

Illinois State University
Division of Academic Affairs

**Academic Priorities
for Technology Enhancements**

FY17



**OFFICE OF ACADEMIC
TECHNOLOGIES**
Illinois State University

College Technology Support Team
Enrollment Management & Academic Services
Center for Teaching, Learning & Technology
Learning Spaces & Audio/Visual Technologies
TechZone & Student Technologies
Web & Interactive Communications

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Office of Academic Technologies
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FY17 Academic Priorities for Technology Enhancements

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Introduction

The Office of Academic Technologies (OAT) federates the activities of twelve units working together to provide academic technology services that support the goals of *Educating Illinois* and enhance the *purpose* of technology for teaching, learning, research and creative activity, and service outreach. Four units report directly to the Associate Vice President for Academic Technologies in the Office of the Provost. The Center for Teaching, Learning, and Technology co-reports to the Associate Provost. The seven members of the College Technology Support Team report to the deans of their respective colleges. The Associate Registrar leads IT staff support in Enrollment Management and Academic Services. These twelve units work together and with staff in Administrative Technologies and Student Affairs IT, to achieve a fiscally sustainable technology environment through collective research, planning, purchasing, and more. The formation of OAT reflects the importance of identifying and developing opportunities to apply technology innovations to the *purpose* of academic technologies in order to enhance the academic enterprise and to attract and retain great students and faculty.

One of the overarching Goals of OAT is to strengthen the collective voice for academic technology needs of units in the Division of Academic Affairs. Toward that end, this Report on the *Academic Priorities for Technology Enhancements* seeks to summarize and prioritize those needs.

A description of the technology services provided by these units and an organizational map is included in the Appendix of this Report.

Organization of This Report

This Report is divided into two sections. The first section describes the priorities for new or expanded IT services shared by all units in the Division of Academic Affairs and, in some cases, the entire campus community. These are listed in priority order. The second section details the priorities for technology enhancements in individual colleges, Milner Library, and Enrollment Management and Academic Services.

A note on Run • Grow • Transform

The priorities for technology enhancements are organized into one of three categories that focus more on IT as a *service provider* for functional units, and less on IT as a *cost center*. A primary goal of working together under the OAT banner is to further align IT support units with the institutional mission of Illinois State and with one another. To help with this, we classify whether a technology enhancement will help Run, Grow, or Transform the academic enterprise. What does that mean?

- **Run** - These are technology enhancements related to ongoing operations. To “keep our computers working”...
- **Grow** - These are strategic technology enhancements to accommodate incremental growth and improvements (e.g., expanding the installation of instructional technologies into all scheduled classrooms; upgrading an existing application, or replacing an application without significantly redesigning the business processes).
- **Transform** - These are technology enhancements to plan and implement transformative change (e.g., implementing a business intelligence environment for the first time).

These categories are not black and white, so it is difficult to classify some technology enhancement priorities.

Guiding Principles for Prioritizing Technology Enhancements

- Provide academic technology services that enhance teaching, learning, research and creative activity, and service outreach.
- Support student, faculty, and staff recruitment and retention
- Make fiscally sustainable technology investments through collective research, planning, and purchasing
- Support the academic environment while addressing information security and emergency communications
- Align priorities with goals and strategies articulated in Educating Illinois, the IT Strategic Plan, and College and unit strategic plans
- Align funding requests with budget planning processes

Shared Priorities for Technology Enhancements

Every year EDUCAUSE, a nonprofit association that supports the community of IT leaders and professionals in higher education, reports on the *Top Ten IT Issues* confronting member colleges and universities. This year the *number two* issue (behind *Information Security*) is *Optimizing Educational Technology*. This is described in the report as “Collaborating with faculty and academic leadership to understand and support innovations and changes in education and to optimize the use of technology in teaching and learning, including understanding the appropriate level of technology to use”. They note that “Almost every institution is supporting a set of core educational technologies (e.g., LMS, technology-enhanced spaces, hybrid/blended courses), and most faculty are adopting them”. This is true at Illinois State as well: ReggieNet, our Sakai-based learning management system (LMS), is used in various ways by instructors in 83.4 of the courses offered during the Spring 2016 semester. Following the completion of the 3-year *Classroom Technology Enhancement Project*, all instructors in the 310 Registrar-scheduled classrooms are able to leverage the installed technology to support instruction. Blended courses are taught in many disciplines, and the Center for Teaching, Learning, and Technology regularly schedules workshops on how best to teach blended courses.

Again this year, OAT places a high priority on extending the tools available in our LMS so that more faculty will find the software useful for enhancing instruction. Though pleased that nearly every scheduled classroom is equipped with an essential level of instructional technology, it is vital that that the technology be maintained lest the advantage of its use goes wanting.

A. Supporting a Robust Learning Management System [*Grow*]

Increasingly, students come to college with “significant expectations regarding the use of technology to support learning” (Roberts, EDUCAUSE, 2015) expecting to have immediate, 24/7 access to course materials and grades, and anticipating that they may be asked to complete some course work in online environments. Similarly, an increasing number of faculty at Illinois State are coming to appreciate the instructional conveniences and opportunities afforded by a robust learning management system. Usage of our Sakai LMS has increased steadily, with **83.4%** of courses offered being published in “ReggieNet” as of Spring 2016.

- 1) Illinois State has moved to a temporary hosted production environment for ReggieNet at Longsight. (An RFP for a long-term hosting arrangement will be released in third quarter FY16). This will improve the timing of software updates and reduce considerably the amount of AT staff time needed for such updates. Running ReggieNet in this “cloud” environment costs **\$108,000** per year.

Once a permanent hosting environment is approved we need to turn our attention to expansion of tools available through this LMS to include frequently requested add-ins for *rubrics*, *video streaming*, *web-conferencing*, and *ePortfolios*. In sum, adding these tools would cost about \$60,000 a year (details follow in items A2-A5).

