

2008 Year in Review
Information Technology Services





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2008 ITS Year in Review



Welcome from the CIO



The recent economic recession is impacting universities throughout the world. The value of endowments, financial aid demand, possibilities of financing, debt loads and budgets have changed significantly over the past year. Consequently, the importance of making prudent decisions on the expansion and support of the university's information technology has never been more evident. During the past two years, Information Technology Services (ITS) has made huge strides toward stabilizing and improving technology at USD. Now, in an effort to help the university contain spending and adjust to new budget constraints, ITS will even more carefully consider the replacement and introduction of new technology. Our decisions will continue to focus on projects that lead to more stability and improved services for faculty, students and staff.

As CIO, one of my fundamental goals has been to stabilize and transform technology at the university. We continue to make progress toward that goal, but there are still some "growing pains" that surface periodically. Based on new information from SunGard, ITS is taking steps to improve the capacity and performance of the Luminis portal during peak registration periods.

This report highlights many of the advancements made during 2008. We are particularly proud of the fact that USD is among the first universities in the country to upgrade to the most advanced version of wireless (WiFi) technology in all academic buildings. The final set of modules associated with the Banner Student System and Luminis portal was implemented. Major improvements were made to the internal network that connects the central university server infrastructure. ITS expanded to 24-hour help desk coverage. WebCT CE8, the university learning management system, continued to see

growth in use by faculty. Academic technology expanded to include a new array of video/audio capture technology and services for faculty. Building on the success of the School of Business Administration Web site redesign, ITS made strides in improving two university Web sites: SOLES and the USD home page. Redesign of the School of Law, School of Peace Studies, and the College of Arts and Sciences Web sites is well underway and expected to be completed in 2009. Faculty continue to have excellent instructional technology support through the "iTeam" composed of four highly skilled instructional technology specialists. Introduction of Google e-mail and applications is underway and we anticipate that all student e-mail will be migrated to Google by Fall 2009.

In 2009 ITS will make our best efforts to continue improvements that make technology consistently stable and of the highest possible quality for the USD community.

Christopher W. Wessells

A handwritten signature in black ink, reading "Christopher W. Wessells". The signature is written in a cursive, flowing style.

Vice Provost and CIO

Operating Expenses

General Budget

ITS operated with a budget of \$13,249,238 during the 2007-2008 fiscal year. Below is a breakdown of the major expenses and projects.

Computer expenses	\$1,477,392 (\$1 million from the work order and \$477,392 from the ITS operating budget)
Software	\$444,080 (includes the library system Millennium upgrade)
Digital signage	\$856,163
Tipping Point equipment	\$80,938
Cisco network equipment upgrade	\$1,062,411
New and replacement classroom equipment/technology	\$367,379
Servers and storage	\$325,307
Internet fees	\$230,320
Enterprise software and applications license renewals	\$836,208
Salaries	\$6,775,094 (includes regular and temporary staff and student help)
Aruba wireless upgrade	\$48,244 (another \$40,447 was expended from the Housing and Computer Support budget)
Television infrastructure upgrades in Residence Halls	\$32,613 (another \$166,455 was expended from the Housing and Computer Support budget)

ITS Expenses 2007-2008 \$13,012,833

Salaries and Benefits	50%
Computers	11%
Software	10%
Network Equipment	8%
Other Operating Expenses	4.5%
Media and Classroom Equipment	3%
E-mail/calendaring	3%
Servers and storage	2.5%
Wireless and Video Equipment	2%
Internet	2%
Student Help	1%
Federal Work Study	1%
Professional Development	1%
Consultants	1%

Banner Student System Budget

ITS was provided just over \$5.7 million to move forward with the Banner Student System and Luminis project in June 2006. In 2008, that amount was augmented by another \$342,150 for a new Enrollment Management/Student Recruitment solution. As of June 30, 2008, ITS has spent a total of \$5,115,798 on the project. The chart below illustrates the breakdown of expenses so far.

Banner and Luminis Expenses

Consulting	35%
Software	24%
Hardware	13%
Salaries and Benefits	22%
Professional Development and Training Costs	6%

New and Enhanced Services

Policy Manual Online

The online USD policy manual went live in June 2008. The new format provides USD employees and students with easy access to individual sections of the manual.

USD's legal policies are maintained by the Office of the General Counsel. Policies must be in a print-ready format for legal purposes. The General Counsel and ITS also wanted to provide them in a more easily viewed Web format. ITS designed a content management system that enables the Office of General Counsel to upload PDF files online. The dynamic listing of policies is viewable by policy number and can be searched using the university's Google Search Appliance.

