2013 Progress Report

SMU
Office of Information Technology

SMU

Our Vision

Support the academic and administrative mission of the University

Our Mission

Actively seek input from our customers, understand their needs and challenges, work with them to implement appropriate solutions, and create and nurture the vital information technology environment required for SMU to achieve its vision of excellence in education

Table of Contents

Connect with OIT

smu.edu/oit

Technology News

smu.edu/OIT/StayInformed/Newsletter

Twitter

twitter.com/smuoit

Blog

blog.smu.edu/itconnect

Welcome

Front row left to right: Roxanne Crowley (Financial Officer), George Finney (Director), Karie Conklin (Assistant to the CIO), and Abby Kinney (Director)
Back row left to right: Ron Lujan (Director), Joe Gargiulo (CIO), Brad Boeke (Director), Jesse Miller (Director), and Allen Hughes (Director)

We have been busy working to deliver the services that our students, faculty, staff, alumni, and visitors not only expect but also depend on as they live, study, work, and visit our campus.
Change in technology is incredible and almost impossible to keep up with. Our challenge is to manage an ever changing service catalog by removing outdated services and expanding timely resources.

Our vision must take into account the correct blend of strategic projects. Most organizations could spend 100% of their efforts just keeping the lights on. For SMU to be competitive, we must ensure that we are focusing adequate resources on transformative projects while delivering excellent operational services.

We have been working diligently to update our enterprise architecture and technology. Numerous projects have been completed to ensure our infrastructure is rock solid and expandable to meet our growing needs.

We manage hundreds of projects a year. Without a standardized project management, change management, and incident management methodology, our ability to deliver projects in a timely manner with the highest level of quality would be impossible. As we have developed our project management processes, we continue to look for ways to improve it.

" *People are our most important asset!* "

Over the last 10 years, our world class team has focused on strengthening our technical competencies, expertise, and customer service skills. We are your highly motivated and trusted IT provider. We work every day to demonstrate that desire!

We invite you to review our Progress Report to see some of the projects that we have been working on and the incredible people that get it done.

Thank you for your continued support!

-Joe Gargiulo
Chief Information Officer

Journey of OIT From the Arrival of Internet to Present

1995
- *Internet: first available on campus (5 Mbps)*
- *Pegasus Project: deploy computers to all desks*

1996
- *Digital Commons: website creation services offered*
- *Email: available for all students*
- *Internet: available in residence halls*

2003
- *Active Directory: one common login and password*
- *Digital Commons merges with Academic Computing*

2004
- *Access.SMU: Self-Service added*
- *Classroom Tech Support*
- *Information Commons created*
- *SMU Budgets*

1999
- *Internet: capacity continues to increase*
- *Internet2: bandwidth between universities*
- *PONI (Voyager)*
- *Y2K preparations*

2000
- *Exchange email: secure access via desktop, web, and mobile devices*
- *Web CT: end users now in 1000's*

2007
- *Laptop and cellphone encryption*
- *Security Awareness campaign begins*
- *Virtual machines implemented for servers*
- *Wireless printing in libraries*

1997
- *Internet: capacity doubled*

1998
- *Access.SMU*
- *Digital Commons: Web CT pilot*
- *Internet: capacity doubles again*
- *Internet: available in fraternities*
- *SMU Financials*
- *SMU STAR: formed to assist Faculty on technology projects*

2005
- *Blackboard: pilot*

2006
- *Blackboard replaces Web CT*
- *Improved security with Network Access Controls (NAC)*
- *SMU joins iTunes U*
- *Wi-Fi: available across campus*

2001
- *Access.SMU: Student Administration module added*

2002
- *Wi-Fi: available in the library and commons*

2008

- ImageNow (AdminImages)
- Locker.SMU: campus-wide online storage
- Safe Assign for Blackboard detects plagiarism
- Sitecore: web content editing and management system
- VPN implemented
- Wiki.SMU: online documentation system

2010

- AMA (Account Maintenance Automation): Access. SMU and Active Directory linked
- Inside.SMU: SharePoint 2010 rolled out
- LanDesk portal
- Schedule.SMU: room scheduling system

2011

- Conflict of Interest workflow
- Digital Signage
- OIT collaborates with CUL Touch Learning Center
- Patterson Data Center upgrade
- Service Desk moved to Fondren Library

2013

- Adobe enterprise agreement for Master Collection
- Budgets.SMU: Hyperion budget system
- Bush Library: quadrupled network for opening
- CrashPlan Pro: enterprise backup
- Firewalls replaced
- Lists.smu.edu: email subscription management tool
- Protection of Minors: Blackboard course created
- Student Learning Outcomes: provide support for SACS requirements
- Sustainable Security Initiatives begins
- Sync: Access.SMU database split preparation
- Tracking Module for Risk Management
- University Data Center
- Wi-Fi: expansion in residence halls

2012

- Access.SMU 9.0
- Adobe enterprise agreement for Creative Suite
- Apps.SMU: provides access to applications in virtualized environment
- Cox email consolidation
- Dynamic Host Configuration Protocol: network standardization
- Email encryption
- Lync: instant messaging
- SMU-in-Plano Data Center
- Tech Fund model management

2014 Plans

~Distributed Antenna System
~Fiber Cable Plant: connects Data Center to campus
~High Performance Computing capacity more than quadruples
~Phone replacement begins

2009

- Blog.SMU
- eProcurement: module added to SMU Financials
- High Performance Computing
- Lyle email consolidation/unification
- Spam.smu.edu: spam filtering system
- Taos network

About Us

Brad Boeke

Academic Technology

We support faculty, staff, and students in academic technology use, innovation, and experimentation at SMU. Our team of four full-time professionals and eight specially-trained students provide for the support and training for SMU's Learning Management System (Blackboard); educational technology; digital media; Web Content Management (Sitecore and WordPress); and, research and statistical computing, including the use of statistical and mathematical software programs.

Ron Lujan

Application Development and Support Services

We are technical developers that offer programming and consulting for the Access.SMU, AdminImages, Sitecore, SMU Budgets, SMU Financials, and Voyager (PONI) systems. This team maintains, customizes, and interfaces database applications. Our team also provides web infrastructure support, development, and desktop database support.

George Finney

Information Security

Our team is responsible for monitoring a diverse security infrastructure to protect the University network and data. We recommend security architectures, provide centralized database security, review vendor security, capture security logs, oversee security investigations, review contracts, and manage firewalls and other security technologies. We have partnered with the Controller's office to educate campus merchants in the protection of credit card data and in compliance with credit card security standards. Our mission is to partner with all departments to provide expert consulting to ensure that all University servers and technology services meet security best practices.

Allen Hughes

System Services

We are responsible for providing servers, storage, and systems software services. Systems services include High Performance Computational Computing support for the SMU research community, enterprise database support, web infrastructure, unified messaging services, SMU account and access management, SMU ID Card support, hosted department applications, virtualized hosted systems, file storage services, server data backup services, content management support services, and collaboration systems support services.

