Foundations + Innovations

Texas Woman's University

The Office of Technology Annual Report 2014-2015

CFO 13 conference room

+ Technology

Front cover: Denton student, Danya Rangel-Rivera

From Wax Tablets to iPads: Foundations and Innovations

Roman wax tablet, circa 13th century

The human desire to continuously improve is evidenced throughout history in our development of innovative ways to **seek out knowledge**. Sir Francis Bacon taught us that our search for truth should be conducted by induction - recording what is observable. Bacon and others' methods evolved into what we know as the scientific method. The scientific method begins with the known, builds by systematically testing, and adds new knowledge after great scrutiny.

The scientific method appears to shine in stark contrast to the methods of **technological innovation**. New technology seems to be chaotic--created and adopted organically. Not so. Consider the *Tabula Rasa* to the right. The image of a wax tablet should look familiar - as many of us today own tablet devices similar in shape with a stylus accessory. Just as our scientific method suggests, technological innovation comes not from chaos, but rather builds on a solid understanding of the past.

Success in research or technological innovation begins with a solid foundation. The Office of Technology strives to provide that technological foundation to the University by **offering services** such as storage, networking, telephones, and desktops. We then build on this foundation with services that enable and empower our colleagues to be successful. This report reflects our 2014-2015 efforts to provide continuously improving value through service.

Robert B. Placido

Robert B. Placido
Associate Provost for Technology & CIO

Technology Dashboard

WHO WE ARE

85 Technology professionals

WHO WE SUPPORT[1]

15,303 Students (fall)
426 Professors
368 Adjunct faculty
278 Graduate assistants
829 Staff

OUR ENVIRONMENT

3 Campuses
4,052 Desktop computers
1,066 Laptop computers
799 Tablet computers
244 Projectors
467 Printers
378 Virtual servers
106 Physical servers
1,580 Single-line phones
767 Multi-line phones
136 VoIP phones
210 Fax lines
1,021 Infrastructure phone lines to support building facilities

4.6 technology FTEs per 1,000 institutional FTEs compared with the EDUCAUSE industry benchmark of 9.5 for the same Carnegie classified institutions[2]

85.6% Technology Service Desk's First Contact Resolution rate, up 6% over the last two years

99.937% average uptime for production infrastructure hosts is up 421 minutes over last year

21% reduction in number of pages sent to TWU printers over 2013-2014

Notable Changes

	2012	2013	2014	2015
Open Lab Hours	n/a	235,181	231,943	321,700
Pages Sent to Printers	9.5 million	9 million	8.5 million	6.7 million
Classroom Lab Hours	71,580	130,959	200,729	201,844
Tablets Supported	n/a	476	467	799

Note: Data estimated using best information available at time of publication
[1]TWU Fact Book (http://www.twu.edu/institutional-research/fact-book.asp) and TWU Campus Stats Report (http://www.twu.edu/compensation-classification/twu-campus-stats-report.asp) [2]EDUCAUSE Core Data (http://www.educause.edu/research-and-publications/research/core-data-service)

Students + Technology

A Message from Marissa Johnson, Students Advisory Committee for Technology Chair, 2014-2015

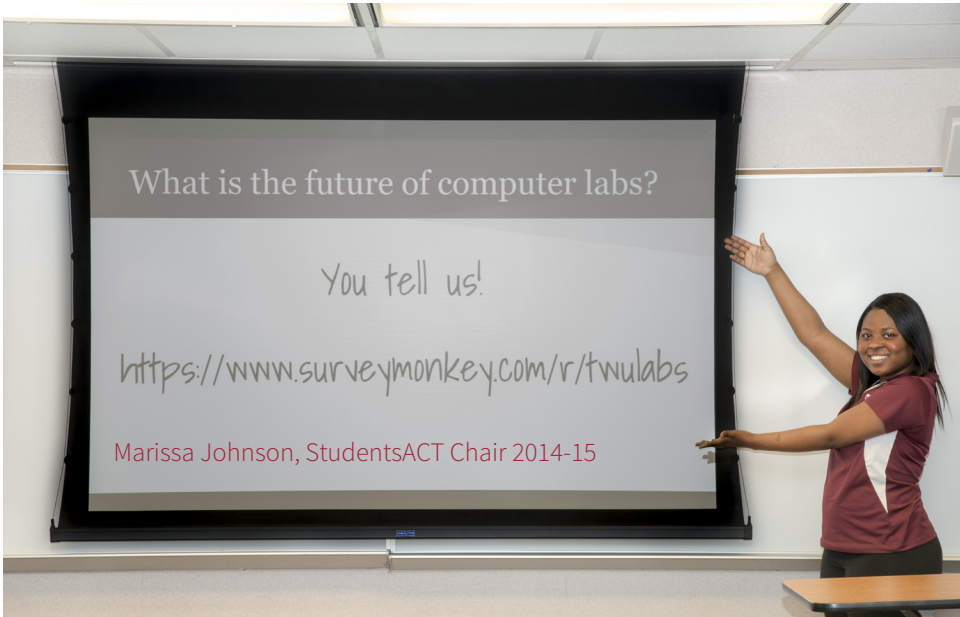
Last year, the Students Advisory Committee for Technology (StudentsACT) focused on two projects: Implementation of TWU GMail and the Future of Computer Labs and Printing. We continued to reach a cross-section of the TWU student body through on-campus events at each campus and eLounges for distance students.

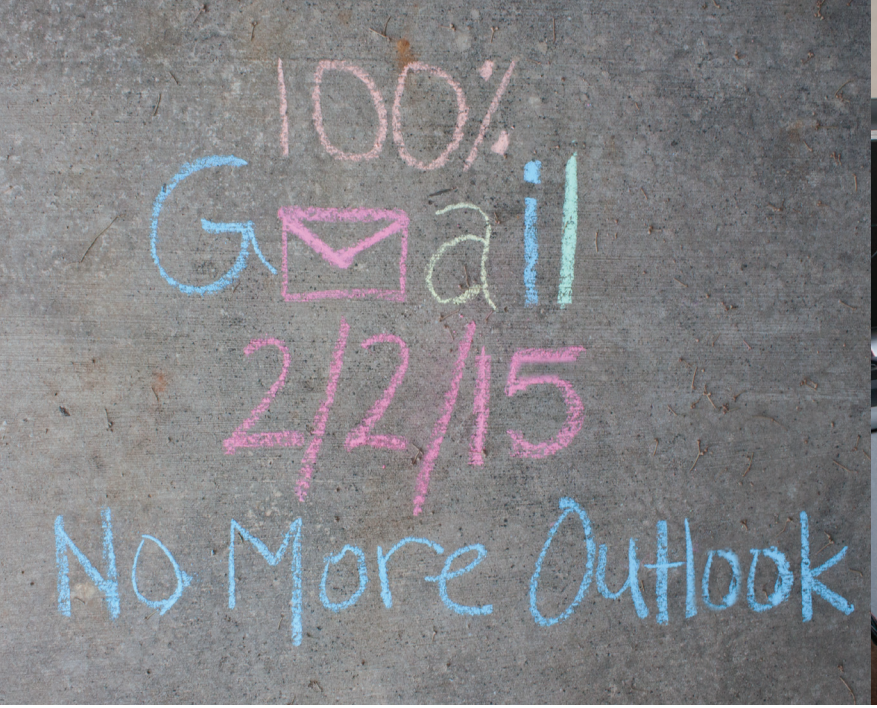
I think the **student body appreciated** our move to Google mail. StudentsACT worked hard to ensure that the students were given the information they needed to adjust. This was a great change, and I was excited to lead this effort to move technology forward at TWU. It was great talking with students early in the spring 2015 semester as they called in with questions about TWU GMail.

The committee expanded its collaboration efforts this year. **Building on relationships** with the Student House of Representatives and CARE (formerly Commuter Services), we worked with Residence Life to provide TWU GMail training for Resident Assistants.

Before building a survey one of our members developed a research report on current and future trends in computer lab usage and printing. Our computer labs and printing survey surpassed our response rate for the prior spring's email survey with 2,169 responses (15% of the enrolled population).

The StudentsACT is an **important governing voice** for TWU students in all aspects of technology at the University. I am excited to see how this year's committee moves us forward!