SOLES Building Technology

From spanning North American borders to crossing oceans and circling the globe, the four Video TeleConferencing (VTC) systems in Mother Rosalie Hill Hall have led the way at USD in the number of conferences and diversity of content. Teleconferences ranged from job interviews for law school students in Hawaii to a three-week course featuring six VTC interactive sessions with Tec de Monterrey in Guadalajara, Mexico, to visiting a Cheetah Reserve in Johannesburg, South Africa, with the Francis Parker School in San Diego. All this activity kept the SOLES staff testing and coordinating equipment, locations and connections daily.

Since August 2008 some 27 programs with nearly 40 hours of original program material developed in SOLES have been prepared and placed on USD's streaming server. Programs include Microfinancing and Wealth Creation, Remarkable Leaders, ELDA Spotlight on Education Series, the Manchester 2008 Graduation, and the ISCAR 2008 Conference.

Library System Improvements

The Copley Library and Legal Research Center (LRC) continue their partnership with ITS to financially support and manage many of the library systems. In addition, Media Services and the art department continue to utilize the library system to reserve and circulate equipment. Recently, SOLES added a satellite office to track equipment and there are plans to expand these library services to other departments.

This is the third year of the libraries' four-year plan to implement new enhancements and expand the library system. This framework will allow the libraries to more fully integrate with vendors and other university initiatives, such as the Banner Student System, Oracle iProcurement and the Luminis portal.

This year marks a major change for the book industry as it moves to 13-digit ISBNs. Both libraries were required to upgrade their electronic ordering and invoicing products to accommodate this change. Currently, the libraries have successfully set up and transmitted data to five different vendors, streamlining the order and payment process.

As part of a solution to give library digital collections greater exposure on the Web, Copley, LRC and ITS agreed to sponsor a partnership with our library vendor to develop the digital archive product Content Pro. Both libraries have a variety of digital collections to create, including audio, video, photographs and other objects. The libraries' Web presence continues to grow with the redesigned San Diego Circuit site. The improved look and feel of the revamped help screens offer a simple and intuitive interface. The USD online catalog, SALLY, is also undergoing a redesign that will incorporate many new features such as RSS feeds. The site will be launched in the coming fiscal year.

Video Teleconferencing

The Ahlers Center for International Business has coordinated a Microfinancing and Wealth Creation course that enables USD students to study microfinance, a practice actualized by Nobel prizewinner Maha Yunis. Patricia Marquez, Ph.D., and Steve Conroy, Ph.D., have designed a collaborative international class

between 11 students at USD and 17 students at the Tecnológico de Monterrey in Guadalajara, Mexico.

The class met for three hours per session with a total of six sessions during the month of August 2008 and connected live via interactive video teleconferencing technology from the USD campus. A WebCT course was also developed in which students and professors in both locations could access materials, e-mail and discuss course content together anytime. Denise Dimon, director of MBA Programs and the Ahlers Center for International Business, organized a four-day trip for the USD students to Guadalajara, Mexico, to see first-hand how microlending is being carried out in Latin America and to visit several organizations engaged in microlending business models and meet with their Mexican classmates face-to-face.

Professor Dimon explains that while such a course does take pre-planning and arranging, the technology is easily accessible for every instructor on campus to use effectively and that students benefit substantially from such international encounters.

StudioAbroad

StudioAbroad is the software behind the new Study Abroad online presence. With StudioAbroad and Banner, students can log in with their MySanDiego username and password and apply for Study Abroad classes online.

The second phase of the integration involves extracting data from StudioAbroad and automatically adding the Study Abroad classes to Banner as well as enabling billing without manual interaction from the Study Abroad, Registrar or Student Accounts offices. In addition, information for non-USD students can be kept in Banner to greatly ease coordination of requests for transcripts and other inquiries.

Expansion of E-Mail System

With the initial offering of Microsoft's Exchange 2007 e-mail system, ITS was able to offer a rich set of features to approximately 500 users. Administrative staff immediately saw the benefits provided such as complex calendaring, increased storage space (1 GB mailboxes) and the ability to easily send and receive e-mails and schedule calendar events from handheld devices.

The system is built for expansion so ITS can now offer Exchange accounts to all full-time faculty. Our Exchange infrastructure was designed with duplicate servers in place so important e-mails and calendar invitations will never be lost and users can expect an uptime of greater than 99.9%.

