

OKLAHOMA STATE UNIVERSITY INSTITUTE OF TECHNOLOGY

Technology Plan

2016-2021

Table of Contents

OSUIT MISSION STATEMENT.....	3
OSUIT TECHNOLOGY SERVICES VALUES.....	3
ASSUMPTIONS	3
TECHNOLOGY BACKGROUND.....	4
Overarching Goals.....	5
Increase Cost Savings and Collaboration	5
Increase Productivity and Effectiveness	5
Provide Technology to Increase Student Retention	5
Expand and Improve Infrastructure Services.....	5
OSUIT Technology Plan	6
Increase Implementation of Shared Services	6
Provide and Implement Innovative Instructional Technologies	6
Mitigate Loss of Resources with Better Inventory Control.....	7
Enable Data-Driven Decision-Making	7
Develop a Portfolio of Fully-Online Degree Programs.....	8
Enhance End-of-Course Evaluations	8
Improve Data Services	8
Encourage Institution-Wide Collaboration	9
Enhance Institutional Safety and Emergency Management.....	9
Develop and Institutional Inventory Monitoring Process.....	10
Implement Scheduling Software to Maximize the Use of All Spaces	10
Use Technology to Improve Productivity, Communications, and Processes.....	10
Improve Support Services and Processes for Online Students.....	11
Coordinate the Migration of Data from SCT	11
Appendix A.....	12
Technology Plan Completed Action Items – 2012-2015	12

OSUIT MISSION STATEMENT

OSU Institute of Technology's mission is to serve as the lead institution of higher education in Oklahoma and the region providing comprehensive, high-quality, advancing technology programs and services to prepare and sustain a diverse student body as competitive members of a world-class workforce and contributing members of society.

OSUIT TECHNOLOGY SERVICES VALUES

- Customer Service
- Best Practices
- Timeliness
- Accuracy
- Security
- Agility

ASSUMPTIONS

- The Technology Plan will be closely aligned with and driven by the university's Strategic Plan, Campus Master Plan, and Mission Statement.
- Technology has become an integral part of all university business.
- The Technology Plan will contain input from various stakeholders and reflect their expectations.
- The Technology Plan will be posted on the OSUIT website.
- It will be a five-year "rolling" plan with annual reviews and updates.
- The Technology Plan will update each academic cycle.
- The Technology Plan will be fluid and flexible enough to allow Technology Services (TS) the agility to take advantage of new or unexpected opportunities.
- Technology Plan Action items will be specific and measurable.
- Technology Plan Action items will reflect relevant task force findings.
- Implementation of individual Technology Plan action items will be contingent upon the availability of institutional resources.
- The Technology Plan and current list of action items will be public documents describing continuous improvement and advancement of the technology on the OSUIT campus. It will not be a listing of the current technology service offerings, which are outlined in the Technology Services Catalog.

TECHNOLOGY BACKGROUND

At the beginning of the 21st century, the technology services offered at OSUIT included maintaining around 300 employee computers, 200 lab computers, 6 servers, delivering FOCUS reports from our SCT Plus system, and maintaining our campus wired network which had approximately 3 Mbps bandwidth to the Internet. At that time, the institution’s total network storage was around 1 GB. There was no campus-wide wireless network and there were very few user-owned devices.

OSUIT’s technology resources have expanded substantially over the past sixteen years (see Table 1).

Table 1 –OSUIT Technology Resource Expansion, 2000-2016

Service	2000	2016
Network backbone	10 Mbps	1000 Mbps
Connection to Internet	1 Mbps	1000 Mbps
Wireless access points	0	107
Physical servers	4	16
Virtual servers	0	104
Cloud services	None	Private, Public, Community
Network storage	1 GB	40,000 GB
Employee computers	300	671
Labs	10	80
Lab computers	200	1250
iPads	0	325
TS Employees	11	11
Network/server uptime	Not measured	99.99%

Overarching Goals

In alignment with the OSUIT Strategic Plan, the following overarching goals will direct the Technology Plan.

Increase Cost Savings and Collaboration

Sharing of services with other higher-education entities through increased use of community-cloud services, an increase in user-owned devices, and a movement toward select use of public-cloud technologies will allow us to meet the changing needs of our technology stakeholders for the next five years and will deliver cost savings and increased collaboration.

