



TEXAS A&M
UNIVERSITY

Texas A&M Information Technology
Annual Report 2008



“ ... pushed by continuing progress in computing, information, and communication technology, and pulled by the expanding complexity, scope, and scale of today’s challenges... the capacity of this technology has crossed thresholds that now make possible a comprehensive “cyberinfrastructure” on which to build new types of ...knowledge environments and organizations and to pursue research in new ways and with increased efficacy. ”

*“Cyberinfrastructure Vision for 21st Century Discovery”
National Science Foundation Cyberinfrastructure Council, March 2007, www.nsf.gov*

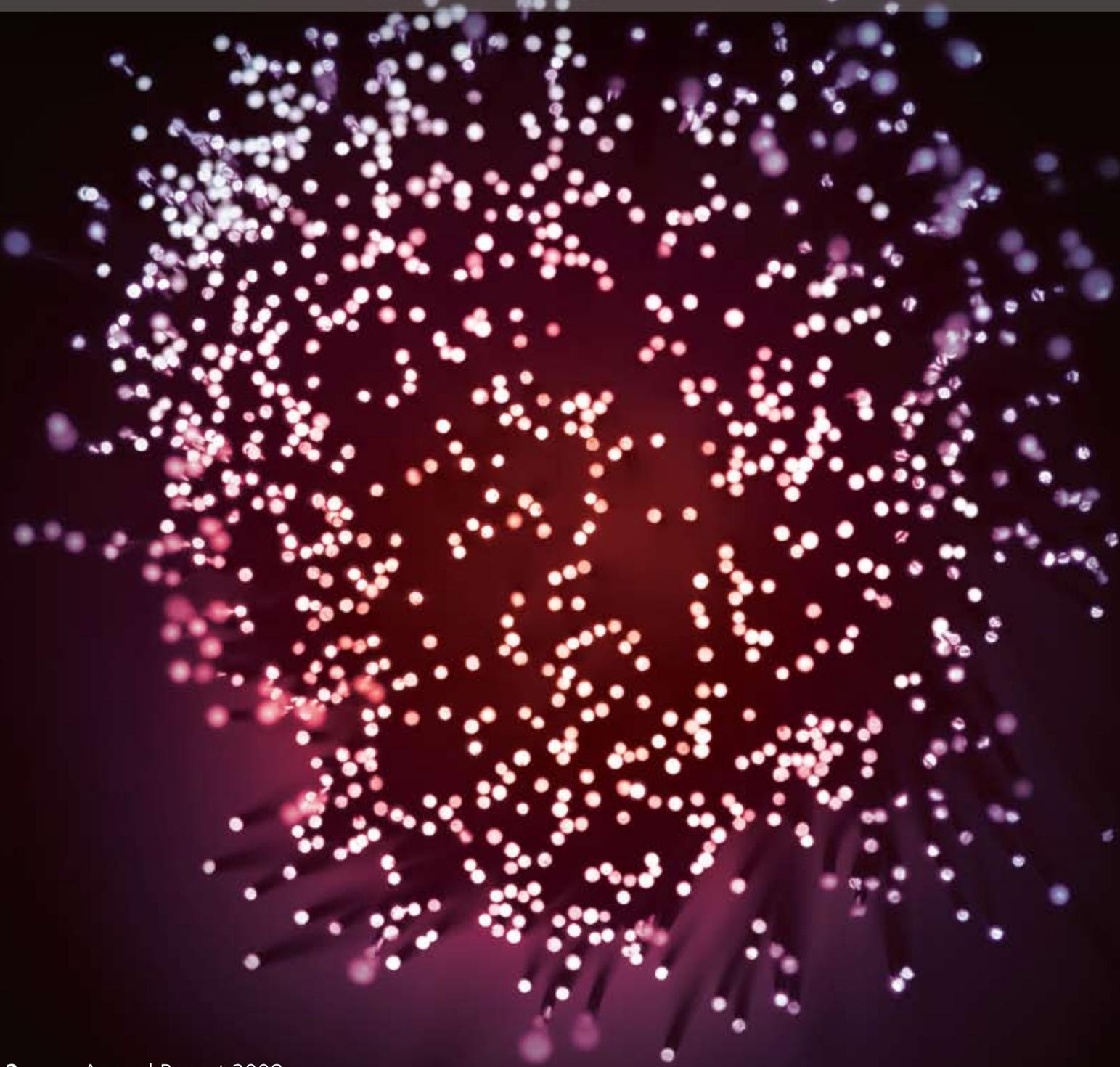


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A Message from the Vice President



Dr. Pierce Cantrell

- » The goal of the **Office of the Vice President and Associate Provost for Information Technology** is to achieve an outstanding IT environment that supports Texas A&M University's commitment to develop and inspire tomorrow's leaders.

We have concluded a year full of challenges and obstacles overcome, and goals and objectives accomplished. We successfully completed or made critical progress on key projects that increase access to technology resources and provide improved services and benefits for all of our customers. We are well-positioned to continue enhancing resources and installing new services that strengthen teaching, collaboration, research, and the exchange of ideas.

- » **Advanced the quality of our university's IT infrastructure** by completing significant wireless and campus network upgrades, and creating and supporting the LEARN high-speed optical network.
- » **Met important milestones** in implementing a new web-based student information system, which will streamline data management and reporting, and allow students, faculty, and staff secure, anytime, online access to information they need.
- » **Enhanced teaching resources** with new hardware and applications for eLearning, upgrades to classroom equipment, and more instructor training and support.
- » **Increased access to research computing** by implementing a supercomputing consulting service that provides intensive help for faculty and other advanced users.
- » **Improved communications** by installing a state-of-the-art campus email system, updating account and directory management applications, and upgrading the university's two-way radio system, and completing the first 100 percent voice-over-IP deployment on campus.
- » **Strengthened IT support** by consolidating help operations to improve customer service, increasing discounted software options, and providing computer access centers with extended business hours.

“ *Our achievements for fiscal year 2008 have built a solid base for future progress. We are well positioned to continue enhancing resources and installing new services that strengthen teaching, collaboration, and the exchange of ideas.* ”

*Dr. Pierce Cantrell, Vice President
and Associate Provost for Information Technology*

- » **Enhanced information security** by installing additional firewalls and implementing stronger departmental self-assessment tools, education programs, and training.
- » **Fostered connections within the campus community and beyond** through a new Information Technology Advisory Committee, monthly information-sharing forums, and public television and radio broadcasting.

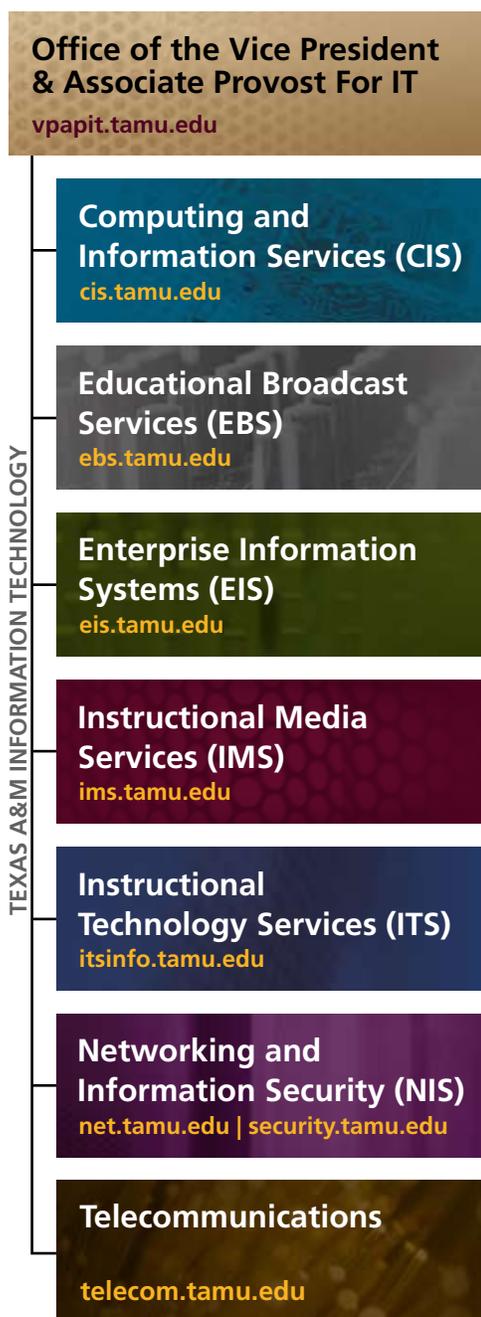
While we take time to reflect on what has been accomplished, we are reminded of the many challenges confronting us in the future. We will be called to fulfill growing expectations for new services and keep up with rapidly changing technologies, while maintaining core essential services. We must seek to improve customer IT experiences, help, and support to meet the needs of an expanding university population. And as our nation faces an uncertain economic climate, it is imperative that we continue to use funds wisely and to prudently manage expenditures as we tackle next year's opportunities.