Backup Storage for Faculty

Due to an increasing demand for centralized digital backup/storage for faculty, ITS has chosen a solution which balances functionality and budget constraints. Twenty terabytes of Western Scientific Storage hardware was purchased and each faculty member will be given 20 GB of personal storage space. The storage can be accessed from multiple platforms—Windows, Mac, Unix/Linux—and its authentication is tightly integrated with USD's active directory, thus providing Windows users with seamless access.



Software of Note

During the 2007-2008 academic year, faculty and students expressed an interest in obtaining licensing for EndNote, a software program which allows users to search bibliographic databases on the Internet, organize references, images, PDFs and files easily and inserts formatted references automatically within Microsoft Word. After ITS research, the provost office generously funded the purchase of a three-year site license covering faculty, staff and students. Faculty and staff can download the software from the ITS software Web site. Students can purchase a copy of EndNote at the bookstore.

CE8 Learning Management System

While WebCT has been the university's learning management system (LMS) since 1998, the CE8 version is now in its second year at USD. During 2008, ITS has seen growth in use of the LMS by faculty to augment their face-to-face and hybrid courses, allowing them to build more robust, content-rich courses using such elements as Wimba Voice Tools, video and podcasts. Many courses are fully developed for effective blended delivery.

CE8 was originally intended for use as an academic class management system. However, in 2008, non-academic use of the system grew. The Innovative Learning Spaces Design (ILSD) Committee is using CE8 as an online meeting space and materials repository. The iTeam's Student Technology Assistant (STA) program is using it as a program management tool. The WASC committee is using CE8 as are several departments as a materials repository for faculty. The Learning and Teaching program in SOLES is using CE8 to manage their faculty search committee.

Usage	Fall 2007	Fall 2008	% Change
Active Users	8,873	8,147	-8%
Active Students	5,527	7,512	36%
Active Instructors/ Designers	547	662	21%
Total Courses	1,998	718	11%
Active Courses	646	718	11%
Total Online Blended Courses	120	128	7%

The chart above illustrates the change in usage in the last year. Decline in active users is due to the removal of duplicate ac-

counts and classes of previous semesters by the Banner system.

An Online Course Guidelines document and an accompanying template will be released soon which sets the bar for CE8 courses through printed and video versions of course guidelines and recommendations, making the introduction of a CE8 course to augment face-to-face teaching even easier.

In addition, the USD Exemplary Course Project is coming in Fall 2009, where students and faculty can nominate effective CE8 courses to be judged and awarded prizes.

Computer Training

Each year the IT Training program presents more than 250 free technology workshops to more than 1,000 faculty, students and staff. Approximately 400 hours of instruction cover a wide variety of professional growth and skill development on university-supported software applications such as Microsoft Office, SPSS, EndNote, Adobe Creative Suite and Web development applications.

The program delivers technology training in face-to-face seminars and hands-on trainings covering specific applications. Staff members provide orientation on a wide spectrum of technology on campus; they also create online presentations, videos and tutorials.

Extensive training on the network-based course management system CE8 and its associated integrated technologies is offered for beginning, intermediate and advanced users. Hardware technologies including the classroom-based Symposiums, document cameras and lab-based flatbed scanners are supported.

Training workshops in the new Microsoft Office 2007 products and introductory computer workshops in Spanish have proven to be popular.

Expansion of Smart Classrooms

Refreshing, remodeling and upgrading classrooms continued for the fifth year during the summer of 2008 with 32 classrooms or learning spaces being completed.

Starting in June 2008, new Symposiums were installed in buildings around campus. Additional upgrading and remodeling with the standard package consisting of console, DVD/VHS combo player, computer/monitor and data projector replacement were completed over the summer in Olin Hall. Digital signage was also installed in the Olin Hall lobby and the One Stop Center lobby in the University Center.

Newly refurbished and remodeled classrooms in Warren Hall were brought online prior to the beginning of the Fall semester. Also newly remodeled and operational were classrooms in Loma, Founders, and Sacred Heart Halls as well as the Sports Center stage.

Document Management/Imaging

With the implementation of the SunGard Banner solution and related products, a suite of integrated administrative applications will replace some of USD's current administrative systems including those used by the admissions, financial aid and registrar offices. One such integrated application, Banner Xtender Solutions, provides a comprehensive document imaging solution fully integrated with the Banner administrative system. BXS was implemented with undergraduate admissions on September 13, 2008, setting the stage for campus-wide implementation.

