>50</td>
<td>75</td>
<td>25%</td>
<td>Complete initial rollout by June 2012</td>
<td>75%</td>
</tr>
<tr>
<td># centrally provided storage cycles available to HPC</td>
<td>5x with Technology Refresh</td>
<td>117</td>
<td>117</td>
<td>0</td>
<td>472</td>
<td>100%</td>
<td>585</td>
<td>81%</td>
</tr>
<tr>
<td># centrally provided computing cycles available to HPC</td>
<td>5x with Technology Refresh</td>
<td>20</td>
<td>20</td>
<td>0</td>
<td>43</td>
<td>100%</td>
<td>100</td>
<td>43%</td>
</tr>
<tr>
<td>Dollar value of external grants supported by the research groups on HPC</td>
<td>5% growth per year</td>
<td><em>$25.8M</em></td>
<td>$30.4M</td>
<td>$32.4 M</td>
<td>$35.4M</td>
<td>9%</td>
<td>$32.9M</td>
<td>108%</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>0%</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>400</td>
<td>38%</td>
<td>187</td>
<td>214%</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. Rolling it out to campus. We have been constrained by the readiness of the software.

2) No growth until completion of Tech Refresh FY2012.

3) Significant changes in the definition of what UA considered to be “HPC” and some policy decisions in 2006, which added the concept of buy-in nodes, decreased the number of centrally provided computing cycles.
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): Continued enhancement and support for the Student Administration System including:
- Course Management and Fees implementation
- Implementation of My Financial Aid Page giving students better access to financial aid information
- Development of on-line change of major for newly admitted students
- Creation of an online orientation registration system application of SUN system in schedule of classes, course catalogue and transcripts
- UAlert enhancements and expansion
- Prescheduling of new students into required classes at time of orientation

Identity Federation: Continued promoting and facilitating the use of Shibboleth/InCommon for inter-institutional collaboration and research, as well as the preferred mechanism for integrating UA’s identity management infrastructure with third-party/hosted/cloud-based services. Federated trust relationships were established with several additional third-party service providers this year, including:
- Research.gov (NSF Grants/Research portal)
- Terradotta (study abroad/travel registration system)
- WEPA ("cloud" printing kiosks used in SUMC, OSCR labs, etc.)
- DMPTool (research data management tool)
- Zimride (carpooling/ridesharing for colleges/universities)
- Omnilert (emergency notification system)
- Federated trust relationships were established with several additional third-party service providers this year, including:
- Research.gov (NSF Grants/Research portal)
- Terradotta (study abroad/travel registration system)
**Technology (Tier 1) Support for Campus:** Continued 24/7 tier 1 support with notable shift in service requests as phone call and walk-in requests dropped slightly while on-line service requests increased by 50% year over year.

Total service requests:
- 54,395 calls (-5%)
- 10,816 walk-ins (-10%)
- 18,669 online requests (+56%)

**Student IT Investments through Student IT Fee:** Over $8.4 million generated by the Student IT Fee were distributed among the following programs and initiatives:

- Common Software/New Site Licenses: The Office of the CIO negotiated a new, enhanced Microsoft Campus Agreement effective July 1, 2012, which includes a Student Option that covers licenses for Microsoft Office and Microsoft Windows Upgrades for a PC or MAC at no charge
  - Free product upgrades for the entire 3-year duration of the agreement
  - Free eLearning tutorials through the IT Academy
  - Microsoft’s free eLearning tutorials
- Wireless Network (99% indoor coverage, 85% of outdoor wireless planning area)
- Technology (Tier 1) Support for Campus (24/7)
- OSCR Student Computing Laboratories, including refresh of two computing laboratories
- D2L Programming - Purchase of data storage capacity that should accommodate needs through FY13. Reduction of D2L programming support by 1.0 FTE.
- Student-related software renewals: Renewal of RightAnswers: knowledge management system for Student related content. Renewal of the Sophos antivirus and malware scanning license for student use.
- Online Education Project: The goal of the Online Education Project (OEP) is to improve campus capacity for excellence in teaching and learning within fully online or hybrid course environments and to create additional content available to off-campus students. FY12 is the first year of this initiative. To date, the OEP has generated 6 courses available beginning Summer 2012, and 3 more available in the Fall 2012 semester.
- Arizona Mobile (Student mobile applications portfolio) – release of the official UA mobile app in October 2011.
- Classroom Technology Upgrades Project: This strategic 3-year project to replace and standardize the core technologies and infrastructure of many of our classrooms across campus attained several key milestones:
  - The CTU campus advisory and steering committee was created and will begin prioritizing classrooms and technology upgrades for the life of the project.
  - As a project jump-start an initial investment of $671,368 was made into high-priority classrooms.
  - A cross-institutional team was assembled to consider and make a recommendation for meeting the lecture capture and streaming needs of campus.
- Information Technology Student Advisory Board Fund - Conducted a survey in the March 2012 to assess the IT needs and desires of the student body. Late in the year, they solicited a small number of proposals to provide funding for seed/investigational purposes.

**Continued Enhancement of Enterprise Instructional Support (EIS):** 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 7% increase in usage (over 252,000 seats in 6,365 courses).
Early Alerts was integrated with D2L.
Additional stability, data storage and monitoring service enhancements were implemented for D2L and iTunes.
Student Administration enrollment data integration was refined.

**CLASSROOM TECHNOLOGY SERVICES:**
- Supported the use of classroom technology for over 299,000 instructional hours with 19,776 equipment orders.
- Created minimum technology standards and upgraded 18 frequently used classrooms that previously had no installed technology.
- Identified and scheduled high-priority, critical needs rooms for implementation work.

**2012-2013 PLANS**
- Create an Online Orientation for International Students
- Complete GradPath project - allowing for streamlined processes for tracking Graduate Plans of Study.
- Work with OIA to develop an automated course creation function.
- Implement the new, enhanced Microsoft Campus Agreement to take effect July 1, 2012, including a Student Option that covers licenses for Microsoft Office and Microsoft Windows Upgrades for a PC or MAC at no charge to students.
- Continue wireless network expansion through FY13 to obtain 100% indoor coverage and 95% outdoor coverage.
- Implement technology for an additional 23 rooms that currently have none installed with minimum standards.
- Implement an emergency response communications system enabling bi-directional communications between classrooms and UAPD.
- Implement the recommendation of the cross-institutional team in FY13 for the lecture capture and streaming needs of campus.

**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:** The Office of the CIO negotiated a new, enhanced Microsoft Campus Agreement to take effect July 1, 2012, which includes:
- Student option that covers licenses for Microsoft Office and Windows upgrades for a PC or MAC at no charge to students
- Enterprise Server products for campus at no cost to departments and colleges
- SQL and Systems Center server products for all campus servers at discount rates
- Faculty/Staff option that covers licenses for Microsoft Office, Windows, Visio and Project Upgrades for a PC or MAC at no charge to departments and colleges
**Strategic Area 1: Student Learning and Success**

- Home Use Program for faculty and staff to enjoy Microsoft Office for personal use at home for a very small fee
- Microsoft’s free eLearning tutorials

**Student Administration (SA):**
- Continued enhancement of the staff and student experience by implementing modifications and/or enhancements to the UAccess Student system.
- Collaborated with a cross functional team that is advising on mobile applications.
- Provided support on an application reflecting course schedules, grades, to do list, notices and holds, and financial information including account balance, refunds, and payment plans.

**Technology (Tier 1) Support for Campus:** Continued 24/7 tier 1 support with notable shift in service requests as phone call and walk-in requests dropped slightly while on-line service requests increased by 50% year over year.

