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## INFORMATION TECHNOLOGY SERVICES

### Strategic Plan Annual Review and Progress Report 2018

Information Technology Services (ITS) published our five year strategic plan in 2014, and we annually report on our progress meeting the goals outlined in the plan. This is the last annual report for the existing strategic plan, and our next step is to engage our community, assess current and emerging needs, and set the direction for the next five years. The goals from the 2014 plan have remained relevant and effectively guided our delivery of central IT systems, services, and capabilities for the past five years, and they will certainly provide the foundation for the next iteration. Below are initiatives that ITS completed this year.

#### GOAL 1

Pursue IT solutions that empower members of our community to successfully, productively, and securely engage in all of their institutional roles as individuals.

#### **Phishing Protection and Education**

The University email filters block the vast majority of spam messages that flood the email system on a daily basis. However, senders of spam and other unsolicited messages continue to employ new and more sophisticated techniques. In particular, phishing messages, which attempt to steal personal information, remain a threat to our community. This past year, ITS employed multiple strategies to better protect our community from phishing messages and its impacts.

- **Phishing Education:** We developed and disseminated educational material to improve institutional awareness. Materials included presentations at tabling events; online materials that include techniques for detecting fraudulent messages; alerts about particularly widespread attacks on websites, the Daily Digest, and University social media channels; and direct communication with our IT community.
- **Improved Email Filters:** ITS also researched cloud-hosted mail filtering products that would provide improved spam and malware/virus prevention for the University's email systems, Office

365 and G Suite. The chosen threat prevention service is comprised of two filtering services, Exchange Online Protection (EOP) and Advanced Threat Protection (ATP), which are built into Office 365. These two filters better detect spam and malicious emails and provide better protection against harmful links and attachments. As a cloud-service, it also improves high availability of email and will remain functional, even during a campus power outage or other disruptive event.

### **IT Accessibility**

The Rehabilitation Act of 1973 and American with Disabilities Act of 1990 prohibits discrimination against individuals with disabilities in all areas of public life, including digital content presented on websites or delivered through other technologies. In accordance with these acts, federal accessibility standards for digital content were designed to reduce barriers for people with impairments and to enhance usability for the broadest practical audience. To support the institution-wide initiative to ensure equal opportunity for participation in teaching, learning, living, and working at the University, ITS has provided the following support for information and communication technology (ICT) accessibility.

- **Accessibility Coordinator:** ITS hired an IT Accessibility Coordinator to improve university support for digital accessibility and to help content stewards better meet current and evolving federal laws and standards. The coordinator informs policy changes in the area of digital content, provides training and resources for faculty and staff, collaborates with other IT and accessibility professionals to conduct a comprehensive review of UConn websites and digital products, and facilitates remediation of identified accessibility issues.
- **IT Accessibility Website:** ITS developed the IT Accessibility site, in concert with multiple University units, to provide our community with a central resource for information about, and strategies for, creating accessible content. The site is available at [accessibility.its.uconn.edu](https://accessibility.its.uconn.edu).

### **Modified UConn Phonebook to Protect Student Identity Data**

The UConn Phonebook is used to look up directory information for employees and students. As a publically addressable service, there were concerns that it released too much information about our student population that could be abused by marketing firms. In response to feedback from stakeholders, we modified the Phonebook to only provide search results for faculty and staff and require authentication to gain access to student directory data.

### **Digital Signage**

ITS deployed an enterprise-wide digital signage service and migrated all departments except for the Student Union to the centrally-managed system. The new digital signage service enables individual units to manage their signs centrally. It includes templates approved by University Communications and integrates with Office 365, Astra classroom scheduling, Everbridge emergency notifications, and EMS event scheduling.

### **Aurora Web Content Service**

Aurora, the University's WordPress-powered web content management system, supports the broad communication needs and varying technical levels of the community. We continuously evolve our service continuously based on direct community feedback so that it will remain relevant and useful for diverse purposes and needs. ITS added new widgets (units of functionality) and doubled the default storage limit. To encourage adoption of Aurora, ITS also produced a series of training videos to provide self-help to those new to the system.

### **GOAL 2**

Pursue IT solutions under the guidance of our academic partners that facilitate effective research, enrich teaching and learning, and enhance institutional competitiveness for extramural funding.

### *Research*

#### **High Performance Computing**

HPC gives researchers the power to process large amounts of data (big data), solve complicated computational problems, and explore complex systems. University researchers are increasingly pursuing these activities, and as the demand increases, the capacity and performance of our facility must scale commensurately. As part of future growth, ITS coordinated a combined investment by the Provost, ITS, and faculty stakeholders to replace end-of-life equipment with current generation compute this fiscal year. With this investment, HPC has expanded its capabilities, providing researchers with more power to analyze their experimental data and to explore models in multiple disciplines. The number of compute nodes in the cluster has grown by 33%, expanding from 267 to 355 compute nodes. Core count and memory have both grown by 50%, owing to the increased size of the resources available on the newer nodes. In addition, we have increased the number of GPU capable nodes from two to six, while increasing the number of GPUs from four to 16. In keeping with our growing capabilities, six more researchers have invested in the HPC cluster this year, bringing the total to 23.

