



Information Technology Services Inventory of Cost Savings

Over the past few years, Information Technology Services in partnership with the broader Penn State IT community has made significant strides to boost the efficiency and effectiveness of IT operations, services, and technologies while continuing to provide a superior level of service to students, faculty, and staff and support the University's mission. The following is a summary of many of these collective efforts as of June 2014.

Intrusion Detection and Prevention System

IMPACT

Penn State operates a sophisticated Intrusion Detection and Prevention System that detects and blocks cyber attacks. On any given day, approximately 145,000 hostile systems are prevented from accessing nearly 200,000 computers on the Penn State network. Because the Intrusion Detection and Prevention System is deployed across the entire University, the system is able to assess traffic entering and leaving Penn State in order to spot trends, better analyze and aggregate data, and access national and regional sources of threat information only available at the enterprise level. Compared to supporting locally deployed systems, the centralized system has saved a total of \$10 million in hardware costs, networking costs, and staff salaries.

Primary contact: Kathy Kimball
Service owner: Security Operations and Services

Session Initiation Protocol trunking project

IMPACT

A Session Initiation Protocol trunking project began in 2013 to transmit voice calls over the University Enterprise Network, which connects twenty-three Penn State campuses and eliminates long-distance fees for calls made between campuses. The project is expected to save \$40,000 annually and will improve voice system resiliency by providing multiple connection points at each campus location.

Primary contact: Steve Updegrove

Service owner: Telecommunications and Networking Services

Software at Penn State

IMPACT

Software at Penn State, an online-only software store, was launched on July 1, 2013, to replace the University's physical Computer Store. Due to leveraged discounts with Adobe, Penn State saved \$21 million during the last fiscal year. Additionally, since October 2011 the University has saved \$18,000 in shipping costs as a result of customers digitally downloading software instead of ordering physical copies.

Primary contact: Mairéad Martin

Service owner: Services and Solutions

Internet Protocol addresses

IMPACT

Internet protocol (IP) addresses are a finite Internet resource allocated by the American Registry for Internet Numbers (ARIN). Like other higher education institutions, Penn State has neared its maximum capacity of IP addresses due to the growing number of on-campus wireless devices such as laptops, smartphones, and tablets, each of which requires a unique address for identification. To fulfill the increasing demand for wireless connectivity within residence halls and avoid outpacing the amount of IP addresses assigned to the University, Penn State saved \$1 million this year by securing an additional 130,000 addresses from ARIN—instead of buying them commercially—by working with departments across the University to reorganize and reallocate their IP addresses.

Primary contact: Steve Updegrove

Service owner: Telecommunications and Networking Services

Internet Telephony Service Provider

IMPACT

The University's transition to a new Internet Telephony Service Provider, Level 3, is expected to reduce long distance expenses for calls made to off-campus numbers. When completed next year, the approach will save \$300,000 per year (and potentially \$1.5 million over the next five years if usage and rates remain the same) by charging one flat rate and eliminating per-minute call billing. Beyond cost savings, the service will also better meet unanticipated call demand because upgrades and circuit activations can be made digitally.

Primary contact: Steve Updegrove

Service owner: Telecommunications and Networking Services

Data Centers Colocation Center

IMPACT

The Colocation Center is available for Penn State departments and units to relocate and securely house their research and business data. Transitioning data and systems to the Colocation Center supports the University's business continuity and disaster recovery efforts by providing a redundant infrastructure and backup system with continuous power, cooling, and security for storing data. The center also helps minimize the downtime related to power and cooling inefficiencies that often occur in independently managed server rack locations—saving energy and personnel time, reducing equipment failure, and mitigating risk. With 74 percent customer growth over the past year, the Colocation Center currently serves eighteen units, colleges, and campuses, including the Office of the President, Office of the Vice President for Commonwealth Campuses, Penn State Abington, College of Engineering, Smeal College of Business, and the College of the Liberal Arts.