Lastly, the task of providing essential IT services usually goes unnoticed unless something goes awry. Thanks to the hard work of many dedicated and experienced professionals, university business can be conducted every day without significant outages or disruptions. The achievements listed in these pages are the direct result of the teamwork and “can-do” attitude of our staff. I encourage you to share your questions, comments, and suggestions with me and members of our team as we all work together to build an outstanding IT environment for our university.

Dr. Pierce Cantrell

*Vice President and Associate Provost for Information
Technology and Chief Information Officer
Texas A&M University*

Who We Are



The Office of the Vice President and Associate Provost for Information Technology provides services and resources that help the faculty, students, and staff of Texas A&M University use technologies to achieve excellence in teaching, research, learning, and administrative pursuits.

CIS provides and maintains Texas A&M University Email, campus computer labs, Help Desk Central, hardware and software support, networking, Internet services, data centers and high performance computing.

EBS is comprised of KAMU-TV/DT, KAMU-FM, and TTVN. KAMU provides public radio and television broadcasting services. TTVN is responsible for the Texas A&M University System Wide Area Data Network, and they also provide enterprise data resources for webcasting and video- and web conferencing.

EIS is responsible for mission-critical, enterprise-wide information systems. The existing student information system is being replaced at the College Station, Galveston, and Qatar campuses.

IMS provides fixed multimedia equipment in 120 classrooms. They can also deliver equipment for classes, meetings, or other functions on campus.

ITS fosters effective use of technology in teaching and learning. They offer workshops, individual training, course design consultation, online resources, and equipment for instructors.

NIS maintains and manages the university's network infrastructure and administers information security strategies, procedures, and practices. NIS serves as the point of contact for information security-related issues on campus.

Telecommunications provides fast, reliable, and cost-effective telecommunications services, solutions, and support to the university.



Computing & Information Services

A vast array of core computing resources and facilities is provided by Computing & Information Services (CIS). IT infrastructure that supports the campus and the departments within Texas A&M Information Technology is maintained by CIS. CIS also operates central campus servers that house mission-critical data and services, including email, Internet and network access, campus wireless, web sites, data center operations, and administrative and academic systems.

CIS provides IT help for the campus, including 24-hour phone and email assistance through Help Desk Central, computer repair services, office computing support, and custom application development and maintenance services. CIS runs campus computer centers, where students can use PCs, Macs, software, printers, and peripherals. Other resources include the campus email system, discounted software for departments and individuals, and the university's supercomputing facility.

Educational Broadcast Services

EBS is comprised of KAMU-TV/DT, KAMU-FM, and TTVN. They offer a unique synergy of technology and expertise for wide area networking, interactive communications, public broadcasting, and audio/video production that broadens the range of services available to the university community.

KAMU-TV and KAMU-DT (HDTV broadcasts) also produce high-quality video programs for research and teaching, while providing electronic media facilities for videoconferencing and distance learning via the Internet. Satellite uplink services are also available. KAMU-FM provides public radio services to Bryan/College Station and surrounding areas.

TTVN is the wide area data and interactive communications network for The Texas A&M University System. In addition to providing enterprise-level high-speed data networking services to each of the ten A&M System university campuses, the Health Science Center, and the seven research and service agencies, TTVN provides interactive videoconferences with any site worldwide, Centra webconferences with voice-over-IP audio, and live and archived Windows Media streaming audio and video webcasts.



Enterprise Information Systems

The Enterprise Information Systems (EIS) department and project team are responsible for the implementation and maintenance of new mission-critical, enterprise-wide information systems at Texas A&M. The existing legacy Student Information Management System (SIMS) is being replaced by modern, state-of-the-art information systems that will be entirely web based. The new student information system (called Compass) is currently being implemented to support the campuses in College Station, Galveston, and Qatar. Throughout the transition to Compass, EIS is also responsible for maintaining SIMS. Compass is being launched in stages, with the full transition scheduled to be complete in fall 2009.

Instructional Media Services

Instructional Media Services (IMS) provides and supports multimedia equipment and technology tools that enhance and improve the quality of classroom instruction. IMS maintains multimedia/computing equipment in technology-enhanced Smart classrooms across campus. These automated systems allow instructors to use one interface to easily control classroom equipment such as a data projector, screen, computer, built-in VCR/DVD player, and optional equipment such as a Smart Sympodium or document camera. IMS personnel also deliver and set up equipment for classes or other functions in rooms without permanent equipment.

Instructional Technology Services

Instructional Technology Services (ITS) provides professional development opportunities, administers eLearning resources, and empowers instructors to use best practices in higher education to enhance student learning through the use of technology.

ITS maintains, administers, and develops university-wide systems and services to strengthen eLearning, from supporting Blackboard Vista, the university's enterprise-level learning management system, to distributing software

“*If you can build a team of committed and inspired workers who value the organization and are passionate about what they do, then there is virtually no limit to what you can accomplish.*”

***Dr. Elsa Murano, President, Texas A&M University
2008 Southwestern Black Student Leadership Conference***

resources such as Camtasia and Respondus. ITS also provides opportunities for faculty, teaching assistants, and instructional staff to learn to use technology in their courses, research, and departments. ITS conducts a full range of training and support that complements various learning styles and fosters effective course design.

Networking & Information Security

Networking and Information Security (NIS) maintains and supports the campus network backbone and provides network connections. They are responsible for Internet connectivity, campus wireless service, and remote office services. NIS is in charge of the information security program that maintains and enhances the overall security posture of the university. Their responsibilities include maintaining the campus firewall, incident response and investigation, firewall and sensor configuration, and providing information and notification on viruses, attacks, and vulnerabilities. NIS initiates and applies IT policies and procedures, as well as develops and administers information security awareness training for all faculty, students, and staff.

Telecommunications

Telecommunications provides fast, reliable, and cost-effective telecommunications services from data to voice, dial-up to high-speed, and wired to cellular. They offer voice services to all A&M System offices in College Station and other offices in Texas and international locations, as well as all network service contracts for all A&M System office locations. They support security and surveillance systems on campus, as well as manage the university's two-way radio system. Telecommunications also manages the Emergency Alert System, a component of the university's Code Maroon system, which provides the ability to rapidly distribute emergency information to the campus.

Laying the Foundation

A robust and secure technology infrastructure is the necessary foundation for an exceptional IT environment. Just as highways, roads, and bridges carry goods and facilitate the nation's commerce, the campus network is the conduit through which digital information flows. Every day the network carries thousands of email messages, electronic financial transactions, and web application processes that are necessary to manage daily business, assist learning, and conduct research.

» What's a Gigabit?

A gigabit is one billion bits, so a 10-gigabit network connection carries 10 billion bits per second. Transferring a DVD (17 G) occurs in 1.7 seconds. In contrast, the previous average desktop transfer takes 170 seconds, or 2.8 minutes, while a DSL line takes 280 minutes or 4.7 hours.