- 2) One of the most requested assessment tools to use with ReggieNet is **iRubric** software add-in. iRubric is an assessment tool that lets faculty set up and **score student mastery of rubrics** created for their course or mandated as part of an accrediting body and have those scores recorded directly into the ReggieNet grade book. Right now CTLT provides a workaround to faculty who need to use rubrics for grade assignment using an Excel workbook. A campus-wide license of this software is about **\$31,000** per year (with a \$3,500 one-time setup fee).
- 3) **Kaltura** is an open source **online video platform**, providing both enterprise level commercial software and services, fully supported and maintained by Kaltura, as well as free open-source community supported solutions, for video publishing, management, syndication, that integrates with Sakai. It also allows students to submit video assignments. Kaltura's hosted framework provides interactive video tools for teachers and students. Easily create, upload, clip, manage, publish and deliver high quality video to any device, live or on demand. Post video assignments and incorporate videos into tests, announcements, blogs, discussions, feedback and more, improving engagement, creativity, sense of community, and learning results. **\$24,000** per year for a campus-wide license.
- 4) Software that facilitates **synchronous delivery of instruction** over the Internet is often referred to as Web conferencing software. This software is used to support video-enabled one-to-many training sessions (e.g., classes). Such software is particularly helpful to those teaching and learning in blended or fully online environments and has been identified as a key "missing component" by those at CTLT who prepare faculty to teach in these environments. Several such tools are in use at the University right now, including *Blackboard Collaborate* as well as *Skype* and other free web-based software. Currently the College of Education, has purchased a license to *Blackboard Collaborate* at a total annual cost just under \$10,000. A *campus-wide* license to Blackboard Collaborate would cost at least \$132,250 in the first year (depending on options).

Another option is to use an open source application called **BigBlueButton** (BBB), which integrates with Sakai. Longsight, the firm that provides hosting for our Sakai learning management system (ReggieNet), offers BBB to its Sakai clients at no additional charge for one session at a time with limited time (2 weeks) storage for recordings. Blindside Networks offers hosting services for \$200 per concurrent session per month, including downloadable recordings that can be stored indefinitely, dial-in telephone number integrated with session audio, and as many concurrent sessions as needed. If 10 concurrent sessions are required each month (not counting summer) that would cost at least **\$18,000** per year.

A third alternative is **Zoom**. In the Fall semester 2015, the Mennonite College of Nursing (MCN) switched from Bb Collaborate to Zoom video conferencing software to hold synchronous online class meetings with students in their three online programs. A 20 host

(read: instructor) package starts at \$150 per month. For twelve months of classes that would amount to **\$1,800** per year. Feedback from MCN faculty is keenly supportive of its feature set and was of use. This software has been improving rapidly and now offers “break-out rooms”, a feature that was not available last summer.

- 5) ePortfolio software has also been on the list of desired software for several colleges (COE, COB, CFA, MCN) and departments for many years. The College of Education uses LiveText, a hosted service that provides rubrics relevant for teacher education majors. At the moment, LiveText may offer other colleges or departments the best option for setting up and using ePortfolios for students. If it does prove viable for a large number of programs, it will be easier to finance because the pricing model is already established. Students using LiveText pay \$80, through TechZone, for a license that gives them five years of access to the hosted environment that stores their portfolio.

B. Maintaining Instructional Technology In All Scheduled Learning Spaces [Run]

One of the Strategies in *Educating Illinois 2013-2018* is to “Enhance technology infrastructure for classroom[s]...” as a way to support the Goal of improving institutional effectiveness by building a modern IT infrastructure (Goal 4, Strategy 2C). Last year, Learning Spaces and A/V Technologies (LSAVT) completed a 3-year, \$1.7 million project to install essential instructional technology infrastructure in Registrar-scheduled classroom spaces. This Project effectively doubled the number of technology-enabled learning spaces. Now that the work is completed, the equipment in 310 classrooms will need to be on rotation for replacement in either 8 month, 4-year, 6-year intervals.

The annualized cost of replacing the projector bulbs once a year plus the core hardware every 4-10 years is nearly \$283,650 (See Table A1). LSAVT currently allocates about \$175,000 out of its operating budget to keep the bulbs and core hardware current. The expanded number of classrooms will require an additional **\$108,650** in annual operating funds to support (See Table A2). This does not include the annual cost to replace the more long-lived special equipment that make up the instructional technology tools (i.e., Switcher, AMX, etc.).

Designing Learning Spaces for Emerging Pedagogies [Transform]

The Academic Facilities Advisory Committee produces an annual Report on the *Academic Priorities for Facilities Improvements* that is the older sibling of this Report. One of the Priorities in that Report calls for increasing the number of flexible learning spaces that support contemporary pedagogies. The Office of Academic Technologies shares in the view that “Design and renovation of learning spaces should reflect the trend toward utilization of more flexible, interactive, and engaging pedagogies. Such design concerns go beyond the basic needs to maintain infrastructure systems, to ensure an aesthetic pleasant environment, and to update classroom technology and equipment as needed...” OAT enthusiastically supports the high priority classroom renovation

projects in the unfinished space in the lower level of State Farm Hall and the flexible learning spaces in “Area 21” in DeGarmo Hall. We are also pleased to add our endorsement to the flexible learning space remodeling in Milner 213C (with an in-kind grant from Kramer Electronics).

C. Hiring and Retaining Qualified Staff [Run]

While not a technology enhancement *per se*, it is important to also note priorities related to technology *staffing*. After all, IT support has three dimensions; people, process, and technology, and *people* are the most important dimension. Because state support for higher education is shrinking, and external competition for students and faculty is growing, it is even more important that ISU take steps to ensure we have adequate IT staff development and retention.

