OFFICE OF INFORMATION TECHNOLOGY

2016 PROGRESS REPORT

CHARGING AHEAD



STRATEGIC GOALS & OBJECTIVES OF THE UNIVERSITY

	GOAL ONE	To enhance the academic quality and stature of the University.
	GOAL TWO	To improve teaching and learning.
Δ	GOAL THREE	To strengthen scholarly research, creative achievement, and opportunities for innovation.
\mathfrak{B}	GOAL FOUR	To sustain student development and a supportive campus experience.
Ø	GOAL FIVE	To broaden global perspectives.
ŧ	GOAL SIX	To increase revenue generation and promote responsible stewardship of resources.

Throughout the report, icons like these will indicate the SMU goal to which that project or service is aligned.

OIT'S MISSION

The mission of the Office of Information Technology (OIT) is to be a community-focused organization that provides reliable, simplified, unified, and innovative services that support and advance the teaching, research, and service missions of the University.

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LEADERSHIP

A LETTER FROM THE CIO

2016 has been both transitional and transformative for the Office of Information Technology (OIT). Transitional as we continued to mature with our IT Shared Services model and transformative as we have implemented some exciting new services. Academic Technology has been a key focus with the introduction of our Academic Technology Service Directors (ATSDs) embedded in each school. We have placed these Service Directors, not for the purpose of troubleshooting technical problems but rather to strategically develop trusted partnerships with the Deans, Chairs, and Faculty as we seek to leverage technology. A new Learning Management System (LMS), Canvas, was introduced this year and in 2017, we will focus on increasing adoption with faculty to foster new engagement with students. We completed our first ever Faculty and Student IT Needs Assessment Surveys which we will use to drive our strategic planning for the coming year.

Our newly formed academic governance council has provided guidance and insight with a committee led by Dean Quick and made up of 14 faculty members representing the schools and the faculty senate. Classroom Support and Research Support were identified as priorities which we are addressing.

With the backing of the President, Provost, Dean of Research and Director of the Center for Scientific Computation, we received approval to fund the next generation high-performance computer cluster, a \$5.2 million investment in the future of SMU's groundbreaking research. We expect to see this running by April 2017! We also reallocated an additional IT position to provide system administration support for the new cluster.

In an effort to enhance technology equipment throughout campus, nearly 1,000 computers were upgraded over the summer along with almost 65 classrooms. We are continuing to focus on opportunities to improve the classroom experience for faculty and students alike.

We have made significant progress managing the IT project workload (with typically 60 projects in motion at any given time), and are working on project intake and resource balancing capabilities. Balancing projects with operations support can be a challenge. Almost 85% of our time is spent on operations, which makes staying current with our project backlog very complex. Our focus is to reduce the effort spent on operations by improving efficiencies so we can devote more time on strategic projects.

We are also reviewing our staffing levels to ensure we are at the appropriate level to respond to the needs of the University. A year into Shared Services and we have received feedback from four separate customer satisfaction surveys. Through this feedback, we have developed comprehensive action plans and are reporting our progress to the University.

As we charge ahead into 2017, we are all so thankful to be an integral part of the University and take that role very seriously. We look forward to continue serving as your trusted IT partner.

JOE

As Chief Information Officer, Joe Gargiulo reports directly to the University President and works closely with all levels of University leadership to ensure OIT's success in delivering service and solutions that help propel SMU's academic innovation. During his time at SMU, Joe has led OIT through multiple technology initiatives and organizational evolutions;

> from the modernization of our enterprise resource planning software at the turn of the new millennium to improving operational excellence at the dawn of SMU's second century.

On a personal note, I have decided to retire from SMU after almost 19 years of service. It has been an honor and privilege to serve as your CIO. You have an amazing team of IT professionals and

an extremely talented leadership team to lead SMU into the next century. I am very confident that your IT Team will continue to provide you with world-class service and support! Thank you for allowing me to serve in this role.