By the Numbers

- » The **7,500**-square foot Computing Services Center's data center houses **314** individual machines.

Building a 21st-Century IT Infrastructure

Several key network improvement projects were completed this year that increased data delivery through the network, extended wireless coverage on campus, created cost efficient, redundant regional networks, and augmented conferencing services for audio, video, and web. Through these improvements, the campus infrastructure is now well positioned to carry the increasing IT demands of the growing, vibrant university.

Information Delivery on the Fast Track

The campus backbone network was enhanced from 1 to 10 gigabits per second (Gbps). This major infrastructure improvement enables faster data flow through the campus network. Increasing network speed facilitates data intensive services for research, communications, and university business.

Behind the scenes, hundreds of servers connect computers to applications used daily, link to the Internet, and store files, email messages, and other data vital to the university. Maintaining and renewing these servers is essential to reliably and securely connecting customers to resources and information.

Major projects were completed this year that enhanced the campus network and server environment:

- » Replaced older tape systems and added new tape services to increase support for eLearning and the Compass project.
- » Provided new offsite storage of encrypted tapes for backup and recovery purposes.
- » Improved capacity and redundancy of environmental systems in the main data centers at the Computing Services Center and Wehner building.
- » Installed NetBotz, an enterprise IT physical infrastructure management tool, in campus data centers to improve environmental monitoring.
- » Reviewed and overhauled notification procedures covering data center utility, fire, and other emergency events.

“ By having a regional optical network, we could spend about the same amount of money and go from 100 megabits to a gigabit per second worth of bandwidth...[and] buy that extra guarantee of system availability. ”

Willis Marti, Director of Networking and Chief Information Security Officer

Expanding Campus Wireless

Wireless deployment was increased, with 60 percent of the 11 million square feet of campus building space now having access to TAMULink, Texas A&M's wireless network. A matching fund program using a special allocation from the Office of the President reduced departmental costs for wireless access point installation during fiscal year 2008.

In addition, TAMULink was upgraded to use Wi Fi Protected Access Enterprise (WPA), a robust security technology that uses encryption to protect wireless traffic. WPA uses a computer's built in system features, providing easier wireless access for Texas A&M faculty, students and staff. Also, the process of requesting departmental guest logins was simplified, enabling offices to offer temporary wireless access to visitors, free of charge.

“The National Network of Texas”*

With web applications used increasingly in important university functions, the ability to access the Internet 24/7 has become a major priority. With the region at risk from hurricanes, the need for added protection of physical network redundancy has become more apparent.

Texas A&M has partnered with the University of Texas to create a resilient regional network for accessing the Internet. The universities' separate networks were merged into one, a complex project that required careful planning to accommodate different sets of hardware and infrastructure. The merger created redundant paths, which offered the best and most cost effective resolution for enhancing continuity. Both institutions realized tremendous time and cost savings with the shared network and automated configuration management.

* *“Lone Star Schools Boot Rivalry,” Communications News, November 2008, www.comnews.com*

By the Numbers

- » The university's network covers **11 million** square feet in **340+** buildings on a **5,200**-acre campus plus satellite offices throughout the county.
- » The network connects **50,000** computers and has **90,000** wired ports and **2,000** wireless access points.
- » The average network download speed is **720** megabits per second, which is **120** times faster than an average home user's speed.
- » About **2.25 million** emails are delivered per day. During peak delivery times, **200,000** messages are delivered per hour.

By the Numbers

- » **339** Videoconference sites
- » **4,264** Videoconferences
- » **127** Telecourses
- » **2,735** Class meetings
- » **797** Streaming webcasts
- » **2,735** Centra conferences

» What is Centra?

Centra is an interactive webconference application that lets participants meet over the Internet using their desktop or laptop computers. Meeting leaders or instructors can display PowerPoint presentations, graphics, and other media. Centra uses VoIP audio, so no telephones are required to hear a presentation or talk interactively.

TTVN System-Wide Improvements

TTVN is the Wide Area Data Network (WAN) that provides statewide backbone service and access circuits to all members of the A&M System. Services riding on the backbone include Internet, Internet2, National LambdaRail, and a statewide intranet that facilitates reliable delivery of videoconference, audio, and Voice-over-Internet Protocol (VoIP). In addition to network connectivity, TTVN also provides multi-point videoconferencing for classes, meetings, and conferences, as well as SABA Centra webconference tools that facilitate teaching or collaborating with others anywhere via the Internet.

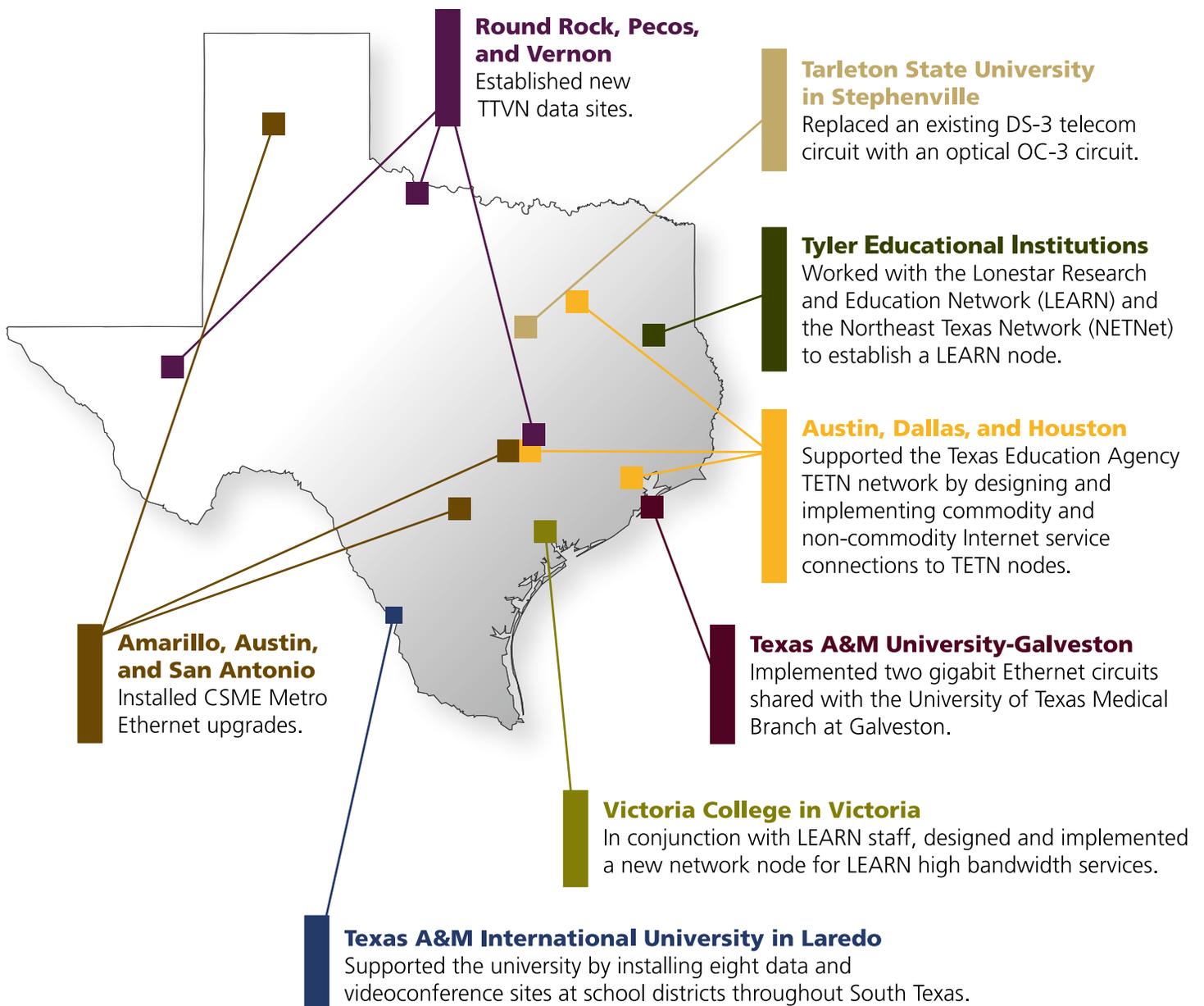
During fiscal year 2008, infrastructure improvements were completed that resulted in increased Internet bandwidth and reliability across the A&M System.