Total service requests:
- 54,395 calls (-5%)
- 10,816 walk-ins (-10%)
- 18,669 online requests (+56%)

**Mobile Apps:**
- The web portal for mobile app approach was revamped in 2012 to focus on a site friendly to mobile devices as well as desktops and laptops, and with a design driven out by campus marketing experts in conjunction with UITS.
- The web/mobile services leadership was changed in April 2012. New leadership is driving a collection of working groups, one of which is focusing on this subject. A web/mobile services high level vision was developed.
- A mobile application submission process was developed and cross functional team established.

**2012-2013 Plans**

- Site License: Continue to work with the BookStores in order to provide the campus with high levels of customer service support.
- Mobile Apps: Continue adding features to the mobile application for enhanced student/visitor/employee experience.
- Version 1.0 of the Mobile Matters site will go into production during Fall term, and follow up versions will be released to expand fostering a campus wide mobile application community.
- Update the UA website Phonebook feature and the Maps component update (4Q12 or 1Q13).
- Develop a Mobile governance process for prioritization and assessment.
- Enhance DegreeSearch and implement fully.
STRATEGIC AREA 1: STUDENT LEARNING AND SUCCESS

**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, 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 2011 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:**
- Participated in a pilot of Skillsoft training material with HR. Continued UACBT.
- Continued support of UACBT with over 1000 online courses.
- Added campus access to the Microsoft Academy, featuring 67 content areas with 948 e-learning sessions, including an array of web-based training on Microsoft Products.

**Mosaic Training:**
- Developed and delivered hands-on and web-based training for over 1500 end users of UAccess Financials, including intensive training for SuperUsers. This was a highly successful training model for the project implementation.
- Provided ongoing training for Business Office Toolkit, UAccess Analytics, UAccess Employee and UAccess Student.
- Continued support of Mosaic Community.
- Conducted needs assessment and developed proposal for implementation of Enterprise Learning Management, an employee-oriented training management system.

**Classroom Training and Workshops:** Developed and delivered demonstrations of Online Web App to support the UAConnect migration. Supported Microsoft IT Academy as an aspect of our UAConnect campus training effort.
Strategic Area 1: Student Learning and Success

2012-2013 Plans

- Resources permitting, start promoting Microsoft IT Academy for use in academic classes.
- Continue sustaining training for UAccess systems.
- Develop/revise and deliver training for updates and upgrades to existing UAccess systems and for UAccess Research.
- Develop and deliver Lync, Outlook, and SharePoint training for end users.
- Develop a train-the-trainer program for IT staff.

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): ITSAB was revitalized with 12 team members, new bylaws that strengthen the year-to-year transitions, and responsibility to spend $300,000 for Student IT needs from the Student IT Fee.

IT Surveys: Administered the annual student ITSAB survey in March-April of 2012.

Associated Students of the University of Arizona: Conducted frequent and specific interactions with Associated Students of the University of Arizona.

2012-2013 Plans

- Continue ITSAB with increased focus on education and member involvement.
- Continue to conduct the annual ITSAB survey and report results.
- Hold focus groups as needed on relevant student IT issues such as classroom technology and the network master plan.

Action Item 6

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

Accomplishments

Classroom Technology Upgrades Project (CTU) – This strategic 3-year project to replace and standardize the core technologies and infrastructure of many of our classrooms across campus attained several key milestones:

- The CTU campus advisory and steering committee was created and will begin prioritizing classrooms and technology upgrades for the life of the project.
- As a project jump-start an initial investment of $671,368 was made into high-priority classrooms.
- A cross-institutional team was assembled to consider and make a recommendation for meeting the lecture capture and streaming needs of campus.
**CONTINUED ENHANCEMENT OF ENTERPRISE INSTRUCTIONAL SUPPORT (EIS):** 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 7% increase in usage (over 252,000 seats in 6,365 courses).
- Student Administration enrollment data integration was refined.
- Additional stability, data storage and monitoring service enhancements were implemented for D2L and iTunes.
- Early Alerts was integrated with D2L.

**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 FY2011-2012 there were 3,500 Gear-to-Go reservations accommodated for students, faculty and staff and 41 Gear-to-Go devices were refreshed, expanding the number of available resources.

**MULTIMEDIA LABS:** Expanded multimedia lab hours from 74 weekly hours to 149 weekly hours, increasing availability by greater than 100%.

**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 16 Instructional projects, 30 AZ-LIVE tours and 12 research projects were completed in the center.

**TEACHING ACADEMY:** A symposium was offered in the fall and spring where faculty and instructional staff could 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. Campus colleagues held other meetings (NetManagers Mini Conference and the Mobile Health Users Group) in the ILC at the same time to leverage the ability to optimize exposure of campus personnel to a variety of IT offerings.

**PODCAST PRODUCER:** Support model formalized and documented.

**2012-2013 Plans**

- Continue above initiatives as funding allows.
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 completed. Education building upgrade has been started; network design is done and almost 100% of construction. Equipment has been ordered.

**Agility Enhancements:**
- Nine additional buildings were provided with centrally managed converged communication, bringing the total to 50 buildings.
- Eleven departments have been moved to centrally provided telephone and network services
- MPLS installed in core and initial work on MPLS security tiers is completed.

**Voice Messaging System:**
- Purchased Cisco CUWL licenses that enabled procurement of software for Cisco Unity Connection. Licenses for voice messaging are included for all currently VOIP users.
**STRATEGIC AREA 2: INFORMATION TECHNOLOGY INFRASTRUCTURE**

**IPS/IDS SYSTEM:**
- Research complete with plan to implement IPS/IDS on only strategic locations in our network and not at the border.

**10G FIBER SERVICE:**
- 144 strands of single-mode optical fiber were added from the Computer Center to Life Sciences South

**TELEPHONE EQUIPMENT ROOM MONITORING:**
- Environmental monitors were installed in 10 buildings.

**2012-2013 PLANS**
- MPLS resiliency through extra modules.
- Begin MPLS edge implementation.
- Move existing VOIP users to the new voice messaging system.
- Identify hardware needed for implementing IPS/IDS at strategic locations and budget it for the next year.

**Action Item 2**
Complete the installation of wireless. *This is an ongoing effort.*

**ACCOMPLISHMENTS**

**CAPACITY/SPEED ENHANCEMENTS:** Indoor wireless coverage was added to 13 buildings. Outdoor coverage was added in 14 areas. Wireless coverage was completed in 26 buildings. 99% of campus indoor space and 85% of outdoor space has wireless coverage.

**2012-2013 PLANS**
- 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 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.
Strategic Area 2: Information Technology Infrastructure

- Optimizing and consolidating other IT support functions where appropriate.

Accomplishments

Enhanced the IT Governance, Standards and Processes Collaboration:
- Held final meeting of Mosaic Executive Steering Committee in April, 2012. Formal project essentially completed. Any remaining governance issues will be handled at Provost's Council.
- CIO White boarding sessions included broad campus representation for upcoming and ongoing campus IT issues.
- Formation of Faculty Senate IT Ad-Hoc Committee
- Campus-wide UAConnect governance and working groups insured success of project

Continued Growth and Investment in Scalable, Centralized Server Hosting and Administration:
- Purchased a 3 year Enterprise License Agreement (ELA) with VMWare that includes licenses to upgrade all existing virtual servers, and an additional 40 CPU's which will increase our capacity by 300 additional virtual servers, capacity planner, and 500 virtual desktops.
- Continued standardization of the virtual infrastructure; the UAConnect project is 100% virtualized.
- Number of virtual servers owned and managed by campus units and located in central (UITS) data center(s) increased by 5% to 48.
- Number of virtual servers owned and managed by UITS and located in the central (UITS) data center increased by 13% to 656.
- Number of physical servers located in central (UITS) data center(s) increased by 5% to 438.
- Implemented the campus web services for self-managed websites available for departments, campus organizations, and faculty.
- The virtual desktop pilot program concluded with 50 users, resulting in 180 virtual workstations in production.