Primary contact: Mark Saussure

Service owner: Data Centers

Linux operating system licenses

IMPACT

In 2012, a performance analysis revealed that transitioning Linux operating system licenses and data center applications from a Linux mainframe to Linux servers would result in extensive cost savings and better delivery of IT services to the Penn State community. In 2012, the University saved more than \$230,000 by returning Linux licenses to IBM and avoiding maintenance fees. Over the next five years this change will save approximately \$500,000 in maintenance fees.

Primary contact: Ken Forstmeier

Service owner: Administrative Information Services

iTwo

IMPACT

As part of an initiative to design and implement an infrastructure that will transform Penn State's administrative data into usable information for key stakeholders, iTwo—a web-based data access and analysis tool—is now being used by units across Penn State, including the Division of Undergraduate Studies and the University Budget Office. Since 2010–11, iTwo has made it easier for participating departments to generate data for planning and reporting efforts and share information with Penn State executives and administrators, while reducing the need to maintain, secure, and support separate web applications and repositories. The implementation of iTwo has made it possible to retire three distributed models within the Enterprise Information System and save the University \$37,500 annually (potentially \$200,000 over the next five years by not running multiple systems).

Primary contact: Ken Forstmeier

Service owner: Administrative Information Services

Course Substitution Request System

IMPACT

The Course Substitution Request System, released as a University-wide pilot in September 2013, has served nearly 1,500 students and currently has four participants—Penn State Altoona, Eberly College of Science, College of Nursing, and Smeal College of Business. Used by more than 200 advisers, the system provides an automated and standardized workflow approval process for advisers requesting a course substitution on behalf of their students and has facilitated the processing of more than 3,200 course substitution requests since fall 2013. Advisers in the College of Nursing report the new system saves approximately one-third of their time. The College of the Liberal Arts and Penn State World Campus will also soon begin to use the system.

Primary contact: Ken Forstmeier

Service owner: Administrative Information Services

Document Imaging

IMPACT

Penn State's Document Imaging service provides approximately 4.5 terabytes (roughly 2 billion pages) of secure data storage for transcripts, applications, contracts, grants, and more for eighty-five departments across the University, including the College of the Liberal Arts, Dickinson School of Law, Undergraduate Admissions, and Penn State Harrisburg. Departments use the service to virtually manage documents, store and retrieve files, reduce space needed for paper storage, and eliminate printing. The Electronic Document Distribution System, a component of the service, is a tool for accessing, viewing, and distributing files and supports University-wide sustainability initiatives by storing and virtually distributing nearly 25 million pages of report data.

Primary contact: Ken Forstmeier

Service owner: Administrative Information Services

Central Person Registry

IMPACT

As part of Penn State's identity and access management services initiative, a Central Person Registry (CPR) was created to integrate identity information from disparate University sources into a single system and enable the real-time transfer of identity information from the CPR to business systems such as the Human Resources Inquiry System and student information system. Based on the recommendations of a Penn State task force, the CPR was developed to improve transparency, visibility, and processes for creating, tracking, and managing identity data. The new registry will save staff time previously spent rectifying the thousands of duplicate and mis-matched identity records of students, faculty, and staff across University systems.

Primary contact: Renee Shuey
Service owner: Identity Services

VMHosting Service

IMPACT

Penn State's VMHosting, a service that consolidates physical servers into virtual ones, has ten hosts running 541 virtual servers for more than 175 University customers. This has saved approximately \$358,000 a year, based on VMware's calculator. Thanks to virtualization, a total of \$1,839,000 has been saved on hardware since the service's inception in 2008. University customers have also saved considerable time and effort as a result of not having to maintain their own servers.

Primary contact: Mairéad Martin
Service owner: Services and Solutions

Conference Services in the Call Center

IMPACT

When the Penn State Call Center switched from AT&T's Toll-Free Teleconference service to service provider MeetingOne, the University saved \$24,931.

Primary contact: Mairéad Martin
Service owner: Services and Solutions

IT Service Consolidation

IMPACT

Digital Library Technologies (DLT) consolidated services with other areas of Information Technology Services to increase efficiency and enhance services for University Libraries' patrons, faculty, and staff. To date, DLT has consolidated email, calendaring, desktop image management, user and server backup, wireless, and LAN networking services at University Park campus. Consolidation efforts have saved 3.5 full-time equivalent (FTE) positions, allowing staff to be relocated to other priority projects and initiatives.