Abby Kinney

Technology Support Services

Our team is responsible for client technology support to all students, faculty, staff and others affiliated with the University. Our support includes the following services: IT Help Desk for reporting all technology related requests and issues; client hardware and software support for 5,000+ computing devices (including procurement, installation, software installations and updates, and recycling); Audio/Video (AV) installation consulting and support for AV equipment; departmental cellular phone acquisition and support; training for Access.SMU, AdminImages, Adobe applications, Inside.SMU, Microsoft Office, SMU Financials, and other services provided by OIT; campus client software license management; and general computing support to all users affiliated with the University. In addition we oversee IT communication efforts and departmental Project Management coordination.

Jesse Miller

Telecommunications Services

We are responsible for maintaining the campus wired and wireless networks (including upgrading and installing network equipment), inside/outside cable plant, telephone and voice mail operations as well as providing SMU directory assistance. Our team provides long distance, calling card, and audio conferencing services for faculty, staff, and students and is responsible for cellular and cable services contracts.

New Software Aids Faculty

A major initiative is underway to enhance the assessment and reporting of student learning in SMU's new University Curriculum (UC). Faculty members teaching in the new curriculum are required to assess the Student Learning Outcomes assigned to their courses. Faculty members can then report on how well students are attaining the core college competencies. All reports are collected and reviewed by the Office of Assessment and Accreditation as a part of national requirements to assess student learning within each university's General Education Curriculum.

During the first two semesters of the new curriculum, faculty members submitted reports through email, with a variety of attached files, making it difficult to analyze data efficiently. Therefore, several new software modules were purchased for Courses.SMU (Blackboard) to help ease the process of gathering assessment data and evidence by faculty and the Office of Assessment and Accreditation. Additionally, two other software packages, Qualtrics and ExamSoft, have been added to the mix of new applications. Fortunately, these software improvements to academic support will have benefits for faculty far beyond the scope of assessment. At this time, the configuration of these various components is underway. Once fully adopted, these new tools will simplify tracking, analysis and reporting of SMU student performance on critical college level core competencies.

> **" The goal is to provide smart, efficient and modern software to help SMU's faculty demonstrate our excellence in the classroom. "**
>
> *~ Patty Alvey, Director of Assessment & Accreditation.*

Outcomes and Assessment Module

Perhaps the most immediately critical addition to Courses.SMU, the Outcomes and Assessment Module, allows the Office of Assessment and Accreditation to sample, collect, and analyze Blackboard-based assessment data and evidence of student learning. With this new capability, faculty can now align assignments in Blackboard courses to UC Outcomes that OIT staff have carefully loaded into Courses.SMU, and to use the shared interactive rubrics that match the UC Rubrics to assess student learning all within the Blackboard environment. A faculty member imports the appropriate UC Rubric(s) into their course from the SMU central Rubric Library. They then create an assignment for the course and align the specific questions or assignments to one or more UC Components located centrally in Courses.SMU. Depending on how faculty use Blackboard, they may assign two scores for each student on an assignment designated for UC assessment: one as a grade for the assignment and one as an assessment score for each Student Learning Outcome. The assessment score is then collected by the Office of Assessment and Accreditation using the new Outcomes and Assessment Module. If faculty members wish to use BB only for assessment, there are special instruction sheets provided for that purpose.

Content Management Module

The Blackboard Content Management Module provides shared storage within Courses.SMU. Currently, files that are uploaded to a course are only available within that course. If the course is copied from one year to the next, each collection of files is then duplicated. The Content Management Module allows an instructor to store all of those files in one location and link from multiple courses to that content. It also allows for departments to share content from a central location. To support improved assessment of student learning in the UC, the library of rubrics for assessment is located in the Institutional Collection of the Content Management Module. These are same rubrics designed by faculty for assessment of the UC and are ready for faculty to import directly into their Blackboard courses.
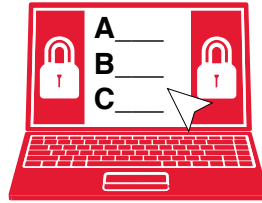
| Unlocked | Load Exam | Take Exam | Submit Exam | Unlocked |

ExamSoft

This software was piloted this semester to help design more broad availability to UC faculty in Spring 2014. ExamSoft is an exam management software that allows faculty to administer an exam digitally, in the classroom, while blocking access to internet or other resources. During the exam period, the laptop or iPad is restricted to the test software only. Once the test is submitted by the student, all communications and programs are unlocked and returned to normal. The test itself is fully encrypted and can only be read using the ExamSoft application. ExamSoft has been integrated with Courses.SMU to import course rosters and then authorize those students to access ExamSoft tests for a specific class. Once those are graded within ExamSoft, the grades can then be pushed to the Grade Center in Courses.SMU. Instructors may also link specific questions within the test to specific learning outcomes in the UC Components that, like in Blackboard, are collected and available to the Office of Assessment and Accreditation.

One very important benefit of Examsoft is the ability for faculty to create the exam in the software and then use paper bubble sheets in sections where laptop and iPad use is not yet available. The bubble sheets can be produced from any SMU printer and read into a scanning system provided by OIT staff. Departments save money not having to buy scantron sheets, but faculty still get all the rich benefits of exam analysis and assessment reporting. This scanning service was set up over the holiday break and is available to faculty for Spring 2014.

" The bulk of assessment reporting can be managed centrally thereby easing the work of reporting for faculty teaching in the UC. "

Qualtrics

Beginning in the fall semester, SMU now has a campus-wide license for Qualtrics, a web-based tool for building surveys and conducting research with large respondent groups. Qualtrics was used for the first time in the fall 2013 semester to collect not only information about the assessment process, but the actual assessment data, reports, and artifacts as well. Qualtrics was used to generate an online survey and sent to nearly 282 faculty members teaching UC course sections requiring assessment. Each respondent (faculty member) is asked to describe the method of assessment used, and attach the relevant roster, assessment instruments and one example student work (identity removed). The use of this survey tool will completely eliminate the need for hundreds of separate email messages laden with attachments and sent by faculty and collected by various schools/college.

To Enhance the Academic Quality and Reputation of the University
- *Development, evaluation, and retention of a diverse faculty through competitive compensation, an environment conducive to teaching and research, externally funded support, and effective annual performance review.*

To Improve Teaching and Learning
- *Ongoing critical review of programs to ensure excellence through enhanced academic expectations and rigorous academic evaluation, accommodating new educational ventures and implementing discontinuance procedures for those inconsistent with the University's focus.*
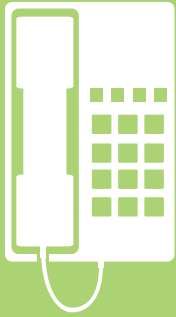
Telephony Upgrade Planning

We are planning for the next generation of telephony. With funding allocated to replace the legacy system, the process of analyzing SMU's needs and creating a transition roadmap is scheduled to start in 2014.

Our system supports approximately 6,600 digital, 1,400 analog phones, and 5,400 mailboxes for SMU and SMU-in-Plano. Unified messaging (voicemail to email), audio conferencing, and desktop video conferencing will be incorporated into this multi-year initiative.