In the 2016 *Top Ten IT Issues* Report, the number four issue was “IT Workforce Hiring and Retaining”. As IT services provided by the University become more like those offered by private employers, wage competition becomes an increasing challenge to attracting and retaining qualified IT staff. While the wage gap matters at ISU as elsewhere, it is not the only reason higher education loses IT staff to the private sector. Research by EDUCAUSE shows that 1 in 8 CIOs, 1 in 6 managers, and 1 in 5 IT professionals are likely to leave their current institution (Educause Review, *Top 10 IT Issues 2016*, January/February 2016, p. 34.). The reasons can vary of course, but, after salary, the top two reasons staff leave their higher education IT jobs is due to (1) a lack of advancement opportunities; and (2) the feeling that what they do is not important to the university mission.... “... it is primarily [colleagues] and quality of life (including the quality supported by good benefits [and work hours]) that retain staff, no matter their age or position.... Managers who can develop and foster a collaborative and congenial workplace are the superpower of a stable, high-performing organization”. (*ibid*)

On this, EDUCAUSE notes that “IT staff crave professional development and expect it to be an organizational priority.” In part because of the decentralized organization of budgets and of IT support on campus, funding for professional development varies widely. However, as the Top 10 Report notes, “Given that IT infrastructures are essentially a very complex system of systems, we need [IT staff with] a wide array of skillsets that quickly evolve, and we need a culture of teamwork that supports and encourages the growth of the individual and the team”. (*ibid*, p 48) Their advice is to “Establish a specific budget and a transparent process for requesting training. However, with tight funding, ensure that all development has a particular end in mind. Include staff professional development as part of each person’s goals and each manager’s and director’s performance review. (*ibid*. p. 36.) Investing in the training and professional development of our IT staff can help them maintain or grow their usable skills, or to pick up a new skill needed because of changes in the IT environment. Systematic investment in staff development will show IT staff how important their role is for Illinois State.

Based on a review of the EDUCAUSE 2014 Core Data Survey results, the median annual spending on professional development for IT staff is \$584 at Illinois Publics, \$716 at our IBHE Peer schools, and \$848 at all Doctoral Research Universities in the survey. Based on this data,

the Office of Academic Technologies recommends that at least \$716 per year per IT FTE be earmarked for professional development. For IT staff affiliated with OAT that sums to nearly **\$54,000** per year.

D. Facilitating Access To State-Of-The-Art Information Technologies For Research [Grow]

One of the Strategies under Goal 4 in *Educating Illinois 2013-2018* is “Enhance technology infrastructure for ... research activities” (Strategy 2.C). In support of that Strategy, Goal 2 in the *IT Strategic Plan 2015-2018* encourages the University to “...facilitate University research with state-of-the-art information assets and technologies”. The Office of Academic Technologies endorses these goals and pledges to work with faculty and research staff to seek out the best means of enhancing the infrastructure in support of research activities.

- 1) Illinois State University invested in a university-wide license for *Select Survey*, a locally-managed **web-based survey** platform, to help avoid the duplication of effort that resulted from offering support for various software programs of varying capabilities in multiple departments. The annual cost to campus is \$550 (paid for by WEB). Having a single platform available for web-based surveys increased familiarity among faculty and staff on campus and helped ensure its successful adoption institution-wide, as well as its extension to uses beyond research. Over time, expectations of the power of survey software, especially for research, have grown and the features in Select Survey have not grown apace. Faculty and staff are once again turning to other sources (SurveyMonkey, Google Docs, etc.) because of the enhanced features offered. In addition, maintenance to patch security vulnerabilities for Select Survey has become very time consuming for OAT staff.

A faculty and staff working group conducted a review of the gap between the survey services offered by Select Survey and the services desired by researchers. They leveraged the details of this gap to write a Business Case for the purchase of a richer web-based survey tool to offer to faculty, staff, and students. The result of this research lead to a list of possible options, at the top of which, is **Qualtrics**. The annual cost for a campus-wide license to Qualtrics is **\$35,000**.

- 2) While this is the highest IT priority for the College of Arts and Sciences, it is a priority shared by the College of Applied Sciences and Technology, Milner Library, the Office of Admissions, and the ISU Foundation. That priority is to obtain a site license for **ESRI-ArcGIS Software** as well as the server and storage capacity necessary to meet campus-wide needs. One may consider this a technological imperative for a university wishing to remain relevant in the state of Illinois because all Illinois high schools have access to the software and our ability to train their future teachers and make scholarly and administrative applications of GIS for the university’s broad benefit. ISU is the only state university in Illinois without a GIS site license. A business case proposing the consolidation of licenses into one campus-wide license has been supported by the Data

Stewardship and IT Services Council. A preliminary estimate of a campus license to the ArcGIS software is at least **\$25,000** per year.

- 3) To facilitate grant-funded research, and to reduce the colleges' role in provision of server and storage solutions, Illinois State could provide centrally-managed access to computation and storage for academic research. Since 2012 the National Science Foundation has required that grant recipients have and use a Data Management Plan for data generated during and after the funded research is completed (and for at least 3 years thereafter). Since then, NIH and National Endowment for the Humanities have also added requirement for storage of funded research data.

Administrative Technologies is developing a pricing model that would make it easier for faculty to know the cost of computation and storage to include in their grant proposal. Once available, researchers can add the cost of compute and storage to the grant application and report in the Data Management Plan their long-term data storage options.

E. Providing Access to Productivity-enhancing Software [Grow]

Several unmet academic technology software needs were discussed by the OAT Leadership Team. Many of these software tools have been requested for years, some formally, but a lack of resources keeps them on a “wish list”. Once again, Goal 2 in the *IT Strategic Plan 2015-2018* encourages the University to “Support rigorous, innovative, and high impact academic programs and facilitate University research with state-of-the-art information assets and technologies”. These are listed in priority order.

- 1) Office 365... To support student-to-student and student-to-faculty interactions online using Skype for Business and Shared Folders in OneDrive as well as OneNote for Class and Office Mix for presentations.
- 2) Adobe Creative Suite software (Photoshop, Acrobat, InDesign, Premiere Pro, After Effects) has been a standard in multiple industries including, but not limited to, graphic design, marketing, concept design, print layout, and video and audio production. Mastery of these software are part of the curricula for the Colleges of Business, Fine Arts, Arts & Sciences, and Applied Science and Technology. In May 2013 Adobe announced they would no longer be selling Creative Suite as a stand-alone software package but instead their creative software would only be available via their **Adobe Creative Cloud** subscription service. There is no industry-recognized or feature-equivalent alternative to the Adobe Creative Cloud suite of application.

Many academic departments bought the "last" perpetual rights version of Adobe Creative Suite (v6) in 2013. Now, almost 3 years later, they are at a tipping point of having to decide to keep using the older software or figuring out how to provide faculty and students access to the newer Creative Cloud.