- » Migrated to the new Internet2 national backbone and increased our connection speed from 155 Mbps to 1 Gbps. The Internet2 network provides robust high bandwidth connectivity with other institutions across the country.
- » Connected to the National LambdaRail PacketNet 10-Gbps backbone and the 1-Gbps FrameNet backbone.
- » Worked with the University of Texas and VTXC to move the South Texas ring to a more robust, regionally operated fiber optic infrastructure.
- » Made improvements to local network bandwidth and data and videoconference capabilities.
- » At the TTVN Network Operations Center located in College Station, implemented new network monitoring and quality assurance software.
- » Managed the migration from a single-server Centra webconferencing system on the College Station campus to an enterprise-level Centra system that now serves the entire A&M System.

“ In 2004, TTVN embarked on [implementing] a fiber optic network that will insure adequate bandwidth for many years to come. I am happy to report [in 2008] that... TTVN has essentially accomplished the vision it set forth in 2004. ”

Dr. Rodney L. Zent
Executive Director, Educational Broadcast Services

Improvements to TTVN bandwidth, data, and videoconference capabilities



Streamlining Processes Through Technology

The university embarked on large-scale projects to build integrated services that directly connect the campus to information stores. Modern, robust systems and updated procedures will consolidate multiple services, enhance business efficiency, improve reporting, and empower users with new self-service options.

Compass Student Information System Points in a New Direction

By the Numbers

- » More than **55,000** students and employees will use the new Compass system.
 - » An Oracle database will allow **59,000** unique individuals to access Compass through the Howdy web portal.
- » The transition to the Admissions module of Compass occurred smoothly for approximately 400 staff members, including some 150 from the Office of Admissions and Records. Michelle Walker, Assistant Director of Admissions Processing, notes that Compass is intuitive, with clearly labeled drop-down lists allowing the end-user to easily determine how information is entered into fields. Delayne Nichols, Business Coordinator in Fee Processing, likes the new reporting tools available in Compass. "I can access exactly what day and what information that I need to reconcile our money for deposit and our online payments. The format for the reports is great. Everything is arranged well and easy to read," she said.

Texas A&M is implementing a new student information system for the university's three campuses in College Station, Galveston, and Qatar. The university purchased the web-based system, which uses an Oracle database, from SunGard Higher Education. At Texas A&M, the system is called Compass. Compass is being launched in several phases, with the full transition scheduled for completion in fall 2009. In addition, the current system is being supported and maintained throughout the transition to Compass.

Key milestones critical to the success of this project were met during fiscal year 2008:

- » Launched the Howdy web portal. The portal will be the front door to Compass and consolidates many web-based university resources with a single login.
- » Launched the Admissions module. Compass is now being used to process applications for fall 2009 enrollment and beyond.
- » Implemented companion products to Compass. These include the SunGard Operational Data Store (ODS) to improve reporting capabilities, ePrint as a report repository, and AppWorx for job scheduling.
- » Installed complex hardware and software environments to support the new system.
- » Converted records of former and current students from the present system into Compass. Scripts and programs were written to address gaps between the two systems.
- » Issued Compass accounts for, and trained, approximately 400 employees to use the system.

“ I can access exactly which day and what information that I need to reconcile our money for deposit and our online payments. The format for the reports is great. Everything is arranged well and easy to read. ”

*Delayne Nichols, Business Coordinator,
on the new reporting tools available in Compass*

Work is ongoing to meet goals set for 2009 that will move forward the implementation of Compass:

- » Launch additional modules of Compass, including those supporting Financial Aid, Accounts Receivable, Records, and Degree Audit.
- » Convert academic records and financial history of former and current students into Compass.
- » Issue Compass accounts for, and train, approximately 2,500 employees to use the system, and launch a comprehensive web site for Compass training resources.
- » Launch the self-service component of Compass to students, faculty, and advisors.
- » Integrate ongoing modifications from ApplyTexas and the Texas Connection Consortium (TCC), and serve as a SunGard Beta Partner for new TCC releases in support of student information system upgrades.

Online Billing System Eliminates Paper Costs

A new online billing system was installed that provides computing account billing statements on the web. This cost-effective new service eliminates paper bills, allowing departments to immediately view their invoices online as they become available. Also, customers will be able to view past bills online, since three years of account information will be kept in the system going forward. Placing billing records online streamlines account service operations, increasing efficiency of researching bills, and answering customer questions.

Bulk Computer Purchase Program

Texas A&M initiated a bulk computer purchase program to achieve standards and savings for the university and participating A&M System members. After evaluating several desktop manufacturers, Texas A&M Information Technology recommended three standard configurations for desktop computers with monitors manufactured by Dell, Inc. Through the collaborative efforts of Texas A&M Information Technology, Procurement Services, university departments and colleges, and other A&M System members, significant savings were achieved through bulk purchases.

By the Numbers

- » **4,166** computing services invoices were converted to online billing.
- » More than **\$1,000** of paper billing and postage costs were saved.
- » Bulk orders achieved additional **52%** average discounts beyond single-unit discounted prices.
- » 13 bulk orders were issued for a total of 1,362 desktop units valued at over **\$1.1 million**.

Supporting Our Customers

Technology is the means of bridging the gap between information and the user. Championing and transforming how our customers access resources, use applications, obtain help, and benefit from using IT services is central to our group's mission.

Transforming Student IT Services

As digital technology evolves, students arrive on campus with higher expectations than ever before of the technologies that should be available to them. The campus environment for teaching, learning, and research is dramatically changing, along with student and faculty information needs.

Improvements to the student IT experience include computing centers with expanded hours, 24 hour access to IT support, additional discounted software through campus software license programs, grants for instructional computing enhancements, and a new, state of the art campus email system (see p. 26).

Computing Centers Provide Universal Technology Access

Open Access Labs (OAL) provide computers, printers, and peripherals in six fully staffed centers, six supported locations, and one dedicated printing facility. While classes are in session, most labs operate extended business hours to better serve the needs of students and faculty. Through the labs, students receive secure network and web space, which can be accessed from any OAL computer and from residence halls, apartments, or via the campus wireless network.

The OAL computers, both PCs and Macs, provide access to 84 software applications and 12 browser plug ins. Students can use these applications for their classwork without having to purchase the software, lessening their financial burden. To keep up with the high demand for OAL services, the number of available workstations increased from 1,590 to 1,659.

Future plans for addressing increased OAL usage by the growing student population include:

- » Increasing the hours that labs are open to customers.
- » Taking charge of workstations in library computer labs, providing access to all software applications offered by the OALs.

By the Numbers

- » **49,492** unique OAL customers.
- » **1,882,200** registered OAL logins.
- » Over **18,616,670** black-and-white and **159,450** color pages printed at the OALs.
- » **800,000** pages per month printed on two high-speed printers for campus departments and A&M System members.

“ Help Desk Central...has always made me feel as though my problems were important and [that they] would work on my problem until it was solved. When one is at the end of one’s computer frustration rope, such courtesy is beyond price. ”

Dr. R. J. Q. Adams, Patricia & Bookman Peters Professor of History

Focusing on Help

From everyday items such as resetting a forgotten password, helping to connect a laptop or iPhone to campus wireless, or removing a virus from a computer, to specialized assistance to campus IT professionals, Help Desk Central is the main point of contact for IT support. With eight full time staff and 40 trained student consultants, Help Desk Central fields calls and emails, resolving problems 24 hours a day, 365 days a year.