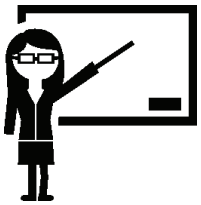




Patrice Briggs, Denton student

GMail Implementation Communication Plan

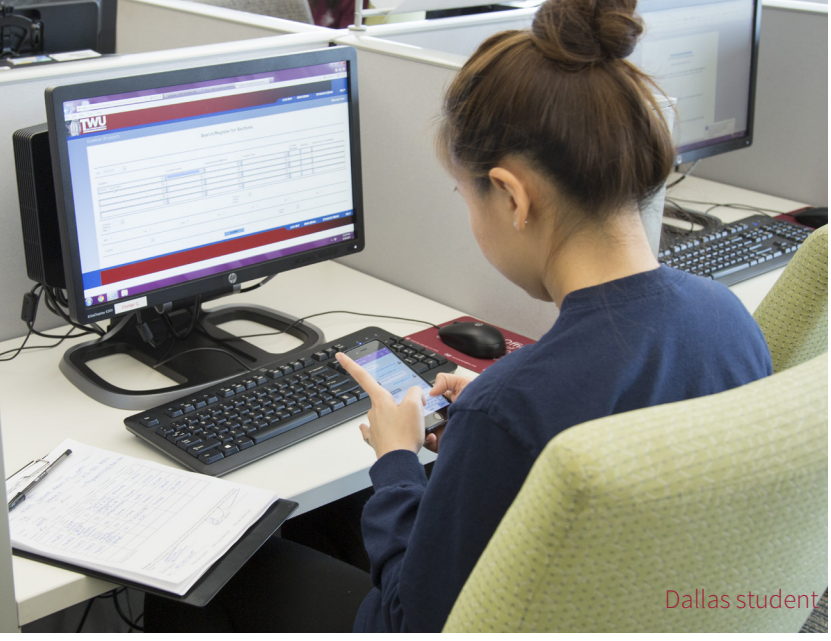
The GMail implementation was a robust effort that included student, faculty, and staff testing GMail and other Apps. Adjustments were made by project leads as needed.



Technology built a website with links to training documentation. Live presentations on Google Apps through the Tech Talks series were led by staff in Technology and by members of the StudentsACT.

Emails to students November through February. Emails were developed by members of the Students Advisory Committee for Technology (StudentsACT).

Phone bank led by students in January. Answered more than 200 phone calls from students, faculty, and staff. 77% of calls were resolved at the phone bank, increasing timely student support. 23% of calls were escalated for additional support.



Dallas student

More Screens, More Access, More Knowledge

The StudentsACT computer labs and printing survey found that campus computer labs and bring your own device (BYOD) are not mutually exclusive options. TWU students want to access TWU systems through campus computers. Simultaneously, they want to **access their social and entertainment media** through their own devices. In the photo above, a student demonstrates the power of multiple screens and media. She searches for classes in WebAdvisor, referring to printed advising material while using her phone to take care of other business. The Office of Technology must support wired and wireless devices in mobile and traditional platforms.

Computer Lab & Printing Survey

In spring 2015, the Students Advisory Committee for Technology (StudentsACT) researched trends and practices in computer labs at universities and applied that knowledge to a survey they made available to all TWU students. While the StudentsACT had successfully **surveyed the student population** in spring 2014 to determine that student email would move to GMail, the response to the computer lab and printing survey was even greater, with a total of 2,169 students participating in the online survey.

56% use the labs multiple times per week

44% most often visit the Library & Megalab

41% visit a lab to print assignments more than 90% of the time

Computer Lab & Printing Results by the Numbers

The StudentsACT survey of students demonstrated that computer labs and printing are **critical services**. 85% of respondents use the labs for printing, and 41% use the labs to print assignments more than 90% of the time. As instructors accept more digital files over paper, this number should decrease.

85% use the labs for printing

73% use the labs for Blackboard

58% use the labs to check TWU GMail

Survey Results: Services Students Seek

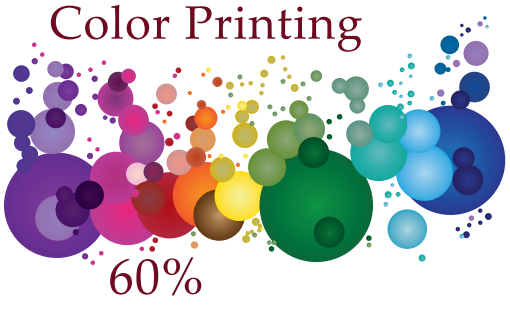
The most popular features desired among students who took the survey were the availability of color printing (60%), more outlets for charging devices (55%), and Air Printing (51%). Answers varied by campus.

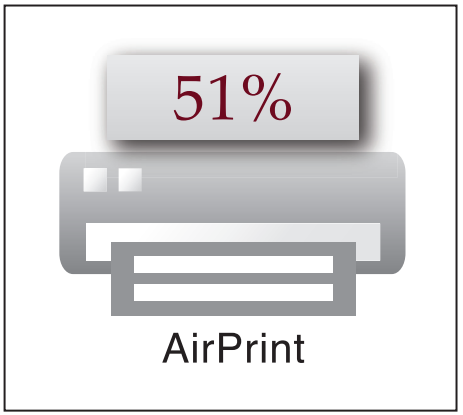
Denton's Top Picks
Color printing (66%) [dorms 75%]
More outlets (58%)
More outlets (61%)

Houston's Top Picks
Collaboration stations (54%)
Lounge spaces (55%)

Dallas' Top Picks
Color printing (56%)
Charging stations (62%)

The survey also included feedback on availability of labs/printing and quality of customer service. Client Services will use these data to drive changes to lab environments. To meet this expectation, Lab Coordinator positions were created.





The Students Advisory Committee for Technology (StudentsACT) is **led by students** on the Dallas, Denton, and Houston campuses who represent undergraduate, graduate, residential, commuter, and 100% online students.

Connecting Students to Opportunities

This year the Office of Technology worked with the Pioneer Center for Student Excellence and with Enrollment Services and Student Life to implement two software solutions for TWU students. **TWUConnect** through the Pioneer Center for Student Excellence is a searchable database of internships. The new and improved scholarships software, **Academic Works**, takes the confusion out of the former application process by limiting the scholarships students see when they log in based upon their eligibility. Innovative, proactive leaders like Kurt Krause, Coordinator of Experiential Learning, and Gary Ray, Vice President of Enrollment Services, are excellent partners with Technology.

> Working with Arman and Cori was a breeze, and they were both very conscientious about staying in touch, keeping me informed, providing solutions to any issues that arose, etc. I could not be happier with my interactions with Technology.
>
> – Kurt Krause, Pioneer Center for Student Excellence

Streamlining Processes

Both of these systems allow students internet-based and mobile access with the ease of single-sign-on technology. Students log in in with their TWU userID and password. The Office of Technology is pleased to enhance TWU students' connectivity to internship and scholarship opportunities. Often, technology can be a barrier to students in the world of higher education; through partnerships with others at the University, the Office of Technology is able to remove those barriers and streamline processes.

Before either product was released, the Office of Technology had TWU students test the software and give feedback on usability. Including students in the testing phase helped ensure a successful roll-out of the products and allowed the teams a better understanding of how TWU students will use them.

Aligning Technology with Institutional Goals

Both of these projects align with Texas Woman's University's institutional values:

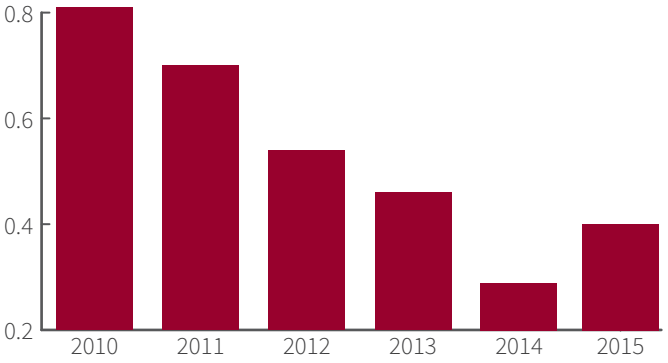
Educational Opportunity: Supporting learning among engaged students from varied backgrounds

Success and Sustainability: Preparing students for purposeful lives and careers of leadership, service, and lifelong learning in an ever-changing world

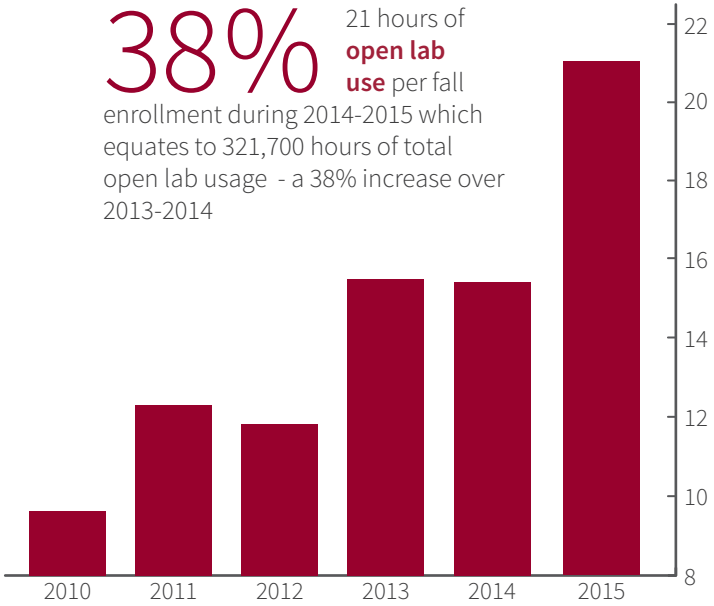
Further, TWUConnect offers additional students access to internships so that they follow our SACS QEP: Learn by Doing.