#### **Secured Research Infrastructure**

Federal Government and Department of Defense related research contracts with the DFARS 252.204-7012 clause have required compliance with the NIST SP 800-171 security controls to safeguard Controlled Unclassified Information (CUI). ITS and the Office of the Vice President of Research partnered to develop a Secured Research Infrastructure (SRI) that meets the security control requirements, keeps the workload on the PI to the smallest amount practical, and ensures compliance. The Federal Government imposed a compliance deadline of 12/31/17, and the University met that deadline for all UConn research projects containing CUI.

## *Teaching and Learning*

### **Classroom and Educational Technology**

ITS is responsible for installing, maintaining, and evolving classroom technology as well as other resources that can be leveraged by UConn instructors.

- **Lifecycle planning:** To provide our instructors with a consistent and contemporary experience in any of the centrally-scheduled classrooms, ITS began implementing a comprehensive lifecycle plan for educational technology starting in 2014 with the intention of completing the refresh of classrooms in five years. Aggressive scheduling, close coordination with the University Classroom Committee, and additional financial support from the Office of the Provost allowed us to achieve a stable five year lifecycle this fiscal year.
- **WePresent:** We have also added additional capabilities to the classrooms. Wireless projection and device mirroring with WePresent is now part of the standard deployment for high-tech classrooms. With this functionality, instructors can display the screen of their Windows, Mac, and Android devices directly on the classroom projector, allowing them to more easily step away from the podium and move about the classroom. ITS introduced this technology option to address alternative teaching preferences and to better support student engagement.
- **Kaltura Lecture Capture (KLC) service:** Another addition that supports teaching and learning at UConn was enhanced self-service capabilities for the Kaltura Lecture Capture (KLC) service. The KLC service enables instructors to record and publish video, audio, and screen captures from their courses. Previously, instructors had to reserve specific videoconference-enabled rooms and coordinate recordings with ITS's Academic IT staff. With the self-service model, instructors can perform ad hoc recordings in high-tech classrooms and retrieve their files from UConn's KLC online portal. The KLC editing software was also updated to provide greater flexibility with modifying content. With these updates, KLC is the most comprehensive, supported solution for editing and publishing videos at the University and allows content creators to independently deliver high quality materials.
- **UConn Lightboard:** Partnering with the Center for Excellence in Teaching and Learning (CETL), ITS implemented updates to the UConn Lightboard. This specialized recording studio features a transparent panel that enables instructors to face their virtual audience while they write or present material. ITS upgraded the room to follow the standard design of high-tech classrooms and installed a touch panel beside the glass screen that looks and functions similarly to those found in hi-tech classrooms. It facilitates settings and background changes and increases the efficiency of the recording process by translating the faculty classroom experience to the studio.

### **Replaced Computers in Library**

ITS replaced the thin client terminals in the library in Storrs and the regional campuses with 220 full desktop machines. These machines are managed centrally so they are kept up to date with software patches, the latest operating systems, as well as updated software. Moving from thin clients to a full desktop drastically improved the performance of these machines for student use.

## Software Additions

- **AutoCAD:** AutoCAD for Education was made available to UConn faculty, staff, and students. The developer, Autodesk, offers an educational version of AutoCAD that is free for research, teaching, and learning at qualifying universities. The School of Engineering approached Autodesk to allow the University to participate in their ongoing education program, and ITS has incorporated AutoCAD into our software portal for access and distribution.
- **Adobe:** ITS continued contract negotiations with Adobe this past year in pursuit of terms and conditions that were advantageous to UConn students but also more appropriately used Student Tech Fee funds. We developed an effective bridging strategy with certain academic areas that required the Adobe Creative Cloud software for their courses. As these one-year licenses expire, we have negotiated attractive pricing with Adobe and are now offering purchase options with better flexibility through UConn Marketplace.

### GOAL 3

Pursue IT solutions in concert with functional partners that support the business of the University and increase operational effectiveness.

## Added New Affiliation for Student Employees

An affiliation, in the context of an identity and access management system, specifies an individual's relationship to the institution and provides the appropriate access and privileges. When the University transitioned to CORE-CT for employees, there was not a fitting affiliation for student employees, and this population was designated as Special Payroll. Working in concert with Human Resources and the Registrar's office, we created the new affiliation "Student Employee." This allowed these student employees to be properly labeled and receive the proper privileges for that affiliation.

## Project, technical, and implementation support for HuskyBuy Evolution

The HuskyBuy project was initiated by Accounts Payable and Procurement Services to reduce complexity of the existing eProcurement portal and introduce additional features. ITS enabled the transition to a single environment hosted by Jaegger. The updated iteration of HuskyBuy went live on-schedule in July.

## Software Project Implementation

Working with the functional partners – Purchasing department, Accounts Payable and Human Resources – we are in the final stages of procuring two software solutions: 1) Recruiting and Onboarding Systems Solution, which will streamline the hiring and onboarding experience of new faculty and staff, and 2) The implementation of a Travel & Expense Management Solution, with improved functionality, better access and system flexibility.