Continued Growth and Investment in Scalable Storage for Consolidation Efforts:
- Upgraded the D2L database servers to improve performance and the data center load balancers to increase the capacity for the UAConnect project.
- Completed construction and implementation of a new Research Computing Data Center.
- Completed storage upgrade project:
  - Replaced the enterprise storage arrays doubling overall storage and the growth capability for increased capacity and performance in order to support all existing enterprise systems and the UAConnect project.
  - Created a highly available, extensible, fault tolerant environment by implementing enterprise network file server appliances to replace multiple individual file servers.

Consolidation of Other IT Support Functions:
- Identity Federation: Continued promoting and facilitating the use of Shibboleth/InCommon for inter-institutional collaboration and research, as well as the preferred mechanism for integrating UA's identity management infrastructure with third-party/hosted/cloud-based services. Federated trust relationships were established with several additional third-party service providers this year, including:
  - Research.gov (NSF Grants/Research portal)
  - Terradotta (study abroad/travel registration system)
  - WEPA ("cloud" printing kiosks used in SUMC, OSCR labs, etc.)
- DMPTool (research data management tool)
- Zimride (carpooling/ridesharing for colleges/universities)
- Omnilert (emergency notification system)
- Continue leveraging Shibboleth/InCommon for federated IdM with third-party service providers. Use of Shibboleth and InCommon allow us to leverage our institutional single sign-on system (WebAuth), and gives us the ability to specify exactly which data elements (attributes) are released to third-party service providers.

- Common Software/New Site Licenses: The Office of the CIO negotiated a new, enhanced Microsoft Campus Agreement to take effect July 1, 2012, which includes:
  - Student option that covers licenses for Microsoft Office and Windows upgrades for a PC or MAC at no charge to students
  - Enterprise Server products for campus at no cost to departments and colleges
  - SQL and Systems Center server products for all campus servers at discount rates
  - Faculty/Staff option that covers licenses for Microsoft Office, Windows, Visio and Project Upgrades for a PC or MAC at no charge to departments and colleges
  - Home Use Program for faculty and staff to enjoy Microsoft Office for personal use at home for a very small fee
  - Microsoft’s free eLearning tutorials
  - Home Use Program for faculty and staff to enjoy Microsoft Office for personal use at home for a very small fee.
  - Microsoft’s free eLearning tutorials

- Classroom Technology Services:
  - Supported the use of classroom technology for over 299,000 instructional hours with 19,776 equipment orders.
  - Created minimum technology standards and upgraded 18 frequently used classrooms that previously had no installed technology.
  - Identified and scheduled high-priority, critical needs rooms for implementation work.

- Web Services:
  - 390 websites centrally hosted.

**2012-2013 Plans**

- Continue services above as funding allows.

**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**

**UA CONNECT:** 13,000 faculty and staff email accounts were migrated to a campus provided service utilizing Microsoft Exchange.
IDENTITY MANAGEMENT INFRASTRUCTURE: Upgraded UA WebAuth environment to latest release of JA-SIG CAS (3.4), running on virtual server resources; researched various service registry solutions, decided to go with model implemented by University of Washington. Implemented more robust access request portal for IAM services; implemented more streamlined metadata submission/update process for Shibboleth IdP environment; provided request mechanism for test NetIDs/EDS entries.

TWO-FACTOR AUTHENTICATION MECHANISM FOR NETID PASSWORD CHANGES: Project completed. To date, approximately 26,500 users have self-enrolled in the two-factor NetID password reset service.

IMMEDIATE NETID CREATION: Project completed. New employees and students are automatically provisioned in our enterprise person registry (EDS) at the time they are created in the enterprise systems (PeopleSoft CS & HCM), allowing the immediate self-service creation of UA NetIDs.

ENABLING APPLICATION INTEGRATION:
- The adoption of SOA principles and web services-based integration has exploded over the last year. SOA design patterns and technology used to provide programmatic access to numerous UAccess Student services to campus departments, including services used in recruiting admissions, registration, bookstore and bursar processes.
- Worked with UAccess Student Tech Team to create UA Schedule of Courses web service, used by both the Arizona Mobile application as well as campus departments
- Used SOA technologies to integrate third-party services for Risk Management/Study Abroad and emergency alert service, with UA systems and processes.

MACE GROUPER SOFTWARE: Continued provisioning application/workgroup-specific groups, including some for the UAConnect BPOS migration and groups for UAnswers and UAccess workgroups. Tested Grouper 1.6, but delayed implementation due to 2.0 release by Internet2. Work to migrate to Grouper 2.1.0 is underway. Refactored nightly Grouper loader process to be more robust.

2012-2013 PLANS
- Continue leveraging Shibboleth/InCommon for federated IdM with third-party service providers.
- Upgrade Shibboleth IdP, NetID and EDS infrastructure (software versions and P2V migration).
- Create dedicated test environment for IAM.
- Provide UA service registry, which can be used to locate service metadata, register departmental services, and provide info/updates to service consumers.
- Migrate SOA environment to Oracle SOA Suite 11g.
- Will move to Grouper 2.1.0 in Spring/Summer 2012--concurrent with Grouper upgrade, we will provide the ability to delegate branches of the Grouper namespace to University departments/organizations, to allow self-management of groups in Grouper/EDS.
- Researching Grouper 2.x role-based access control mechanism, and how to offer this as capability as a service.
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 that occurred in a replacement effort.

The transition from project status to sustaining mode has been essentially transparent to campus. The sustainment group has worked closely with teams within the UITS Client and Infrastructure Services group (24/7 IT Support Center, the Environment team, and Security and Access Management) to ensure that the systems are managed well and that clients receive an exceptional level of customer service.

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 apppellations 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%
STRATEGIC AREA 3: ADMINISTRATIVE EFFECTIVENESS

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:** Continued the collaboration and sharing of information with NAU and ASU.

2012-2013 PLANS

- Continue to share information about Degree Tracker and Degree Search with ASU and NAU.

**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: 100%*

ACCOMPLISHMENTS

**Manager Self Service:** Transactions for Release 0, 1, and 2 have been completed and work is underway on transactions for Release 3, which is scheduled for implementation in the fall.

**Benefits Open Enrollment:** In July and August of 2011, implemented the new waiting period for the healthcare benefits, waiting period for ASRS retirement benefits and the fixed benefit healthcare plan which is offered to new employees for coverage during the waiting period.

**Multi-State Reporting:** Using an outside vendor, this new service provides local and state tax information for employees working in states other than Arizona. This is an ongoing process as it requires updating additional local and state entities required for taxation.

**Promotion and Tenure Tracking:** *100% complete.* Implemented this process for Provost Office use in FY 2012 and automated the process for tracking faculty tenure.
**Faculty Requisition and Offers Planning:** Phase one is 100% complete. Established a program for University departments to use to plan faculty recruitments, approve plans, and track associated offers. Delivered phase one of this project to track recruitment plans and offers for faculty in April/May of 2011. Work continues to develop a process for College of Medicine.