Houston students

33% increase in the number of **kiosk users** per fall enrollment compared to FY2014, up to 0.43 users per fall enrollment for FY2015



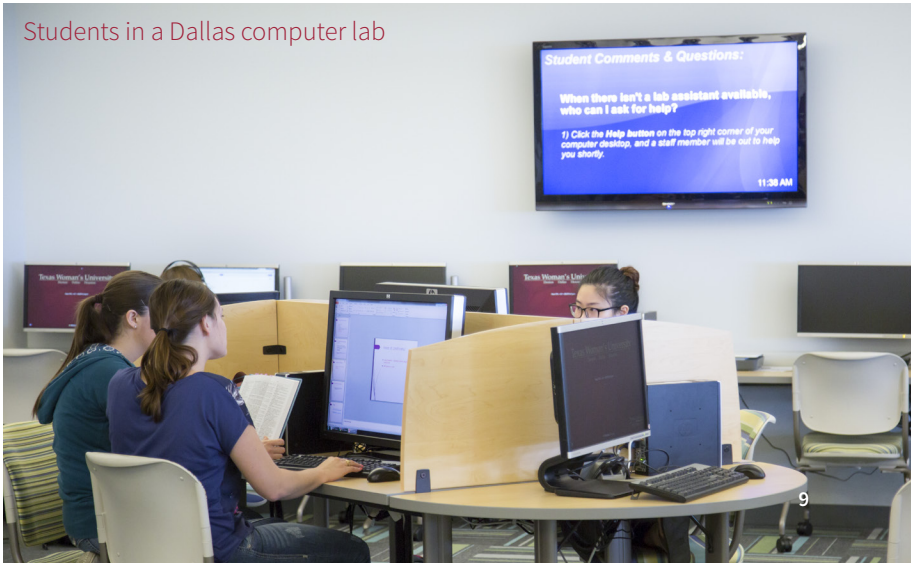
38% 21 hours of **open lab use** per fall enrollment during 2014-2015 which equates to 321,700 hours of total open lab usage - a 38% increase over 2013-2014



Aligning with Student Needs

Technology reclassified positions on each of TWU's campuses to **better serve students**. Lab coordinators at each campus are dedicated to maintaining and improving TWU's open and classroom labs to meet the needs of TWU's Pioneers.

Lab coordinators will implement the suggestions made by students regarding computer labs, printing, and collaboration space.

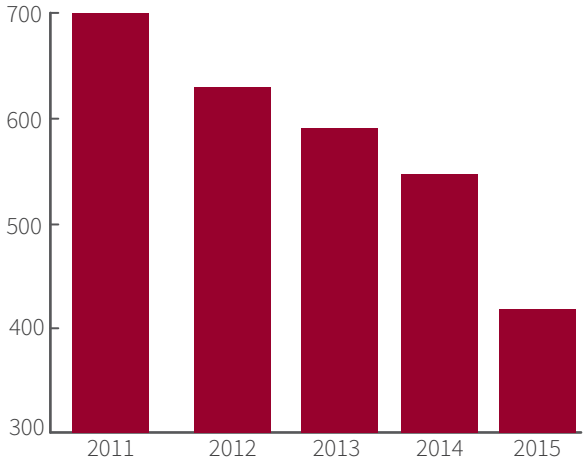


Students in a Dallas computer lab

Dallas students using a collaboration station

Enabling Collaboration

Students at the TWU Institute of Health Sciences-Dallas benefit from **two collaboration stations** in the primary computer lab. This is an example of the future of all TWU computer labs - combining individual learning spaces with collaborative spaces. Research emphasizes that today's learners favor active, participatory, experiential learning and that they are highly social, both face-to-face and online. The workforce expects college graduates to have excellent interpersonal communication skills and to be able to work in teams. An on-site collaboration station meets face-to-face students' learning needs while Google Apps for Education provide 100% online students the tools they need to collaborate in real time.

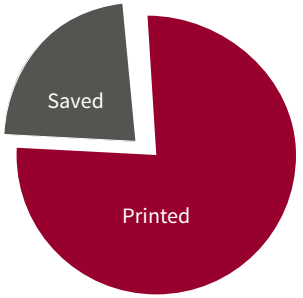


439 pages per fall enrollment were sent to the TWU print server last year; 6.7 million total pages were sent this year, representing a **21% reduction in total pages** sent compared to last year

Students in the Denton Megalab

Denton students use their own devices in a study space.

20% of the pages sent to the printer were saved and never printed because of **environment-saving** technology installed at each printer



Faculty + Technology

Technology for Transdisciplinary Research

At TWU's Stroke Center - Dallas at the T. Boone Pickens Institute of Health Sciences, Speech Language Pathology, Occupational Therapy, Physical Therapy, and Nursing students practice and learn together.

Students who work with patients at the Center benefit from **a closed-circuit (CCTV) system** that provides both live and recorded video feeds of patients in a clinical setting. The Dallas Technology team expertly supports the needs of this excellent research and teaching center.

Enhancing Learning with Tech Tools

Instructors and presenters in updated rooms benefit from state-of-the-art document cameras and projectors that enrich the learning experience. The new document cameras have been redesigned to take up less space, provide more image detail, and are built upon the manufacturer's reputation of long-lasting, quality performance. The projectors now feature no lamp or filter technology and twice the detail of standard definition.

Technology staff work with vendors to find the best-priced, most reliable classroom technology that address the specific needs of those who most frequently use the rooms. The efforts translate into improved pedagogy environments that save the University money over time.

ACT 601 doc cam

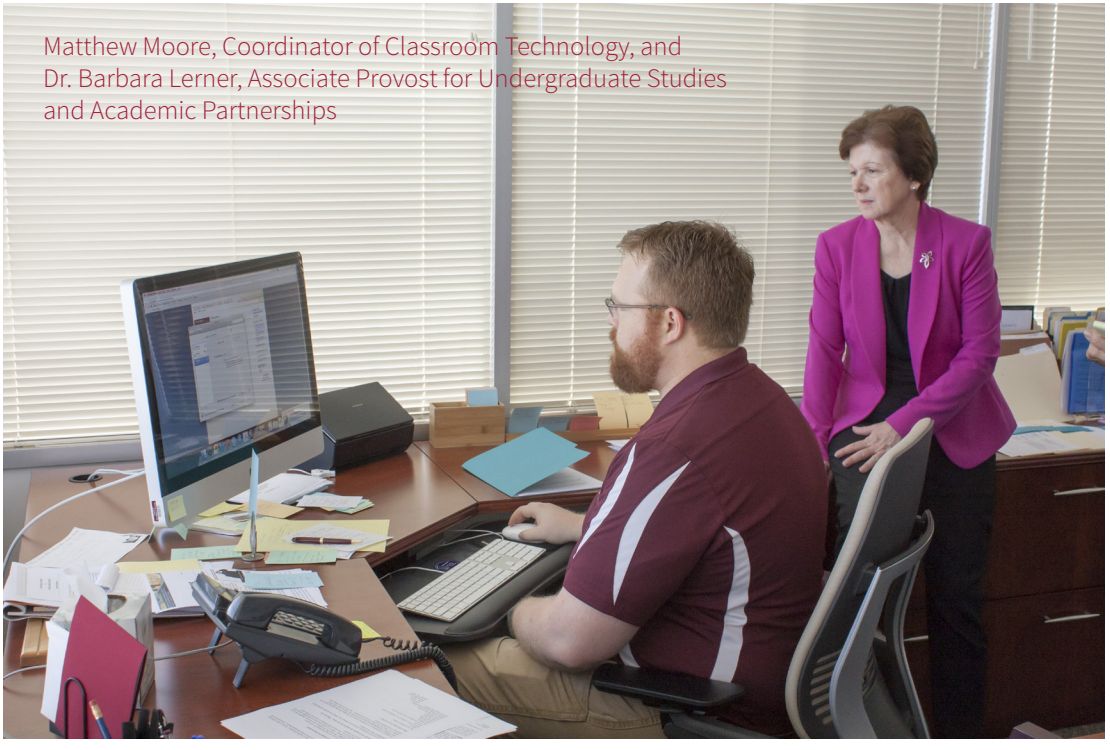
ACT 601 projector and television screen

No More Remotes

The computer classrooms in ACT allow for projector, screen, and volume control in panels on the wall. One location for every button. And the screen moves independent of the projector so that the white board can be used in the middle of a presentation.

"The IT department, was incredibly helpful in setting up a custom Macintosh workstation for my new office in the Woodcock Institute."

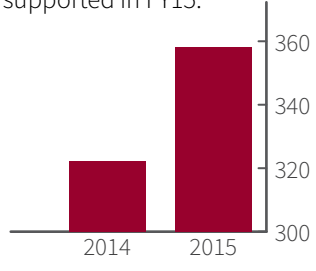
Dr. Daniel Miller,
Executive Director
Woodcock Institute
for Advancement of
Neurocognitive Research
and Applied Practice



Matthew Moore, Coordinator of Classroom Technology, and
Dr. Barbara Lerner, Associate Provost for Undergraduate Studies
and Academic Partnerships

71%

increase in number
of Apple/Mac devices
supported in FY15.



Support for Macs

Historically, Texas Woman's University Technology standardized computers with Windows operating system (OS) for uniform enterprise management and big-buy purchasing power. Only a few areas at the University needed the specificity of what a Mac could do; and, with a Windows standard, support was simple and service was available. Through the **growth of Mac computers at TWU**, combined with the breadth and scope of the Mac OS, support and service became more complex, so the Office of Technology invested in tools and learning opportunities, while listening to the needs of its colleagues. The department committed changes in staffing and training this year to provide additional support for Macs. This included revisiting locations where Mac technology was already being used, like Visual Arts, and preparing Macs for use in new locations, such as the Woodcock Institute for Advancement of Neurocognitive Research and Applied Practice.

