Information Services - Annual Academic Report, 2012-2013

Information Services provides technical expertise, infrastructure, and tools that help Oregon State University realize its mission and its strategic vision. Our goal is to support the University's top priorities by enhancing learning and engagement, supporting advanced research, and streamlining the business activities that rely on data-driven decision making. In Academic Year 2013, Information Services (IS) collaborated with stakeholders across campus with these goals in mind.

A Strategic Plan for the Information Technology Enterprise at OSU was finalized in 2013. This plan embraces a future where people are enabled through technology to create, author, and collaborate from any location, across many communities, from devices that best meet their needs. These goals span educational, research, and community activities, and many of the initiatives presented in this report were launched in order to reach this future.

Major initiatives included:

- The kickoff of the Cooperative Open Reporting Environment (CORE) initiative to enhance business intelligence at OSU
- The successful implementation of the Time & Attendance software project that simplifies and improves OSU processes
- Development of a private "cloud" infrastructure to better enable academic and administrative innovation and efficiency
- The inauguration of a Change Management process to enhance reliable access to computing and communication resources

Units across IS also made many incremental improvements in our systems, our operational effectiveness, and our customer outreach, including those services that have served our community well for many years. Everyone in IS played a role in our success in AY 2013.

Student Engagement and Success

Next-generation learning spaces: Classroom Building

Information Services collaborated with Academic Affairs, Facilities Services, and the Boora architecture firm in the design of the new Classroom Building that is scheduled for completion in 2015.

IS helped create a new vision for formal and informal learning spaces and designed a new Integrated Instructional Resource Center that will continue to advance research and support learning environments. We set up mock classrooms in the MU Ballroom to test ideas for two innovative spaces: an arena teaching space

and parliament style rooms that facilitate interaction. We led charrettes with faculty to test ideas and refine the room designs.

Technology prototypes are underway for this new building, including special configurations in the wireless network, a pilot project to use tablets as teaching stations, and device-to-device communication in the classroom.

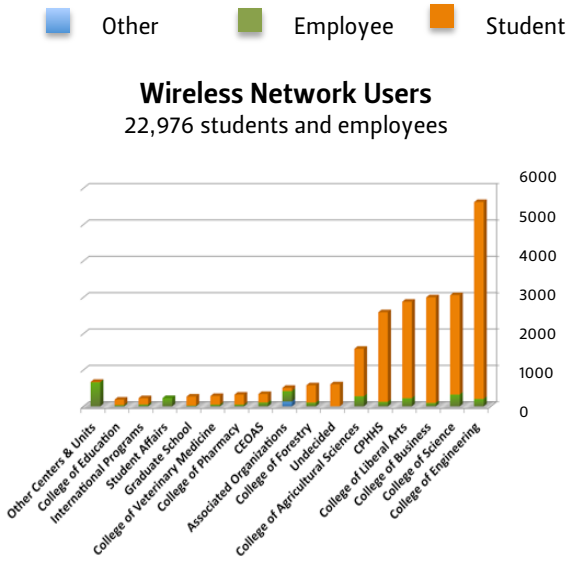
Enhancing classroom technology for student success

- Information Services added 21 technology-enhanced classrooms, including rooms for the International Living-Learning Center and the Student Success Center. IS now supports a total of 125 general purpose rooms and 222 departmental rooms. Staff also completed the full digital build out of all general purpose classrooms to provide higher quality imaging and to enhance usability.
- In the new Animal Science Pavilion and in the Weniger 226 biology lab, Media Services integrated research microscopes into the labs' presentation technology, allowing students to view instructor demos at their workstations and share microscope images.
- At Cascades Campus Mill Point, Media Services worked with mental health counseling instructors to design three observation rooms that allow counselors to non-intrusively capture, record, and edit sessions for research and evaluation.
- We deployed assistive listening technology to all classrooms and event spaces.

Improving student access to computing and support

Serving the community in the "bring your own device" era means providing robust anytime, anywhere access to OSU resources, providing both low-touch and high-touch support, and continuing to evolve services to best meet students' needs.

- Students and employees access OSU resources using an average of 2.6 devices per user.
- The number of simultaneous wireless network connections in AY 2013 increased by 33% over the previous year. Nearly 23,000 employees, students, and other affiliated users – and over 32,000 visitors to our campus – used the wireless network.
- The combined wireless and wired network activity showed a 27% increase in maximum utilization, peaking at 2.11 gigabytes per second.
- Student Multimedia Services (SMS) and the OSU Computer Helpdesk (OCH) moved to a collocated service point in the Valley Library to make equipment loans, consulting, and computer support easier for students.