Help Desk Central recently streamlined operations by consolidating phone/email support with hardware/repair functions into one physical location. Now, all IT help inquiries can be requested through a single phone number and email address, lessening customer confusion or uncertainty.

Help Desk Central improvements in operational efficiency allowed them to handle more calls with a small increase in on-floor student worker hours:

- » **Most problems were quickly answered verbally or by email, and 11,784 calls were entered into the Keystone problem tracker for more in-depth and extensive resolution.**
- » **From fiscal year 2007 to 2008, while on-floor staffing only increased by 3 percent, Keystone workload increased by 42 percent.**

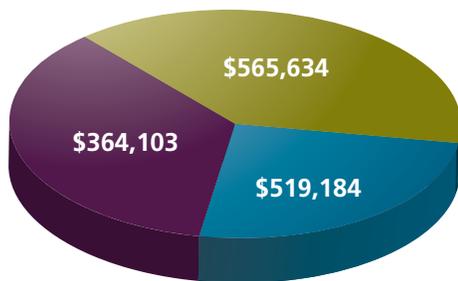
In addition to Help Desk Central, IT support is provided to departments, offices, and colleges for managing office computing resources on a contract basis, and creating and maintaining custom applications and web sites:

- » **17 custom application projects were completed on time and within budget – ranging from developing specialized departmental databases, to redesigning web sites, to directing the initial stages of the campus integrated emergency communications project.**
- » **32 support contracts were ongoing for office computing support and software maintenance.**

By the Numbers

- » **100,791** calls answered.
- » **11,784** Keystone problem tracker slips entered.
- » **25,120** student worker hours worked (average of 69 student worker hours per day).
- » **10,793** walk-up customers served.
- » **2,308** student computers repaired.

» Personal Software Purchases



- **Adobe products¹**
650 Units sold
- **Microsoft Vista Ultimate Upgrade**
2,845 Units sold
- **Microsoft Office products²**
11,960 Units sold

Total Savings: \$1,448,921

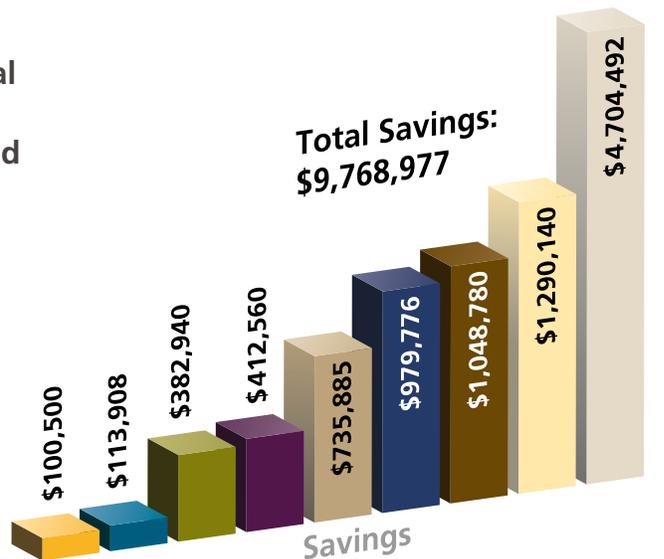
1. Includes Adobe Acrobat, Creative Suite Web Standard, and Creative Suite Design Premium.
2. Includes Office 2008 for Macintosh and Office Enterprise 2007 for Windows.

* Note: Savings were calculated using educational discounted prices, if available, or best prices online from reputable dealers.

Discounted Software Benefits

The Software Evaluation and Licensing Library (SELL) administers licensing agreements with software vendors, allowing faculty, students, staff, and departments to make purchases at greatly reduced prices. This year the SELL added several Adobe products to its listing of discounted software. During fiscal year 2008, departments realized savings of over \$9.7 million through the SELL software licensing agreements. Individual faculty, students, and staff purchased software for personal use and collectively saved over \$1.4 million through the SELL.

Departmental Software Purchases and Savings



- ArcInfo
- Other Software¹
- Matlab - PC
- Maple
- Microsoft Office/Windows
- SAS (annual renewal)
- Labview
- AutoCAD 2009
- SPSS

1. Other software is comprised of:
ArcView: \$61,875
Minitab: \$13,093
Entire Collection: \$1,680

“IT security is up to all of us...By working together, we ensure the security of our personal information, accounts, and computers, as well as campus systems and resources.”

[Texas A&M Information Security Web Site \(security.tamu.edu\)](http://security.tamu.edu)

Protecting and Maintaining Security

Identifying and mitigating ever-evolving risks to computers and systems are critical to the academic and business needs of Texas A&M. Protection of the university's IT environment was strengthened through improved self-assessment tools and updated educational programs for the entire campus community.

The Information Security Awareness, Assessment, and Compliance (ISAAC) system is a tool that Texas A&M departmental IT representatives use to assess the security posture of their systems and measure compliance with both state and local information security standards. The ISAAC system has been so well regarded that it now is being used by other universities and state agencies.

This year, ISAAC was enhanced to ensure compliance with new regulations and to help safeguard university systems from attack:

- » Added a new payment card industry (PCI) module for assessing measures that safeguard credit card transaction information.
- » Improved account management by implementing the Central Authentication System (CAS) for accessing ISAAC and upgraded archiving of previous years' assessments.

Texas A&M's security awareness training follows the philosophy that security is everybody's business. Since no one group can ensure our security, everyone is enlisted to help protect the entire community.

Information security awareness education was strengthened to help familiarize the campus about requirements for responsible computing, increase knowledge of security issues, and teach good security practices:

- » Updated the online Information Security Awareness Training for students. The completely redesigned training site features new student-oriented videos and a module on social networking and privacy issues.
- » Launched a new Information Security web site (<http://security.tamu.edu>), which consolidated information previously dispersed on multiple sites. Information was specifically tailored to fit the needs of three separate campus populations: student, faculty/staff, and IT professionals.

By the Numbers

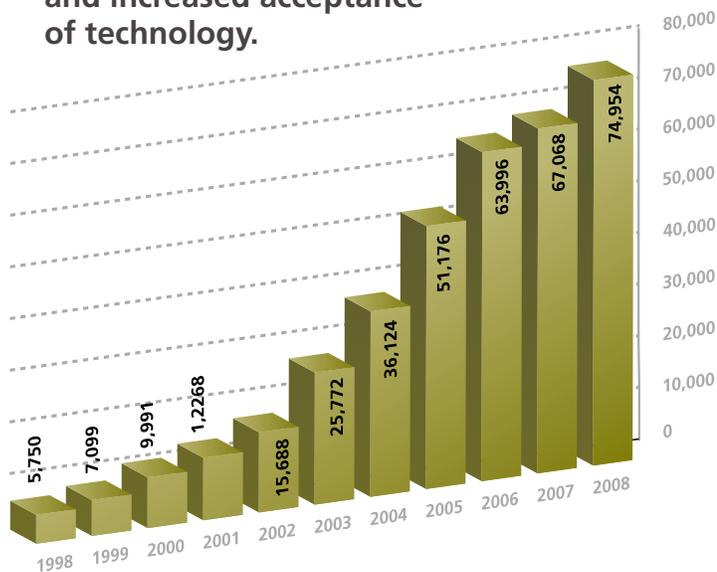
- » Processed **2,776** requests to open or close hosts through the campus firewall. Before opening a firewall port, the customer's computer is scanned to ensure the host is free of vulnerabilities.
- » Installed **11** departmental firewalls, **17** credit card firewalls, **54** NetSQUIDs*, and worked with customers to install **10** more firewalls.
- » Registered **9,451** computers in the residence halls.