Primary contact: Mairéad Martin
Service owner: Services and Solutions

Reduction in Compromises

IMPACT

The transition of 703 faculty and staff workstations to "least privilege" desktop administration mode resulted in more than an 80 percent reduction in compromised computers in 2010–11. The transition reduced productivity loss in a number of departments, including the unit or staff with the compromise; the staff responsible for removal, rebuild, and restore; and Security Operations and Services. Savings include shipping costs, replacement costs, and notification in case of personally identifiable information (PII) loss.

Primary contact: Mairéad Martin
Service owner: Services and Solutions

Meeting@PennState

IMPACT

In the last fiscal year, a total of 1,449 students, faculty, and staff participated in 131 training sessions via Meeting@PennState powered by Adobe Connect (565 participants were located at other Penn State campus locations). This saved approximately 35,000 travel miles, resulting in significant savings in travel expenses and employee time.

Primary contact: Mairéad Martin
Service owner: Services and Solutions

Vendor Training

IMPACT

Penn State's vendor training service provides IT professionals with access to vendor-offered training sessions at a reduced cost. Since 2008, 1,047 staff members from across the University have used the service to increase their effectiveness in working with the technologies needed to deliver IT services to Penn State students, faculty, and staff. The service reduces costs for the University by negotiating lower rates, raising participation rates to meet lower vendor pricing tiers, and taking advantage of bulk pricing for training vouchers. The service has saved Penn State \$595,618 since its inception in 2008.

Primary contact: Mairéad Martin

Service owner: Services and Solutions

lynda.com

IMPACT

lynda.com, an online training module service, had more than 12,000 unique visitors from across the University who completed 34,939 hours of training in the 2012–13 fiscal year. Since its rollout in 2009, lynda.com has opened opportunities for professional development while lowering costs. Under Penn State's contract, the University pays \$1.15 per student FTE and nothing for faculty and staff FTE. Independent of the University, an annual membership costs \$250 a year.

Primary contact: Mairéad Martin

Service owner: Services and Solutions

Knowledge Commons

IMPACT

Penn State's Knowledge Commons has helped increase efficiency at the University through collaboration. Digital Library Technologies, the University Libraries, Media Commons, ITS Consulting and Support Services, and Teaching and Learning with Technology worked collaboratively to develop and deliver a support framework for the opening of the Knowledge Commons. The commons provides a more collaborative experience for students, faculty, and staff with combined Digital Media Commons, multimedia instruction, and student computing facilities.

Primary contact: Mairéad Martin

Service owner: Services and Solutions

Tenable SecurityCenter

IMPACT

Since April 2013, an enterprise license for Tenable SecurityCenter—a tool for streamlining vulnerability scanning, administration, analysis, and reporting—has enabled Penn State units to scan their networks at regular intervals and quickly respond to security threats. Currently used by fifty-four units, the software provides a single centrally managed console to administer scans, alerts, reports, and plugin updates across Penn State. Compared to deploying individual instances of the software across the University's many local area networks, SecurityCenter saved an estimated \$870,000 on initial start-up costs and now realizes a yearly savings of approximately \$130,000 in ongoing maintenance.

Primary contact: Kathy Kimball
Service owner: Security Operations and Services

Systems Management at Penn State

IMPACT

Systems Management (SysMan) at Penn State is an initiative to reduce energy and power costs by enabling IT departments across the University to remotely configure computer power settings from a central interface. The service has reduced Penn State's power bill by \$750,000 this year alone. Since 2009, the software, provided at no cost to most departments, has been installed on nearly 33,000 computers at more than eighty-five units—including the College of Health and Human Development, College of Agricultural Sciences, and Finance and Business—across every Penn State campus. The initiative allows IT administrators to more efficiently update systems, keep computers secure, and provide better IT support for students, faculty, and staff, while reducing the University's carbon footprint by roughly 15 million pounds per year.

Primary contact: Terry O'Heron
Service owner: Teaching and Learning with Technology