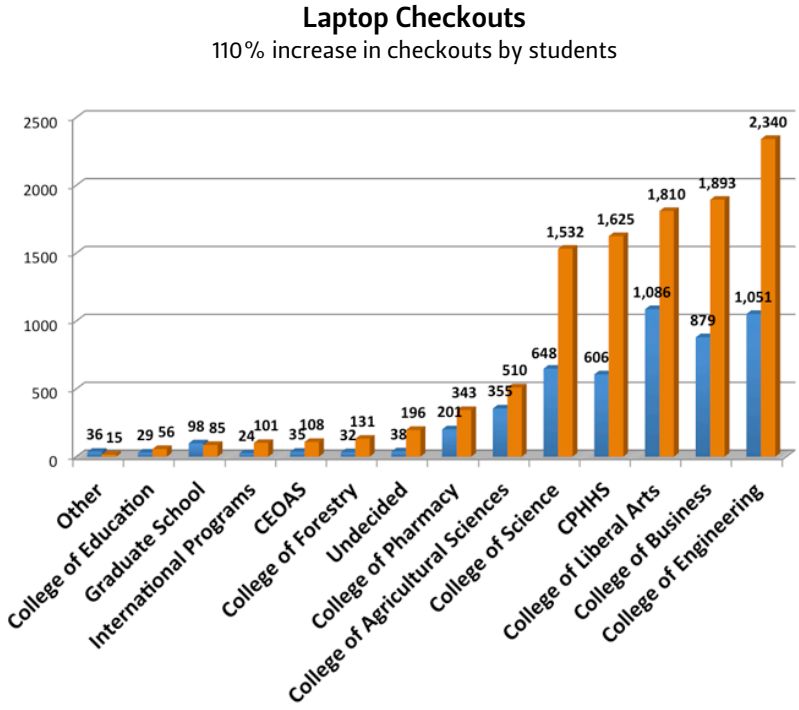


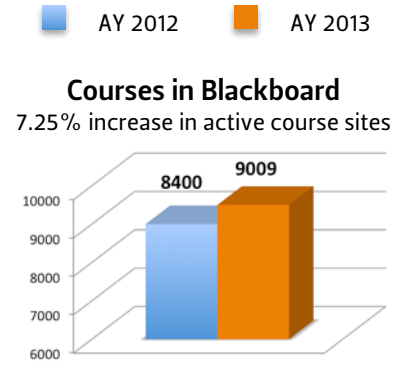
- 3,207 student-owned laptops were serviced at the Helpdesk for Students. Based upon a cost assessment, area retailers would have charged students a minimum of $320,000 for these services, while the Helpdesk's total expenses for AY 2013 were less than $133,000.
- Call center staff at the OSU Computer Helpdesk were able to solve 93% of the issues for which customers contacted them during the first call. In a customer survey, 99% of respondents indicated they would recommend the OSU Computer Helpdesk service to others.
- IS invested in customer self-sufficiency and operational efficiency by improving and expanding the Helpdocs website. Use of the website grew by 33%, compared to a 17% increase in calls to the helpdesk.

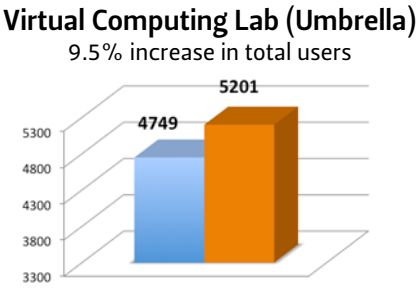
Meeting increased student demand for computing, media, and support

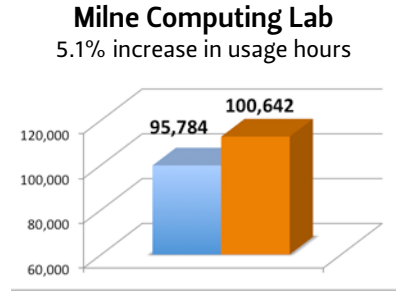
Access to computing, media, and support resources is critical to students' academic success. Information Services responded to the increased need for services as more academic units view the ability to use media to present ideas and demonstrate learning as a key competency.

The growing student population is placing more demand on services. In order to best understand why students use computing labs, we commissioned a study by the Close to the Customer Project in the College of Business. This study led to a decision not to increase the size of the computer labs, but rather, to invest in ways to make it easier for students to access resources from their own computers. This should both improve the students' experience and manage cost growth.









Reducing barriers to the technology ecosystem

OSU must have a technology ecosystem that is reliable, available, and enhances academic excellence. In AY 2013, Information Services achieved significant, measurable success in removing barriers to learning and engagement. Highlights include:

- In September 2012, in consultation with the Blackboard Steering Committee, the Blackboard technical team migrated the entire Blackboard system to a faster and more supportable platform to improve performance, redundancy, and system availability. Blackboard and ONID service uptime improved to over 99.5% throughout AY 2013.
- IS moved the OSU Cascades Campus onto the OSU network in September 2012, enhancing the technology experience for both students and faculty.
- The Google Apps for OSU implementation team laid the groundwork for service launch in the 2013 Summer term.
- Technology Across the Curriculum held 128 webinars on 26 topics for 528 registered participants. The webinars helped faculty make the best use of technology in teaching.