To Support and Sustain Student Development and Quality of Life

- *Support for a living/learning environment that enhances personal exploration and growth.*

Fiber Cable Plant

If the Data Center were the brain, the Fiber Cable Plant would be the nervous system of campus. It connects every building to the Patterson Data Center providing data speeds at 1 Gigabit/second and voice services with original cables from 1991. This project will not only replace the current outdated cables with 10x speed improvement capability, but also provides resiliency to our data network with a second logical connection to the new University Data Center.

The Fiber Cable Plant will also enable new functionality. For example, Meadows students will be able to remotely edit high definition video on a server located in another building. It also prepares us for the future needs as SMU increases its focus on High Performance computational research. As new computing technology becomes available, the new cables will support increased speeds.

This project began with the connection of the Patterson Data Center to the new University Data Center. Without this link we would not be able to access the resources of the new University Data Center. Additional linkages to the remaining buildings will continue throughout 2014.

Distributed Antenna System

SMU's reliance on cellphone service is continually increasing as a primary form of communication. The growth of text messaging, video, and other multimedia applications are placing enormous strain on the cellphone providers network from a capacity point of view.

Coverage on campus is impacted as a result of the number of LEED (Leadership in Energy and Environmental Design) certified buildings with Low-E Glass materials.

Even when high-powered cell towers are able to pass through the reflective coating in the glass as well as the concrete in SMU's structures, cellphones' return signals lack the strength to consistently make it through those barriers. This is where a Distributed Antenna System (DAS) is extremely effective as antennas are strategically placed throughout the interior of a structure. This new coverage bypasses the barrier of concrete walls and Low-E Glass with a connection to a powerful exterior

antenna that amplifies the signal. OIT is working with a third party firm, generating a detail design of a campus-wide DAS. We are negotiating with multiple carriers (AT&T, Sprint, T-Mobile, and Verizon) to participate in the DAS. The design relies on the newly established University Data Center and outside fiber cable plant. Implementation is dependent upon the completion of these two facilities. The Residential Commons and other student housing will be the first buildings upgraded to the DAS.
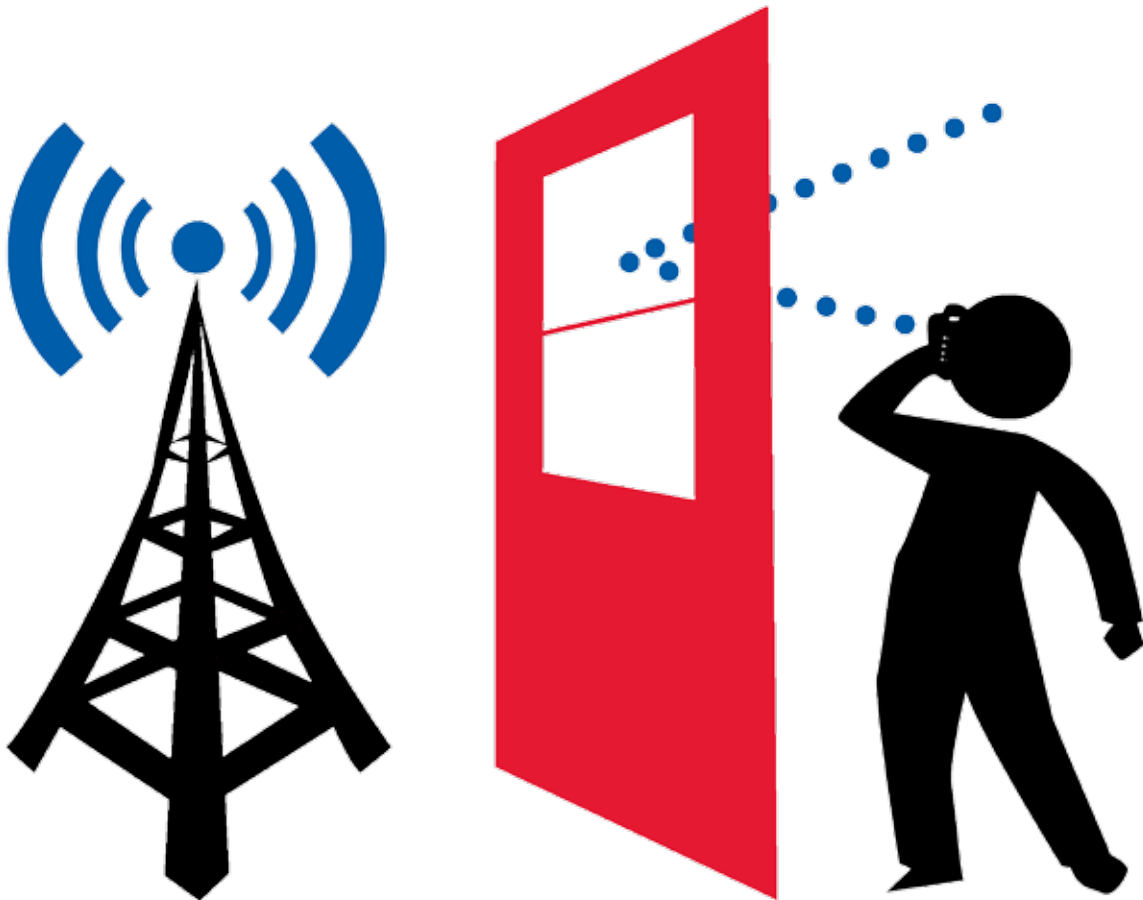
To Support and Sustain Student Development and Quality of Life
- *Support for a living/learning environment that enhances personal exploration and growth.*
- *Enhancement of critical student life programs related to student retention and growth.*

Enhance the Academic Quality and Reputation of the University
- *Development, evaluation, and retention of a diverse faculty through ... an environment conducive to teaching and research.*
- *Enhancement of the University's ability to recruit, retain, and graduate academically and creatively gifted students.*

To Improve Teaching and Learning
- *Enhancement of teaching and learning through curricula, pedagogies, programs, and methodologies informed by research, along with utilization of advanced technologies.*

To Strengthen Scholarly Research and Creative Achievement
- *Implementation of an updated technology transfer program to provide additional resources for scholarly research.*
- *Development of collaborative programs with corporations, businesses, governments, educational institutions, and other partners.*
- *Encouragement of interdisciplinary teaching and research, especially at the doctoral level.*

University Data Center

Bradfield Computing Center was torn down in 2003 to make room for the Collins Executive Education Center. SMU had moved away from large mainframe systems and was able to relocate the remaining servers to the Telecommunications room in Patterson Hall. While not ideal, it was considered a reasonable temporary solution. Even with the calculated risk of a single point of failure for network, computing, and telephone systems, Patterson's location was convenient in respect to being the hub of Fiber Cable Plant which connects to all campus buildings.

Our leadership understood the need to address the risk of all computing and network capabilities sitting above the chiller/steam plant. Without a resilient campus network, cloud computing would be an unacceptable risk. If anything happened to Patterson Hall, the University would not be able to connect to the Internet or run on-campus systems. The resulting loss of campus networking and computing capabilities could cripple SMU.

On a parallel track, a strategic plan was being developed to expand SMU Research capabilities through computational research powered by the emerging technology of High Performance Computing Clusters built on commodity servers, storage, and a high speed network.