Sincerely,

Joe Gargiulo Chief Information Officer Providing direct support to the faculty of the University, Jason Warner leads OIT's Academic Technology team. The group strives to make the technology resources that OIT provides align with the specific pedagogical needs of each school and department of SMU. This support includes management of the Canvas LMS, statistical and mathematical software, and partnering on various strategic initiatives. Academic Technology also provides consultation to faculty to assist in bringing curriculum of all kinds into the digital realm. Data provides intelligence. Data is crucial to make decisions. SMU is a steward for massive volumes of information from student rosters to critical research. Managing those volumes is no simple task. Curt Herridge leads the Applications Support team that transforms data into information. His team manages databases for multiple services on campus including my.SMU, AdminImages, Budgets, Financials, Voyager, and more.

CURT

At the front lines of the IT experience, the people of Customer Service help the University community in all aspects of using their technology. As Customer Service Director, Rachel Mulry promotes an environment that prides itself on personal service coupled with agile technical experience. From the thousands of calls that reach the IT Help Desk each year to keeping the over 7,000 workstations on campus running smoothly, the Customer Service team's priority is you.

RACHEL

JASON

DAVID

Infrastructure, under the leadership of David Nguyen, is responsible for maintaining the Networking, Telecommunications, and Systems Administration services. The team is responsible for campus data networks, firewall administration, maintaining inside/outside cable plants, telephone and voice mail operations. The group also manages the University's High Power Computing platidentity management, forms, file storage, and e-mail services.

TEENA

Project Management Office (PMO), under the leadership of Teena Newman, is responsible for the orchestration of all OIT projects, large and small. Through thorough analysis of departmental resources and project requirements, PMO ensures that the IT needs of the University are continuously met and improved.

GEORGE

George Finney, as leader of the Information Security team, is responsible for managing both physical and information security system on campus. Through advanced security investigations, recommendations for security architecture, development of physical security systems, and providing centralized database security, the Information Security team is critical to the protection of all types of data held by the University.

EMPOWERING AND ENABLING INNOVATIVE TEACHING, LEARNING & RESEARCH

ACADEMIC TECHNOLOGY SERVICES

The role of eLearning and digital course management has only grown in the years since its introduction. Modern eLearning and course management systems enable institutions to offer complete academic programs online to students entirely on campus, in hybrid modes, or even entirely online. SMU is utilizing the Canvas cloud course management system to foundationally provide and advance innovative ways for faculty to build engaging digital course content for both traditional and non-traditional scholarship.

Amid the many changes that have taken place at SMU throughout the last year, the successful retirement of SMU's Blackboard course management system and the adoption of Canvas represents the completion of phase one of Academic Technology Services' efforts to lay the groundwork for the institutional expansion of SMU's student experience and online learning capabilities.

In phase one, OIT's efforts were focused primarily on migration support and faculty training. Throughout the last year, Academic Technology Services teams and OIT trainers engaged with academic units and faculty in successfully enabling SMU to enter the Fall 2016 term exclusively utilizing Canvas. For the first time in SMU's history, OIT can provide institutional measurements of learning activities in Canvas. With Canvas actively employed in 32% of SMU courses, OIT enters phase two.

For phase two, Canvas moves to a steady-state service allowing Academic Technology Services to focus on growing and improving both faculty and student usage and experiences within Canvas as well as the overall digital literacy of our academic communities. The plan is to refine and demonstrate the benefits and





features within Canvas and other eLearning systems that will help faculty save time and improve student success and engagement. Whereas year one focused on getting started with Canvas basics, year two will build upon basic usage and add depth to how Canvas' key components—assignments, submissions, modules, and quiz tools—can be utilized more efficiently in delivering quality content online for traditional, hybrid, and SMU's maturing online programs.

Also focusing on growing and adding depth to Canvas training opportunities, the year ahead will emphasize one of the most powerful features of the SMU Canvas course management system, the Learning Tools Interoperability (LTI) application capabilities. Canvas' LTI capabilities allow SMU to seamlessly integrate additional teaching and learning tools and applications within the Canvas system. SMU currently employs third-party LTI solutions at the institutional level such as Turnitin, Zoom, Kaltura, and several others. LTI tools also allow applications and tools to be added for individual courses as well or even licensed for individual instructors or programs. We will be increasingly leveraging LTI partners who add deep integration and analytics that benefit the faculty and student eLearning experience.