Google Apps in the Arts

With the move of students from Exchange/Outlook to GMail, Google Apps accounts were made available to faculty and staff who wanted to use them. Visual Arts is a department which jumped onto the Google train.

Google Apps are used within the department as organizational tools, **collaboration tools**, and communication tools. Former department chair Michelle Hays said that Google Apps makes life simpler. The department has made a greater shift toward a paperless office. Faculty who weren't using technology are now using Google Apps.

GMail is seamlessly integrated with the other Apps. The department had already been using Google calendars, so the addition of GMail made scheduling even easier within the office.

Michelle Hays, former chair, Visual Arts

Google Apps for Office Hours

The Department of Sociology offers an online and face-to-face option for every undergraduate course. Celia Lo, Chair, wants to help online students interact with their instructors, so she bought PC cameras and gave them to GTAs in the department. Brothers, Lucas and Luis Espinoza, teach undergraduate online sociology courses. They recognize that faculty struggle to get to know their online students and vice versa, so they use Google Hangouts for office hours. Hangouts include text, voice, and video chat in synchronous time that is often lost in online classes. Video chat supports **human interaction**. All faculty, students, and staff can use Hangouts outside of a structured classroom environment. Google Hangouts is an additional tool that is user-intuitive and mobile-friendly.

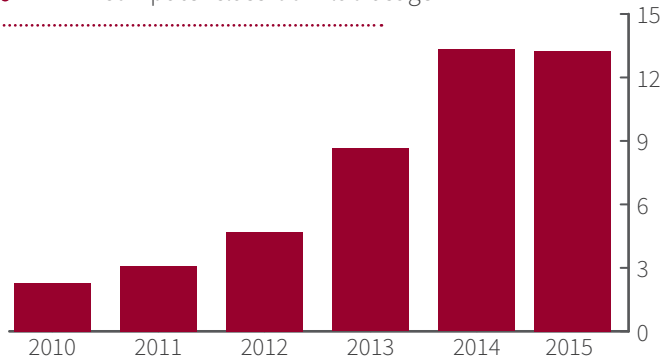
Adjunct instructor in piano lab class

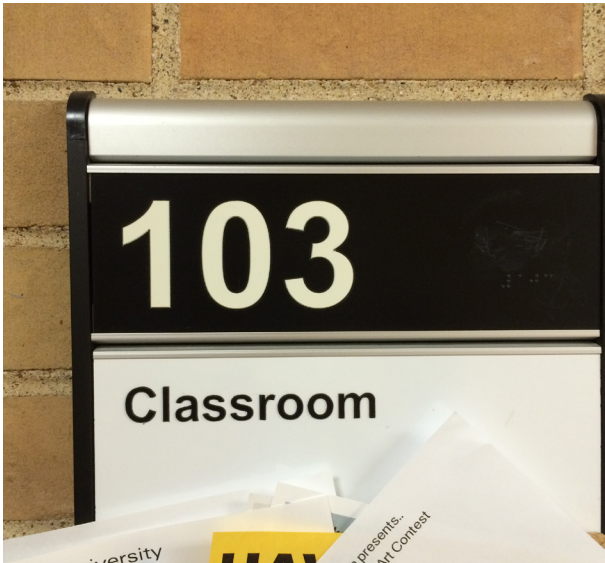
Technology in the Music Classroom

"Cameras that project an image of the teacher's keyboard have been around for a long time, but they are quite expensive. Joe Kondras [Manager of Classroom Technology and Videoconferences] and his team figured out a way to adapt the use of an inexpensive webcam and open source software applications to develop a system that works perfectly. Now students can see an image of the teacher's hands as they move from one position to the next. Students are truly grateful for this enhancement because seeing the positions makes learning keyboard skills much easier. This is a great example of how faculty and technology staff **collaborate to dramatically improve** the delivery of information in the classroom."

-Dr. Richard Shuster, Professor, Music

13.1 hours of **computer classroom lab use** per fall enrollment during 2014-2015, which equates to 201,844 hours of total computer classroom lab usage





Space + Technology

This year, TWU's Regents approved a plan to invest in updating outdated classroom, computer lab, and videoconference technology. The initiative is targeted to upgrade approximately 30 rooms per year over the next 5 years. This funding will upgrade all of TWU's classrooms from analog to digital technology and will place technology in classrooms that never had those tools before. The Denton campus made tremendous updates to 29 rooms in eight buildings. Houston upgraded three rooms , and Dallas upgraded six rooms. Photos on these pages illustrate some of these changes, including some of the challenging spaces Technology staff encountered and fitted with A/V equipment to enhance learning and productivity spaces.

What's in a Technology Upgrade?

Lamp projectors are being replaced with laser light and filter-less models that are designed to operate for 20,000 hours. HD tensioned fabric screens enhance the contrast and reduce the effects of ambient light which **maximize the beauty** of the digital projected images. In spaces where screens and projectors won't work, large-screen televisions are installed.

MCL 410 demonstrates the future of technology in the classroom: balancing standardization with customization while maintaining functionality. The class has a television, a screen with projector, and custom non-tech features, such as chalkboards. The seating is also mobile to allow customization. Each room is equipped with a touch panel that is more sensitive to touch, lasts longer, has AppleTV, and has VoIP to allow instructors to speak directly to the Service Desk for immediate support. Updated rooms are outfitted to allow instructors to connect their own devices. In many rooms, the cords retract so the instructor station is less cluttered.

CFO classroom, AppleTV option

MCL 505

Technology in Tough Spaces

Denton's MCL 505 has been in use for classes and videoconferences for many years, but a large column blocked a view from the back of the room. This year the room was upgraded to include the number of screens needed so that everyone in the room could see a screen. Further, two monitors were mounted to face the presenter/instructor station so that **videoconference attendees** can be seen from the front of the room. MCL 505 now has five screens audience-facing and two screens presenter-facing. The column is no longer an obstacle.

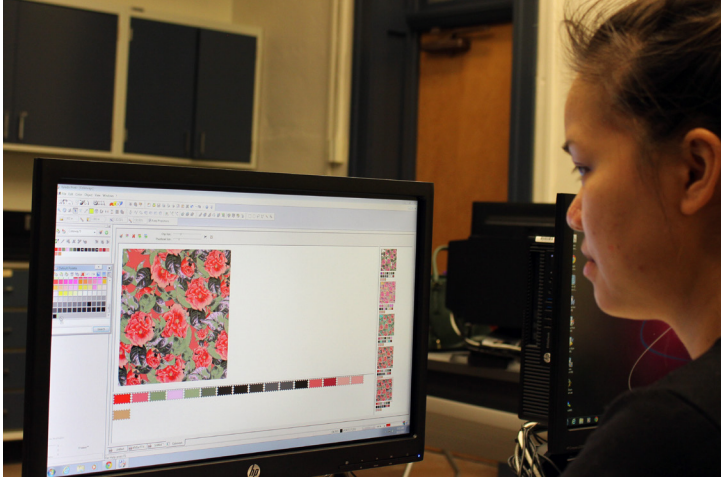
Room 3510 in Dallas was also difficult when tackling an upgrade. The overhead lights cannot be moved, and the shallowness of the room made hanging the monitors in the front a challenge to meeting ADA requirements, but the Dallas team and the vendor were able to upgrade the room to full compliance.

Dallas 3510

A New Panel of Options

The touch-sensitive AMX panel puts the Service Desk at a touch of a button for instructors in the classroom. Custom screens are available in multi-use rooms to provide the person at the panel with the options they need, minimizing confusion and maximizing presentation time, discussion, productivity, and collaboration.

Houston 3322



Denton student in fashion lab

Technology for Design

The updated Fashion & Textiles lab, like the piano lab in music, features extra technology to assist with instruction and learning. Students can watch the instructor design in real-time and follow along on their own computers.