Although contract negotiations are on going, a single annual subscription could cost as much as \$480 per computer, per year. *Over the last five years*, TechZone has received over 550 orders from campus colleges/departments for approximately 2,500 Create Suite products costing about \$340,000. Within this new subscription model these same departments could expect spend approximately **\$192,000 annually**. So over a similar five-year period that would cost \$960,000.

In light of this considerable increase in cost we recommend investigating what a site-license may cost the University. In the past Adobe has only offered such terms based on a count of all faculty, staff, and students. No estimate can be made of this cost without pursuing such a negotiation with Adobe. It is our hope that a site license may offset or decrease the cost with the added benefit of allowing all faculty, staff, and students access to the software.

- 3) The accessibility of learning materials to all students, regardless of disability, is a huge issue in online learning and an integral consideration when designing an online course. Not having a quick and convenient way to provide **closed captioning for videos** used in online courses is increasing legal risk. On 12 February, Harvard and M.I.T. were sued over lack of closed captions in videos on their edX online courses. The lawsuits, filed by the National Association of the Deaf, seek an injunction requiring that closed captioning be provided for all online materials. (Tamar Lewin, NYTimes, 13 Feb. 2015, p. A18) **Koemei** is a **\$40,000** per year subscription service that provides "online tools to transcribe, edit, caption and index the world's growing educational rich media content." Koemei offers *automatic* machine-captioning with a very high degree of accuracy. Without Koemei, CTLT staff estimate (based on experience and experimentation) that it will take professors and/or teaching assistants about 10 minutes of transcription time per minute of media time. Purchase of Koemei would result in a huge savings of time for faculty and CTLT staff developing course material, regardless of the delivery mode.
- 4) In previous years, this Report has noted shared interest in providing "faculty, staff, and students with Web-based IT training options available 24/7". Toward that end, the University could subscribe to online software training services such as those offered by Lynda.com, Atomic Learning, Element K, and others. These hosted services present quick Web-based text and video tutorials on a wide variety of software tools in use at Illinois State (such as MS Office, Adobe Creative Suite software, etc.) on topics useful for beginners and experts alike. Purchase of a campus-wide subscription from **Lynda.com** has a list price of around **\$86,000** per year. Right now the University offers no support for students who have questions about productivity software use beyond what faculty and the Technology Support Center can provide.
- 5) There are other software tools that are already in use by one or more units or are used by CTLT in faculty development workshops (such as **Camtasia Studio**). Some of these

software tools have been purchased under separate contracts and, in some cases, at different prices. Better information on these contracts needs to be assembled and attempts made to renegotiate the prices on those contracts at an enterprise level (where usage is extensive) or local levels (for niche software).

F. Managing and Protecting Data on Mobile Devices [Run]

Laptop and mobile device security and encryption are a major item of interest to the colleges. As more devices are in use with faculty and staff and their uses proliferate the likelihood of theft and other risks increases dramatically. Per ISU internal audit recommendations and best practices the colleges will be working together to develop a laptop and mobile device management strategy that includes device encryption, inventory tracking, application management, and theft prevention/recovery tools. While SCCM can be used to manage mobile devices that run the Windows operating system, another software product is needed to manage Apple devices. Following a review of the alternatives available, OAT is recommending **AirWatch** and is in the process of obtaining a free trial license to demonstrate its effectiveness. An annual license for AirWatch would cost \$26 per device. An initial estimate revealed about 1,500 Apple devices that would need to be managed. This would bring the annual cost of managing Apple mobile devices to about **\$39,000**.

G. Implementing an Efficient Fixed Asset Management System [Run]

The Office of Academic Technologies has identified a need for new tools and processes relating to inventory tracking and management. In large part this is because the limitations of the current processes make it difficult to comply with security and auditing obligations. OAT is interested in an inventory management tool capable of tracking items and their location over time via data entry from devices (like bar-code scanners), communications tools (like ticketing systems), or via automated tracking or management systems (like SCCM or Mobile Device Management (MDM)). Using a modern inventory management tool would decrease staff hours required, improve accuracy, and minimize liability and security risks.

H. Developing Server-hosted Virtual Desktop Infrastructure [Transform]

Desktop virtualization has multiple deployment models. In all of these models one can use a variety of computing devices to access as little as a single application running in a hosted server environment (application virtualization) or as much as an entire computing experience — operating system, applications, and storage — (remote desktop virtualization) running on those servers. Desktop virtualization can provide significant improvements in computer manageability and cost savings by consolidating the services offered by a number of supported computers onto a centralized service in a hosted server environment. Many departmental lab computers provide students access to specialized and limited-license software. Some of this software is no longer compatible with the latest operating systems. A virtualized environment allows these applications

to be delivered outside of the boundaries of a specific lab, and it allows those applications to be administered more efficiently. Also, desktop computers require regularly scheduled recapitalization. The cost of recapitalizing a zero client, thin client, or bare-bones desktop computer is minimized as the cost of that equipment is less than that of a normal desktop computer and the useful life-span of the client equipment is likely to be longer.

The Office of Academic Technologies supports the deployment of a server-hosted virtual desktop infrastructure on campus to improve the computing experience of faculty and students, and to reduce the cost to colleges of providing computing services from desktop and lab environments. At a minimum we would encourage the move to application sharing so that more students can have access to full-featured academic applications from their own computer.