### **Quality Assurance & Training**

As part of our ongoing effort to drive process improvement, we continue to build a robust quality assurance process for software testing and validation. This process is integrated in our new software implementation process and whenever changes are introduced to the current software systems. The process improvement efforts include eexpanding the current training workshops to include regional campuses.

### **BI Publisher tool**

Working closely with the community to better understand historical and new business requirements, ITS implemented BI Publisher, a new reporting tool used to convert transcripts from crystal to XML. The new reporting tool is better supported by Oracle going forward and also brings immediate enhancements, such as improved transcript formatting. It is strategically aligned to preserve upgrade options for the University and is foundational to future services, such as the electronic transfer of transcripts.

### **Delegated Access and FERPA Pin System**

The confidentiality of student information is protected by the Family Educational Rights and Privacy Act (FERPA) and prior consent from students is required to allow others to access or discuss their education records. The University has historically provided processes that allow students to authorize others to pay fee bills and discuss their information with University officials. However, they could not provide access to view their education record in Student Admin, the University's hub for student academic and financial information. ITS, Office of Privacy Protection & Management, Office of the Registrar, and Office of the Bursar partnered to enable this Delegated Access feature in Student Administration System. ITS also replaced the existing FERPA Pin system, which had been through Student Admin, with a new system that allows students to determine with greater specificity what categories of information may be discussed with a designee.

### **Replacement of FAMIS with AiM by AssetWorks**

The web application Facilities Asset Management Information System (FAMIS) reached the end of its usable life and was formally retired at the end of 2017. ITS, in concert with our functional partners, implemented a new maintenance management system, AiM by AssetWorks. This new system replaced current functionality (e.g., asset management, work order functions), improved cost tracking and key/access control, and introduced mobile solutions for over 200 technicians. This system currently supports over 400 users.

As part of the project, ITS also facilitated interactions between AiM and other ITS supported systems. For the Quali Financial system, ITS developed integrations and added functionality for tracking AiM purchase orders. The myUConn Maintenance app was also modified and upgraded to interact with AiM.

### **Applications and Integrations**

At the request of and in concert with our functional partners at Storrs and the regional campuses, ITS provides application support for institutional activities that contribute to the overall mission of the

University. This support entails procurement, development, or facilitation of software or application solutions; integrations that work in concert with existing institutional investments and practices; and enhancements to efficiency by improving processes and introducing automation.

- **New applications:** ITS created applications that support training requirements, student financial and academic needs (e.g., refund requests, graduate student emergency loan system, scholarship applications), and campus orientation registration.
- **Integrations:** The integration of software and systems enables our functional partners to leverage information from more than one system for greater efficiency and tracking. Examples of integrations include Quali Financial Systems with AiM and UPDC's Construction Management system and Terra Dotta for the International Office to ensure compliance with SEVIS.
- **New Process or Automation:** Updating processes and automating activities that replace manual entry provide our partners with improved efficiency and accuracy of data. ITS made improvements for the Bursar's Office, Advising, Human Resources, Department of Orientation, and the School of Education.

#### GOAL 4

Pursue IT solutions that assist technical partners at all UConn locations to successfully provide for the specific needs of their respective communities.

#### Franchise IT

ITS and various administrative areas have been engaged in ongoing discussions about how best to combine associated functions and leverage existing resources in a joint effort to deliver IT systems, services, and capabilities to the UConn community. This past year, we have continued to migrate services, such as file storage, servers, and workstations, to ITS's central portfolio. We are making organizational changes where IT staff join our organization or have a dotted line relationship to us. This enables the University to leverage central IT tools to provide support and provides a continuity of service to our community.

#### GOAL 5

Pursue IT solutions that can best be provided centrally and deliver them securely, efficiently, and robustly at scale.

#### Wireless Expansion Project

The university community relies on multiple devices and effective wireless infrastructure to maintain connectivity and achieve high levels of productivity. At the beginning of 2017, aging infrastructure and ad hoc deployments meant that less than 50% of university buildings had sufficient wireless

coverage. The administration provided ITS with capital resources to improve performance and coverage in administrative and academic buildings across all campuses. By the end of July 2018, the overwhelming majority of UConn buildings were successfully upgraded. Exceptions were buildings that were deferred to accommodate construction or structures that did not have the necessary wired infrastructure in place.

### **Bousfield Rewiring Project**

ITS collaborated with Psychology IT staff to update cabling and wiring that was installed in 1989 and that inadequate infrastructure to support contemporary services and technology. We identified and developed a new telecommunications room that had appropriate cooling and consolidated three rooms into one. At the completion of the project, the building had was upgraded to provide a greatly improved experience, and the project was executed with minimal disruptions.

### **Increased Identity Data from UConn Health**

As the use of Storrs based services increases with users from UConn Health, these populations need to get into the identity systems in order to make use of our central systems. We have created several additional feeds to cover the non-traditional populations associated with UConn Health such as Residents and Affiliates. This not only allows them to use existing services, but also opens up the path for enabling future services.