2014-15 Classroom & Videoconference Upgrades

40 Denton rooms in 11 buildings

6 Dallas rooms

3 Houston rooms

Year-in-Review
Project Highlights

2015

SEP
3771 tickets closed
26 projects opened
8 projects closed

Increased internet speed and network redundancy

OCT
3131 tickets closed
15 projects opened
20 projects closed

Academic Calendar Editor

NOV
2493 tickets closed
9 projects opened
7 projects closed

TeamDynamix implementation for portfolio project management and governance workflow

DEC
2134 tickets closed
12 projects opened
4 projects closed

Year-end federal reporting with a vendor change for 1098-Ts

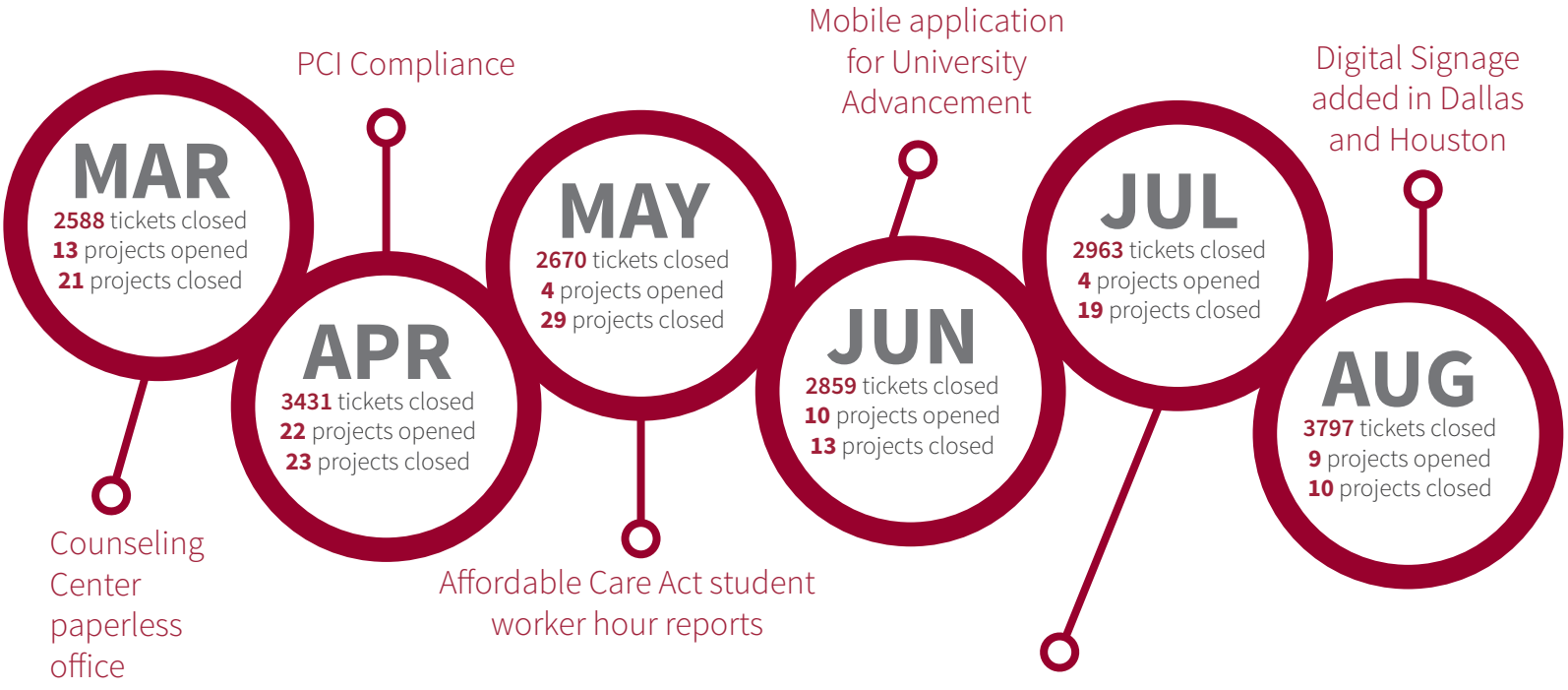
JAN
4950 tickets closed
20 projects opened
28 projects closed

Successful student GMail implementation

FEB
2729 tickets closed
20 projects opened
28 projects closed

TWU Connect Live

2014



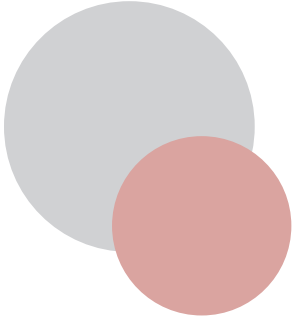
Classroom & Videoconference Upgrades

ACT	CFO	MCL	HDB	MUS	ADM	HOUSTON	DALLAS
501	103	402	305	203	129	2120	3510
502	104	403		218	122	3322	5110
503	201	410	**SH**	220		6305	7401
601	1304	411	105	304	**BA**		8201
602	Sky Room	501	402	317	201A		8400
603		505	406				8720
1500	**DGL**	632	412	**PH**	**OMB**		
	208	636	419	102	401		
	210	646		107			

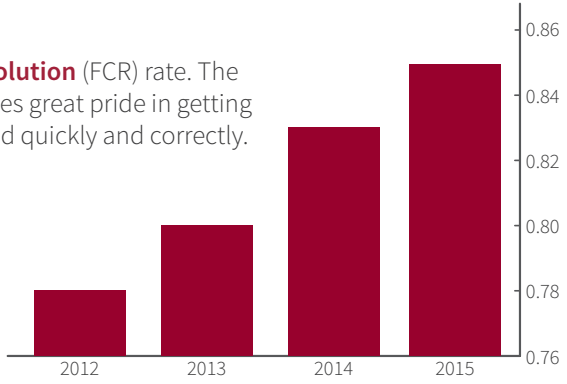
Continuous Improvement + Technology

The Office of Technology emphasizes continuous improvement. These pages display a few of the metrics and projects that demonstrate the department's commitment to reviewing, revising, and refining its efforts, services, and standards.

Such efforts include maintenance of cell phone use guidelines and an employee success guide to provide its staff with the information they need to be successful at Texas Woman's University.



85.6% **first contact resolution** (FCR) rate. The Service Desk takes great pride in getting problems resolved quickly and correctly.



Service Desk Support

Beginning in August 2014, the TWU Service Desk equipped its full-time agents with laptops to pilot-test a service that would allow them to **work remotely** in case of a weather event or emergency that closed the campus so that they could continue to provide technical support to the students, faculty, and staff working off-campus and in unaffected areas such as Houston.

During the FY2015, the Denton campus was closed for weather events on February 22-24, February 27, after 5:00 pm on March 4, and March 5. Because the Service Desk analysts were able to work from home on their laptops, they **assisted more than 200 individuals** who in previous years would have waited for support until the next day the Denton campus was open.

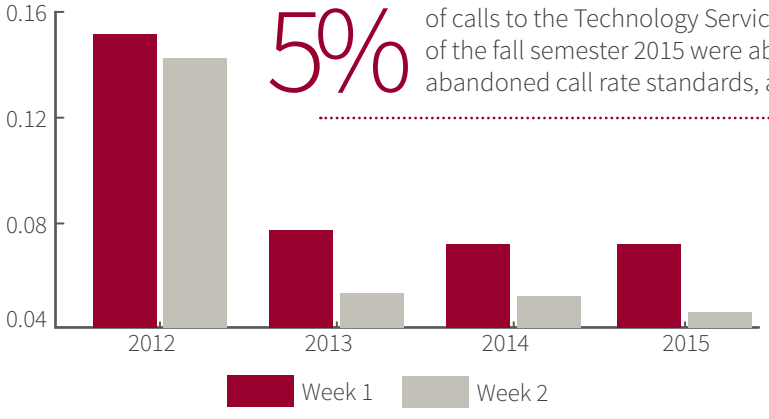
Weather Day Support 2015

137 phone calls answered

53 emails handled

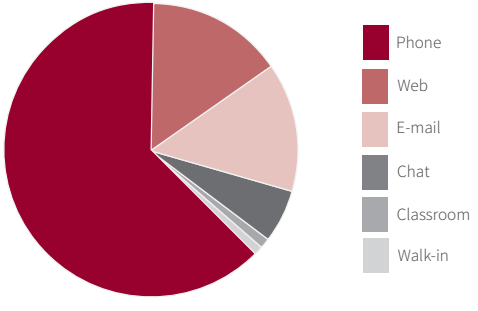
20 chats received

18 web tickets worked



5% of calls to the Technology Service Desk during the second week of the fall semester 2015 were abandoned according to ITIL's abandoned call rate standards, a **4% decrease over last year**

35,178 **service tickets** were logged during FY2015 from all sources, a 9% increase over last year



Tech Talks Rebooted

The Office of Technology offered a reimagined Tech Talk series that focused less on the how-to of technology and more on broader intersections of technology and society in brief, twenty minute sessions. **Faculty and staff from outside of the department** led talks on social media, cyberbullying, and wearable tech. The variety of topics and speakers yielded a diverse audience who engaged in the subjects presented.

9 talks Inbox Zero, Security: Learning to Phish, Social Media & Students, Google Apps for Students, Google Apps for Faculty & Staff, Landscape of Data Collection Tools, Cyberbullying Panel, Future of Computer Labs, Wearable Technology

207 total attendees across Dallas, Denton, and Houston

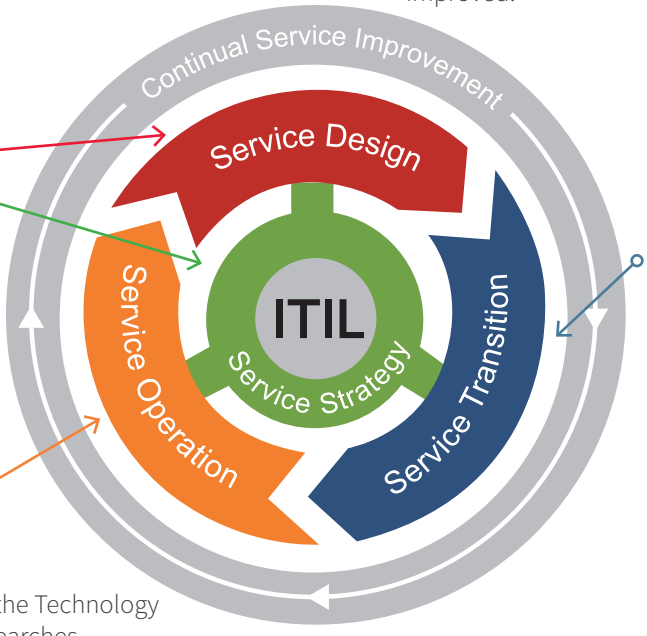
46% first-time attendees

77% wanted to see longer versions of talks

ITIL Case Study: Pioneer Emergency Notification

The IT Infrastructure Library provides a framework for IT best practices. ITIL is an iterative lifecycle that demonstrates how IT services provide value to the business, aka the University. The recent change from an Oracle-based Pioneer Emergency Notification system to a **Pioneer Portal-based Pioneer Emergency Notification system (TWU PEN)** exemplifies many aspects of ITIL methodology.