Shared Priorities Summary

Table 1: Summary of Shared Priorities for Academic Technology Enhancements

Priority	Software or Service	Expected Annual cost
A	LMS Support	
1	Hosting	\$ 108,000
2	iRubric	\$ 31,000
3	Kaltura (video hosting & streaming)	\$ 24,000
4	Zoom (Synchronous online instruction; web conferencing)	\$ 1,800
B	Learning Space Technology Maintenance (See Table 2 for details.)	\$ 108,650
C	OAT staff professional development	\$ 54,000
D	Technology for Research	
1	Qualtrics (online surveys)	\$ 35,000
2	ArcGIS	\$ 25,000
E	Productivity Software	
1	Office 365	NC
2	Adobe Creative Cloud	\$ 192,000
3	Koemei (closed captioning for videos)	\$ 40,000
4	lynda.com	\$ 86,000
5	Camtasia Studio (Unit cost per license in bundles > 25)	\$ 117
F	Mobile Device Management – Airwatch (\$26 x 1,500 devices)	\$ 39,000
G	Fixed Asset Management	???
H	SH-VDI	???
*		
	TOTAL	\$ 744,567

College Priorities for Technology Enhancements

College of Applied Science and Technology

The College of Applied Science and Technology (CAST) provides technology support and services to faculty, staff, and students in order to meet the needs of its eight Departments and Schools, most of which have unique and challenging requirements that serve to promote faculty and student fluency in the use of technology. Our efforts with technology are driven by the Departmental, School, and College Strategic Plans which have a direct “line of sight” to Educating Illinois.

Run

1. Support Visual Retailing software for the Fashion Design and Merchandising major.
2. Support Past Perfect – museum management software –to provide an integrated system for managing the Lois Jett Historic Costume Collection.
3. Support equipment/software in the HSC Media Lab, Physiology Assessment Lab, Biomechanics lab, and Sport Psychology lab.
4. Support Superior Observation software for video analysis by KNR faculty and students.
5. Support the Caterpillar Integrated Manufacturing Laboratory where students learn how to write programs for Programmable Logic Controllers (PLCs) and ABB Industrial robot arms.
6. Continue to implement a sustainable faculty office computer replacement model with the goal of being able to replace/upgrade office computers on a 3 year cycle.

Grow

1. Adopt new survey software that would replace our reliance on the College of Arts and Sciences’ Select Survey software. [*Shared*]
2. Increase integration of tablets in a variety of programs (i.e. – teacher education, parks and recreation) both as a learning tool for students and as a classroom/teaching tool for faculty. This would include adoption of mobile device management software that would facilitate the use of these devices.
3. Develop a plan to use audio/video that is being captured in the renovated FCS foods laboratory.
4. Continue to develop and supply specialized computing labs for students (i.e. - ADM Convergence lab, Enterprise Computing Systems lab, Internet 2 lab, Data Security/Wireless lab, Human-Computer Interface lab).
5. Complete the remodel of Makerspace in OU 136 to give students a place to checkout, store, and work on various smart board type equipment (Raspberry Pi, Arduino, Lego Robots, Smart boards, etc.). (\$60,000.00)

6. Complete Cisco Self Certification lab in OU 213B to give access to all CAST Students who are interested in studying for their CCNA or to gain routing experience on Cisco equipment
7. Remodel the Telecom Lab in OU 134 to better support modern networking equipment and to better facilitate current teaching needs
8. Investigate OpenStack to replace IT's VMware vCloud environment
9. Explore adopting a new faculty productivity reporting system to replace Digital Measures

Transform

1. Create a pilot virtual reality "cave" to allow 3-D walk-throughs of designs produced with software such as Autodesk Revit (\$70,000)
2. Implement desktop virtualization technology (HVD) and application virtualization with the intent of utilizing virtualization to increase availability of software to students and faculty both on and off campus [*Shared*]

College of Arts and Sciences

The College of Arts & Sciences (CAS) has focused on continuing and enhancing services provided to faculty, staff, and students while cooperating with central IT units to reduce the amount of redundancy throughout the university. Our efforts with technology are driven by the college's mission and vision statements which are influenced by those of the university.

Run

1. Enhance research support through online surveys [*Shared*]
 - a. Currently using a nearly 10-year-old version of Select Survey
 - b. Current tool does not generally meet faculty needs
 - c. An evaluation committee that included faculty recommended purchasing Qualtrics
2. Enhance end-point support efficiency, computing consistency, and data security [*Shared*]
 - a. Subscription to AirWatch Enterprise Mobility Management Suite
 - b. Addresses multiple findings in the CAS-IT audit
3. Enhance data reliability, provide more storage, and introduce additional features like easily collaborating with students [*Shared*]
 - a. Easily available all in OneDrive for Office 365
 - i. Must be cleared for storing restricted and possibly highly restricted data
4. Enhance faculty technology access and stability
 - a. Formalize a sustainable faculty end-point equipment recapitalization plan

Grow

1. Enhance efficiencies collecting data and generating reports for faculty productivity
 - a. To aid in strategic decision making
 - b. Easily available using Digital Measures Activity Insight
 - i. to reduce administrative strain on manually intensive reporting processes
 - ii. to reduce faculty commitments on administrative processes

Transform

1. The College of Arts and Sciences highest IT priority is to work in consultation with the other ISU colleges, Milner Library, Office of Admissions, and ISU Foundation to obtain a site license for ESRI-ArcGIS Software as well as the server and storage capacity necessary to meet campus-wide needs. We consider this a technological imperative for any university wishing to remain relevant in the state of Illinois as all Illinois high schools have access to the software and our ability to train their future teachers and make

scholarly and administrative applications of GIS for the university's broad benefit. ISU is the only state university in Illinois without a GIS site license. [*Shared*]

College of Business

Run

1. The College of Business will continue to pursue a customer focused technology support ethic for both it's own operations and those operations and services that directly affect COB faculty, staff, and students.
2. Even in a time of dire financial need the issue of technical staff retention is a priority that cannot be overstated. The diversity of skills required to support and manage a modern, heavily-automated, desktop/academic software environment are increasingly in demand and technically stringent. If we cannot address the gap in compensation for these roles we will endanger our ability to deliver these services reliably and with confidence. *[Shared Constraint]*
3. A scheduling system by which manual interaction and email management becomes unnecessary for room scheduling requests would have substantial efficiency gains. While 25Live has made it possible to better visualize the current scheduling of rooms and resources the manual management of email requests and the multiple detail requests, requests for approval, and confirmations make this process unnecessarily time consuming. *[Shared Constraint]*
4. The College of Business will continue to be aggressive in maintaining the rotation of faculty, staff, and computer lab machines. Despite the current budget climate this will remain a priority for our operations as delaying rotations will have a cumulative effect that would eventually incur greater costs.