As Academic Technology Services and SMU charge ahead, we envision a seamless, integrated, and robust suite of online course management and eLearning solutions which enable and empower traditional and hybrid course development on campus—but will also evolve to activate SMU's online eCampus experiences of the future.



MODERNIZATION OF SMU CLASSROOMS

Over the past few months, SMU has invested almost 1 million dollars in refreshing classroom technology. These classroom upgrades included such things as document cameras, widescreen projectors, and the replacement of quite a few standard components like screens, speakers, lecterns and equipment control panels. Although much needed, that was just the beginning!

In addition to the typical components found in a classroom, OIT focused on demonstrating innovations and adopting modern technology tools and capabilities that challenge and inspire users to move past the status quo. The Academic Technology team and the AV/Events team worked closely with faculty and academic units to pilot several new instructional services.



Epson Interactive Projector: The Epson Interactive Projector not only turns a standard whiteboard into an interactive whiteboard, but interactions can be recorded and shared with students. One system has been installed in Dedman College. Based on feedback from faculty, additional locations for these systems are being identified.

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Nearpod: This cloud-based, interactive presentation and assessment tool is currently being tested at the Cox School of Business. Nearpod allows instructors to create interactive presentations – involving quizzes, polls, videos, images, drawing boards, web content, and traditional slides – and directly deliver them to students' laptops and mobile devices. This way, instructors can use students' own devices for engagement and presentation playback, rather than compete against them as distractions.

AMX Enzo presentation system and Barco WeConnect systems: Faculty and students have been asking for a way to easily and wirelessly connect multiple devices to display content in the classroom. While Apple TVs are capably serving Mac and iOS users in some campus classrooms, the AMX and Barco systems offer a wireless "screen mirroring" experience from any computer or mobile device. These systems are being tested in Dedman College as a more flexible option to Apple TV, making it easy for users to instantly share screen information with others in the room.

Poll Everywhere: While audience response systems using "clickers" have characterized real-time feedback service in the past, the costs and required hardware have become inefficient and outdated. Poll Everywhere offers an excellent cloud-based service that allows students to respond to questions using their smartphones, tablets, and laptops. Dedman faculty have been evaluating Poll Everywhere in both large lectures and small discussion groups and indicate that students have been engaged and excited by the peer interaction. Our goal is to continually improve teaching experiences and increase student successes by providing innovative classroom technology solutions. We want to foster opportunities by helping academic stakeholders manage the rapidity of technology change and what those changes mean within SMU classrooms. Tech solutions must continue to serve traditional lecturebased instruction, but at the same time be more flexible, collaborative, and dynamic learning environments where both faculty and students can easily share and interact with academic content. Tools like interactive projectors, cloud-based audience response systems and wireless mirroring devices allow professors and students to engage in ways never previously possible at SMU. As we look ahead to 2017 and beyond, we will continue to explore additional innovations to provide better spaces and opportunities for intellectual exchange.

HIGH PERFORMANCE COMPUTING

Building upon the foundation that the ManeFrame HPC clusters have provided, OIT is currently drafting the framework for even greater processing capacity to foster continued progress on SMU's groundbreaking research projects.

Soon, ManeFrame II will come online with over 10,000 cores of computing power, along with almost 3 petabytes (equaling over 2.9 million gigabytes) of storage. In addition to increased high-performance storage, the new cluster will also include archival storage for long-term protection of data as well as the capability to provide off-site backups for disaster recovery. This computational strength will be made available to campus using ten Gigabit network connectivity. Additional features of the new cluster include an improved graphical remote desktop experience, a move to the CentOS 7 operating system, and optimized programming environments for MATLAB, Python, and R. There will also be various software packages installed for specific research needs, making the new HPC system even more accessible to disciplines across campus.

TRAINING

During 2016, OIT's Training and Communications team hosted over 130 instructor-led workshops utilizing both classroom and web-based instruction.