AppXtender Reports Management helps with the capture of PDF applications sent by online application sources. ITS has successfully used this product to upload financial aid documents to Xtender. The next goal is to use this product to extract transcripts, FERPA and transfer evaluations from the VAX system and upload them automatically to Xtender.

Imaging has arrived at financial aid, law admissions, law records, student accounts and the registrar's office. There are currently 10 scanners in operation on campus and more than 159,400 documents have been scanned. Banner users now have the ability to retrieve relevant documents in the document imaging system by simply pushing a button in the Banner toolbar, thus reducing costs associated with printing, copying and storing paper documents.

New Academic Technology

The selection process for new technology begins with the collection of data, customer requests and research on industry trends. During the evaluation stage, the team looks for technologies which are of proven benefit and how they align with and can assist in achievement of the university's mission and learning objectives.

Technologies that ITS is in the process of implementing include:

- Tidebreak software: Tidebreak enables students to work with their peers on projects or in a classroom collaborating with faculty via a simple interface. ITS installed Tidebreak software in the Serra Hall 155 prototype classroom. Included in Tidebreak is TeamSpot, where team members can work together across common screens and their own laptops, and ClassSpot for faculty to create interactive presentations. Students and faculty can instantly co-create digital content and present materials during class sharing.
- Echo360 Expansion: Echo360 allows professors to capture lectures, complete with presentation slides, for publication to WebCT/Blackboard, iTunes or the streaming server. Piloting results indicate expansion of use is appropriate.
- Social Software and Web 2.0: This is a collection of many different applications such as wikis, blogs and RSS readers. While

many of these can be stand-alone, ITS is also looking at PowerLinks to our CE8 for wikis, podcasting and blogging.

- Online Course Guidelines: The iTeam has developed guidelines to make setting up a CE8 course easier than ever before offering basic guidelines and advanced usage. These are also available in video and print formats. A CE8 template accompanies the basic guide for easy set-up.

Computer Lab Enhancements

The computer labs have seen improvements in equipment and software this past summer. The Serra Hall 156B lab received new Dell computers running Windows XP with Microsoft Office 2003 and 2007. The Serra Hall 156A lab received new iMacs running Leopard and Office 2008 and new iMacs running both Leopard and Windows XP with the latest Microsoft Office 2008 for Macintosh and 2007 for Windows. In the Multimedia Lab (Maher 176), seven 20" iMacs have been added with Final Cut Express for simplified and professional editing. ITS has improved the process for faculty and staff to reserve computer labs for classroom use, meetings or training with the introduction of Resource25.

Virtualization on an ERP Scale

Large enterprise resource planning (ERP) applications such as Banner Student, Self Service, Luminis, Cognos and ODS require computing infrastructure that can support hundreds of simultaneous interactive users. The systems must also provide tools that simplify the routine tasks of systems, application and database management.

ITS purchased two IBM systems at the outset of the Banner implementation in 2006. These systems were based on IBM's LPAR (logical partitioning) technology which allows for the rapid creation of virtual servers from the pool of processors and memory available from the overall server. Experience with these systems demonstrated that this is a highly reliable technology that addresses USD's rapid deployment cycles, business needs and systems management requirements.

Expansion of Help Desk Support to 24/7

The ITS Help Desk has partnered with PerceptiS to provide the USD community with 24/7 technical support. In addition to searching the FAQs, searching the knowledgebase and submitting requests for service online or via e-mail, users can now call the Help Desk at (619) 260-7900 at any time.

Interfaces/Integration for Banner

As the Banner Student System has been implemented, it has been integrated with more than a dozen other systems, both on campus and off. One of the most exciting integrations is the real time connection to CE8. As new students sign up for classes, they are automatically added to classes that are CE8-enabled, and as grades in CE8 are submitted, they synchronize with Banner.

One of the advantages of an ERP system is that, by sharing information across departments, the university can act as a more cohesive unit. An important part of this is interfacing



with systems that are not within Banner. These interfaces assure that, for example, when a student changes their address in Banner, other systems on campus receive this information and the student no longer has to inform each department, one at a time, of their new address. The ability to add interfaces is due in large part to the cooperation ITS receives from the many other departments.

Billing Statement Redesign

The first bills issued from Banner were successfully sent this past summer. While these bills were functional, a cross-departmental team was formed to increase their clarity as well as to examine the various ways students, parents and departments are able to view their student accounts activity. This process is part of the ongoing effort to use IT resources to simplify and enhance student interaction with the university. So far the following changes have been put in place:

- The bill has been redesigned to clearly group and label elements, such as financial aid and loans.
- E-mails are now automatically sent to students when they are eligible for a refund.
- A Deferment Channel has been added which shows the student's current billing status and allows them to request an initial deferment through MySanDiego.
- CASHNet, the bills and the Deferment Channel have all been brought into parity so that information appears the same on all three.