Increase Productivity and Effectiveness

The way in which we will advance technology in the next five years is very exciting. The trends would indicate that many new opportunities will be available to us to increase the productivity and effectiveness of the campus. These will include:

- Server virtualization
- Virtual desktop technology
- Enterprise Resource Planning (ERP) solutions which utilize business intelligence and analytics
- Expanded wireless communication over the IP network
- The Internet of things
- Unified communication including video conferencing and screen sharing on desktops and mobile devices from within Outlook

Provide Technology to Increase Student Retention

The Retention Task force has recommended the implementation of Copley Student Success Software to facilitate proactive intervention to increase student success. It is planned to implement this or similar software soon after Banner is fully implemented.

Expand and Improve Infrastructure Services

Updating technology infrastructure services will be critical to our continued success over the next five years. Investment in the infrastructure will allow improved and expanded services for existing technology assets and will strategically position us for increased student and employee use of personally-owned mobile devices, video-conferencing, security cameras, and Internet of things.

OSUIT Technology Plan

Increase Implementation of Shared Services

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: A-1-B -CULTIVATING STRONGER AFFILIATIONS WITH THE OSU SYSTEM, AND OTHER ENTITIES

Cost savings and efficiency can be achieved by increasing implementation of shared services with other educational entities. In the past, OSUIT has partnered with other Oklahoma higher- education institutions to leverage buying power, standardization, and knowledge-sharing; these partnerships have led to cost savings on technology such as VMware, OKCorral, Online Classroom, Microsoft products, Dell computers, Cisco networking, and many other products and services. Under the leadership of the CIO of Oklahoma State Regents for Higher Education, higher-education technology leaders across the state are continuing to look to standardization, shared resources, volume contract pricing, and knowledge sharing to provide more and better services, more efficiently, and at lower cost.

Action Items:

- Share services with other educational institutions
- Utilize volume-negotiated pricing from other higher-educational institutions

Provide and Implement Innovative Instructional Technologies

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: A-5-a - Encouraging innovation in instructional technologies

In order to provide a world-class education, we must provide and implement innovative-instructional technologies. This will enable better modeling of the industry working environments as well as supporting learner-centered activities to increase student-learning outcomes. Providing this technology is just the first step. We must provide professional development in best practices for incorporating this innovative technology into the curriculum.

Action Items:

- Encourage and advise schools to purchase innovative learning tools
- Encourage the use of the Center for professional development
- Encourage the use of our web-based professional development resources
- Use Cornerstone to schedule and report on professional development
- Explore the use of virtual reality for course delivery
- Expand the use of existing virtual desktop technology in coursework

Remain Current with Technology Trends

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: A-5-b-Remaining current with technology trends

To ensure campus-owned technology remains state-of-the-art, it is recommended that we refresh our technology assets at least once every four years. According to Moore's law, the processing

power of new technology and the requirements of new software will increase four-fold in this four-year cycle. This rate of advance in processor speed is expected to last at least a decade until transistor etching technology approaches the atomic level. Scientists speculate that Moore's law can continue using nanotransistors to enable continued increase in processing power. As the current versions of software require exponential increases in storage and processing resources compared to the previous year, and as the need for analytic power increases, our hardware resources will need to be refreshed at least every four years to stay current with this increased resource demand.

Action Items:

- Refresh desktops, laptops, tablets
- Refresh wireless technology
- Refresh fiber network technology
- Increase unified-communication technology
- Refresh classroom technology for teaching and learning
- Increase bandwidth to the Internet

Mitigate Loss of Resources with Better Inventory Control

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: A-5-c Utilizing technology to mitigate loss of resources

Better inventory control and documentation of our university assets is critical to management of these assets. TS maintains a technology resource management system that is integrated with our service desk and allows monitoring of technology assets through the network. Physical Plant Services maintains a cloud-based, facilities management inventory solution that includes a Physical Plant work-order system.