To meet our customer's needs, we focused on three key deliverables: Strengthening our partnership with the Altshuler Learning Enhancement Center (A-LEC); focusing on Canvas onboarding through instructor training; and promoting Training On-Demand through SMU's online learning tool, lynda.com, and through the creation of online webinars. We also continued to provide application support by offering ongoing instruction on new and existing applications used by faculty and staff.

In 2015, we worked with the A-LEC to determine an expanded class offering selection as student surveys indicated interest in additional technology workshops. During 2016 we successfully implemented those offerings by tripling the number of seminars provided to the A-LEC.

In support of faculty, the Training and Communications team collaborated with our Academic Technology group by offering 60 workshops to support our Canvas rollout. To meet the demand for faculty training, specialized workshops were offered in specific academic units in addition to regularly scheduled sessions. We also provided adjunct faculty with Canvas Nights, our evening webinar series, along with hosting a three-day Canvas Bootcamp.

As we seek to support the SMU community we recognize not everyone can attend regularly scheduled workshops. While we work hard to provide a variety of times and days for our training, we understand that this will not always match everyone's schedules. To supplement our workshops, we have continued to increase webinar offerings to support learner's on-demand needs. We have also focused efforts on increasing adoption in SMU's online learning tool lynda.com through a series of promotions in conjunction with the A-LEC, Hegi Career Center and with Human Resources. To date, we have increased campus adoption of lynda.com by over 100 percent.

As we charge into 2017, one key focus for the training team will be to review accessibility standards and best practices along with streamlining documentation processes so that we can better focus on the needs of the entire SMU community.

LYNDACAMPUS

SMU has a campus agreement with lynda.com to provide thousands of online courses in software, technology, creative and business skills.

In 2016:

- » Over 1,100 faculty, staff, and students used the service for the first time.
- » Over 44,300 videos were viewed, providing over 3,075 hours of training.
- » Over 480 Certificates of Completion have been made available to users.

The Top 5 Courses in 2016:

- » Foundations of Programming: Object-Oriented Design
- Photoshop CC Essential Training (2015)
- » Foundations of Programming: Fundamentals
- » Illustrator CC Essential Training (2015)
- » Up and Running with Canvas 2015

SUPPORTING THE UNIVERSITY

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APPLICATIONS: STREAMLINING & INTEGRATION

A major undertaking for OIT in the past year has been to develop solutions to transform largely paper-based and manual processes into streamlined digital solutions. These are projects in which specific departments have partnered with OIT to improve experiences within the SMU community. Experience is not the only driver. Reducing staff time on rote processes is our passion, and has been a driving force in 2016.

One example of streamlined procedures and services is an improved payroll authorization system which speeds up and simplifies the process of authorization for both payroll staff and managers across campus. Also introduced in 2016 was a new web-based recruiting platform called Taleo. Taleo digitizes the entire recruitment, application, interview, and hiring process to enable managers and human capital specialists to obtain the best talent with ease.

For students, entering and confirming personal information like emergency contact, demographic, and address data has been a tedious process. OIT Shared Services has worked with several departments on campus to implement a new and simplified wizard in my.SMU to guide students through the personal data entry and confirmation processes. Now, students can quickly and easily enter this information without having to find where to go and what to do every time information needs to be changed.

These examples are just a few that demonstrate our goal to partner with various campus groups to enable productivity. No one knows your business better than you. It is OIT's job to help apply streamlining and technology solutions. We achieve this by utilizing existing tools, purchasing off-the-shelf software (i.e. departmental software) or custom develop solutions when needed.

For OIT, integration is the connecting of two server applications in such a way that information can be seamlessly shared between them. Depending on the needs of the customer, the information may be shared just one way or bi-directional. This type of setup is used to connect applications to our main records system, my.SMU. This system is also commonly referred to as PeopleSoft and Enterprise Resource Planning (ERP).

Over the past year, Student Affairs engaged in several new system migrations, and OIT aided in integrating the applications together. These integrations have helped ensure the correct students are eligible for housing (StarRez) and that students can access available resources at the Dedman Center for Lifetime Sports (SpectrumNG).

In the coming year, several new applications will be integrated, such as Electronic Catalog and Research Administration. Through these integrations, we are helping the SMU community focus efforts on what makes us a premier research university.