The plan included:

1. Shore up Patterson Data Center as a short term solution,
2. Enhance SMU-in-Plano Data Center as a recovery site,
3. Embrace cloud computing where appropriate,
4. Build a redundant campus network homed out of the new University Data Center, and
5. Plan, fund, and build a new generation University Data Center to meet five specific University needs.

SMU leadership defined five specific needs the University Data Center must be able to address:

1. Anchor a new high speed fiber network to all buildings and the Internet,
2. Provide space, power, and cooling to house expansion of High Performance Computing,
3. Mitigate the risk of Patterson Hall as a single point of failure,
4. Provide space for cell phone Distributed Antenna System (DAS) that supports the density of smart phones in every building, and
5. Balance the cost and capabilities to fit the foot print available with long term ability to grow power/cooling capacity to meet current as well as anticipated future technology needs of the University.

In 2010 a strategic plan outlined the needs of computational research and the risk of Patterson Hall as a single point of failure. When the new University Data Center opened in December 2013, all requirements were met. The design includes 8,000 square feet of raised floor, 1,700 square feet for DAS, and the ability to grow power/cooling from initial capacity of 600 kW IT load to 2.4 Megawatts of IT load, if ever needed.
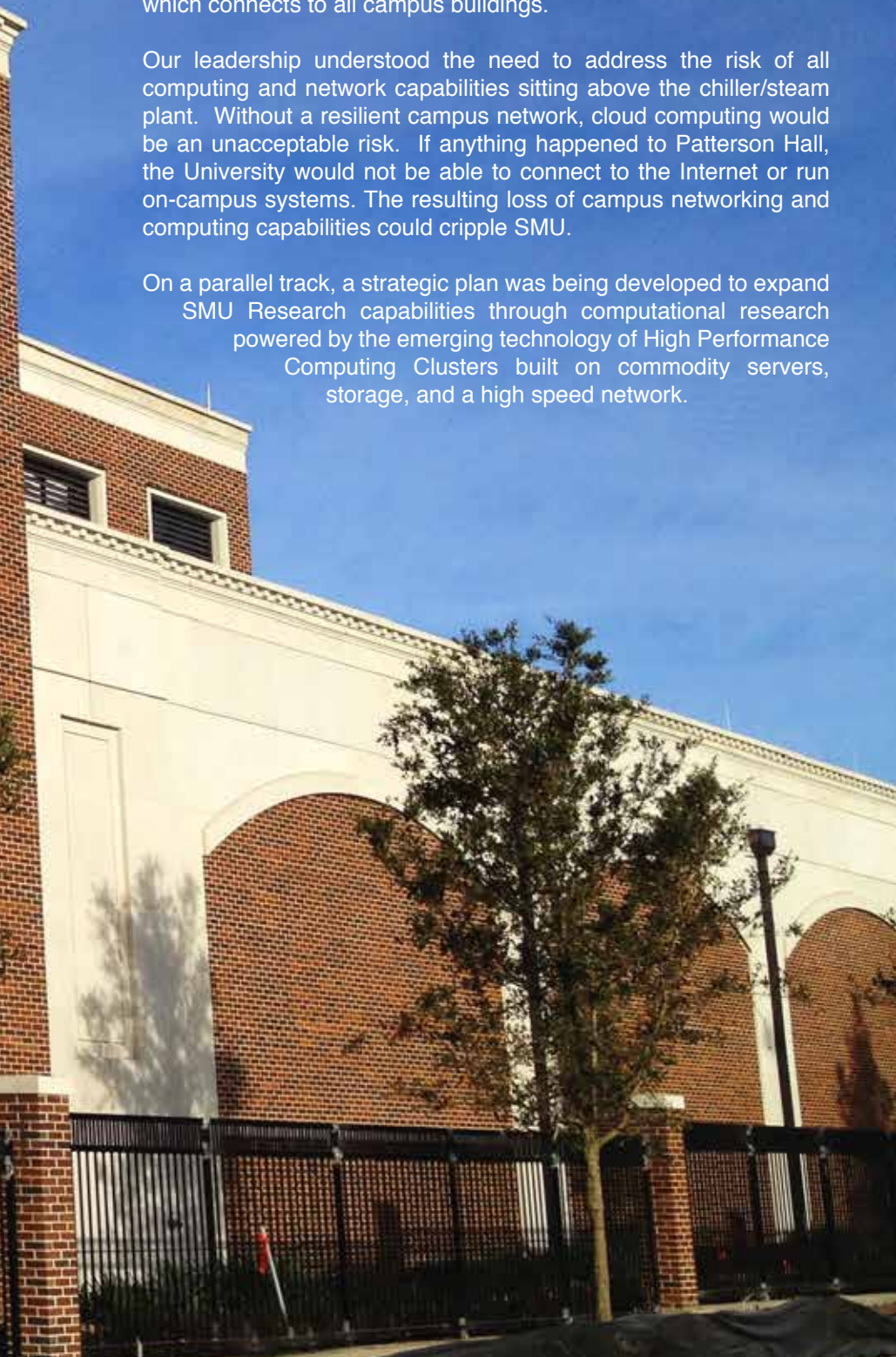
High Performance Computing

Rapid advancements in computing technology over the past decades have revolutionized research in traditional fields such as science and engineering, and now impact business, the social sciences, the humanities, and the arts. Therefore, a High Performance Computing (HPC) capability is essential to a modern research university.
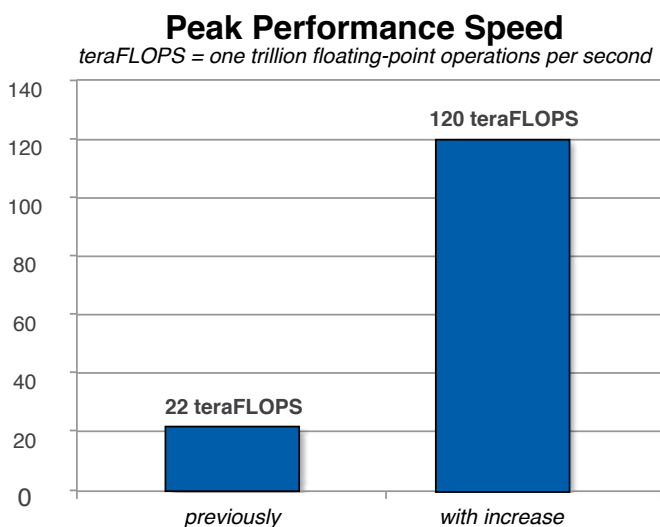
The university-wide Center for Scientific Computation directed by Dr. Thomas Hagstrom (Mathematics Department), with associated faculty from most all departments in science and engineering, is actively exploring new uses of the facility to help SMU fulfill its mission as a leading center for research and education at both the undergraduate and graduate levels.

The SMU HPC services are extensively utilized by faculty and students in Biology, Chemistry, Mathematics, Physics and Engineering, as well as other departments. SMU pools its resources with others world-wide in collaboration on projects such as the ATLAS experiment, which led to the detection of the Higgs boson, and the NOvA experiment studying the muon neutrino.