### 2012-2013 Plans

**Manager Self Service:** Continue work on Manager Self Service with completion of release 3 as follows:
- Release 3.0 – Requirements Gathering (End of Oct Implementation)
- New Hires/Rehires
- E-Verify
- I-9s (MSS/ESS)
- Other Professional Compensation
- Supplemental Compensation
- Summer/Winter Session
- Weekend MBA
- Notice of Appointment/Reappointment
- Inter-departmental Promotions/Transfers
- Department Changes

**Promotion and Tenure Tracking:** Make tenure information available for reporting through Analytics

**Faculty Requisition and Offers Planning:** Configure process for additional employee categories.

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**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%**

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**Accomplishments**

**Student Administration (SA):** Continued enhancement and support for the Student Administration System including:
- Course Management and Fees implementation
- Implementation of My Financial Aid Page giving students better access to financial aid information
- Development of on-line change of major for newly admitted students
- Creation of an online orientation registration system application of SUN system in schedule of classes, course catalogue and transcripts
- UAlert enhancements and expansion
- Prescheduling of new students into required classes at time of orientation

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**2012-2013 Plans**

- Student Administration: anticipate continued development on all modules; initiate/continue/complete new projects including updates/enhancements to Schedule of
Classes, enhancements to Course Management and Fees, further enhancements to UA Mobile, Online Orientation for International Students, and complete GradPath project - allowing for streamlined processes for tracking Graduate Plans of Study.

**Action item 8**

Replace the Financial Record System with the Kuali Financial System. *Percent Complete: 100%*

**ACCOMPLISHMENTS**


**TRANSITION:** Effected transition from project mode to sustaining mode.

**2012-2013 PLANS**

- Update and expand report offering using Financials Reporting Governance structure.
- Transform Archibus (Space) project from a departmental project and integrate into UAccess framework.

**Action Item 9**

Replace the Sponsored Projects Information System (SPINS) with Kuali Coeus (KC) Research Administration. Phase one: *100% complete*

**ACCOMPLISHMENTS**

**SPINS:** Implemented sufficient functionality to retire SPINS on May 2, 2012.

**KC RELEASE 3:** Rolled out KC Release 3 to Optical Sciences, Public Health, and Engineering *Percent Complete: 100%*

**BACKOFFICE FUNCTION IMPLEMENTED:** All data entered back to July 1, 2010 and validated. System upgraded from Release 2 to Release 3.

**DASHBOARDS:** Initial set of dashboards completed and in use. Awards data made available through Analytics.

**PROPOSAL FUNCTIONS:** Rolled out proposal functions to pilot colleges: Optical Sciences, Public Health, and Engineering.

**2012-2013 PLANS**

- Complete rollout to campus colleges/departments.
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:** The Tri-U IT Risk Assessment Workgroup has adopted the ISACA IT Risk Framework. The framework was modified slightly to fit higher education, but will be a shared framework among the Tri-U institutions. UA has an initial plan to pilot the risk assessment with central IT services for FY13.

**Annual Security Roadmap:**
- Conducted follow-up security maturity assessment to measure security posture as more programs become implemented and sustained.
- Conducted security maturity assessment to measure UA progress in developing holistic security program.
- Developed knowledge and assessment methodologies for ITAR, EAR, HIPAA and FISMA. Conducted policy mapping of HIPAA obligations to UA policies and standards. Policy changes are in progress.

**UA Risk Assessment:** Work was concluded on the previous security risk assessment. Application and server scanning program in progress, to be repeated annually, to assist in mitigating risk as part of comprehensive security program.

**Priority Security Reviews:** Partnerships have extended beyond action plans to include pilot encryption program for portable devices. Ongoing.

**2012-2013 Plans**
- Conduct second campus-wide security risk assessment.
Tri-U Risk: In FY13, refine the multi-year project plan for implementing an IT Risk Assessment Program at UA and pilot the risk assessment initiative with central IT services.

Conduct follow-up security maturity assessment to measure security posture as more programs become implemented and sustained.

Review recommendations in final report and begin implementations depending on priority, resources and funding. Ongoing.

Develop and publish annual security roadmap and initiatives. Ongoing.

Continue working with partnership departments and with departments who have not contacted us nor completed a risk mitigation plan. Partnerships have extended beyond action plans to include pilot encryption program for portable devices. Ongoing.

Continue development of compliance programs to ensure compliance requirements are addressed institutionally, and to assist units in their compliance efforts, including policies, training and assessment initiatives.

Ongoing scans of critical enterprise applications.

Action Item 2

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

ACCOMPLISHMENTS

**Enterprise Applications:** Coordinated security reviews for Internal Audit of UAccess Financial System, D2L and UAccess Student System and Financial Aid.

**Procedures:** Training modules in place for both web developer security and scanning tool training.

**Mosaic Project:** A UITS team has formed with the scope of scanning UITS applications. Scans are mostly complete for servers and in progress for applications.

**Web Application Security:** Web application and security scanning program in place. Inventory database in development to record criticality of applications. Train the Trainer program completed. Communication plan complete and campus-wide scanning program implemented.

**Campus-wide Scanning:** Campus-wide scanning of applications and servers implemented and ongoing.

**Mitigation Plans:** Working with partnership units to assist with mitigation plans and security review scanning for servers and applications. This is an ongoing effort.

**Enterprise Systems Security:** Ongoing periodic application scans of PeopleSoft HCM and SA, as well as other modules in post-production. Scanned Kuali Financial System and servers prior to go-live.

2012-2013 Plans

- Continue campus-wide scanning of internet facing servers and applications.
STRATEGIC AREA 4: INFORMATION TECHNOLOGY SECURITY

- Continue working with partnership units to assist with mitigation plans and security review scanning for servers and applications.
- Continue scans of critical enterprise applications.

**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:** Continued to provide leadership and collaboration among SAQC (Self-Assessment Questionnaire, ‘C’ level) merchants to facilitate PCI (Payment Card Industry) certification for campus. Quarterly meetings held with SAQ C Merchants. Quarterly scans completed, and annual assessments completed.

**INCIDENT MANAGEMENT:** New methodologies implemented to improve incident reporting. Standardized processes implemented to ensure that incident handling is thorough and improves overall security posture of affected units and campus, including lessons learned being fully implemented.

**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%.

**SENSITIVE DATA PROTECTION:** Implemented campaign for faculty-sensitive data cleanup and encryption of research PI data. Continued communication of campaign to department heads and faculty. Continued implementation of campus-wide encryption for mobile devices.

**PCI DSS:** 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.

**2012-2013 PLANS**

- Continue use of VPN to limit access to University resources.
- Continue network firewalls 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.
- Continue quarterly Workgroup meetings to review work plans and address compliance issues of new PCI DSS 2.0 regulation.
- Continue work on research, collaboration, and implementation of mobile device security.
- Continue to 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. This item is on the roadmap for 2012-2013.
**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 promoting and facilitating the use of Shibboleth/InCommon for inter-institutional collaboration and research, as well as the preferred mechanism for integrating UA’s identity management infrastructure with UA enterprise applications third-party/hosted/cloud-based services. Federated trust relationships were established with several additional third-party service providers this year, including:
  - Research.gov (NSF Grants/Research portal)
  - Terradotta (study abroad/travel registration system)
  - WEPA ("cloud" printing kiosks used in SUMC, OSCR labs, etc.)
  - DMPTool (research data management tool)
  - Zimride (carpooling/ridesharing for colleges/universities)
  - Omnilert (emergency notification system)
- 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.
- Continued extending our institutional authentication/authorization and privacy requirements to third-party service providers via our use of Shibboleth/InCommon.

**Upgrade Paths:**
- Upgraded UA WebAuth environment to latest release of JA-SIG CAS (3.4), running on virtual server resources.
- Researched various service registry solutions and decided to go with model implemented by University of Washington.
- Plans to pursue Aegis USA Trident HE Identity Management solution fell through when Aegis USA dropped the product.
- Implemented more robust access request portal for IAM services.
- Implemented more streamlined metadata submission/update process for Shibboleth IdP environment.
- Provided request mechanism for test NetIDs/EDS entries.
- Assessment of available solutions, cost considerations, and the advent of the OSIdM4HE initiative, led to conclusion that an RFP was premature at this time.