* *Network Security Quarantine/ Isolation Device (NetSQUID) refers to devices deployed in residence halls and some departments that automatically isolate virus- or worm-infected machines.*

Enhancing Teaching Excellence

At Texas A&M, both students and instructors have embraced new technology, allowing introduction of innovative ways to enhance learning. Fueled by benefits such as improved instructor/student communication and increased efficiency, use of classroom equipment, eLearning, multimedia tools, and other technologies continues to grow.

» **Classroom equipment use (semester average) grew with more availability of automated classrooms and increased acceptance of technology.**



Classroom IT Support

User-friendly classroom technologies allow instructors to concentrate on teaching, instead of how to operate complex equipment. With automated systems in 120 classrooms, instructors control audio-visual equipment through simple options on the classroom's computer screen. Symposiums enable instructors to use an interactive pen to write on presentations with digital ink, access web sites, and show multimedia files to provide a more interactive classroom experience.

Classroom upgrades and cost efficiency measures were accomplished during fiscal year 2008:

- » Installed automated control systems in five classrooms, including a unique music appreciation classroom with higher quality audio and video equipment.
- » Upgraded two classrooms to high-definition video conference rooms.
- » Advanced certifications for installing and programming automated control systems earned by several instructional media employees. They can now perform work previously outsourced, which saved 10 percent on the cost of installations this year.

Use of classroom technology has rapidly increased during the past 10 years. Future plans address this trend through continued classroom upgrades to automated systems, lessening the need for labor-intensive equipment delivery and setup.

“ *From email to PowerPoint to eLearning, technology is so embedded in the educational landscape that we seemingly can't live without it.* ”

*Dr. Pete Marchbanks, Interim Executive Director
Computing & Information Services*

Teaching with Technology

Through technology, learning goes beyond the confines of a physical classroom. Virtual classrooms allow students and instructors to connect and communicate in new ways and engage in innovative learning experiences. At Texas A&M, eLearning is conducted using the Blackboard Vista enterprise learning management system. This system has become an integral part of an increasing number of on-campus and distance learning courses.

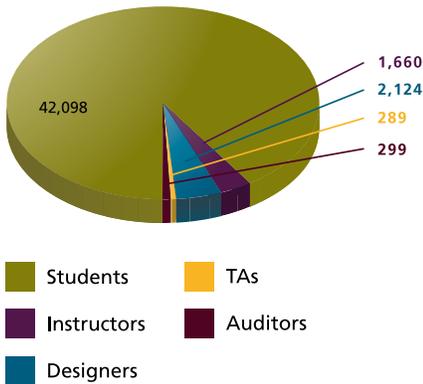
Resources continue to be improved for accessing and using eLearning:

- » Installed a Sun M5000 database server to increase Vista system performance and to implement a disaster recovery plan for improved system reliability and data-loss prevention.
- » Enhanced the disaster recovery process by integrating the Vista production database using Oracle DataGuard.
- » Installed a Coradiant TrueSight 1200 network monitor to identify and resolve web application and network issues, and generate usage reports for future growth planning and analysis.
- » Installed F5 6400 LTM load balancers to improve system performance for web applications.
- » Upgraded the Vista learning management system to Version 8.1 to allow more user flexibility, feature enhancements, and bug fixes.

» Expanding Professional Development Opportunities

The scope and number of online training courses were updated to fit the teaching needs and hectic schedules of educators on campus. The majority of Blackboard Vista workshops are now available online, offering to-the-point training topics that instructors can approach at their own pace. Additional online workshops introduced this fall emphasize best practices in developing courses for today's tech-savvy students. "With our unique focus on emerging and relevant instructional technologies, instructors can learn innovative ways to keep their curricula up to date and enhance their students' learning," says Carol Henrichs, Assistant Director of Instructional Technology Services.

» **Fall 2008 eLearning Usage***

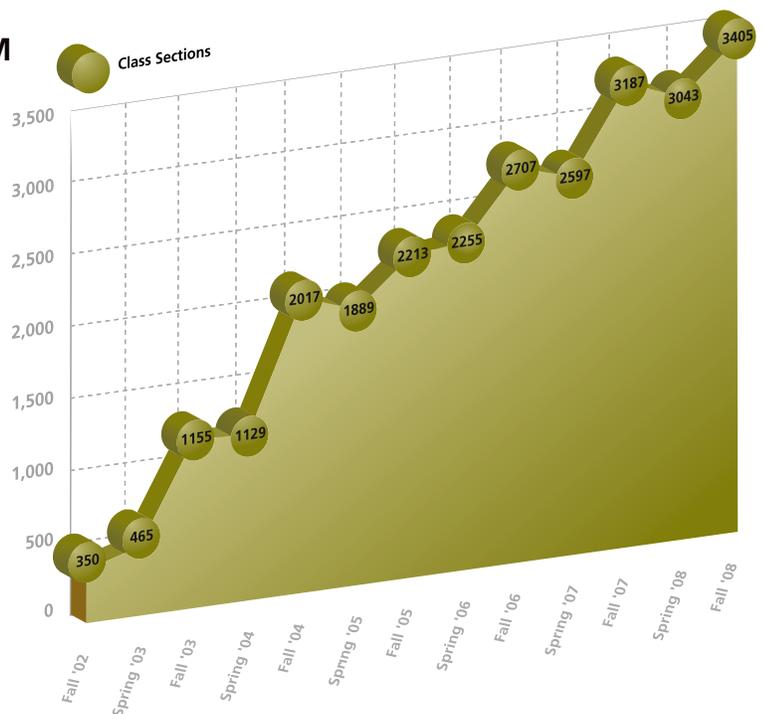


* For unique (non-duplicated) students and instructional users.

Increased resources were provided for enhancing student learning through technology including improved eLearning user tools and more instructor training and support:

- » Enhanced TAMU Section Management Utility (SMU) with new user functionalities. A Health Science Center SMU was also designed and deployed.
- » Expanded the scope and number of online and hybrid instructor training courses, developed new online workshops, and offered more face-to-face course options.
- » Developed and deployed a web-based eLearning orientation module for students. Instructors no longer need to tell students how to use the eLearning system, freeing them to concentrate on teaching their courses.
- » Implemented a web-based registration system for departmental training and events including Vista and Clicker user group meetings.

Texas A&M eLearning Usage



“ We encourage and empower instructors to develop technology enhanced courses. We demonstrate how educators’ initial investment of time and effort ultimately benefits student learning. ”

*Dr. Jim Snell, Director
Instructional Technology Services*

Grant Programs Improve Student Instructional Computing

Grant programs administered by Texas A&M Information Technology are used to fund proposals that positively impact the student instructional computing environment. The Computer Access/Instructional Technology Fees (CA/ITF) Competitive Grant program distributed \$200,000 during fiscal year 2008. Also, \$193,000 was distributed in matching funds for departments and colleges to upgrade classroom technology through the Classroom Instructional Technology Grant program.

Outstanding proposals were funded to enhance teaching technology resources:

- » Expansion of student computer access in Biochemistry, Genetics, and Chemistry teaching laboratories and other departments.
- » Purchase of high-performance workstations for the Visual Studies program.
- » Deployment of Tidebreak TeamSpot instructional collaboration technology at the Bush School.

» High Performance Visual Workstations Benefit Digital Studio Instruction

The strong growth of the Visualization Department’s program has increased demand for a technologically advanced digital studio teaching facility. Funds provided by a CA/ITF grant were used to purchase high-performance workstations that provide the foundation for this facility. The computing configuration is modeled after systems currently being used by leading special effects, game design, and film companies. Graduates of the Visualization program at Texas A&M are successfully employed by animation studios such as Sony Pictures Imageworks, PIXAR, and DreamWorks, and other industries with military, medical, engineering, and architectural applications.