Research and Its Impact

IS consulted with a number of campus units about collaborative approaches to providing an internal private "cloud" infrastructure and we built partnerships with the Center for Genome Research and Biocomputing and OSU Libraries.

Strategic Agenda for Research Data Services

IS worked with OSU Libraries and Press to develop a Strategic Agenda for Research Data Services. This Agenda sets out a plan for development of services and tools in areas from consultation services and education to IT infrastructure.

Oregon Research Collaboratory - statewide approach to research infrastructure

IS worked the Office of the VP for Research, and with the CIOs and Vice Presidents for Research from OHSU, UO, and PSU, to seek funding from the legislature for a collaborative approach to building the research infrastructure needed to analyze, store, and visualize research data. As a result of this effort, the group successfully obtained $300K in shared funds that will be used to develop a detailed plan and funding request for the next legislative session.

Legislative funds for OSU infrastructure

The legislature gave the University approval to invest $17M to improve its data centers and network this biennium. This will allow a number of academic units that have been running their own data centers with inadequate environments to move into higher quality space over the next several years and continue growing research programs that are dependent on computational modeling and data analysis. Network funds will be used to improve capacity and provide redundancy to the campus's fiber networks.

InCommon for improved collaboration

OSU joined the InCommon Federation to improve researchers' ability to collaborate interinstitutionally through trusted authentication services.

Additionally, IS participated directly in several grants:

WAVE~Ripples for Change: Obesity Prevention In Active Youth In Afterschool Programs Using Virtual- And Real-World Experiential Learning
Investigators are developing an immersive virtual environment to evaluate the effectiveness of virtual- and real-world learning environments. TAC's Jon Dorbolo is a co-investigator on this $4.7 million grant funded by the National Institute of Food and Agriculture and is partnering with colleagues in CPHHS and EEC.

Better Eating Starts Today (B.E.S.T.)
Investigators will develop a mobile phone application to track eating behaviors. This $25,000 grant is funded by the PacificSource Healthy Life Research Initiative and Jon Dorbolo is a co-Principal Investigator with Siew Sun Wong and Mary Cluskey.

The OSU Concept Warehouse to Promote Active Learning - pilot study
Milo Koretsky (OSU Chemical Engineering) and TAC's Jon Dorbolo are co-Principal Investigators in a pilot study of concept-based pedagogy using response system technology (clickers). This $69,653 grant is funded by OSU's Technology Resource Fee.

NSF Campus Cyberinfrastructure - network infrastructure and engineering
Under the leadership of Brett Tyler, IS co-created a NSF grant proposal with teams from CGRB and Engineering. We successfully passed the first round of review and await word on whether the grant is funded. If so, NSF funding would put 40 to 100 GB campus network connections in our reach, enabling research and educational innovation.

Outreach and Engagement

Many of the initiatives described throughout this report are designed to allow people to work productively from any location on any device. While all benefit, those who are not located on the Corvallis campus are particularly well served. For example:

- eduroam allows wireless access while on other participating campuses.
- IS enabled unlimited use of the video bridge for the College of Agricultural Sciences and the Extension offices, allowing the offices and experiment stations to improve communication, save travel time, and fully leverage the investment in this technology.
- Self-service online reporting, available soon through the CORE project, will enable local analysis.
- Online timesheets eliminate lag time for mailing forms.
- The Open Source Lab broadened its global impact with new hosted communities: the Systers project, an email community that promotes the interests of women in the computing and technology fields, and the Python Software Foundation, a nonprofit membership organization. The Lab also created an application to deploy courses automatically for the Oregon Virtual School District project, which is hosted at OSL.

Other Initiatives

Cooperative Open Reporting Environment (CORE)

Data and information are central to OSU's success; we must be able to track progress and understand outcomes, as well as manage our operations. Through the CORE (Cooperative Open Reporting Environment) initiative we will provide access to data to inform work decisions for every level of University employee. This large and complex undertaking will develop over several years and will support all aspects of the enterprise: research growth, student success, and financial stability.

Top-level activities of the CORE team in AY 2013:

- The CORE team sponsored two visits with John Rome from Arizona State; the second two day event in May 2013 included over 60 users from all areas of the campus.
- Campus stakeholders are testing approximately 20 dashboards and reports in preparation for public launch.
- A new data warehouse is in beta production. Tools for data interoperability have been tested, and an open source product, Talend, selected for use. This improves functionality and saves money.
- Extensive training for the new data warehouse was held for stakeholders throughout AY 2013, with several multi-day sessions for departments working with student, financial aid, and finance data.