The SMU HPC system encompasses a wide range of processing requirements. For example, Dr. John Wise of the Biology Department has submitted up to 60,000 job requests in a month for his research on cancer inhibiting drugs while NOvA users have submitted 90,000 jobs in a month. On average 60,000 jobs have been submitted monthly; and only 80% could be processed in a month due to jobs waiting for more resources. Other projects, such as the simulations of chemical reactions performed by Dr. Elfi Kraka and coworkers in support of the Chemistry Department's green chemistry research, can require huge memory resources and months to complete.

Exciting advancements are being made in SMU's HPC services with newly acquired equipment. Dr. Thomas Hagstrom identified an opportunity for a very large HPC equipment grant from the U.S. Department of Defense. Dr. Hagstrom and Dean Quick, Associate Vice President for Research and Dean of Graduate Studies, worked through the bid process and submitted the proposal leading to DoD awarding 31 cabinets of server, storage and network equipment to SMU in October 2013!

The new University Data Center, completed in December 2013, will house all existing systems as well as the newly delivered HPC cluster from DoD which will increase SMU resources by 8,832 CPU cores and 2 Petabytes of storage. With the addition of the new nodes, SMU's HPC cluster will have a peak performance of 120 TeraFLOPS, which can reduce the time required for some jobs from four weeks to only one. Not only does more computing power and storage capacity increase productivity, but it also provides new opportunities for education and research.

Peak Performance Speed
teraFLOPS = one trillion floating-point operations per second

120 teraFLOPS

22 teraFLOPS

previously   with increase

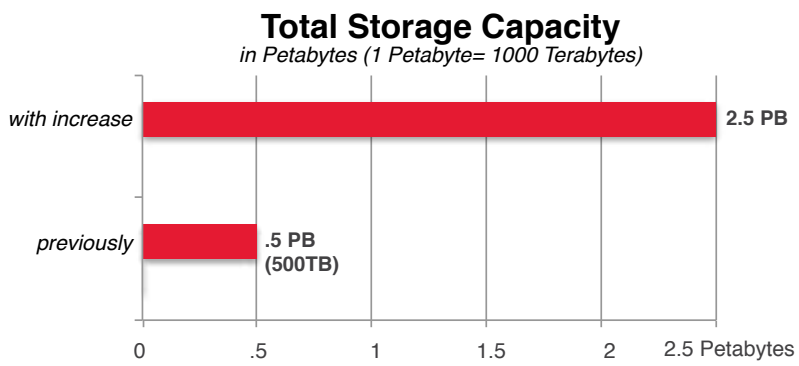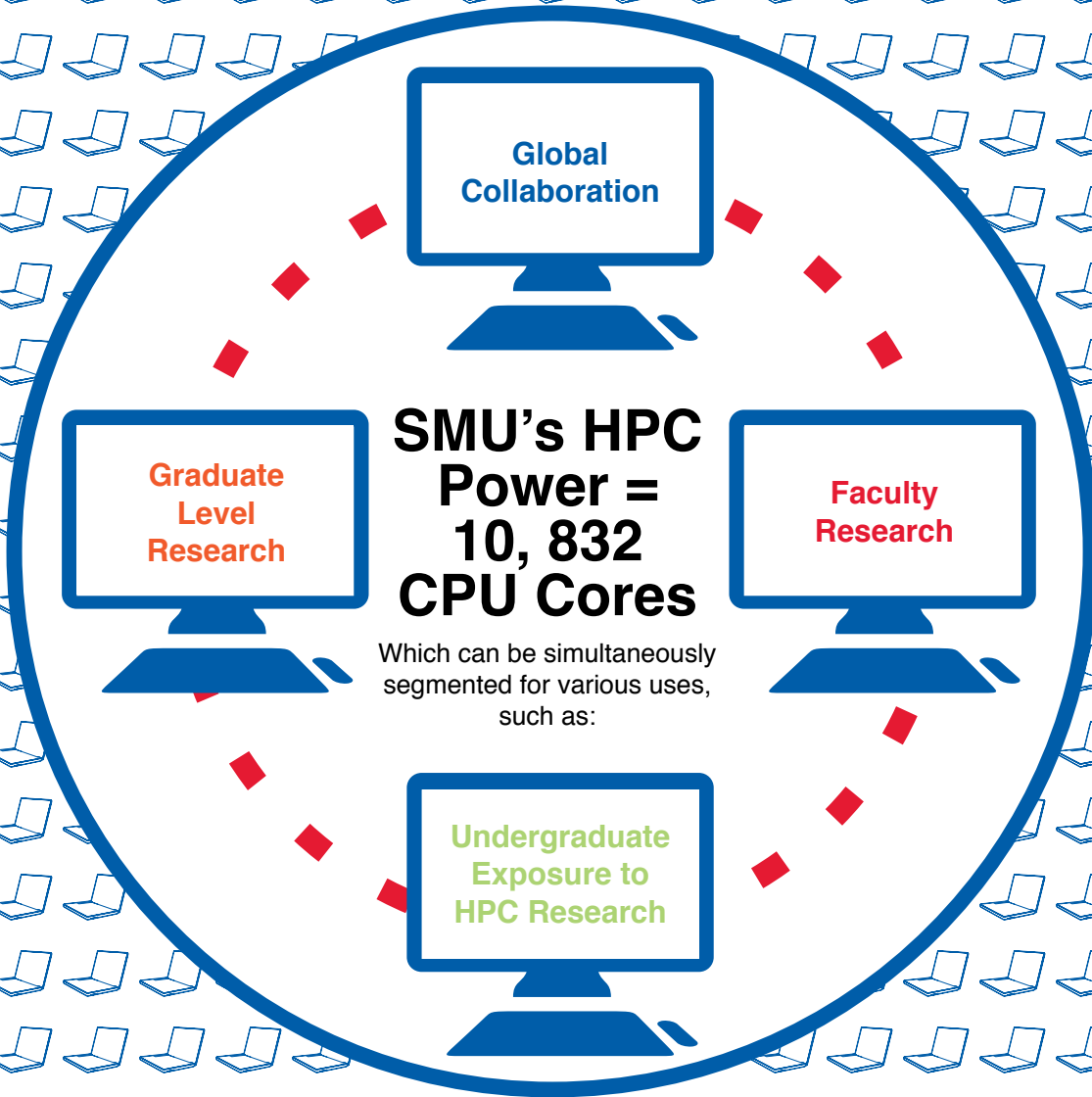**To Enhance the Academic Quality and Reputation of the University**
- *Recruitment and appointment of distinguished faculty in the senior ranks and gifted scholars/researchers/creative artists in the junior ranks.*
- *Recruitment and retention of staff who are competent and professional.*