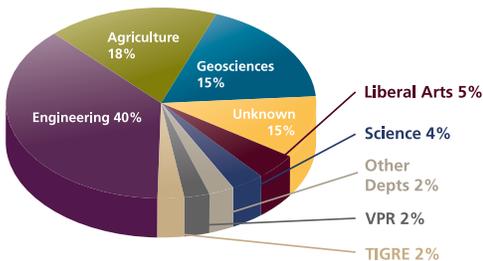
Supercomputing for Research and Discovery

Advanced supercomputers give researchers tools to perform complex computations to solve problems that have tremendous economic and social impact including long range weather forecasting, oil and gas exploration, drug discovery, and molecular modeling.

» Predicting El Niño With Supercomputers

El Niño is one of the most powerful climate fluctuations disrupting global weather, causing drought in some regions, while increasing rainfall to destructive flood levels in other areas. Understanding ocean-atmosphere interactions to improve prediction of climate phenomena, such as El Niño, is the life work of Dr. Ping Chang, Professor of Oceanography and Atmospheric Sciences. "We constantly run parallel climate model codes that numerically simulate large-scale climate phenomena involving ocean-atmosphere interactions... The numerical simulations enhance our understanding of these climate fluctuations and help us to improve the ability to make long-term forecasts to better prepare for their destructive force. My research has benefited greatly from the use of Hydra and the expert assistance given by the analysts of the Supercomputing Facility."

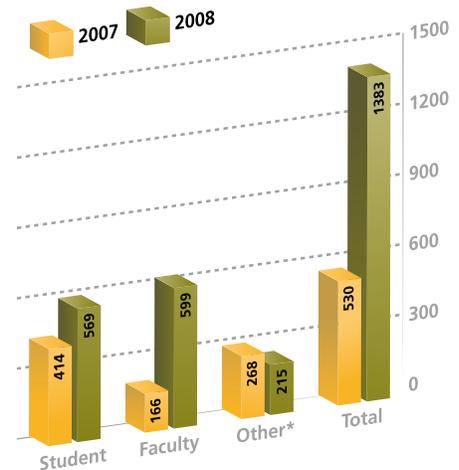
» FY 2008 Help Desk Hours by College



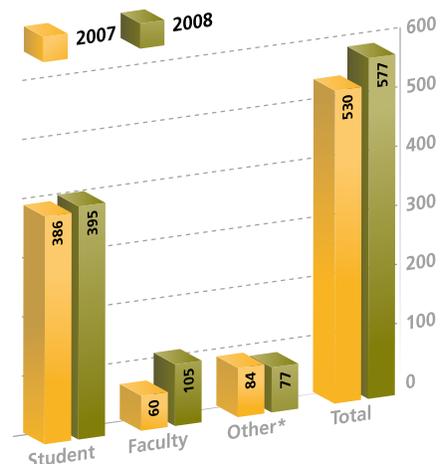
Facilitating Research and Discovery

The Supercomputing Facility supports large-scale scientific computation on campus, which enables outstanding research and discovery across many fields and disciplines. From chemistry, physics, chemical and mechanical engineering, to atmospheric science and oceanography, the facility provides critical support to a wide spectrum of research. More than 30 departments and 577 faculty and students have benefited from its expert analysts and state-of-the-art hardware.

Supercomputing Consulting Hours



Number of Supercomputing Users



* Research associates and scientists, post-doctoral candidates, and visiting scholars.

“ ... Our research in nanotechnology and nanostructured functional materials requires a lot of computing. My group submits dozens of jobs every week to Hydra. We wish there was more capacity to use. All in all, the facility has been invaluable to our work. Its analysts were of great help to us.. ”

**Dr. Tahir Cagin, Professor in Chemical Engineering
Chair, Materials Science & Engineering Program**

Supercomputing Short Courses

The facility offers short courses that address practical issues that typical users confront when using the systems. Topics include introduction to UNIX, code parallelization using MPI, and shared memory parallelization using OpenMP.

Advanced User Consulting

The facility launched a new initiative to provide intensive help for advanced users, which substantially increased use of consulting by faculty. Technical expertise was provided in code porting and parallelization, but also for more mundane projects such as helping conduct classes (engineering) with alternative software that the faculty member preferred because of robustness.

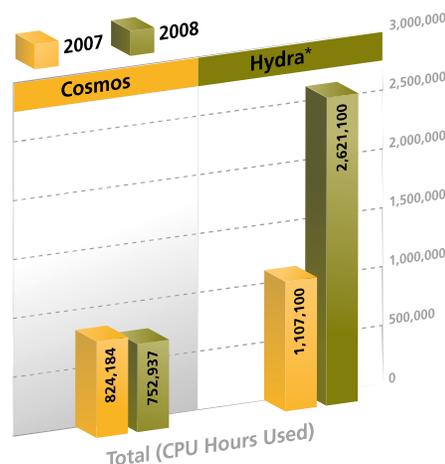
Major projects and activities are planned for fiscal year 2009:

- » New Cluster Acquisition – Plans are in place to drastically expand the facility’s computing capacity through the purchase of a 5,000-core cluster with the help of contributors across different departments.
- » Advanced Topics Workshops – The facility will hold several workshops next year, which will feature industry and academic specialists and cover topics such as MATLAB’s Parallel Tool Box and effective use the engineering package, LS-DYNA.

By the Numbers

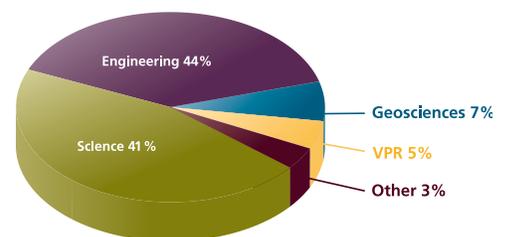
- » **577** individuals from over **30** departments used the Supercomputing Facility.
- » Help and advanced user consulting hours increased **161 percent** from 2007.
- » **53 percent** of assistance time was devoted to advanced users.

Supercomputing Usage



* Use of Hydra began in February 2007

» FY 2008 Total Adjusted CPU Time Used Per College



Improving Essential Services

Reliably and securely connecting our customers to resources, applications, and data requires constant maintenance, vigilance, and renewal of systems, servers, and applications. Through strategic campus-wide initiatives that strengthened and revitalized core services, the university community has benefitted from expanded access to information and new abilities to connect.

By the Numbers

TAMU Email serves:

- » **51,620** students
- » **5,117** faculty
- » **6,310** staff and retirees
- » **2,879** affiliates (Health Science Center, Qatar campus, and others)

Strengthening Communication

Effective communication and collaboration is essential to the success of Texas A&M's mission. Campus deployment of new technologies in email and telecommunications commenced, which leveraged network infrastructure upgrades to install integrated customer oriented services.

Sweeping Changes to Campus Email

A comprehensive overhaul of the campus email system was undertaken and completed this year. The new Texas A&M University Email system provides full featured mail and collaboration tools, and along with major infrastructure upgrades, delivers significantly more responsive and reliable performance. The extensive conversion, which involved moving over 80,000 mailboxes and 22 million messages, occurred smoothly with relatively few problems.

The successful deployment of TAMU Email was recognized with a Campus Technology Innovator award, which acknowledges higher education information technology advances of North American college and university campuses. Texas A&M was one of 14 winners selected from 275 nominations. The university is featured in the August 2008 issue of Campus Technology magazine (<http://campustechnology.com/articles/65883>).

New Online Account Management Tools

The email conversion necessitated changes to account, password, and directory information management applications, which had been integrated into the obsolete email system. Applications were rewritten in a more streamlined manner and now include affiliation based displays and messaging.

New applications provide additional customer-focused services:

- * **Self-Service Password Reset and Question Management applications allow online verification of a user's identity to reset a forgotten NetID password.**
- * **NetID Password Expiration Date tool allows users to look up when their NetID password will expire.**
- » **TAMUDirect provides an easier way for instructors to email class sections, view lists of currently enrolled students in their classes, and send mail to individual student email addresses.**

» What is TAMUDirect?