Internal Cloud Infrastructure

IS began to consolidate its servers and storage to more flexibly allocate storage and computing capacity. This consolidation effort is the foundation for the development of a private cloud for campus. We are building on this work by adding self-service systems that let IT staff provision the server capacity they need as well as monitoring systems that measure capacity and usage.

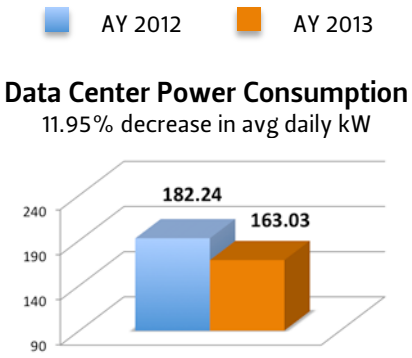
Through these steps, IS has created a private cloud that will allow researchers and administrative units to obtain computing resources more cost effectively than from locally managed systems. IS consulted with a number of campus units about collaborative approaches to providing and operating computing resources and we built partnerships with the Center for Genome Research and Biocomputing and OSU Libraries and Press.

Technology Resource Fee (TRF) reformulation

Over the years, the TRF has supported the development of an extensive infrastructure and set of services. In AY 2013, the TRF governance committees aligned TRF funding to the University's Strategic Plan for the Information Technology Enterprise and set priorities among the different types of projects or services that the TRF is asked to support.

Supported projects will improve students ability to work anywhere by funding 1) planning for improvements to the campus wireless network, 2) better access to desktop software outside of computer labs, and 3) implementation of the ability to print without using a computer lab. In addition, they funded planning of an identity management system for campus.

Data Center Power Savings



The virtualization and power savings initiative is yielding results. The daily average power consumption (in kW) at Milne declined by 24% over 16 months and power usage declined 11.95% for all three IS data centers combined over the last year.

Time and Attendance software project (MyTime)

The employee Time and Attendance software project was initiated to replace a laborious paper-based process for recording hours worked, vacation and sick leave, and other daily activities for employees at Oregon State University. Today there are approximately 11,000 active employees using MyTime representing 16,000 jobs. The successful deployment of this collaborative project by Information Services, Payroll, Business Affairs, Human Resources, and OSU's Business Centers demonstrates the effectiveness of shared responsibility with major applications deployment.

Promotion & Tenure Submission Process

Working closely with staff in the Provost's Office, Information Services delivered the first electronic submission process for promotion and tenure dossiers in January, 2013. This allows electronic submission of dossiers, and review by the Promotion & Tenure committee from their tablets and computers.

New academic recruitment tool: Banner Relationship Management (BRM)

Enrollment Management and IS partnered on the Banner Relationship Management project during the 2012-2013 academic year that enables an integrated/automated mechanism for OSU to stay engaged with prospective student. OSU began its first major campaign in August 2012, with communiques sent to hundreds of thousands of prospective students encouraging them to visit OSU and apply for admission.

2) Brief assessment of the efforts in areas in section (1)

What worked:

- Operational excellence measures (change management, virtualization) in IS are working. Unplanned outages in enterprise applications have gone down by 46%, projects are moving more quickly, and costs are more easily predicted and managed.
- Collaboration continues to improve, with successful efforts in research projects, teaching efforts, software deployments, and operations.

Areas that need improvement:

- Research infrastructure deficiencies will inhibit OSU's ability to compete for external funding. Improvements are needed in data center space, and capacity growth is needed for computation, storage, visualization, and telepresence.

- Campus growth over the past several years has led to resource demand that is currently unmet. In particular, investments in new and renovated spaces require maintenance over time, and funding for this has not been identified.
- The threat of data loss and reputational risk from security breaches continues to grow. This is driven by an increasingly sophisticated hacker community and increasingly complex computing environments that have many ways to be compromised. We are prioritizing investments in security and community education.

3) Major faculty and student awards

Blackboard Catalyst Award for Exemplary Course Program
Jon Dorbolo, in his role as Philosophy instructor, was named a winner of a Blackboard Catalyst Award for Exemplary Course Program, which honors members of the Blackboard community who design and develop exciting and innovative courses that represent the very best in technology and learning. "InterQuest: Introduction to Philosophy" was one of the first university courses in the world to be fully taught on the web.

4) Key initiatives to improve administrative efficiencies

In addition to the many improvements mentioned throughout this report, the establishment of industry-standard change management processes has improved service availability. IS began working under new processes in February 2013.

System	Incidents before new process	Incidents after new process	Percent Uptime, Total AY 2013
ONID	1	0	99.85%
Blackboard	5	0	99.57%
Banner	7	0	99.19%

- As a whole, including business applications experienced a 46% reduction in the frequency of unplanned service interruptions in the last 5 months of the academic year compared to the first 5 months.
- A Service Management effort also broke ground, beginning with the definition of a true Service Catalog.