INFRASTRUCTURE



University needs are constantly changing. To solve the world's most complex problems, SMU strives to remain on the cutting edge of research technology and infrastructure.

In keeping with this goal, OIT's infrastructure support team is working to build the next generation of high-performance computing on campus as well as improve the network capabilities throughout campus.

Through the continued expansion of our indoor Distributed Antenna System (DAS), cellular coverage is now even stronger in more buildings on campus. Outdoors, new access points are being installed for our wireless networks; allowing students, faculty, and staff to take their research, work, and classes outside onto what has been recognized as the most beautiful university campus in the United States. Work also continues upgrading indoor access points to the latest wireless technologies to increase reliability and data throughput.

The underlying infrastructure of the University's IT services is an essential catalyst for our continued innovation. Making significant investments in network improvements ensures that our significant forward momentum towards world-changing research does not falter.



SECURITY

Cybersecurity has become a regular feature in the news, from entertainment to politics, from business to sports. Each passing year has seen the challenges and the stakes raised at an almost exponential rate. SMU has faced a number of challenges in the last year and at the same time has made huge investments in improving cybersecurity programs.

Universities hold significant volumes of sensitive data, from personal student information to critical research data. The theft or destruction of any of this information would be catastrophic to the University and the surrounding community. The security division of OIT works to ensure that such a breach never occurs by implementing new security technology and educating the University community on keeping data safe.

2016 has been transformative for information security initiatives at SMU. The University has made significant investments in both time and money to help strengthen SMU's Cybersecurity program:

O Launch of Next Gen anti-virus software which provides a significant barrier to malware infections.

- O Deployment of Two-Factor Authentication, with Duo Security, resulting in an 80% reduction of my.smu account compromises.
- O Creation of a Vulnerability Management program which has reduced vulnerabilities in SMU's data center by 75%.
- O Implementation of Data Leakage Prevention program to reduce SMU's sensitive information footprint on the network.
- **O** Production of new quarterly cybersecurity newsletter for all SMU employees.
- Hosting of SMU's first cybersecurity fair for greater in-person awareness training.
- Hosting of SMU's first cybersecurity awards ceremony to recognize employee contributions toward improving cybersecurity.

Security shouldn't be an afterthought. We recognize every hour spent on security is an hour that is spent not working on something else. The goal of SMU's security program is to evolve this way of thinking to incorporate security into everything we do. Embedding security practices into your daily workflow means that protecting ourselves takes less time and is less costly overall.

On the horizon, we will look to redouble our efforts to maintain healthy Cybersecurity programs. These efforts will involve continued improvement of our cybersecurity defenses. We will need to ensure that our third-party vendors have excellent security as well, especially whenever SMU data resides in the cloud. Mobile computing will drive the University to offer additional protections for smartphones and tablets. We will work to partner with individual departments to act as a consultant to improve processes and drive security awareness.

PROJECT MANAGEMENT

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OIT is a vital part of many strategic activities across campus, which creates an everincreasing demand for project work. To ensure we are enabling SMU schools and departments to reach their strategic goals, it is crucial that projects are executed effectively and efficiently. Managing expectations, defining scope, and providing regular communication is paramount to our success.

With high demand and limited resources, it is critical to partner on projects that align with the university's mission and strategic goals. We define a "Project" as any activity that requires 40 or more hours or needs staff resources from multiple teams across. As new projects are entered into our Portfolio Project Management Tool (TeamDynamix), each request is scored against seven criteria, allowing us to rank our projects against our scoring criteria. The evaluation criteria is as follows:

- O Manadatory or regulatory requirements
- O Strategic initiative for the university
- O Reduces Risk

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- O Engagement level and support from the customer
- O Impact to organization improvements

The OIT Project Management Office (PMO) has been working on improving visibility into our Active Projects for all members of the SMU community that we serve. Our project portal is available to anyone with a valid SMU ID and password. We invite you to log in and view all of our active projects. Details about any project, such as project status and percent complete, can be reviewed by clicking on the project.