Begin with the end
Continual Service Improvement
Technology received a great deal of feedback on the TWU PEN. Incidents were logged into the IT service request ticketing system, and individuals **shared with Technology** leadership concerns about the effectiveness of the existing service. A trend emerged. The TWU PEN needed to be improved.



Start with why
Service Strategy
Service Design
Before applying a change, Technology leadership considered the purpose of the TWU PEN and **how to design a service** to meet those strategic needs. Changing the TWU PEN provided TWU constituents an easy-to-use service to keep them safe.

Maintain the service
Service Operation
Now that the new TWU PEN is live, the Technology Service Desk handles incidents, researches problems, and manages requests through a tiered support system. Since the service was released, there have only been two service requests/inquiries, indicating that the **service is working efficiently** and effectively.

Manage the project
Service Transition
Project management, application development, testing, and release all occur within the Service Transition process of the ITIL lifecycle. The Enterprise Application team charged with developing the application made their program available for beta testing among all Office of Technology staff. They adjusted the application **after receiving feedback** and then made the application available again for testing by department staff. After two rounds of testing and modification, the service was released.

Sharpening the Saw

Technology staff benefit from a departmental culture that emphasizes continuous improvement. **Professional development opportunities** include technical training to enhance expertise, and the department also offers annual training tracks. Tracks involve a theme; one of the three tracks focuses on managerial skills. Most of the training comes from Lynda.com courses. The department offers face-to-face training as well.

2014 Certificates in Communication

BEGINNER COMMUNICATION TRACK
Self-Assessment: How Good are Your Communication Skills?
Lynda: Communication Fundamentals
Live: How to Communicate with Diplomacy, Tact, and Credibility

ADVANCED COMMUNICATION TRACK
Self-Assessment: Communication Skills
Lynda: Having Difficult Conversations
Live: How to Communicate with Diplomacy, Tact, and Credibility

MANAGEMENT COMMUNICATION TRACK
Self-Assessment: Skills of Effective Managers
Lynda: Managing Employee Performance Problems
Live: How to Communicate with Diplomacy, Tact, and Credibility

Improving Communication in Technology

In 2013, the Office of Technology formed a cross-unit departmental Communication Committee. The purpose of the committee is to develop continual Communication Improvement Initiatives that create an environment where improved communication is everyone's job. In particular, tactics are used to foster dialogue between units and subunits across the department and with external constituencies so that **meaningful communication happens constantly**.

The committee members serve one-year terms and rotate quarterly so that the committee always has members with varying degrees of familiarity with the communication strategy.

The committee meets weekly to discuss communications and miscommunications within and outside of the department. Its members make recommendations to the directors and CIO about processes and projects to **improve departmental communication**. In 2013 and 2014, the committee proposed and helped implement

(1) professional development opportunities in communication,
(2) a communication blog and website,
(3) a website redesign initiative, and
(4) new branding.

In 2015, the committee has continued to improve the communication skills of the department through a set of communication training tracks that include face-to-face training.

The committee also develops an annual Strategic Communication Plan with the directors and CIO to guide the work of the group.

TWU + the World + Technology

Over the last few years, TWU has expanded its presence at live events. Live Internet streaming, sound, and video require collaboration between technology, marketing & communications, conference services, and outside vendors. Staff in Technology actively seek to expand their knowledge of production technology to support the University's growing presence across the world.

Data Made Visible

Working with Institutional Research (IR), led by Dr. Mark Hamner, is always a joy for Technology - probably because they get the chance to 'geek-out' without reservation. This year Dr. Hamner led an effort to review, select, and implement a data warehouse and business intelligence suite of applications. SAS Business Analytics was the chosen solution. Technology supported the effort by adding all the necessary infrastructure (e.g., servers, databases, applications, and networks) and also worked with the vendor and IR staff to begin transferring in data. The project was finished this summer, and Dr. Hamner's team has already used the system to produce complex and highly accurate models of student persistence. This new system will no doubt prove to be a competitive advantage that offers systemic improvement to TWU where data are made transparent, displaying our excellence to the world.

Christopher Johnson, Chief of Staff

TWU Made Visible by Technology

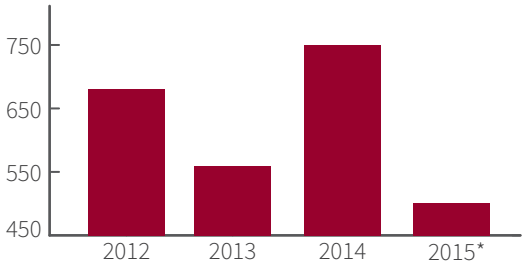
Over the last few years, Technology has taken ownership of conference room technology while greatly expanding videoconference technology. This **equipment enables TWU to connect** its faculty, staff, and students to each other across the state and beyond.

Commencement 2.0

The May 2015 Houston commencement ceremony, led by Dr. Jennifer Martin, Senior Associate Provost, was a tremendous success. The event, held on the Rice University campus, was made meaningful and memorable for TWU graduates and their loved ones by Technology staff.

Technology at the Denton commencement ceremonies continues to meet the needs of TWU graduates. Staff from many offices assist with audio/visual and other technologies at the May and December commencements. Memorably, in May 2015, a graduate was **greeted on video** by her father, who is serving in the military overseas. Such wonderful surprises are made possible by advanced, well-managed technology.

2,489 **videoconferences** conducted at TWU in the last four years



Videoconference and conference room technology

Partnerships + Technology

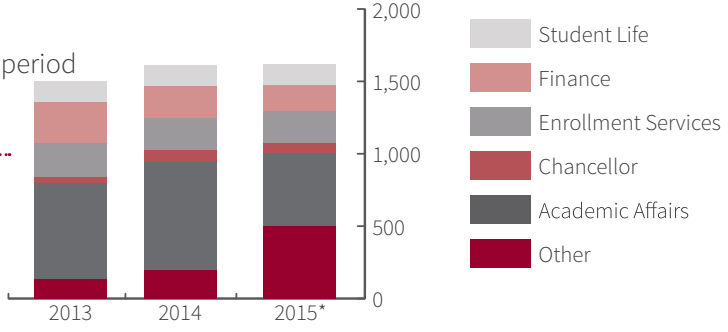
All of the services TWU Technology offers benefit the Institution's students, faculty, staff, alumni, and greater communities. To provide the most effective services, Technology staff partner with colleagues across all three campuses to find solutions and customize existing offerings. While the enterprise applications teams focus on software solutions for operations, development, faculty, and students, client services' classroom and labs teams work with faculty and students to determine their needs. The networking team and others in infrastructure work on cross-unit projects. The success of Technology at TWU is dependent upon the strength of these partnerships.

TouchNet Marketplace & Merchant Services

TWU Technology partnered with the Bursar's Office to implement TouchNet Marketplace & Merchant Services software. TouchNet Marketplace is a comprehensive framework for eCommerce throughout the campus enterprise. Departments, campus organizations, and other campus merchants can use Marketplace to create, manage, and operate **online storefronts, registration sites, and secure payment pages**. Benefits include Marketplace Point-of-Sale (POS) functionality which will mobilize POS and go where the action is --- from collecting donations at games and reunions to event tickets. TouchNet Merchant Services will enable the Bursar's Office and Controller's Office to move all credit card processing accounts to one system. This will facilitate reconciliation because all activity would be on a consolidated report.

1,705 total tickets were submitted to the Enterprise Applications team in a nine-month snapshot period from January to September 2015

The Enterprise Applications unit supports all divisions of the University. These teams received the same number of tickets over a shorter reporting period and with fewer staff than last year.



*2013 & 2014 reported ten months; only nine months reported in 2015

Terminal Four (T4) Project

Technology, in partnership with Marketing and Communications, has been working on a project to replace the existing content management system for TWU's public web server, www.twu.edu. The first step was to research newer content management systems that could be fully-supported, offer new functionality, and are **easier to use**.

Technology tested potential products in a sandbox environment to use the software with TWU content. After Terminal Four was selected as the system, Technology created infrastructure to host the software - development, test, and production environments. The software was installed and configured. Many have noticed the new front page of twu.edu is dramatically different from the old look and feel. Beyond the sleek look, web pages published from the T4 system employ **responsive design**, meaning that they adjust themselves to display correctly on whatever device is being used to view them. T4 promises a modern web presence for the University.

