

Information Technology Services Goals for 2014-16

ITS provides a wide range of technology services to UNCG students, faculty, and staff. During 2014-15, ITS has begun meeting with faculty and staff to discuss service additions in the planning or development stages – in spring 2015 with Schools and academic departments. Attendees are asked in advance which of an [online “menu” of services](#) they want to discuss.

1. *Continued improvements in cost-effectiveness and efficiency in academic & administrative services*

Though ITS in 2014-15 has a total state budget 20% lower than in 2007-08, we’ve been able to increase and enhance campus services in most areas. The use of technology also has enabled other UNCG divisions to become more cost-effective. Campus initiatives include **network port reduction** (\$2 million cost avoidance over 10 years) and **managed print services** (average departmental savings of 43%). ITS has been a leader in the UNC system in collaborative efforts with other campuses that improve cost-effectiveness.

2. *Expanded learning technology services*

ITS continues to expand and improve services for learning technology. In Spring 2014, the University decided to move from Blackboard Learn to Canvas by Instructure as its Learning Management System (LMS). ITS began migrating faculty and courses to Canvas during Summer 2014 and, as of January 2015, approximately 40% of all active courses at UNCG had been migrated. ITS is working with the Division of Continual Learning Advisory Committee (DAC) to study UNCG’s options for Synchronous LMS (SLMS) products, to determine whether to stay with Blackboard Collaborate or move to another product. A decision will be made in November 2015. In January 2015, ITS began a project to investigate **lecture capture** solutions and recommend a product for a UNCG classroom pilot. To support online learning, the **ITS Service Desk** will provide 24x7 service beginning July 2015. This will occur without additional funding.

ITS took over responsibility for **classroom technology** during Fall 2014 and has been working with the Academic Learning Spaces Council (ALSC) to identify ways to provide faculty with needed levels of service, while reducing overall costs. The ALSC recommended a three-tiered approach to providing classroom technology, and now ITS is working with the ALSC, Registrar’s Office, and departmental schedulers to develop a new registration model. The new tiering system will be in place for Fall 2016 course scheduling.

3. *Better use of data for decision-making and accountability*

ITS has a lead role in initiatives focused on business intelligence and data quality. Early in 2014, the Chancellor approved a set of overarching data principles to guide the collection and use of institutional data. The **Data Stewards Council** (DSC) established in Spring 2014 has begun creating an institutional glossary of data terms, toward the use of consistent definitions across campus for reporting purposes. In addition, the DSC has led work to uncover and address data errors—focusing first on faculty workload. In January 2015, the Strata Information Group was engaged to assess UNCG’s use of the Ellucian Banner system (UNCG’s system of record) and internal procedures relative to faculty load. Follow-up efforts are underway. Overall **Banner governance** will be restructured to strengthen creation, maintenance, and enforcement of standards, and to facilitate appropriate participation of campus users. In addition, a project team will make recommendations regarding one or a set of enterprise analytics products.

4. *New voice services offerings*

In early 2014, ITS assessed faculty and staff communications needs, to develop requirements for building the next generation of voice services. Of 1,144 faculty/staff surveyed, 94.3% indicated that traditional voice services (land lines with phone handsets on the desk) were essential or valuable to have. In addition,

the availability of new functionality that enables communication using one's computer, smartphone or tablet was identified as important for faculty and staff, who are significantly more mobile than even a few years ago. Through a collaborative managed services agreement with North Carolina State University in summer 2014, we were able to **reduce base charges for voice services** by up to \$13.84/month per line, with an estimated campus-wide reduction in rates of \$350,000/year. The campus transition to managed voice services was largely unnoticed.

Phase two of voice services efficiency (through 2015-16) will focus on **enhanced mobility** functionality through implementation of unified communications tools.

5. *Improvement of software & services to meet University research needs*

ITS launched a project in January 2015 to study qualitative data analysis (QDA) software options. ITS is also expanding software available to UNCG researchers on the high performance computing (HPC) cluster housed at NC State. ITS is also collaborating with University Libraries and the Office of Research & Economic Development to improve research data management strategies and services.

6. *Strengthened wireless network & increased number of mobile applications*

How UNCG faculty, staff and students interact with the campus network has changed dramatically over the last decade. Devices that connect wirelessly to the Internet over the campus network have become pervasive, inside and outside of the classroom. Students, as well as some faculty and staff, arrive on campus with an average of 3-5 networked devices that may include desktop computers, laptops, smartphones, tablets, printers, and smart TVs. Since 2008, peak wireless usage on the UNCG campus has increased by 740%, from approximately 1,300 to more than 11,000 active devices daily in January 2015.

Demand for pervasive wireless services, the launch of virtual services that rely on the campus network instead of the local device, increased reliance on cloud-based services, and increased bandwidth-intensive long distance collaborations all place demands for more bandwidth and greater speeds on the campus wired and wireless networks. In FY 2013-14, ITS began a multi-year program of **wired and wireless network upgrades** to increase performance and availability. In 2014-15, phase one comprehensive re-architecture and core infrastructure upgrades were completed for both the wired and wireless networks in preparation for upgrading the building networks in phase two to provide 10 Gb wired network speeds (10x increase from previous 1 Gb standard) and 1 Gb wireless speeds. (Wireless is a shared resource, so actual speeds always vary based on the number of connected users, proximity to the access point, and interference, but ITS expects to see a 3x increase in speed from the current 300 Mbps standard.)

In light of continued increases in network demand, ITS will move UNCG to the **"unlimited Tier" for NCREN Internet service**, beginning March 2015. All academic and administrative buildings on campus will be completely configured for 10 Gb wired network speeds, once the multi-year building network refresh completes in summer 2018, and completely configured to the 802.11ac 1 Gb wireless standard once the multi-year wireless refresh completes in summer 2017.