Grow

1. As with many other areas, the College of Business is seeing increasing interest in the use of laptops, tablets, and other mobile devices. However, despite the flexibility of these devices software deployments, comprehensive data management/protection measures, theft prevention,, and management of the devices themselves has proved both challenging and frustratingly inconsistent. These issues can be fully addressed with a Mobile Device Management (MDM) solution. An MDM solution would provide theft prevention, geo-location, device encryption, and software deployment capabilities that would minimize organizational risk, increase efficiency, and ensure a higher standard of support for these devices. *[Shared]*
2. Select Survey has effectively reach end of life and is becoming increasingly difficult to support. The COB are currently customers of the cloud-based web survey too, Qualtrics. The COB recommends that the campus move to Qualtrics or a similar product to better fulfill our data needs for our teaching and research missions. A faculty group is currently being convened to complete and RFP for a product. As Select Survey is used to gather multiple data points for business processes and academic pursuits this need should be considered acute. *[Shared]*

Transform

1. Desktop virtualization has proven to be a major benefit to COB students and faculty by offering a secure software development environment for BIS majors and specialized software options for other COB majors and departments. However, as we look forward towards the future of COB lab spaces we see an opportunity to extend virtualization technology further and start offering "virtualized applications" to students, faculty, and staff for use on their personal desktops, laptops, and personal devices. [*Shared*]

College of Education

Run

1. A room scheduling service that would allow faculty, staff, and external users to make requests to reserve equipment and spaces at ISU. Many of these methods involve surveys or emails at this time and require a lot of manual intervention from tech staff. [*Shared Constraint*]
2. A more effective onboarding procedure for new employees. Tech staff are often not notified of a new employee until they arrive. This makes necessary tech procedures more difficult and often slows down a new employee's ability to start working immediately. A more effective solution would:
 - Automatically notify tech staff for the new person's department
 - Automatically enroll the new person in systems, without manual data entry (transcription errors cause significant delays) [*Shared Constraint*]
3. The grant approval process must include procedures to include the local and university tech support groups. Tech support units are frequently committed (without their knowledge or approval) to providing support for grant projects that often include specialized equipment or software, but do not include any training, extra staff (or pay for existing staff), or other items that would be necessary to properly support the grant project. [*Shared Constraint*]

Grow

1. More standardized "base" tools offered centrally
 - a. File sharing - Generally, the needs for file storage do not vary by department. Therefore, more efforts should be made to centralize this service (even if charge-backs are necessary). By offering it redundantly (coefiles, cobfiles, mcnfiles, etc.), we are reducing consistency and making support more difficult. Similar to how all users have a 'datastore' file share, all faculty and staff should be given a single location (potentially O365) to store their files and redundant services should be removed.
 - b. Email – the two disparate mail systems continue to be a headache for tech staff everywhere. Especially when it comes to calendaring and on/off-boarding. Everyone on a single system by default would go a long way to standardize support models for email.
 - c. SharePoint
 - d. Web sites
 - e. Survey tools

Transform

1. Support (staff and funding) for TeachLive, which is an online tool for educators to gain teaching practice in a low-stakes environment. Using webcams and a Microsoft Kinect, future educators interact with on-screen avatars to practice their teaching skills with real-time feedback. Use of this system will require a staff person to operate the connection to the TeachLive servers, while the faculty member gives instruction to students who are using the system. In addition, connecting to the system costs \$125 per hour.
2. Professional development cert program (more details to come)

College of Fine Arts

As we work with our faculty advisory group to develop our strategic plan for technology, we will be focused on how to deliver IT services in the most efficient manner as we plan for our new and renovated facilities, and the displacements during the construction process. We do not anticipate receiving enhancement funding for technology in this next year, but we are conscious of these needs.

Run

1. Find a solution to the Adobe issue, summarized earlier in this report, is our top priority. We simply cannot afford Adobe's new pricing structure at our current install base. If we only provide Creative Cloud to our open lab and to teacher's stations in our lab/classrooms, we estimate an annual cost of \$10,500, which is manageable under the current budget. Requiring Creative Cloud purchases of our students is possible, but taking the step requires careful consideration of its effects on recruitment. Not supporting faculty creative work with this fundamental collection of software would also be a detriment to the retention of faculty as well. [*Shared*]
2. Develop a strategic plan that is flexible, yet specific enough to be meaningful by the end of Fall 2016.
3. Provide support to our revitalized web presence, assisting the various units of CFA in keeping our information timely and inviting.
4. Bring our computer recapitalization closer to a 4 year cycle than its present 4.7 year average life.

Grow

1. Expand 3D printing opportunities for curricular integration across the College. 3D printing and computer controlled building are now expected areas of instruction in the arts. Our fastest growing major, Arts Technology, in particular, needs access to these technologies for class projects and creative work. Sculpture, scene design, and other areas will benefit from greater investment in this area as well. Deploying these technologies effectively will require reallocation of space and new management strategies, as well as purchase of the technologies themselves.
2. Increase capabilities for high end, multitrack, and other resource intensive audio production in our digital audio lab and CVA 50.
3. Maximize space use for technology dependent instruction using laptops and iPads in wireless areas.

Transform

1. Introducing Deploy Studio and Munki has changed our workflows in the last two years. We must invest in Airwatch (or similar) to continue to streamline our process and to help them comport with security issues addressed in the General Controls Audit of IT. [*Shared*]
2. Invest in collaboration spaces for the College to encourage cross-disciplinary work with technologies.

Mennonite College of Nursing

The Mennonite College of Nursing proudly continues in its commitment to leveraging our technology resources to enhance our pedagogical and research capabilities. Technology has come to play an indispensable role in providing the excellent instruction for which the college has become known. This fact is most evident in our Nursing Simulation lab, which provide unique educational opportunities for our students and also serves as a center for research and in our online programs which provide educational opportunities to students for which traditional options may be unfeasible.

The priorities discussed below support the college's stated strategic goals of ensuring that technology enhance strategic priorities, optimizing online programs and sequences, and increasing collaboration within ISU. (<http://nursing.illinoisstate.edu/downloads/2014-2018%20MCN%20Strategic%20Map.pdf>) (not sure how we are citing thing...) They represent an effective and appropriate use of our time and resources.