**2012-2013 Plans**
- Continue leveraging Shibboleth/InCommon for federated Identity Management with third-party service providers.
- Review identity proofing/credentialing process—specifically, the InCommon Assurance profiles—with goal of providing a "level of assurance" assertion, which some research organizations are starting to require.
- Investigate multi-factor authentication integration with federated Identity Management.
- Upgrade Shibboleth IdP, NetID and EDS infrastructure (software versions and P2V migration); create dedicated test environment for IAM; track "Open Source Identity Management for Higher Education" (OSIdM4HE) initiative (project involving the Kuali Foundation, Internet2, and several institutions, to build an open-source identity management "stack").
- Continue tracking "Open Source Identity Management for Higher Education" (OSIdM4HE) initiative (project involving the Kuali Foundation, Internet2, and several institutions, to build an open-source identity management "stack"), and other open-source Identity Management initiatives.

**Action Item 5**

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

**ACCOMPLISHMENTS**

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

**2012-2013 PLANS**

- Determine time frame for University-wide use of UC Ready project given current resources and priorities. ISO will be determining the time frame in the next fiscal year.
- Determine time frame for reviews of business continuity plans and disaster recovery plans given current resources and priorities. ISO will be determining the time frame in the next fiscal year.

**Action Item 6**

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

**ACCOMPLISHMENTS**

**ENCRYPTION WORKING GROUP:** Implemented in pilot units across campus. Communication regarding program to campus leading to increased use of encryption product.

**CENTRALLY MANAGED ENCRYPTION SOLUTION:** Pilot program has been completed. Encryption program has been communicated to campus, and units are in the process of working on encrypting portable devices.

**2012-2013 PLANS**

- Roll-out has begun to departments, and will continue in the coming fiscal year.
- 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. Ongoing
- Distributed email to all students in Fall 2011 regarding protecting their computers with free resources at UA. Ongoing
- Maintained UA Information Security Facebook page to post online security information that is current and relevant to UA community. Ongoing
- Role-based refresher mandatory security training for all employees with privileged access to UAccess systems developed.
- Hosted Department of Homeland Security Cyber Citizen Forum as part of Security Awareness Month.
- Collaborated with MIS instructors to participate in MIS classes and projects.

**Computer-Based Staff Training:**
- 12,280 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.
- Role-based refresher training developed.

**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. *Ongoing*

**Information Security Awareness:**
- Annual Information Security Awareness Day held on the Mall during Parents Weekend.
- Leveraged events during Security Awareness Month in order to reach out to a wider audience on campus.
- Worked with College of Education for outreach program to future UA students.
- Pamphlets are supplied to HR for new employees.
- ISO meets with students and parents during Orientation at table in Student Union.
- Created Facebook security web page and brochure.
- Hosted Department of Homeland Security Cyber Citizen Forum as part of Security Awareness Month.
- Collaborated with MIS instructors to participate in MIS classes and projects.

**2012-2013 Plans**

- Role-based refresher training implementation will take place in FY13.
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.

Distribute awareness information via new employee and student orientations, departments and monthly electronic newsletters, and other publications for employees and organizations.

Develop awareness and training session opportunities for Information Security Liaisons and Managers.

Explore opportunities to collaborate with Student Affairs departments in order to distribute information on the Online Reputation Program.

Explore opportunities to collaborate with the 24/7 IT Support Center in order to create a pro-active approach to security for students.
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:

- Added information to the Assessment section of the website to include content presented at the 2011 Assessment Showcase held in the Spring of 2011, including PowerPoint and video presentations.
- Used the OIA Blog as a communication tool to publish news items on OIA collaborations and announce scheduled workshops, trainings, and brown bag sessions.
- Faculty websites have been created that allow faculty to have a professional looking website to share information with their students and on research. These sites are created in Drupal by the OIA web team, and are then maintained by the faculty using Drupal content editing capabilities.
- Mobile and social networking computing: In addition to the OIA maintaining Twitter, iTunes, YouTube, and Facebook accounts as a means of promoting teaching practices via social networking, resources have been added to the OIA website and on mobile apps, instructional blogging, podcasting, and resources for teaching and learning using mobile computing techniques.
- Tech Tuesday educational sessions. UITS is collaborating with UA BookStores to build an educational forum that brings experts to the campus community in order to speak on technology-related topics.
**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 7% increase in usage (over 252,000 seats in 6,365 courses).
- Student Administration enrollment data integration was refined.
- Refined the process that loads employees/students into D2L to utilize four points of verification to ensure everyone is loaded.
- Various security, redundancy, and stability enhancements were implemented for D2L and iTunes.
- Early Alerts was integrated with D2L.
- New Office of Instruction and Assessment website went live during FY11.

**Common Software/New Site Licenses:** The Office of the CIO negotiated a new, enhanced Microsoft Campus Agreement to take effect July 1, 2012, which includes:

- Student option that covers licenses for Microsoft Office and Windows upgrades for a PC or MAC at no charge to students
- Enterprise Server products for campus at no cost to departments and colleges
- SQL and Systems Center server products for all campus servers at discount rates
- Faculty/Staff option that covers licenses for Microsoft Office, Windows, Visio and Project Upgrades for a PC or MAC at no charge to departments and colleges
- Home Use Program for faculty and staff to enjoy Microsoft Office for personal use at home for a very small fee
- Microsoft’s free eLearning tutorials

**Classroom Technology Services:** UITS supported the use of classroom technology for over 299,000 instructional hours with the management of over 19,311 equipment orders. Hardware (Elmos, projectors, computers, desk stations, etc.) and software were refreshed in three classrooms, Gallagher Theatre and a large lecture hall. Minimum standards were created, vetted and approved through faculty advisory committee, Student Affairs, and the Provost’s office. Piloted a remote system in the downtown office.

**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.

**Training:** Contractors provided Microsoft Outlook training geared specifically to the University’s system. Remaining training to be handled in-house by UITS.

**2012-2013 Plans**

- Continue collaboration on Tech Tuesday educational sessions with UA BookStores to build an educational forum that brings experts to the campus community in order to speak on technology related topics.
- Continue to work with the Bookstore in order to provide the campus with high levels of customer service support.
- Continue site license website updates.
STRATEGIC AREA 5: ACADEMIC TECHNOLOGY

- Continue creation of 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).
- Continue Outlook (UAConnect) training.

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): Continued enhancement and support for the Student Administration System including:
- Course Management and Fees implementation
- Implementation of My Financial Aid Page giving students better access to financial aid information
- Development of on-line change of major for newly admitted students
- Creation of an online orientation registration system application of SUN system in schedule of classes, course catalogue and transcripts
- UAlert enhancements and expansion
- Prescheduling of new students into required classes at time of orientation

IDENTITY FEDERATION: Continued promoting and facilitating the use of Shibboleth/InCommon for inter-institutional collaboration and research, as well as the preferred mechanism for integrating UA’s identity management infrastructure with third-party/hosted/cloud-based services. Federated trust relationships were established with several additional third-party service providers this year, including:
- Research.gov (NSF Grants/Research portal)
- Terradotta (study abroad/travel registration system)
- WEPA ("cloud" printing kiosks used in SUMC, OSCR labs, etc.)
- DMPTool (research data management tool)
- Zimride (carpooling/ridesharing for colleges/universities)
- Omnilert (emergency notification system)
- Federated trust relationships were established with several additional third-party service providers this year, including:
- Research.gov (NSF Grants/Research portal)
- Terradotta (study abroad/travel registration system)