Action Items:

- Refresh and update network inventory software
- Refresh and update network device-tracking software

Enable Data-Driven Decision-Making

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: B-3-a-Utilizing institutional data and student survey results in the decision-making process

In order to make data-driven decisions, we will have to be strategic in what information we keep in our systems and maintain the data integrity by strict use of our data standards. In the implementation of Banner, we have cleaned up our data and strengthened the integrity of existing data. With the query and report generation abilities of Banner and Cognos, we will put the ability of creating reports into the hands of the end user, an amazing improvement over only having access to one screen of information at a time. Through integration of our various data sources, we will be able to use valid data to guide our decisions.

Action Items:

- Maintain licensing of survey software
- Maintain licensing of Banner ERP
- Integrate stand-alone data sources into Banner

Develop a Portfolio of Fully-Online Degree Programs

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: C-1-d-Developing and promoting a portfolio of fully-online degree programs

The technology side of supporting fully-online degree programs is to provide learning management platforms to support online learning. The learning platform by itself only provides asynchronous learning; maintaining virtual-classroom spaces such as Blackboard Collaborate will allow for virtual-office hours and fully-interactive synchronous learning.

Action Items:

- Maintain Brightspace licensing
- Maintain Blackboard Collaborate licensing
- Maintain Turnitin license
- Maintain Respondus license

Enhance End-of-Course Evaluations

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: C-3-c-Increasing the collection and utilization of end-of-course student evaluations

As we sunset the homegrown end-of-course evaluation software hosted on the OSUIT website, we are evaluating cloud-based alternatives that will allow better analytics and increased usability.

Action Items:

- Consider course evaluation tools such as evalUT by eXplorance, Class Climate, Scantron and SmartEvals
- Integrate student survey end-of-course evaluations into Brightspace online classroom

Improve Data Services

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: D-4-b-Utilizing technologies for the improvement of data services

Until the implementation of Banner, OSUIT's system of record only allowed the end user to view one screen of a particular student's data at a time. All reporting for the campus community was funneled through one or two report programmers. Implementation of the data warehousing and reporting functionality of Banner will allow end users to run customized-basic reporting from Banner without the need for specialized programming skills. The validation tables used by Banner

combined with better adherence to data standards will allow great improvements in reporting and data validity.

Action Items:

- Utilize Cognos reporting for improvement of data services
- Train end users in Cognos reporting

Encourage Institution-Wide Collaboration

Consistent with OSUIT Strategic Plan Item: D-5-a-Encouraging institution-wide collaboration

Better communication and collaboration capabilities are keys to our continued success. Use of technology tools to communicate, collaborate, and share information with colleagues from wherever and whenever you are can promote better collaboration and better use of time. Awareness of the existing technologies available as well as instruction in the use of existing and emerging collaboration technologies is necessary. By improving the usability of meeting spaces and increasing videoconferencing and screen-sharing technology, we can facilitate efficient collaboration.

Action Items:

- Encourage use of SharePoint and Skype for Business
- Upgrade meeting room technology using interactive projection combined with ClickShare

Enhance Institutional Safety and Emergency Management

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: D-5-bEnhancing institutional safety and emergency management

Campus safety is becoming an expectation in today's college environment. With the enactment of the Clery Act and the pending Campus Accountability and Safety Act (CASA), universities are increasingly required to demonstrate due diligence and documentation of efforts to promote campus safety.

Action Items:

- Increase security-camera coverage across campus
- Promote use of Rave Guardian app
- Increase security technology monitoring
- Increase campus cyber security defenses
- Increase generator backup power

Develop and Institutional Inventory Monitoring Process

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: E-3-a-Developing an institutional inventory monitoring process

We have inventory monitoring software in place for Physical Plant and technology resources on campus. We have network software that monitors location and the user of most network-attached devices.

Action Items:

- Continue to invest in network inventory management software
- Continue to invest in Computrace

Implement Scheduling Software to Maximize the Use of All Spaces

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: E-3-e-Implementing scheduling software to maximize the use of all spaces

Cost savings and increased efficiencies can be obtained through the implementation of a room-management system for classroom and meeting-space resources. By better utilization of existing spaces, we can cut maintenance costs, technology costs, energy costs, and increase personnel savings and efficiency by maximizing the number of students in a classroom to cut down on required sections of courses.