Academic History

A key part of the Banner student project has been the effort to move academic history for all students from the various legacy systems into Banner. To perform this task, data from the separate law and non-law systems were merged and then migrated to the new student system.

Because the schools have different data definitions and value sets, grading schemes and academic processing rules, a temporary system was required to hold both sets of data. ITS also needed to identify and merge records associated with different ID numbers for students who attended USD at multiple levels into a single ID.

From this temporary system, ITS created the migration routines to move this data into the Banner tables. As groups of data for each school were loaded into Banner, the registrar's office

and ITS staffs reviewed, verified and corrected it to ensure that results were consistent with the original student, course, grade and graduation data.

Facts about the data conversion of records since the fall of 1985:

- 98,242 IDs across the legacy systems were merged, resulting in 80,930 individual employee and student records
- 1,271,176 graded course records for more than 55,000 students were loaded
- More than 33,000 graduation records were loaded for students who have received degrees/certificates

The data for the course records included grades, credit hours, titles, instructors and course attributes, term and career GPAs. The law school presented a unique challenge since they had both numeric grades and traditional A-F letter grades. The flexibility of the Banner software allowed ITS to accurately reflect each grade scale and GPA calculation. The result of the migration of these records will enable USD to produce accurate academic transcripts from the new student system for any student who has attended USD since Fall 1985.

ERP Reporting

An important piece of the Banner system includes the rollout of the new information access strategy across campus. Leveraging on the technologies of ODS and Cognos, the reporting team ensured that each functional area, and their respective customers, had the information they needed to operate for this first cycle and lay the groundwork for future information access needs. The Cognos reporting system has been of benefit to several offices including Financial Aid, Student Accounts, and Institutional Research (IR) among others.

Looking ahead to 2009, the reporting team will continue to ensure quality information access to our users and also begin to design and implement the Electronic Data Warehouse, which will provide the next level of information access to the university. This will help USD's functional areas provide better analysis, historical trending, data mining and other resources.

Enrollment Management

In April 2008, USD became one of 11 schools to work with SunGard Higher Education on developing their new Enrollment Management product. As an early adopter, USD will collaborate

with SunGard and other peer institutions on improving the core services available in their new application. In return, USD received a high level of support during the implementation process and continued support over the next few years.

In September 2008, USD was one of three schools live with the Enrollment Management Recruiting and Admissions application. Currently the undergraduate admissions staff uses the product to manage recruits. The recruiting desktop provides a comprehensive view of the student's information on one screen. Also during this month, USD was the first school to go live with the Prospective Student Portal portion of the Enrollment Management application. Prospective students are able to go to the MySanDiego portal and create their own portal accounts. Once in the portal, information can be targeted to prospective students based on characteristics stored in the Banner Student System and Enrollment Management. USD has also been invited to work closely with the future development of the portal component of Enrollment Management.

In October 2008, the Admissions office launched several large e-mail campaigns inviting students to on-campus events, off-campus events and an online chat. Analysis of these campaigns is ongoing.

eBusiness Suite

From the time it was implemented in August 2000, the Oracle E-Business Suite (EBS) has been a critical ERP system used at USD. At present EBS maintains the bulk of our finance systems and is fully interfaced with the Banner system.

Maintaining the ERP system requires mandatory patches and upgrades. Patches can be anything from a small fix to a massive upgrade. In the past eight years, ITS has completed seven full upgrades. This year and next, ITS will complete year-end patches for payroll and complete phase three of a larger upgrade. Future plans include upgrading the database character sets, which will allow the use of multi-language displays.

Collaborative Projects

Banner Student System

The 2007-2008 fiscal year marked a new era of student services at USD with the implementation of a new student information system powered by SunGard's Banner suite.

Admissions went live with the new system in September 2007, processing recruits and applicants considering or enrolling for the Spring 2008 semester. The undergraduate, graduate and law school financial aid offices went live with Banner Financial Aid in February 2008. Students are now able to complete requirements; accept, decrease and reject awards; and communicate with the Financial Aid office via the MySanDiego portal, saving time for students and staff alike. The financial aid offices packaged student awards using Banner, performed loan processing and disbursed more than \$50 million in aid with confidence, knowing that Banner Financial Aid is up-to-date on regulations and requirements. Additionally, the financial aid offices followed Admissions in going paperless by using the Banner Xtender imaging solution.