TECHNOLOGY (TIER 1) SUPPORT FOR CAMPUS: Continued 24/7 tier 1 support with notable shift in service requests as phone call and walk-in requests dropped slightly while on-line service requests increased by 50% year over year.
Total service requests:
- 54,395 calls (-5%)
- 10,816 walk-ins (-10%)
- 18,669 online requests (+56%)
STUDENT IT INVESTMENTS THROUGH STUDENT IT FEE: Over $8.4 million generated by the Student IT Fee were distributed among the following programs and initiatives:

- A new, enhanced Microsoft Campus Agreement to take effect July 1, 2012, including a Student Option that covers licenses for Microsoft Office and Microsoft Windows Upgrades for a PC or MAC at no charge
- Wireless Network (99% indoor coverage, 85% of outdoor wireless planning area)
- Technology (Tier 1) Support for Campus (24/7)
- OSCR Student Computing Laboratories, including refresh of two computing laboratories
- D2L Programming - Purchase of data storage capacity that should accommodate needs through FY13. Reduction of D2L programming support by 1.0 FTE.
- Student-related software renewals: Renewal of RightAnswers: knowledge management system for Student related content. Renewal of the Sophos antivirus and malware scanning license for student use.
- Online Education Project: The goal of the Online Education Project (OEP) is to improve campus capacity for excellence in teaching and learning within fully online or hybrid course environments and to create additional content available to off-campus students. FY12 is the first year of this initiative. To date, the OEP has generated 6 courses available beginning Summer 2012, and 3 more available in the Fall 2012 semester.
- Arizona Mobile (Student mobile applications portfolio) – release of the official UA mobile app in October 2011.
- Classroom Technology Upgrades Project

INFORMATION TECHNOLOGY STUDENT ADVISORY BOARD (ITSAB): ITSAB was revitalized with 12 team members, new bylaws that strengthen the year-to-year transitions, and responsibility to spend $300,000 for Student IT needs from the Student IT Fee.

CONTINUED ENHANCEMENT OF ENTERPRISE INSTRUCTIONAL SUPPORT (EIS): 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 7% increase in usage (over 252,000 seats in 6,365 courses).
- Early Alerts was integrated with D2L.
- Additional stability, data storage and monitoring service enhancements were implemented for D2L and iTunes.
- Student Administration enrollment data integration was refined.

COMMON SOFTWARE/NEW SITE LICENSES: The Office of the CIO negotiated a new, enhanced Microsoft Campus Agreement to take effect July 1, 2012, which includes a Student Option that covers licenses for Microsoft Office and Microsoft Windows Upgrades for a PC or MAC at no charge.

- Free product upgrades for the entire 3-year duration of the agreement
- Free eLearning tutorials through the IT Academy
- Microsoft’s free eLearning tutorials

CLASSROOM TECHNOLOGY SERVICES:

- Supported the use of classroom technology for over 299,000 instructional hours with 19,776 equipment orders.
STRATEGIC AREA 5: ACADEMIC TECHNOLOGY

- Created minimum technology standards and upgraded 18 frequently used classrooms that previously had no installed technology.
- Identified and scheduled high-priority, critical needs rooms for implementation work.

OPEN COMPUTING LABS: Continued to maintain 12 general and multimedia labs, open to the campus community and staffed by student consultants. Staffed hours in the multimedia labs were expanded by 100% doubling the available time for classes and open access use. Additionally, the schedule was altered to enable more available times on Sundays due to student demand.

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 FY2011-2012 there were 3,500 Gear-to-Go reservations accommodated for students, faculty and staff and 41 Gear-to-Go devices were refreshed, expanding the number of available resources.

CONNECTIVITY:

SPEED/CAPACITY UPGRADES:
- Major renovations in three buildings completed. Education building upgrade has been started; network design is done and almost 100% of construction. Equipment has been ordered.

REDUNDANCY/STABILITY ENHANCEMENTS:
- Continued due diligence in firewall provisioning and installation. 70 new virtual firewalls were provisioned and replaced border firewalls with new hardware. This is an ongoing effort.

AGILITY ENHANCEMENTS:
- Completed the Routing at the Edge project, 15 installations complete. 100% complete.
- 50 buildings were provided with centrally managed converged communication. 100% complete.
- Two more departments were moved to centrally provided telephone and network services. 100% complete.

ONLINE EDUCATION PROJECT (OEP): The goal of the Online Education Project is to improve campus capacity for excellence in teaching and learning within fully online or hybrid course environments and to create additional content available to off-campus students. FY12 is the first year of this initiative. To date, the OEP has generated 6 courses that will be available beginning Summer 2012, and 3 more will be available in the Fall 2012 semester. Continued solicitation of proposals to create hybrid delivery courses, bottleneck enrollment, winter/summer session courses, and fully-online academic programs.

ARIZONA MOBILE (STUDENT MOBILE APPLICATIONS PORTFOLIO): Release of official UA mobile app in October 2011. Efforts beginning in building and maintaining a UA mobile applications portfolio.

2012-2013 PLANS

- Student Administration planning session with the business areas will happen in 3Q12, resulting in an enhancement roadmap for FY13.
One department is being considered (Cancer Center) for move to centrally provided telephone and internet services.

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).

Using new Student IT Fee revenue, investments will be made in:

- Wireless Network expansion will continue through FY13; seek to obtain 100% indoor coverage, assuming no issues within the Cancer Center. Obtain 95% outdoor coverage. Continued assessment of the D2L environment and storage needs for further faculty adoption.
- Continue implementation of Course Management feature using automated workflow approvals Continue to provide all students with Turning Technologies hardware device during new student orientation.
- Continued purchase of student use software to improve student success and the overall student experience. Continued operation of the 24x7 help desk as planned. Continue support of iTunesU.
- Continue the addition of minimum standard configuration technology in classrooms currently without by upgrading an additional 30 rooms.
- Add an emergency response communications system, a centralized video and audio capture and streaming system for instruction, and newly designed innovative technology-enabled teaching spaces. Continued operation of the laboratories. There are no laboratories scheduled for refresh in FY 13.
- Working with vendor and OIA to upgrade D2L to a new version in FY 2013.
- UITS will work with OIA to develop an automated course creation function.
- Refresh gear for Gear-To-Go, replacing broken or retired equipment and adding greater capacity for more reservations.
- Classroom Technology Upgrades (CTU): continued investment into classrooms, totaling no less than $4m in FY13.
- Online education project (OEP): Continued solicitation of proposals to create: hybrid delivery courses, bottleneck enrollment, winter/summer session courses, and fully-online academic programs.

**Action Item 3**

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

**ACCOMPLISHMENTS**

**eTEXTs:** Apple iBook publishing technologies have begun to be explored. This self-publishing etext technology is free and OIA personnel are looking at ways that this can be used by UA faculty to publish their own course packets, lab manuals and other online interactive modules.

**LEARNING AND TEACHING WITH TECHNOLOGY (LATTE.OIA.ARIZONA.EDU):** LATTe continues to meet monthly, membership has now grown to 100 individuals from all over campus. Some new SIGs were formed; inactive ones were discontinued *100% complete.*

**Teaching Academy:** Three events were held allowing students, faculty and staff an opportunity to familiarize themselves with emerging technologies, new learning tools and methodologies.
MOBILE APPS: Completed a mobile instructional application with Chemistry faculty. This app was released for the Apple Store and Google Play to support iOS and Android platforms. It displays the chemical composition of common pharmaceuticals for students and the general public. It is being used as a blueprint for other departments to create instructional apps.

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

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 16 Instructional projects, 30 AZ-LIVE tours, and 12 research projects were completed in the center. The Virtual Reality (VR) Annex continues to work with faculty to create images that faculty can use for teaching and instruction. VR technical capabilities were upgraded in the past year to begin using HTML5 technologies, enabling mobile computing access to VR images. This is an ongoing effort.