It is a mailing list system that simplifies sending email to groups of recipients. TAMUDirect pulls addresses from databases each time an email is sent, ensuring that the most up-to-date information is used. Course lists are automatically created for all instructors every semester.

“The entire [Texas A&M] university communications infrastructure had been upgraded to provide constituents a true collaboration system, one that not only would bring the campus up to date, but also would provide tools to respond to future constituent expectations.”

***“2008 Campus Technology Innovators,” Campus Technology, August 2008
www.campustechnology.com***

Telecommunications Updated

Reliable, customer focused, and cost effective telecommunications services are provided to Texas A&M and the A&M System.

Several key projects enhanced telecommunications capabilities during fiscal year 2008:

- » **Upgraded the university’s 800-MHz radios from analog to analog/digital control. These radios are primarily used by the University Police Department, Transportation Services, and the Physical Plant Department, and are critical to emergency response.**
- » **Installed the first 100 percent VoIP deployment at the Association of Former Students. Network and fiber optic single mode overlay plans were established to support future conversion of the campus to VoIP service.**
- » **Integrated Texas A&M International and Tarleton State University into the university’s Telecommunications Pinnacle Telemanagement system.**

» What is VoIP?

Voice-over-Internet protocol or VoIP is a new technology that lets the customer make phone calls over the Internet by converting analog audio signals into digital data. Conversion to VoIP is necessary because legacy phone systems currently being used are no longer manufactured.

Major initiatives for the future include:

- » **Deployment of Emergency Alert System radios in all campus departments as part of Texas A&M’s Code Maroon service by September 2008. These radios will provide additional ability to quickly communicate emergency health and safety information.**
- » **Deployment of a Distributed Antenna System, an innovative wireless technology that will improve cell phone service on campus, by September 2008.**
- » **Continued campus conversion to VoIP in new facilities and buildings undergoing major renovations.**
- » **Conversion to electronic billing for Telecommunications customers to eliminate paper costs.**
- » **Enhancement of after-hours network monitoring for configuration management, fault monitoring, and performance tracking.**

Forging Community Bonds

Enhancing communication is central to building community bonds. Outreach with public television and radio, improved collaboration with campus IT professionals, and sponsorship of conferences and forums allow gathering feedback and gaining insight for planning the next stages of IT improvements.

Public TV and Radio, Aggie Style

KAMU is both a TV station and FM radio station, providing public broadcasting to the Brazos Valley area. It is also involved in the academic mission of Texas A&M, from formal instruction in the broadcast arts to on-the-job training for student announcers, operators, and production assistants at the stations.

KAMU-TV/DT produces local Public Television programming and a wide array of academic, research, event, and outreach videos each year. KAMU-FM HD broadcasts National Public Radio news and features, music, and locally produced programs.

Highlights of fiscal year 2008 include:

» KAMU Local Module Programs

Aggie Band Show
Aggie Sports Connection
Texas A&M Commencements
Texas A&M Convocations

» KAMU Radio Programs

Animal Insights
Computer Tips
Engineering Works
Garden Success
Health Wise
Heritage Highlights

Visit kamu.tamu.edu for a complete program listing.

- » Conducted an informational campaign to KAMU customers about the upcoming conversion to digital TV. The first in the Brazos Valley, KAMU-DT began broadcasting digital services in March 2003.
- » Produced, broadcasted, and live-streamed telecourses, local programming, and Texas A&M ceremonies and community events including Aggie Muster, "Veterans of the Valley," and "Meet the Candidate."
- » Produced and broadcast over 35 hours of local and regional radio programming each week including classical music, local arts events, jazz, homeland security topics, health issues, computing tips, and engineering facts.
- » Produced local module programs in cooperation with campus and A&M System members including Computing & Information Services, College of Veterinary Medicine, Texas A&M Engineering, Integrative Center for Homeland Security, and TAMUS Health Science Center.
- » Served as a production resource for national and world news outlets such as National Public Radio, Public Radio International, American Public Media, British Broadcasting Corporation, Canadian Broadcasting Corporation, Texas State News, and other TV and radio stations around the nation and the world to interview recognized Texas A&M experts on various topics.

“*KAMU is far more than television and radio. We think our business is really about ideas, learning, arts, culture, and citizenship.*”

“About Us” on kamu.tamu.edu

Improving Communication Among the Campus IT Community

The IT Forum was initiated to promote communication and information sharing across the campus IT community by providing news and updates about initiatives and policies; encouraging feedback, comments, and discussion; and supporting responsible practices for all IT services delivered at the university. The IT Forum meets monthly with presentations ranging from important changes occurring to campus services, such as email or wireless, to special guests speaking on IT security, web accessibility, and disaster recovery.

Information Technology Advisory Committee Formed

Campus IT personnel face many challenges in delivering services and supporting their customers. To address these demands, the need to gather perspectives from across the university, share resources, coordinate efforts, and arrive at collective decisions on IT- and security-related issues is vitally important. The Information Technology Advisory Committee was formed to facilitate this collaborative approach and increase communication across the campus IT community. The committee helps identify common IT issues, reviews and evaluates solutions, and provides recommendations to form security policy and operational decisions with the Vice President and Associate Provost for Information Technology.

Conferences, Events, and IT Communication

Sponsorship of conferences and effective communication about campus technology services fostered and strengthened relationships within and outside of the university.

Several conferences were hosted by departments that report to the Vice President and Associate Provost for Information Technology.

- » Instructional Technology Showcase (Fall 2007) – Campus educators presented sessions covering software applications, technology concepts, and innovative methods for enhancing student learning.

» Communication Is Key to Illegal File Sharing Response

To combat theft of intellectual property, the Higher Education Opportunity Act requires institutions to inform students about copyright infringement laws, campus policies, and consequences of illegal downloading and file sharing. Texas A&M Information Technology has developed training programs and awareness campaigns using many communication vehicles including web sites, flyers, posters, and videos.

» New and Updated Informational Web Sites

These web sites effectively and consistently deliver information that people need to understand and use IT services.

- » Office of the Vice President and Associate Provost for Information Technology (<http://vpapit.tamu.edu>)
 - » Educational Broadcast Services (<http://ebs.tamu.edu>)
 - » Enterprise Information Systems (<http://eis.tamu.edu>)
 - » Instructional Media Services (<http://ims.tamu.edu>)
 - » TAMULink campus wireless (<http://tamulink.tamu.edu>)
 - » Information Security (<http://security.tamu.edu>)
- » Teaching with Technology Conference (Spring 2008) – The networking and learning event was attended by educators from across the A&M System.
 - » Supercomputing Facility Users' Meeting (Spring 2008) – “High Performance Computing Day” featured guest speakers from Texas A&M, Rice University, and the University of Texas at Austin.
 - » TTVN Annual Conference (Spring 2008) – This annual meeting was attended by enterprise networking and instructional technology staff from the A&M System and TTVN affiliates.

Publicizing IT services to the campus community was conducted through participation in conferences and orientations, production of videos, and creation of informational web sites:

- » New Student Conferences (Spring and Summer 2007) – The IT Services campaign for New Student Conferences received an ACM Special Interest Group on University and College Computing Services (SIGUCCS) Communication Award of Excellence (<http://cis.tamu.edu/students/nsc>).
- » Howdy Web Portal Launch (Spring 2007) – Videos to support this campaign received SIGUCCS awards (Best of Category and Award of Excellence) for development of useful and appealing materials to enhance IT services (<https://howdy.tamu.edu>).
- » New Faculty Orientation (Summer 2007) – New faculty learned about the wide range of information technology services, resources, and support available to them (<http://vpapit.tamu.edu/nfo>).

“... our classrooms, laboratories, and offices must help us fulfill our teaching and research mission through state of the art technology in an accessible and productive learning environment.”

*Dr. Elsa Murano, President, Texas A&M University
Academic Convocation, 2008*



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Vice President and Associate Provost
for Information Technology

Dr. Pierce Cantrell
Ph. 979.845.2072