To Strengthen Scholarly Research and Creative Achievement
- *Implementation of an updated technology transfer program to provide additional resources for scholarly research.*
- *Development of collaborative programs with corporations, businesses, governments, educational institutions, and other partners.*
- *Encouragement of interdisciplinary teaching and research, especially at the doctoral level.*
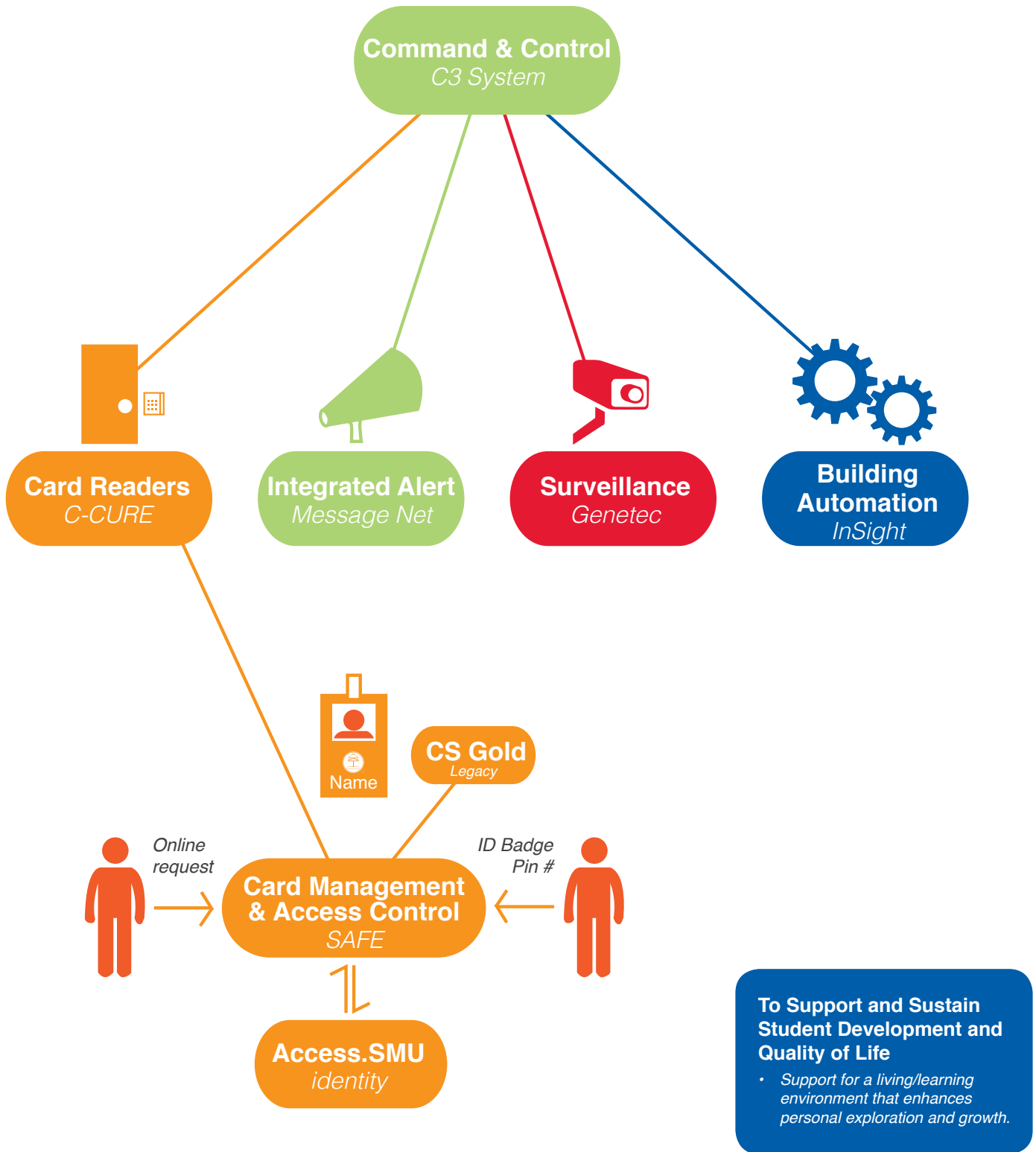- *Enhancement of undergraduate research.*

To Broaden Global Perspectives
- *Review of present and development of new internationally oriented consortial agreements consistent with SMU's academic goals.*
- *Enhancement of strategies that increase the international representation of students and faculty.*

Global Collaboration

SMU's HPC Power = 10, 832 CPU Cores

Which can be simultaneously segmented for various uses, such as:

Graduate Level Research

Faculty Research

Undergraduate Exposure to HPC Research

Total Storage Capacity

in Petabytes (1 Petabyte= 1000 Terabytes)

with increase	2.5 PB
previously	.5 PB (500TB)

0   .5   1   1.5   2   2.5 Petabytes

Sustainable Security

Safety, security, and sustainability are vital in support of our students' development and quality of life. The vision behind this initiative, set in motion by VP Chris Regis, is to streamline the accurate collection of data, improve emergency communication, and automate building management features for access, surveillance, and energy conservation.

Command & Control
C3 System

Card Readers
C-CURE

Integrated Alert
Message Net

Surveillance
Genetec

Building Automation
InSight

Name

CS Gold
Legacy

Online request

ID Badge Pin #

Card Management & Access Control
SAFE

Access.SMU
identity

To Support and Sustain Student Development and Quality of Life
- *Support for a living/learning environment that enhances personal exploration and growth.*

Command & Control

The Command and Control Center (C3 System) provides this comprehensive approach. It integrates all subsystems allowing the SMU Police Department access to information in real time. This includes a Geographic Information System complete with maps, floorplans, and GPS police radios enabling dispatchers to route resources to the right location. C3 System connects the hands, eyes, and voice of emergency response personnel. The implementation of this system is dependent upon completion of key supporting systems.

Card Readers

Should a future lockdown situation occur, C-CURE Physical Access Management system serves as the hands of the police department enabling the remote lockdown of campus doors. Over the next year, we will further enable the doors for remote lockdown functionality. Additionally, contactless, Smart Card readers will be installed at the doors. This allows us to look to the future of authentication technology with multi-factor validation, including pin numbers and biometrics in addition to card readers. These readers are being installed now in the Residential Commons, followed by other new construction. Benefits of access cards over metal keys include:

- Time and date restriction
- Records of when the door is used and by whom
- Locks no longer have to be re-keyed when keys are lost
- A forced door triggers an alarm
- Automated access provisioning
- Use of future technologies such as near field communication

Card Management & Access Control

The new SAFE Identity and Access Management system will automate numerous manual or batch processes. It pulls identity, group information, and other attributes from Access.SMU to drive automation. Now a requestor will be able to log into the SAFE system and upload their selected picture, manage their PIN, report lost cards, request replacement cards, and request access to areas. Once the system verifies their security, the manager responsible for the space is notified and (if approved) access to the area is created. Previously, this process was managed via email or through periodic batch loads. With a standing population around 15,000 plus summer conferences with up to 6,000 card using attendees, this new system will save countless working hours and reduce the possibility of human error.

Surveillance

The video surveillance system on campus was segmented into 40-50 separate networks, each of which was locally controlled and monitored. Genetec is a new system we will be implementing which connects all of the separate camera feeds under the management of Command and Control and provides streaming video to the police department. This asset will assist with investigations and tracking security related incidents. Additionally, the system is capable of granting specific surveillance to departments as needed. The project implementation has begun by replacing the cables and rerouting them to new networked servers. Special measures are being taken to compress the usage of bandwidth that the video will occupy on the network.