MULTIMEDIA LEARNING LABORATORY: Continued growth and support of Multimedia Learning Laboratory, which provides lab space, software, and consultation for creation of multimedia projects. Added Sunday hours to make lab more available to students.

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 committee launched initiatives such as teaching assistant preparation through seminars and brown bags. This is an ongoing effort.

2012-2013 PLANS

- Continue support of AZLive and VR Annex.

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: Professional Development - in addition to the Teaching Academies and May Showcase, OIA hosts seminars, workshops, brown bags and presentations throughout the academic year that address topical needs of faculty beginning to use technology or perfecting strategies to maximize instructional impact of technologies and to share ideas and stimulate innovative and exploratory ideas.

FACULTY SPEAKER SERIES: A series of short videos of faculty describing their use of instructional technologies. Videos for this series continue to be added, they are accessed through the OIA website. Content consists of interviews with faculty on teaching strategies and experiences in regards to specific areas of instruction.
**OIA Website:** The OIA website continues updated and expanded. New materials, references and examples of new technology (e.g., Mobile Computing) are added as they evolve.

**Learning and Teaching with Technology (LATTe.oia.arizona.edu):** LATTe continues to meet monthly, membership has now grown to 100 individuals from all over campus. Some new SIGs were formed, inactive ones were discontinued.

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

**2012-2013 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.

**2012-2013 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

**High Performance Research Data Center:** In less than 9 months a state of the art, high performance, high efficiency research-focused data center was proposed and funded and brought live in January, 2012 through the collaborative efforts of the CIO, VPR, UA Space Committee, and College Deans. **100% complete.**

**Re-Develop RC and HPC/HTC Websites:** Research Computing and HPC/HTC website was completed February 2012. **Phase 1 - 100% complete.**

**HPC Storage:**

- UA FSO rental rate of $53/TB/year was established for 2011-2012.
- Added High Capacity and High Performance Storage subsystem for HPC. **100% complete.**
- 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 and implemented when the new Research Data Center was available. **100% complete.**
HPC/HTC REFRESH: RFP was awarded and all major computing and storage systems were purchased by end of June 2011. 100% complete.

NETWORKING RESOURCES:

SPEED/CAPACITY UPGRADES:
- Major renovations in three buildings including 19 substandard telecommunications rooms were completed. Education building upgrade has been started; network design is done and almost 100% of construction. Equipment has been ordered.

REDUNDANCY/STABILITY ENHANCEMENTS:
- 70 new virtual firewalls were provisioned and border firewalls were updated with new hardware. This is an ongoing effort.

AGILITY ENHANCEMENTS:
- Nine buildings were provided with centrally managed converged communication. 100% complete

IDENTITY FEDERATION: Continued investment in Shibboleth and InCommon Federation to support access to federated research resources.
- Established InCommon federated access to NSF's production Research.gov portal in August, 2011.
- Established InCommon-federated access to University of California's "DMPTool" application, which provides researchers with tools to assist in meeting data management requirements of NSF and NIH grants.
- Prepared a plan to continue to reduce backup and storage costs for campus. HPC connected storage costs have been reduced from $456 per TB per year to $53 per TB per year; Cost effective backup technologies for TB to PB levels of data are not within the scope and reach of the HPC budget. A separate, cost effective, Enterprise-wide backup solution will need to be identified and implemented.

2012-2013 PLANS

- Assuming stable funding, we will continue to enhance, expand, and support all above activities.
- Plan to update/revise Research Computing website to version 2.
- Replace Routing at the Edge project with MPLS at the Edge project, and within this project we will also accomplish routing at the same time.
- As opportunities arise, continue the discussions between central and de-centralized information technology units to eliminate redundancies in service offerings and streamline process. This is a continuing effort that is discussed with college, department and research groups as an option available when they request collaborating on providing services or resources

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.
STRATEGIC AREA 6: RESEARCH COMPUTING

ACCOMPLISHMENTS

HPC METRICS AND SUPPORT:
- HPC systems %-Use: 86%.
- HPC system PIs: 118.
- HPC PI awards: $30.1.

AZ-LIVE METRICS AND SUPPORT:
- AZ-LIVE research projects: 12 projects.
- AZ-LIVE PI awards: $28.0 actual.
- Conducted projects and demonstrations to provide user support and resource information.
  - 12 Visualization Projects.
  - 12 AZ-LIVE Research Projects.
  - 16 AZ-LIVE Instructional Projects.
  - 30 AZ-LIVE Tours.
  - 27 Workshops, Conferences, and Outreach.

EXTERNAL RESEARCH GRANT PROGRAMS: Supported $35.4M 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. This is an ongoing effort.

- As the new HPC/HTC systems were brought online, job monitoring/visibility tools were investigated to enhance researchers’ ability to utilize the central computing facilities. The PBS batch/queue/scheduling "Analytics" module is not currently available for the latest version of the product that we are using on the new HPC/HTC systems. We are investigating joining Altair’s "beta" development project and implementing the module after its General Release Q3/Q4 2012
- During the 2011 HPC refresh cycle, an IBM iDataPlex system, designed for large numbers of serial jobs was included as a third type of computing system design to complement the MPI/parallel cluster and OpenMP/parallel, shared memory system. This item is in production and will continue to be supported and evaluated through its expected 3-4 year life-cycle

2012-2013 PLANS

- Continuing to investigate HPC/HTC job monitoring/visibility tools to enhance researchers’ ability to utilize the central compute facilities. The PBS batch/queue/scheduling "Analytics" module is anticipated in Q3/Q4 2012 and will be implemented in FY13 if/when it is available.

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. (NOTE: as of 2011-2012 TeraGrid has been
superseded by a new administrative group named XSEDE, and the name TeraGrid has been deprecated).

**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. A Library representative has been added to the Research Computing Steering Committee (UA RC governance committee) to maintain UITS understanding and involvement in development and implementation in future Data Management planning.

### 2012-2013 Plans

- Assuming stable funding, we will continue to enhance, expand, and support all above activities.
- Continue implementation and deployment of technical infrastructure necessary to support ASU/UA HPC Collaboration initiative.
- 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 processes.

**Action Item 4**

Replace the Sponsored Projects Information System (SPINS) with Kuali Coeus (KC) Research Administration. *75% complete*

**Accomplishments**

**SPONSORED PROJECTS INFORMATION SYSTEM (SPINS):** Implemented sufficient KC Research Administration functionality to retire SPINS on May 2, 2012. All data entered back to July 1, 2010 and validated. The system was upgraded from Release 2 to Release 3.

**Dashboards:** BI dashboards that provide campus visibility to proposals and designed similar for awards. Initial set of dashboards completed and in use. Rolled out KC Release 3 to Optical Sciences, Public Health, and Engineering. *100% complete.*

**Awards Data:** Awards data made available through Analytics.

**Proposal Functions:** Rolled out proposal functions to pilot colleges: Optical Sciences, Public Health, and Engineering.

### 2012-2013 Plans

- Campus Rollout: roll out KC 3.0 to colleges/departments.
**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 through June 2012.

**HPC/HTC Refresh:** RFP was awarded and all major computing and storage systems were purchased by end of June 2011. All hardware systems have been implemented. Some of the new capabilities of the systems will be implemented in the near future.

**HPC Co-location:** Co-location space has been designed and built and is available for use. RC Steering Committee (RC Faculty and Staff governance) is being established to discuss and advise on policies, practices, and procedures for Research Data Center (RDC) co-location.

**HPC Storage:** Created HPC Storage “rental” service for TB level storage requirements. 100% complete and ongoing.

- UA FSO rate of $53/TB/year was established for 2011-2012.
- DDN GridScaler and SFA 10000 high capacity > (2PB capable) and high performance, parallel (GPFS) storage implemented.