Denton student

iRecruitment

Oracle iRecruitment is a full-cycle recruiting solution focused on the manager-recruiter-candidate hiring relationship that fully **automates the entire recruitment process**. Oracle iRecruitment will enable TWU to manage all recruitment activities using a single self-service interface and to provide an easy-to-use interface for job seekers. Oracle iRecruitment provides a personalized experience for each group of iRecruitment users: site visitors, registered users, managers, recruiters, and agency users.

Affordable Care Act

To meet federal requirements, Human Resources and department hiring managers needed to be able to monitor the number of hours that students and hourly employees work at TWU. Technology developed **tools and reports** that allowed (1) the departmental supervisor to know the average number of hours for a specific assignment and specific student or hourly employee; (2) the departmental supervisor to know when a student has been (or is) working for another department on campus at the time of hiring; and (3) Human Resources to know the average number of hours for all assignments a student or hourly employee works. Enterprise apps developed these solutions in-house, delivering a solution ahead of other universities who relied on vendor support.

SharePoint 2013 and Nintex Forms & Workflow

Much discussion occurred about the current SharePoint 2007 system and about how to prepare for and plan an upgrade and migration to SharePoint 2013. This past year, Enterprise Applications invested a significant amount of time surveying the existing server farm, reviewing logs, setting up servers, testing and upgrading databases, testing services, reviewing best practices, and laying the foundation to migrate. They successfully brought up a production SharePoint 2013 system that is being used with Nintex **forms and workflow** and has enabled collaboration with departments to improve business processes. Next steps include designing and implementing SharePoint services and planning the content migration.

Collaborations Make Us Stronger

Members of the Technology Enterprise Applications teams meet regularly with leadership in Enrollment services, Academic Affairs, Finance and Administration, and Student Life to tackle tough issues and **imagine creative solutions** to keep TWU operating with an eye on innovation. This year, such collaborations resulted in the implementation of new scholarship software for TWU students and iRecruitment for Human Resources.

Arman Rashid, Manager, Applications Development; Lisa Quinones, Manager, Scholarships; Sam Cook, Sr. Business Systems Analyst; Gary Ray, Vice President of Enrollment Services

Balancing Productivity and Security

The Counseling Center's old system for new clients was a clipboard with paperwork followed by staff data entry and then assessment by the therapist. They wanted to be more environmentally-friendly, more efficient, and more aligned with counseling center practices at other institutions. Dr. Denise Lucero-Miller had a vision and knew she could rely on Technology to make that vision a reality.

She worked with Technology staff who managed the project, bringing in Technology staff from several teams to help when needed. Several teams were involved in the project. **Networking** provided a new server; **Enterprise Applications** provided software integration; **Client Services** set up iPads; and the **security team** reviewed the software and assessed server needs to maintain the confidentiality of the students who seek counseling at the center.

The various teams were able to meet the June 1 deadline that Dr. Lucero-Miller presented. Now, when new clients enter the center, they complete an intake and an **assessment on an iPad**; and that information is immediately available without any data entry. Further, implementation of the additional software pieces allows the Counseling Center's aggregate data to be used in comparison with data from other university counseling centers, guaranteeing that TWU students have the support they need.

This was the first phase of implementation. The centers in Dallas and Houston will receive the technology next. Afterward, three follow-up assessments will be made available to track client progress.

A **cross-department team** including staff in Client Services and Infrastructure worked with Dr. Lucero-Miller and her staff to make this Titanium upgrade a success.

Technology staff: David Cole, Tai Chan, Svetlana Galuzinschii, Cody Wheat

Backbone + Technology

Securing Surplus

When hard drives are sent to surplus, student workers and staff in Technology use a machine to **destroy data held in magnetic fields** on them. What happens to the data? Degaussing removes the stored data and servo control data (which compensates for sudden jarring device movements, thermal expansion, or changes in orientation) so that the device is no longer able to determine where data are to be read or written on the magnetic medium.

Danya Rangel-Rivera,
Denton student

Greater Connectivity in Houston

The network team implemented a second point of connectivity between Denton and Houston. Now TWU connects through Rice University and through AT&T. There is a direct connection to Rice University with automatic rollover to any of the circuits if there is a failure. When AT&T failed previously, they spent days bringing the circuit back while TWU networking manually routed traffic to Rice working in real-time with the Rice network team - this took a few hours. Now the rollover is automatic, so **connectivity will be seamless** in future cases of network failures.

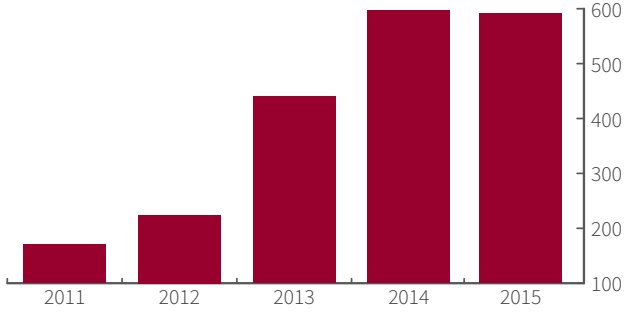
Network team: Wally Campbell and Andrew Clemens

Wireless Upgrades

This year the network team retired access points that weren't compatible with higher-throughput standards. They also began a move toward one AP (wireless access point) per classroom model by moving APs out of hallways and into classrooms. Further, the team deployed wireless "AC" access points that conform to more recent standards and provide **significant additional bandwidth**. We decreased the number of 10/100 Mbps APs while nearly doubling the number of 1Gbps APs.

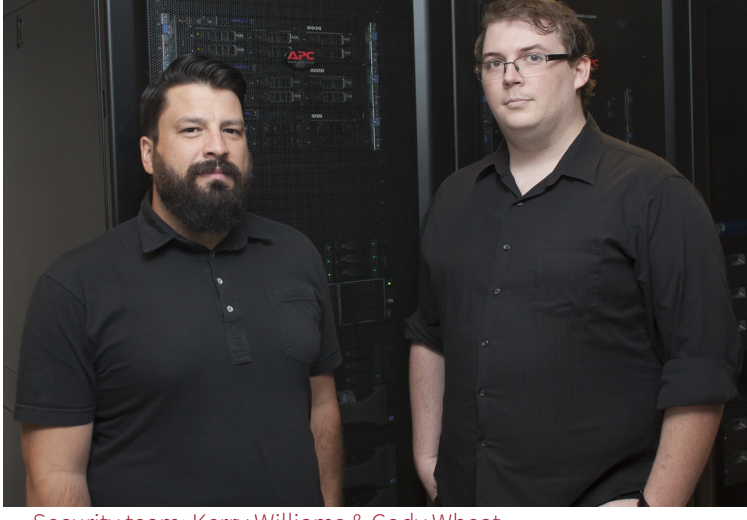
Technology staff added wireless access points in Houston so that students, faculty, and staff have connections via wifi when they need them.

590 wireless APs bring **wifi** to TWU campuses; 528 in Denton; 31 each in Dallas and Houston



Security Compliance

Security is an absolutely essential part of Technology. Kerry Williams and his security team worked with the TWU auditors over the spring of 2015 to demonstrate the department's **information security standards and controls**. The department continuously strives to improve its risk management, security reporting, security controls, and an institutional information security program. This year, 45 controls were added, ranging from data classification to cyber-security incident response. In December 2014, all TWU Technology staff participated in security awareness training.

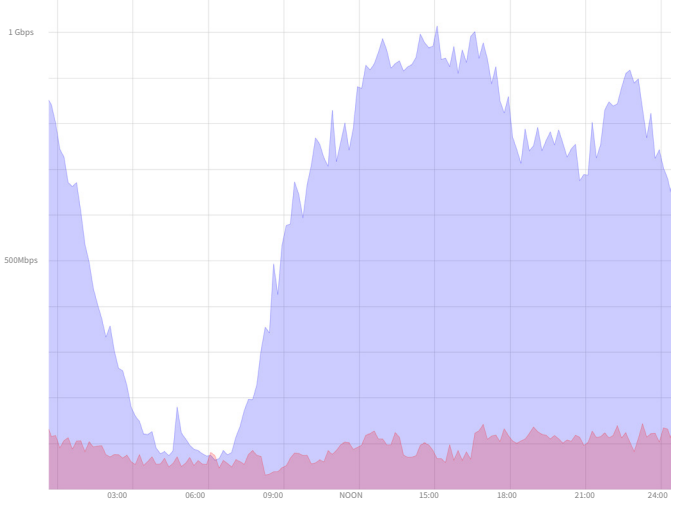


Security team: Kerry Williams & Cody Wheat

24 VPATs The Voluntary Product Accessibility Template®, or VPAT®, is a tool used to document a product's conformance with **accessibility standards**. The security team conducted twenty-four assessments for accessibility this year.

Texas Administrative Code 202 requires that a **risk assessment** of the University's information and systems be performed and documented. Inherent impacts must be ranked as either "High," "Moderate," or "Low". In 2014-15, TWU's security team assessed and ranked 32 systems. There were 3 high, 9 moderate, and 20 low risks recorded.