In FY 2014-15, ITS launched new mobile templates for UNCG site owners that allow them to create mobile versions of their websites that are compliant with UNCG's Unit Web Site Requirements (UWSR). ITS also launched new responsive templates for web sites, as well as a responsive template for Wordpress sites. This gives UNCG site owners a template that will resize and reconfigure according to the size of the screen it is being viewed on, while remaining compliant with UNCG's UWSR. ITS has continued its work to add functionality to the UNCGmobile app, including adding the ability for students to view a map of their current building and find the least congested wireless access point. A **mobile application for Canvas** was added to UNCGmobile in February 2015.

7. *New data storage options available*

ITS began in 2013-14 to evaluate cloud storage solutions as a potential replacement option for individual

network file space (S:\ drive). The goals were to develop a more cost-effective solution that met the capacity, security, cross-platform, and internal and external collaboration needs of UNCG faculty, staff and students. The **Internet2 Net+ Box storage** for higher education solution was selected.

Box for Users was launched in fall 2014. All UNCG faculty, staff, and students were given a 50GB initial storage allocation (10x increase from previous 5 GB capacity standard). Box is approved for storage of all but high-risk data (which meets most user data security needs) and is a web-based service with full cross-platform functionality between Windows, Apple iOS, and Android operating systems. Box for Users by early 2015 had 2,350 active users consuming 1.26TB of storage and 77 external collaborators. It is being used by the Library to provide e-reserves to the Canvas learning management system.

Phase two of the Box cloud storage implementation will develop a Box for Departments service offering suitable as a replacement for the current departmental network file space (N:\ drive). Phase two will also include implementation of functionality that enhances direct integration of Box with the Microsoft Office productivity suite of applications, as well as exploration of the native document management and automated workflow capabilities of Box. The cost of delivering network storage on the previous architecture (S:\ and N:\ drives) is \$5,320.98 per TB. The cost of delivering 1TB of storage on Box under our current contract is \$812.50, which represents an 85% reduction in cost. Box is negotiating with Internet2 to offer unlimited storage to universities.

8. **Secure computing environment**

Faculty and staff at UNCG have a diverse array of computing needs and a wide variety of computing device preferences. Many need to collaborate with colleagues both internal and external to UNCG, working primarily with “Moderate Risk,” “Low Risk,” or “Minimal Risk” data. Others routinely process “High Risk” data as part of their job function.¹ High risk users need a Secure Network to protect critical University data assets. Others will benefit more from an open, less restricted Campus Network that can accommodate a wide variety of devices, applications, and collaboration. To that end, ITS began in 2014-15 to build a new **Secure Network** and transition the existing General Computing Network (GCN) into a less restricted, more open, Campus Network that meets the needs of most faculty and staff.

The goals are to minimize the risk of data leakage that would violate Federal or State laws by segregating high risk data into a Secure Network; increase productivity for users who don’t routinely process high risk data by providing a Campus Network with basic protections that is open and flexible; and maximize the effectiveness of ITS resources by focusing security management on protection of high risk data assets.

The **Secure Network** will have stringent security requirements, will be accessible only from a physical or virtual fully managed Windows desktop (updates and patching enforced, no local administrator access, no unapproved software installed, etc.) and will have direct access to high-risk data and secure data center resources. No data ingress or egress will be allowed to or from the Secure Network to prevent leakage of high risk data. The only way for a user to access high risk data stores will be from within the Secure Network. Client testing is expected to begin in late spring 2015. Phase one of this initiative will complete with the permanent full-time transition of the appropriate faculty and staff groups into the Secure Network in early 2016.

In phase two, the GCN will be relaxed into a more open **Campus Network** suitable for most faculty and staff. The new Campus Network will remain a private network with basic perimeter security and intrusion prevention protection, but will be enhanced to allow less stringent computing device requirements (unmanaged devices allowed), optional local administrator privileges for end users on their devices, base images and software distribution for both Windows and Mac, and basic security scanning and device remediation (no forensic analysis). Phase two is projected to complete by fall 2016.

¹ Data Classification policy (<http://policy.uncg.edu/university-policies/data/>).

9. *Moving more computing to MyCloud*

ITS began a multi-year **virtual computing MyCloud** initiative in 2013-14 to provide private cloud services to the campus community. The goals of the program are to provide centrally managed technology services on servers running in the campus data centers (rather than on endpoint computing devices) to enable faculty, staff and students to have anytime, anywhere, any device access to the UNCG computing environment and University licensed software applications; gain operational efficiency by centrally managing one instance of a device-independent virtualized service (installed once centrally rather than on every end device); ensure better protection of University data assets by keeping University data within the protected confines of the University data centers (processing happens in the data center, only screen images are sent to the endpoint device); and create opportunities for cost avoidance by enabling thin-client computing (extend the life of older workstations and enable replacement with low-cost thin devices). In phase one, the core infrastructure to deliver MyCloud services to campus was designed and implemented.

Upon completion of phase two in summer 2015, **all ITS-managed computer labs will be virtualized**, enabling better performance of the lab computers and increased operational efficiency from centralizing the management of operating system and software application delivery and eliminating the need to touch every computer in every lab each time a change needs to be made. By fall 2015, all lab software applications that can be virtualized will no longer be installed locally on lab workstations, but will be offered instead through the **UNCG App Store**. MyCloud App Store applications can be accessed by both on-campus and distance learning students, and many students no longer need to physically come to a computer lab to complete their assignments. By early 2015, there were over 40 applications hosted in the MyCloud App Store. A pilot will be launched in summer 2015 to explore thin-client computer replacement alternatives for faculty and staff (and students in the computing labs) at a low price point.

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