**2012-2013 Plans**

- 4700 and 8200 systems will be retired as of July 2012.
- HPC Storage: this is an ongoing item that will be updated as needed with new rates approved by UA FSO.
- HPC/HTC colocation facilities: Establish process and practices around collocating research computing systems from various research groups into the newly constructed facility. UITS will work within the new RC Steering Committee structure to define and implement RDC colocation policies and procedures. UITS will implement and manage the RDC co-location resources and service.
- HPC/HTC Systems implementation: implement htc OS switching, PBS Pro Analytics, PBS Pro Web Portals and address requests for new services and capabilities as they are proposed and vetted through the RC governance structure.

**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:**
- HPC systems %-Use: 86%.
- HPC system PIs: 118.
- HPC PI awards: $30.1.

**AZ-Live Metrics and Support:**
- AZ-Live research projects: 12 projects.
- AZ-Live PI awards: $28.0 actual.
- Conducted projects and demonstrations to provide user support and resource information.
  - 12 Visualization Projects.
  - 12 AZ-Live Research Projects.
  - 16 AZ-Live Instructional Projects.
  - 30 AZ-Live Tours.
  - 27 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. Project placed on hold.

**HPC Data Center:** Construction and implementation of new Research Computing Data Center. 100% complete.

**Design and Development of Research Computing Governance:** UITS representative participated on the Research Computing Governance Creation Committee. The committee’s recommendations to VPR and CIO have resulted in the creation of the Research Computing Steering Committee, which is the overarching RC governance body.

**Security Plans and Assessments:**
- HIPAA HITECH compliance. Policy mapping from HIPAA Security Rule to UA policies and standards is in progress. Compliance methodologies will flow from policy maps. This will be a more strategic approach to ensuring that the Security Rule requirements are met in UA policy.
- ITAR Workgroup participation provides security expertise and assist with ITAR initiatives. This is an ongoing effort.

**2012-2013 Plans**
- HIPAA HITECH compliance checklists will be created and used as part of compliance efforts.
- FISMA assessment for NIH Children's Study grant.
**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

**Collaboration:** Collaborative efforts have continued between the three state universities. *This is an ongoing effort.*

**Outreach:**
- Hosted one-day DegreeTracker working session with ASU and NAU.
Provided leadership and participation to support collaborations in 5 areas (Application Scanning, Encryption, Sensitive Data Cleanup, Metrics, and Mobile Devices. Efforts continue on these campus-wide initiatives.

Established a co-managed (ASU & UA) data center on the Phoenix Biomedical Campus. There is a small data center in the ABC1 building that we currently share with ASU. The long-term vision would be for UA to establish a more substantial facility on that campus to support the local research activities.

Joined 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.

2012-2013 Plans

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

Establish a more substantial data center on the Phoenix Biomedical Campus to support the local research activities.

Action Item 2

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

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: Preparing for 2nd campus-wide security risk assessment, to be conducted in the coming fiscal year. This is an ongoing effort.

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. Worked with the departments included implementing initiatives such as security review program and encryption projects. This is an ongoing effort.

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. This is an ongoing effort.
2012-2013 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: Continued to share information within the Tri-U system related to administrative system enhancements and issues. The Directors of the Business Analysis functions at the three Universities are meeting telephonically on a regular basis to discuss projects and business processes.

Collaboration:
- Participated in Tri-U research initiative with ABOR around use of research data sources (SciVal, Academic Analytics, and Data 180).
- Internet2 SEGP Program: Continued working to establish UA and ASU as SEGP providers in concert with the Sun Corridor Networking initiatives.

Outreach:
- Hosted 1-day working session on Degree Tracker with ASU and NAU.
- Worked to establish UA and ASU as SEGP providers in concert with the Sun Corridor Networking initiatives.

2012-2013 Plans

- Facilitate a Tri-U meeting of analysts and technical staff associated with the enterprise systems

Action Item 5

Continue the UA/ASU joint membership in CENIC (Corporation for Education Network Initiative in California) and National Lambda Rail. 100% complete. 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 and upgraded the network connectivity from campus to our Phoenix router and from the Phoenix router to CENIC to 10Gbps.

GovNet: Established contractual relationship between GovNet and the UA along with determining the UA’s participation level in the overall network to deploy a statewide broadband system for government, education, and healthcare.
**STRATEGIC AREA 7: INFORMATION TECHNOLOGY STRATEGIC ALLIANCES**

**BROADBAND GOVERNANCE COUNCIL:** Our CIO participates on the Broadband Governance council, commissioned by the Governor, as the Chairperson for the Strategic planning sub-committee.

**INTERNET2 SEGP:** Established UA and ASU legal paperwork enabling the provision Internet2 connectivity to surrounding communities.

**REGIONAL NETWORKING INITIATIVES:** Worked to enhance the statewide and national network access and capabilities. Continued collaborations with WRN, CENIC, and LEARN with the goal of improving the diversity of regional connectivity.

**2012-2013 PLANS**

- Work with CENIC, Internet2, NLR, and Level3 to improve the diversity of Arizona’s connectivity to the national R&E networks along with driving commodity internet rates down.
- Continue working with GovNet to deploy their network into UA remote facilities in need and in places where our presence advantages other public sector interests.
- Continue to participate in and guide, as appropriate, the efforts of the statewide Broadband council.
- Internet2 SEGP: Continue working to establish UA and ASU as SEGP providers in concert with the Sun Corridor Networking initiatives.
- Continue work with regional networking initiatives to enhance the statewide and national network access and capabilities.
- Continue collaborations with WRN, CENIC, and LEARN with to improve the diversity of regional connectivity.

**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. **100% complete.**

**ACCOMPLISHMENTS**

*This item is complete.*

**Action Item 7**

Continue to strengthen the interface between the Arizona Universities Network (AZUN). **100% complete.**

**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:** The partnership with PBC COM has continued to grow through investments by UITS in staffing and equipment. Defined a new support model and identified issues.

**HEALTH SCIENCES EDUCATION BUILDING (HSEB) NETWORKS:** Facilitated the occupation of the HESB with modern, robust networking and telephony equipment. Network has been designed; wiring is substantially complete; configuration and installation of networking devices has been started.

**2012-2013 PLANS**

- Continue to support these activities and others as opportunities arise.
- Ongoing work on HSEB networks.
- Complete installation and configuration of networking devices.
- Continue installation; continue configuration.
- Coordinate solutions and operations through establishment of sustainable fund source and cross-unit governance team.

**Action Item 9**
Create an inventory of open-source collaborations and potential open source solutions. *100% is complete.*

**ACCOMPLISHMENTS**

*This item is complete.*

**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):** Continued work with SACCNet and UA CIO is a member of the SEDNet (State Education Network) Education Coordination Council.

**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
Launched and participated in exploratory conversation with CA, TX, UT, and NM regarding regional networking needs.
- Established a plan for research and education network for AZ with regional needs in mind.
- Submitted a new IGA for city of Tucson to the City of Tucson Council for final signatures.

**University Community Next Generation Innovation Project (“Gig.U”):** Joined and participated 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.

**Regional Networking Initiatives:** Worked on SEGP application with ASU and NAU and worked with ASU consultant on network design for the new network and connectivity options.

**2012-2013 Plans**

- Continue to work with regional networking initiatives to enhance the statewide and national network access and capabilities.
- Continue working with ASU and NAU to develop Sun Corridor network.
- Endeavor to carry out deployment of AZ based research and education network in collaboration with other national and regional networks and partners.
- Partner with UA Telemedicine program to deploy a robust 21st Century video collaboration infrastructure for UA and beyond.