Action Items:

- Invest in and implement room-scheduling software such as Ad Astra

Use Technology to Improve Productivity, Communications, and Processes

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: E-4-b-Utilizing technology to improve productivity, communications, and processes

Integrating workflow software with our existing processes will increase efficiency by streamlining manual processes and allowing us to do much more with existing staff. In keeping with ITIL best practices, TS has streamlined workflow processes using KACE and SharePoint. The Bursar's office and Student Services have streamlined document management through the use of document imaging software. Fiscal Services has streamlined the purchasing process by implementation of the public-cloud service OKCorral and the travel request process through SharePoint. Grooper software is now able to identify document types and index all scanned content while inserting the data from the paper documents directly into Banner.

Action Items:

- Increase use of SharePoint for collaboration and workflow

- Increase use of Outlook/Skype for Business
- Utilize the workflow capabilities of Banner
- Purchase Grooper to provide optical character recognition and direct scan to Banner capabilities

Improve Support Services and Processes for Online Students

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: E-4-c-Improving support services and processes for online students

Online students deserve the same support available to traditional face-to-face students. We have the opportunity to leverage our existing technology to integrate with our learning-management software to offer these same services to students who never see our campus.

Action Items:

- Utilize Collaborate to give students virtual office hours
- Use Copley or similar retention software to allow increased communications options
- Use Atomic Learning tutorials in Online Classroom to improve student use of LMS
- Use Proctor U leveraging the Quality Matters contract
- Use tutor.com or similar option for 24/7 online tutoring
- Use Skype for Business within Outlook and meeting invitations to allow video communication and screen sharing
- Install H323 video conferencing equipment in the Center
- Install Huddle Room technology in the Center

Coordinate the Migration of Data from SCT

CONSISTENT WITH OSUIT STRATEGIC PLAN ITEM: E-4-d-Coordinating the migration of data from SCT

SCT Plus technology was created before widespread use of normalized-relational databases; therefore, many of the data-entry and database practices used made it difficult to generate valid and meaningful reports. By fall 2016, a majority of the data should be migrated from SCT Plus to Banner using state-of-the-art database technology.

Action Items:

- Continue migration from legacy and integrated systems to Banner
- Migrate data from SIS to Degree Works

Appendix A

Technology Plan Completed Action Items – 2012-2015

- Hired a Server Administrator
- Invested in Training on Remote Management and Mass Deployment Software
- Reduced Employee Technology Refresh Cycle to Four Years
- Implemented Compellent Storage with Deduplication
- Implemented Co-located Disaster Recovery Site in Oklahoma City
- Increased Network Security
- Gained PCI Compliance Validation and Certification
- Reduced Data Center Refresh Cycle
- Incrementally Refreshed Copper Network Infrastructure
- Incrementally Refreshed Network Switch Infrastructure
- Increased Security Camera Coverage
- Implemented Computerized Maintenance Inventory and Work Order System
- Refreshed and Expanded Wireless Access Density
- Refreshed Wireless Network Controller
- Refreshed and Extended Fiber Backbone
- Refreshed Printer/Copier/Scanner Fleet
- Upgraded our Bursar Bill Payment Suite
- Allowed Personal Wireless Access in Residence Halls
- Expanded Server-Based Door Access Control
- Implemented Banner Data Warehouse
- Refreshed Network Security Devices
- Increased Network File Storage
- Expanded Access to Document Imaging
- Upgraded to Banner
- Implemented Slate Recruitment ERP
- Streamlined Workflows using SharePoint
- Implemented Emergency Notification
- Implemented RAVE Guardian Campus Safety App
- Implemented Emergency Operations Center
- Increased and Refreshed Digital Signage
- Upgraded Outdoor Digital Signage
- Distributed Streaming Movies and Announcements in Residence Halls
- Implemented Qualtrics Survey Software
- Implemented Unified Communications using Cloud-Based Office 365
- Implemented Skype for Business
- Implemented Virtual Desktops
- Implemented Virtual Labs

- Moved to cloud-based Brightspace/Online Classroom with Analytics
- Refreshed our Print Management System
- Upgraded to Interactive Projectors in Many Classrooms
- Implemented Campus-Wide Mobile Device Management
- Implemented Imaging Systems for PC and Mac Computers
- Moved to System-Wide Licensing for Adobe and AutoCAD