Integrated Alerts

MessageNet provides the mouthpiece of our emergency alert network. It will efficiently and accurately contact the University population in the event of an emergency. For fast and flexible response, this system integrates existing resources both inside (intercom, video screens, fire systems, personal computers, telephones, and LED signage), outside (loudspeakers, digital displays, sirens, and broadcast radio), and personal devices (PDAs, cellphones, SMS messaging, email, and hand-held radios). It not only sends out a message, but checks for confirmation. In the event of an emergency a message would be repeated on a personal device until receipt is confirmed. Command and Control will have flexible use of MessageNet by alerting buildings on an as needed basis.

Building Automation

The Insight Building Automation System plays the final role in our technology related C3 System upgrades. Although it does much more, building automation plays a vital role for sustainability efforts and energy management. The system strives to maintain a comfortable environment with appropriate airflow to maintain oxygen levels and temperature. Adjust lighting by time of day and season and room/building occupancy. In emergencies, the system ensures mechanical and electrical systems respond appropriately to minimize the impact depending on the situation.
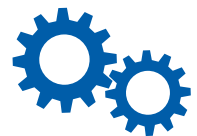
Information Security

> ## "Hi, my name is Dave. I'm from IT. Can you give me your old records to digitize?"
>
> *Beware of impostors. Look for University identification.*

Self-Phishing Campaign

While over 30 million spam and phishing emails are blocked monthly, phishing emails that make it past our filters still pose a viable threat to those who are uneducated in detecting signs of email fraud.

This summer OIT launched a self-phishing campaign. The first phishing email was sent to SMU staff. Of the 1,773 emails sent, many users clicked on the link that could have compromised their password or installed malware onto their computer.

Those that clicked on the link were provided with a teachable moment about phishing. A similar email was sent to faculty this fall. Further campaigns are planned with this tremendous tool that provides real time security education to those who need it most.

Security Awareness Education

Social engineering, in the context of security, is understood to mean the art of manipulating people into performing actions or divulging confidential information. For their protection, individuals and departments must be able to recognize these targeted attacks.
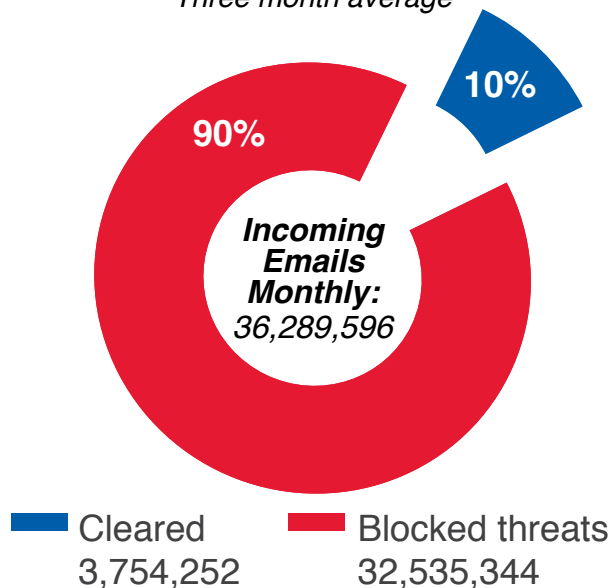
This fall, OIT partnered with an outside vendor who simulated a breach on campus. After the assessment, Information Security staff and the consultants met with department heads to collaborate on reviewing business processes that pose potential security threats.

Blocked Threat Emails
Three month average

10%

90%

Incoming Emails Monthly: 36,289,596

Cleared 3,754,252   **Blocked threats** 32,535,344

New Focus

In a step to go beyond compliance, this year our Information Security team shifted its focus from technology to people and processes. Our vision is to partner with University departments in improving security by creating awareness of security liabilities and providing education for personnel. Our security awareness education campaign has taken several bold steps to support this goal. All the while, technical advances have also been made to keep SMU's information even more secure.

Information Security Advisory Council

The Information Security Advisory Council formed this year with the mission to ensure the timely implementation and enforcement of policy and practices by identifying problem areas, supporting adoption of best practices, and establishing and implementing solutions. It consists of delegates from ten different departments across campus. Their role is to improve the policies and practices that support information protection measures within the University. We believe our combined efforts will reach far beyond those of a single team.

New Firewall

While email encryption protects our external communication, our firewall guards SMU's internal network. While our previous firewalls had reached maximum capacity, our new firewall affords us with a scalable, high-performing solution that will allow for growth in years to come. Its performance enhancements provide us with faster interfaces and throughput.

unencrypted

SS#

ISP

Vendor Network

Vendor
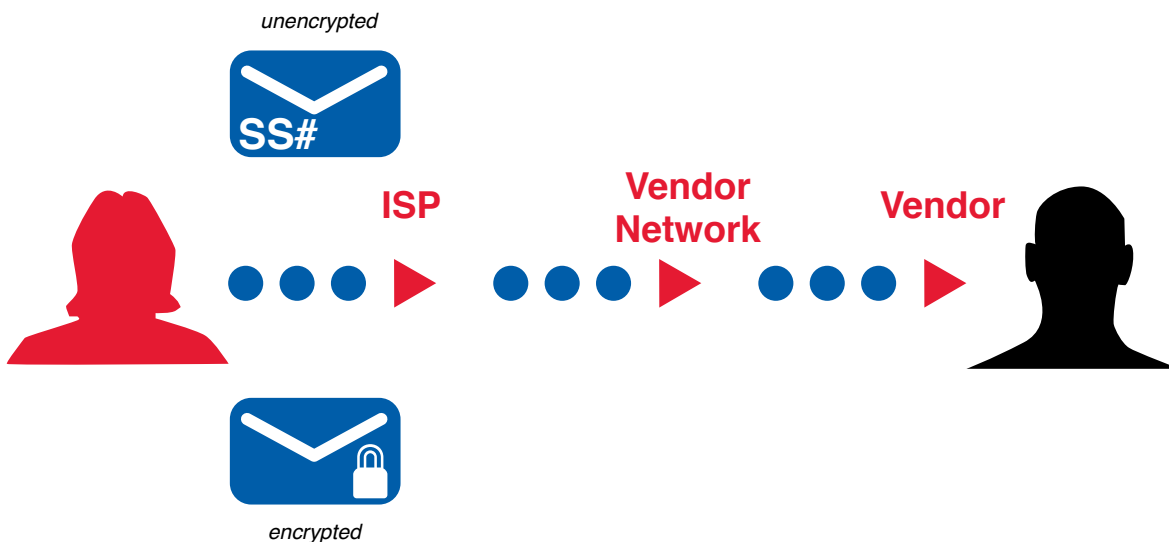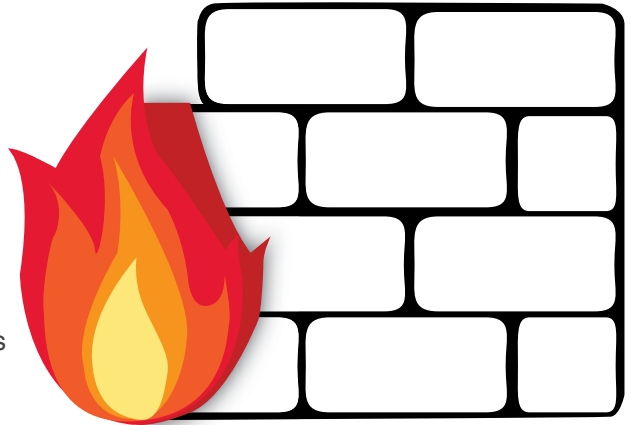
encrypted

Email Encryption

Aside from Information Security education, OIT has continued advancing the technological safety of our records. Email encryption is an important part of that process. This service is specifically for emails sent to someone outside the SMU community. What does that mean for our records safety? Unencrypted emails are visible to a number of different people in the invisible chain of communication, including Internet service providers (ISP), vendors' networking personnel, and the vendor. If an SMU employee were to send an encrypted email to an outside vendor which contained sensitive information, like a social security number, that email would be protected by one more layer of security.