Run

1. Provide a sustainable solution for research oriented surveys
2. Transition to Office 365 for email [*Shared*]

Grow

1. Work with faculty and our partners in Nursing Simulation Lab to find and develop innovative ways to increase the realism and efficacy of simulations
2. Improve our online programs through enhancements to ReggieNet [*Shared*]

Transform

1. Support our DNP and BSN programs by providing ePortfolio capabilities for our students [*Shared*]
2. Find a solution to manage health and safety requirements for faculty and students relating to their clinical activities
3. Develop a recapitalization strategy for nursing simulation equipment

Milner Library

Milner Library utilizes its Strategic Map, 2014-2019 to help guide the development of its annual technology goals and projects for each of its six strategic priorities.

Optimize access to information

1. Complete the library web site redesign process to improve the overall organization and appearance of library's main website. - **Run**
2. Initiate program to capture born-digital archives – Hardware and software will be obtained to facilitate capturing, processing, and preserving the variety of different formats represented among ISU's digital assets. - **Transform**
3. Explore possible solutions to store library's digital materials to ensure its access and long-term preservation, including data storage inventory, clarifying needed support levels, and implementing digital preservation standards to finalize a data storage solution. – **Grow**

Advance transformative teaching and learning

1. Review and implement the findings of the Makerspace working group that was charged with producing a development schedule, ascertaining short- and long-term expenses, identifying potential staffing and developing an assessment plan for makerspace usage in the Milner uLab space. - **Transform**
2. Operationalize the use of the Active Learning Classroom by implementing the recommendations of the working group that developed an appropriate use policy, recommended professional development workshops, drafted an assessment plan, and created a list of key campus partnerships for use of new learning space. - **Transform**

Enhance strategic partnerships

1. NA

Design a facility that enhances learning and research

1. Utilize planned library-wide space planning process to identify emerging technologies, equipment, tools, services and spaces. - **Transform**

Encourage library faculty and staff excellence

1. Expand the use of System Center Configuration Manager (SCCM) tool on library's workstations to make it easier to install applications, updates and patches. - **Run**

Align library resources with strategic priorities

1. Utilize the new IT Service Management (ITSM) solution to create new workflows to streamline requests for services and system support and develop Service Level Agreements (SLAs) for library units. - **Run**

2. Project Management – Explore project management practices and pilot use of tools to better plan and track information technology projects. - **Run**

Enrollment Management and Academic Services

The Office of Enrollment Management and Academic Services (EMAS) oversees various university policies, procedures, and requirements related to university and program enrollment management in addition to initiatives which promote the academic success of prospective and current students. The Office of Admissions, Financial Aid Office, the Office the University Registrar, and University College are included as EMAS units. EMAS Technical Support Staff provides technology support to staff and students in Admissions, Financial Aid, University Registrar and University College.

Run

1. Provide technology support and services to over 250 users.
2. Continue to purchase PCs/laptops as budget allows keeping all computers used by full time staff on a 4 year rotation.
3. Support staff using various mobile devices to support the recruiting, registration/ orientation, and retention efforts of the unit.
4. Continue to significantly reduce the number of personal printers and networked LaserJet printers, as printing to networked copy machines has proven to be much more cost effective.
5. Continue to use SCCM to push software to end users, significantly reducing the amount of staff time spent at a user's computer.
6. Maintain and update web forms and interaction with back end systems to support our mission of recruiting and retaining students.
7. Work closely with departments and users, approving access to Campus Solutions (SIS) as needed.
8. Provide systems support for the Preview and Transfer Day programs. These programs allow new and transfer students to meet with an advisor, register for classes, learn about campus support services and opportunities, and interact with various faculty and staff.

Grow

1. Research the technology involved in sending and receiving electronic transcripts. This will provide a much greater service to prospective, current, and graduating students. Although we do currently receive some electronic transcripts, they are in .pdf format and require manual work to enter the data into the mainframe. In the future we plan to accept .xml files which could be directly uploaded into our SIS, eliminating staff time to enter data manually.
2. Work with AT staff to configure Campus Solutions to import and upload electronic test scores.
3. Serve on various campus committees as subject matter experts (ITSM, Onboarding, USEG, SCCM, ID_resolution, etc.)

Transform

1. In process of virtualizing our file server.
2. Work transparently with AT on continued Administration of ImageNow.
3. In lieu of continuing our contract with Grades First, develop a program in house to monitor and assist at risk students.
4. Significant efforts will continue to be put into the redesign and development of a multitude of existing systems to interface with Campus Solutions, as we are finding that many of our current processes need to be significantly reworked.
5. Plan to switch to using the university's Right Fax faxing solution instead of supporting and someday replacing the current three fax servers supporting Financial Aid.
6. Work with AT and Registrar SIS team to configure users to run queries on CS data.

Constraints

What's holding us back...? In addition to funding there are several impediments to the productivity of OAT staff, particularly in the colleges. Those issues are listed in this section. In most cases, these impediments are not solved by purchase of software or hardware. Some of them require additional work effort or a change in work processes in another unit on campus.

- Job description and salary parity
 - There are IT staff in different classifications that are, as a result, paid less than their colleagues with the same duties and scope.
- On-boarding and off-boarding of personnel
- Faculty, staff, and student access to Web-based room scheduling
- The grant approval process

Appendix

Table A1: Cost of Classroom Technology Maintenance

Item	Count	Unit Cost	Expected Lifespan (yrs)	Annual Replacement Cost
Count of technology-enabled 110 & 210 spaces	310			
Projector		\$ 2,100	6	\$ 108,500
Computer		\$ 700	4	\$ 54,250
Doc cam		\$ 700	10	\$ 21,700
Monitor		\$ 200	10	\$ 6,200
Replacement of Core Equipment				\$ 190,650
Replacement of Projector Lamps		\$ 300	1	\$ 93,000
Core Equipment Subtotal				\$ 283,650
Switcher		\$ 1,200	12	\$ 31,000
AMX equipment		\$ 1,200	12	\$ 31,000
Amplifier		\$ 375	12	\$ 9,688
Speakers		\$ 250	12	\$ 6,458
Special Equipment Subtotal				\$ 78,146
Total				\$ 361,796

Table A2: Expected Annual Cost of Maintenance

Core Equipment Subtotal	\$ 283,650
Current operating dollars for maintenance	\$ 175,000
Unmet Annual Costs	\$ 108,650

EDUCAUSE Reports

Top 10 IT Issues, 2016: Divest, Reinvest, and Differentiate

Grajek, Susan and the 2015–2016 EDUCAUSE IT Issues Panel, **EDUCAUSE Review**, January/February 2016, pp. 10-63.