1Gb per second of **peak data** received at TWU on a typical weekday; this is a **40% increase over traffic last year**, made possible by expanding the TWU network capability



Last year, TWU Technology implemented FireEye and Palo Alto as additional **network security solutions**. Through these two systems, over 300,000 network attacks were prevented.

302,000 Malware Downloads Blocked

35,900 Vulnerability Exploits Blocked

These solutions **prevented over 2,600 attacks on TWU computers**; saved over 5,000 person hours; and allowed $100,000 in payroll to be spent on growth and transformation, rather than on running the status quo.

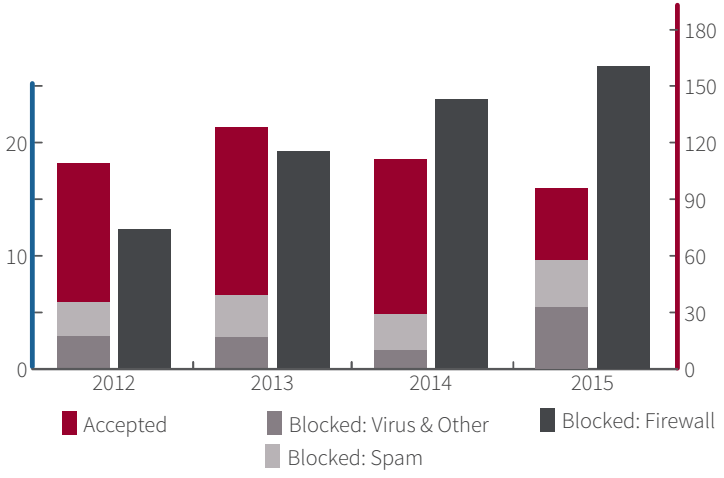
Planned Growth: Internet Expansion

In late September 2014, TWU turned on its **new high-speed research network** marking a major milestone on a multi-institution, multi-year networking project. The fiber connection goes along Highway 380 toward McKinney and then south to Dallas. The fiber is shared between UNT, DISD, UTD, and SMU.

This connection will give TWU a backup internet connection and much greater throughput to meet an ever-growing research demand. This expansion would not have been financially possible without the collaborative efforts of the other institutions and the leadership, creativity, and expertise from partners in the LEARN organization.

43 Windows 2003 servers were deleted or upgraded in response to end-of-service from Windows. This essential project allowed students, faculty, and staff to access their data and applications **uninterrupted** by server issues.

161 million e-mail messages were **blocked by the firewall** last year, including messages blocked using IP addresses and the dynamic reputation service, part of the e-mail gateway; 6.3 million messages were accepted and delivered



Last year the e-mail gateway processed more than 234 million messages, 2.5 times the amount processed in FY2012. Only 2.7% of those were actually delivered: 4.3 million were blocked as spam, 5.5 with a virus or unresolved address, and 161 million were blocked because of the firewall and dynamic reputation service. The e-mail gateway uses machine learning technology that filters on millions of possible spam attributes to save the TWU community precious time. Many colleagues already dislike the number of e-mail messages they process each day, and many do not realize that **97.3% of messages** they would otherwise receive are filtered out by the e-mail gateway.

The Future + Technology

A Message from Robert Placido, Associate Provost & CIO, Office of Technology

Each year my energy is renewed with the thought of the opportunities ahead. 2016 is no different. TWU is no longer just poised for greatness; we have collectively leaped into our future. All across our campuses there are wonderful and exciting projects underway. As far as the Office of Technology, I could express my excitement for our future projects, such as implementing stronger security controls, expanding storage, or exploring voice over internet, but I understand not many would share my excitement. However, I do think my colleagues are as excited as I am for other projects underway, such as a new degree audit, student planning, web-based recruitment, website management, institutional development, and internal communication systems - just to name a few.

Furthermore, I am looking forward to our partnerships with all the centers within the University. TWU is an awesome place to work. I can't imagine a better place to **grow** personally, **contribute** to a more worthy mission, or **be inspired** by exceptional colleagues!!

A Message from Clay Till, Director, Technology Infrastructure

"**Synergy is everywhere in nature**. If you plant two plants close together, the roots commingle and improve the quality of the soil so that both plants will grow better than if they were separated. If you put two pieces of wood together, they will hold much more than the total weight held by each separately. The whole is greater than the sum of its parts." Stephen Covey's ecological philosophy of strength through collaboration guides our team. We consider the needs of the University when we plan our projects for the upcoming year. This year we will upgrade the messaging system Lync to **Skype for Business** to meet growing demand and supply more features. We plan to expand our **wireless network** to accommodate the ever-increasing wireless devices on each of our campuses. We will be replacing a **SAN (Storage Area Network)** with a more robust SAN that will allow for future expansion to meet TWU's network storage needs. We also will be implementing **dual authentication** to increase security to critical systems.

A Message from Dennis Hoebee, Director, Client Services

One of my favorite quotes comes from Napoleon Hill who stated, "**Whatever the mind can conceive and believe, it can achieve**." When I look forward to 2016, I look forward to opportunity. In technology, and specifically technology in higher education, opportunity abounds. This year, we will have **new people in new positions**, and I am excited that they will be directly connected with faculty, students, and staff. We will have new opportunities to put our minds together for conceiving new ways to support the Institution and her community, serving TWU's best interest, and achieving the goals set forth to deliver the technology needed for success.

In our classrooms, we will continue with our plans to **replace outdated analog technology with digital components** which will allow more integration with newer energy-saving equipment and support for mobile devices. For **video-conferencing**, we will replace the remaining analog rooms and continue to explore cost-effective ways to connect TWU remotely for a positive collaboration experience. With **Technology Lab Coordinators** hired at each campus, we will use student feedback on ideas for lab space to make plans for new layouts, hardware, and software to meet their needs. **New Learning Technologist** positions at each campus will collaborate to standardize documentation for consistency while considering the unique training requirements of faculty, students, and staff using new technology. The Service Desk and On-site teams' input will be critical in honing a **service catalog** that will outline technology services to the Institution. All of our staff will train and **mentor student employees** who are also critical to the success of our organization.

A Message from Cori Treviño, Director, Enterprise Applications

Looking ahead at 2016, the year promises to be busy and productive. The Enterprise Applications team, in partnership with campus departments, will implement applications that take advantage of new technologies. **Colleague Student Planning** will benefit students, advisers, and the institution. The application's responsive design will make it easy for students to access the self-service tool from any mobile device allowing them to monitor progress, identify required courses, and register. Advisers will be able to provide guidance and help the student map out their academic journey to graduate on time. Real-time analytics and reporting will help the institution plan and forecast decisions around enrollment caps and instructors. **Oracle iRecruitment** will provide managers, recruiters, and candidates the ability to manage every phase of finding, recruiting, hiring, and tracking new employees. The self-service application will enable hiring managers to manage open job vacancies, search for candidates, manage the interview process, extend recruiting functionality, leverage third-party integration for pre-screening and background checks, and hire more efficiently. The implementation of applications such as **Nintex Forms & Workflow**, **TouchNet Marketplace**, and **Terminal Four** position TWU to expand our global presence and reach.

TWU continues to evolve. Technology continues to evolve. Merging the two promises to make 2016 an exciting year! Looking forward…

A Message from Katherine Kellett, Students Advisory Committee for Technology Chair, 2015-2016

The Students Advisory Committee for Technology (StudentsACT) is excited to be taking on two main projects this year. Our first goal for the year is to spread awareness about technology services available at each campus, from computer labs to the Lynda program. There are so many free services offered to students at Texas Woman's University, and we want to ensure that students know about them and that they understand how to use those resources to their fullest potential. As our second project, StudentsACT is thrilled to be researching a new learning management system called Canvas. Our goal is to support institutional pilot testing of Canvas.

In the coming year, StudentsACT will continue to forge relationships with other campus departments and organizations, such as CARE, the Leadership Institute, and Residence Life. We hope that these partnerships will help us to reach a larger and more diverse population of students. We love what TWU has to offer, and we are excited to share that with the TWU community!

TOP TEN REASONS TO TACKLE THE TOP TEN IT ISSUES OF 2015

http://er.educause.edu/columns/from-the-president

Diana Oblinger, President and CEO of Educause, shared these reasons to tackle this year's top ten IT Issues. As Oblinger reminds us, "Although the issues may change over time, the reasons behind working to solve them are persistent."

1. Information technology is critical to higher education.
2. Information technology is enabling a learner-centered revolution.
3. Higher education's goal of student success is advanced by IT-enabled personalized pathways.
4. Administrative systems can improve not just operations but also institutional competitiveness.
5. Information security matters to everyone.
6. We are building tomorrow's infrastructure today.
7. New models are reshaping higher education.
8. Information technology can change the game.
9. Community connections solve problems.
10. Information technology is about people.

TWU technology

Produced by
Heather Davis
Business Systems Analyst,
Office of Technology

Photography by
Deedra Baker, MFA in Photography at TWU
with contributions from Patrice Briggs,
Andrew Clemens, Heather Davis &
Danya Rangel-Rivera

Special thanks to Christopher Johnson

(Invisible) Technology

The installation of a Wireless Access Point (WAP).
The invisible captured in a photograph.

The best technology is the kind that works so well you don't even notice it. The Office of Technology strives to provide the services the University needs without drawing attention to those services.