We have recently hired an additional project manager to further increase our capability to manage resources from all perspectives. Project Management is indispensable to SMU's success. The OIT PMO will continue to evolve and find ways to reduce project risk, cut costs and improve operational efficiency.

CHARGING AHEAD IN 2017

The mission of the Office of Information Technology (OIT) is to be a communityfocused organization that provides reliable, simplified, unified, and innovative services that support and advance the teaching, research, and service missions of the University.

As we charge ahead in 2017, we will continue our support of the University through several initiatives:

EMPOWERING THE UNIVERSITY

- Delivering new learning tools within Canvas.
- Cultivating deeper understanding of Canvas and eLearning systems.
- S Improving research technology solution consultancy and project management.
- S Installing and activating new High Performance Computing (HPC) cluster.
- O Advancing and automating classroom management systems.
- Upgrading classroom technology for an improved teaching experience.
- Integrating accessibility standards throughout all IT systems and resources.
- Partnering with Center for Teaching Excellence to establish unified online instructional design services and standards.

SUPPORTING THE UNIVERSITY

- Enhancing online forms and workflows to streamline business processes.
- Improving operation efforts including revamping the account permissions, technology purchasing, and other services to ensure a rapid resolution and fulfillment of IT requests.
- Deploying a new unified campus phone system.
- S Revising the project request and prioritization process for more effective Project Intake.
- Seviewing Project Portfolio Management to better align IT initiatives to SMU strategic goals.
- Simplifying the web editing experience.

We will continue to work diligently in building relationships across campus, delivering high quality services and support, and serving as your trusted IT partner. Our primary goal is to serve your needs and foster your continued academic success. We look forward to the many challenges and opportunities in the year ahead.

BY THE NUMBERS

- **3** Percentage of emails considered "clean" or free of marketing, spam, or threats.
- **56** Percentage of SMU accounts that are sponsored.
- **131** Number of major OIT projects completed.
- **133** Number of live training sessions offered.
- **189** Number of physical servers.
- **418** Number of virtual servers.
- **1,398** Number of classroom support calls.
- **1,713** Number of users backing up with Crashplan.
- **3,050** Number of active users of Box@SMU.
- **3,225** Number of wireless access points.
- **4,074** Number of on-premises email boxes.
- **11,500** Number of times my.SMU has been accessed using the SMU Mobile App.
- **12,009** Highest number of devices to the SMU wireless network at one time.
- **20,563** Number of active employee and student accounts.
- **25,334** Number of Help Desk support calls answered.
- **28,529** Number of cloud-based email boxes.
- **37,537** Number of wired Internet connections.
- **68,062** Number of calls answered by OIT operators.
- **131,086** Number of media files uploaded to Canvas.
- **21,344,786** Number of page views on smu.edu (Sitecore).
- **504,880,699** Number of emails processed.

7,400,000,000 Maximum amount of data (in bits) downloaded at one time.

METRICS



ACTIVE UNIVERSITY ACCOUNTS



UNIVERSITY EMAIL















HELP REQUESTS BY UNIVERSITY AFFILIATION

CUSTOMER SATISFACTION



HELP DESK PHONE VOLUME



HELP DESK TICKET VOLUME



OFFICE OF INFORMATION TECHNOLOGY

2016 PROGRESS REPORT

THE WORK OUTLINED IN THIS REPORT IS ONLY A SAMPLING OF THE WORK COMPLETED DURING THE 2016 CALENDAR YEAR. THANK YOU TO THE ENTIRE OIT TEAM AS WELL AS OUR CAMPUS PARTNERS FOR YOUR DEDICATION, HARD WORK AND SERVICE ON THESE AND MANY OTHER INITIATIVES THROUGHOUT THE YEAR.

PRODUCED BY THE OFFICE OF INFORMATION TECHNOLOGY COMMUNICATIONS TEAM

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SMU will not discriminate in any employment practice, education program or educational activity on the basis or race, color, religion, national origin, sex, age, disability or veteran status. SMU's commitment to equal opportunity includes nondiscrimination on the basis of sexual orientation. The Director of Institutional Access and Equity has been designated to handle inquiries regarding the nondiscrimination policies.