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er.educause.edu/articles/2016/1/top-10-it-issues-2016

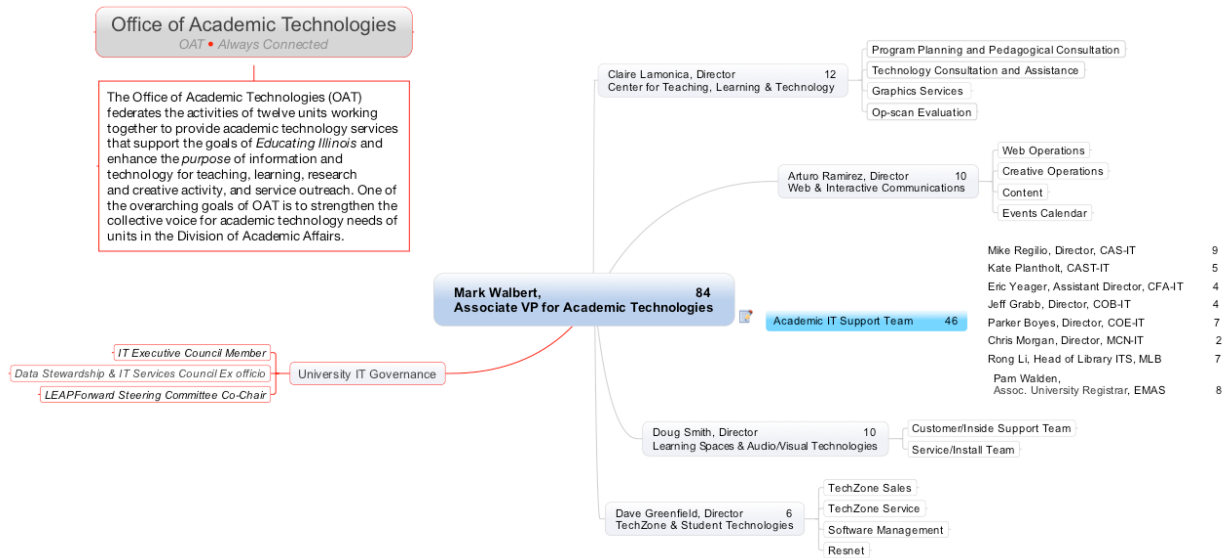
Higher Education's Top 10 Strategic Technologies For 2016

Grajek, Susan, EDUCAUSE Vice President, Data, Research, and Analytics, **ECAR RESEARCH HUB**, January 11, 2016, pp.

ECAR Subscription required. ISU faculty and staff may contact Mark Walbert for a PDF copy of the Report.

www.educause.edu/library/resources/higher-education%E2%80%99s-top-10-strategic-technologies-2016

OAT Organizational Map and Unit Descriptions



College Technology Support Team

The six colleges and Milner Library at Illinois State make up the academic core of the University. Each of these colleges provides technology support for the teaching, learning, research, and creative activity needs of faculty, staff, and students in those colleges as well as students across the University. Support needs vary from college to college and are often discipline-specific. The six colleges that make up the College Technology Support Team are: 1) College of Applied Science and Technology; 2) College of Arts and Sciences; 3) College of Business; 4) College of Education, 5) College of Fine Arts; 6) Mennonite College of Nursing; and 7) Milner Library.

Enrollment Management & Academic Services

The Office of Enrollment Management and Academic Services (EMAS) oversees various university policies, procedures, and requirements related to university and program enrollment management in addition to initiatives which promote the academic success of prospective and current students. The Office of Admissions, Financial Aid Office, the Office the University Registrar, and University College are included as EMAS units. EMAS Technical Support Staff provides technology support to staff and students in Admissions, Financial Aid, University Registrar and University College.

Center for Teaching, Learning & Technology

The Center for Teaching, Learning, and Technology (CTLT) supports Illinois State University faculty and staff in their pursuit of excellence and innovation in teaching, student learning, and the effective use of technology. CTLT provides a wide range of programs, services and resources, including technology short courses, support for ReggieNet, and other instructional technology workshops. The director of CTLT reports jointly to the Associate VP for Academic Technologies and the Associate Provost.

Learning Spaces & Audio/Visual Technologies

Learning Spaces & Audio/Visual Technologies (LSAVT) is charged with the design, installation, and maintenance of multimedia equipment and technology to enhance teaching in all learning spaces. This service is also provided to any department looking to improve the audio/visual functionality of any space, be it classroom, conference room, performance hall or office. Up-to-date technology in learning spaces includes computer, monitor, data projector, document camera, speakers, connections for a portable computer (video and audio), connections for a USB devices, and a user interface to make using the equipment simple and easy.

TechZone & Student Technologies

This unit has four primary functions most closely identified with the TechZone name: Sales Center (personal computer purchasing help and discounts, University purchasing), Service Center (walk-in technology support and warranty hardware repair), ResNet (support of residence hall networking), and Software Management (discounted & site licensed software). TechZone staff manage client-vendor relationships and coordinate the student technology orientation programs.

Web & Interactive Communications

Web & Interactive Communications (WEB) is charged with design, development and support for university, college, department and unit websites and mobile websites. WEB customizes web editing tools, provides basic training, and collaborates with other units to ensure the University is able to provide strategic, thoughtful and targeted messaging via the Web. WEB is also responsible for creating and maintaining web-based interfaces to public and authenticated university data. Such interfaces include, but are not limited to, My Illinois State, Go Illinois State, Campus Map, Events Calendar, Illinois State's Stories news hub, Course Finder, and Guidebook.