Database Activity Monitoring

The Information Security team has assumed the responsibility of database security for OIT. We moved staff to the Security team and over time, we will centralize all database and application security efforts there. A new tool allows us to do "Database Activity Monitoring," which provides an audit trail for our most sensitive databases and allows us to monitor and report on access to other databases on campus.

Enhanced Support

This year OIT expanded our support to deliver better assistance for services. We extended IT Help Desk hours, worked to adapt our IT Help Desk incident management tool for other departments use, and expanded training opportunities available for applications. We also implemented additional communication channels to better serve the SMU community.

Our full-time IT Help Desk directly resolves

over 17,000 **requests for assistance each year.**

First row: Gina Benavides

Second row (left to right): Amber Clark and Lauren Nelson

Third row: Zach Peterson and Janet Asberry

IT Help Desk Staff

To provide more consistent, quality technology support, the IT Help Desk full-time staff now covers hours Monday through Saturday. Since we rely on student coverage during the late evenings and Sundays, we have implemented a mentoring program, pairing each student with a full-time staff member to provide guidance and training.

Our goal is to provide quick and accurate resolutions. In order to do that, we try to connect the IT Help Desk staff as much access and knowledge as possible to allow them to resolve issues and answer questions up front.

" We are committed to delivering excellence in technical support. "

~ Abby Kinney, Director of Support Services.

IT Help Desk Software

The IT Help Desk software is now being used by local IT support groups. Instead of redirecting someone with a request, a ticket can be created at the point of contact and routed to the appropriate technology group. As additional areas are using the software, it has become a core tool for various technology help needs. Additionally, the metrics provided by the system furnish trending information to increase our knowledge of specific support needs.

Professional Development

Continued professional development is always important with the pace of changing technology. Each year Technology Support Services staff work to complete a new certification. Some of these certifications include the IT Help Desk's HDI certification (best practices for customer and technical processes), as well as Adobe, Macintosh, Microsoft Office, and Windows certifications.

New and Expanded Services

1,000 New Access Points

Wireless usage on campus has surged over the last few years. Our new threshold reached more than 7,000 devices simultaneously connected to the SMU wireless network. To support the number of wireless devices used in the residence halls, we are installing 1,000 new access points by the end of 2013.

Apps.SMU

Apps.SMU offers access to a variety of applications in a virtual environment. This means those with credentials can login and access programs such as SAS and SPSS which they previously had to visit a computer lab to use. Classrooms now have more flexibility because of this resource. Apps.SMU can be accessed on both Mac and Windows computers.

introducing Mylists.smu.edu

Mylists.smu.edu enables students, faculty, and staff to manage the campus communications they receive by selecting the mailing list(s) they subscribe to. While essential communication is still possible, this tool de-clutters inboxes.

IT Training

From left to right: Emily Blackmore and Laurene Klassen

Our Training Team expanded courses to include some of the Adobe applications. In addition, certificate programs in Office 2010 and Inside.SMU were offered.

Twenty-five Lynda.com licenses were purchased to supplement the training workshops taught throughout the year for faculty and staff.

Guest Wireless Pilot

Our new guest wireless service affords easier access to those visiting campus. It also connects various devices in the residence halls, like eReaders, smart TVs and gaming devices, that could not previously connect to PerunaNet.

Did You Know?

We enhanced communication with chat services through the IT Help Desk. This proved to be helpful for long distance and international assistance. In addition, we launched the "IT Connect" blog this fall which contains tips and tricks, as well as information on current IT initiatives. We use Twitter to share service updates and industry news.

blog.smu.edu/itconnect
@smuoit
@smuhelpdesk

IT Unification

Effective institutions ensure their organization shares both vision and goals. Our united vision is to optimize IT resources to maximize our contribution to SMU.

In December 2008, President Turner directed the Vice President of Business and Finance, in collaboration with the Provost, to develop and implement a strategy to unify Information Technology (IT) at SMU. The goal was to enhance the overall customer experience by maximizing the expertise and proximity of our Local IT staff without duplicating services provided by campus IT.

> **"** *Our vision is to unify, strengthen, and coordinate IT services and resources, increasing the effectiveness, efficiency, and delivery through a collaborative approach and structure.* **"**
>
> *~ Joe Gargiulo, Chief Information Officer.*

Strategy for Unifying IT:

1. Create a common vision for all IT services
2. Establish strategic alignment with appropriate oversight
3. Enhance support for academic initiatives
4. Repurpose IT resources to improve efficiencies
5. Improve service delivery through collaboration
6. Enhance communication
7. Create an environment that fosters technological innovation and experimentation

Local IT Supplemental Services:

1. Collaborative help desk functions using campus IT tools
2. Local AV support for events, conferences, and meetings
3. Departmental classroom support in academic areas
4. Departmental computer support using campus IT framework for asset management
5. Departmental research computing support as defined by the Director of Center for Scientific Computing
6. Emerging technologies (until they mature into campus-wide services)
7. Specialized support unique to school or division

Over the next several years, any of the 200+ services managed by campus IT that are duplicated will need to be consolidated in a prioritized manner. A schedule will be maintained based on road-maps, priorities, and available resources.

Over the past several years, significant strides have been made toward our vision for IT at SMU. With the assistance of the Deans and Directors of IT, we have made impressive gains in implementing a single campus-wide, email system as well as a single authenticated wireless network. We improved the computer life-cycle replacement process to be more cost efficient. The new Information Security Officer position drives information security awareness across campus. IT projects have increased in transparency. IT Training services and techniques have been broadened to provide a more comprehensive training catalog and course delivery options. Several areas on campus now share a collaborative help desk system to make processing issues more efficient.

Due to our growing service catalog, we calculated the cost of providing each service, along with usage metrics, to ensure we are utilizing our resources wisely. We built out our disaster recovery data center site and are replicating our mission critical applications at that facility. Finally, construction of our new University Data Center is complete which will provide incredible opportunities for collaboration amongst SMU students, faculty, researchers, other institutions, and industry partners around the globe.

As we continue to consolidate IT services, our effectiveness and efficiency will improve, allowing us to provide even better service. This affords us additional opportunities to be innovative.

Significant IT expertise exists both within the local IT teams as well as within campus IT. The possibilities are endless for what we can accomplish together as we continue to strengthen our partnership and unify our combined service catalogs!

The word cloud above was generated at Wordle.net from the text within this article. The size of each word in the cloud is proportional to the frequency with which the word or its cognates occur in the article. From the cloud we can see emphasis on services supporting the SMU vision.

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