After a year and half of training, testing, documenting, loading

data, and many more processes, followed by a celebratory mock registration during which hundreds of students tested the new system, online registration went live in April 2008. For the law school, this was the first time students did not have to line up for registration. Within five minutes of the online registration window opening, most of the first group of 300 students had registered.

The Student Accounts module went live in July 2008, and the first set of billing statements with a value of more than \$95 million went out that month. Students were able to pay their bills easily online with the CASHNet payment option that was implemented along with the Banner product suite. This application has also resulted in the improvement of many business processes and has transformed the way USD provides student services.

As part of this implementation, ITS converted more than 20 years of historical student data from the legacy VAX system into Banner, created a single USD ID, made Banner the system of record, and interfaced and integrated with many other systems at USD.

Online Payment Solutions/CASHNet

USD's current online payment solution continues to facilitate general event registrations for departments across campus. After a major upgrade in the CASHNet payment system, departments have an easier method for tracking the financial deposits that are made to their accounts via an online form on their Web site.

ITS is currently researching an enterprise-level event management tool, which will resolve current registration and payment reconciliation issues as well as allow departments to better manage their event registrations and marketing campaign and communication efforts.

Faculty Technology Open House

The second annual Faculty Technology Open House, held in February 2008, was designed to engage faculty in the use of current technologies in a collaborative atmosphere and to celebrate creative and innovative uses of technology at USD. Held in Maher Hall, the fair provided guests with an up-close look at the products and services available to them. They were introduced to the professional faculty support team and exposed to ways in which they can create learning environments that are enhanced with appropriate uses of various technologies.

Guests were invited to explore many products and techniques, ask questions and try things first-hand. In this setting faculty have a chance to experiment with new technologies and see demonstrations by their colleagues. The showcase also highlights exemplary faculty uses of technology in teaching and provides an opportunity to explore instructional technology innovations. STAs were also invited to showcase their project outcomes throughout the afternoon.

Product exhibitors on hand included Apple, HP, Dell, Smart, CPS, Echo360, Microsoft, Wimba and Adobe and provided continuous demonstrations, answered questions and generously donated raffle prizes. Representatives from across campus also demonstrated current and emerging technologies such as Second Life, Federated Searching, WebCT, Banner/Luminis, Visual Communicator, and Streaming Media.

Continuing Education

USD's Division of Continuing Education (CE) offers non-degree fee-based workshops, seminars and certificate programs designed to meet the needs of today's competitive professionals. Since CE processes are quite different from those of the rest of the university, it was decided to address CE as a separate phase after the initial implementation of Banner for law, graduate and undergraduate programs.

Begun in October, the Open Learning registration solution provided in Banner, a flexible, student-centric registration and fee-processing part of the traditional registration process, will be used to support CE offerings. Open Learning is completely date-driven and students can start and finish their courses whenever they choose. The implementation will also include the full Banner product suite of Banner, Luminis, Xtender and ODS/Cognos and will provide the following benefits:

- A single point of data entry; single identity
- Use of less paper, saving filing and storage
- Single personalized point of communication with students
- Better statistical information, enhancing decision making process

Resource25 Implementation Progress

Resource25 (R25) is the university's event and academic scheduling software, providing automated capability to assign rooms to courses for each academic term, a feature which results in optimal classroom utilization. Prior to 2008, the university's special event coordinators adopted this program for scheduling events around campus. During 2008 the effort was to transition all academic schedulers to R25.

ITS, in partnership with Institutional Research and Planning (IRP), also led the effort to integrate R25 with the new Banner Student System. These systems communicate during the development of each academic term's class schedule and classroom assignments. This integration effort was very successful, deployed on time and on budget.

All of the university's academic schedulers were trained to use R25 in concert with Banner to create efficient academic schedules, including automated final exam scheduling. Now all of the university's scheduled events are being managed with R25 and are viewable online via USD's Campus Events Calendar.

ITS helped develop three online calendar views of R25 event information: one with a complete master calendar, one with all public event listings, and one depicting dates to remember, including major campus events, holidays and holy days.

During the latter part of 2008, a newer version of R25 was evaluated. 25Live is the first step to a Web-based service model. ITS hopes to convert fully to 25Live within 12 to 24 months. A special project team from Institutional Research and Planning and Public Affairs is developing a plan to further integrate and streamline campus-wide scheduling.

SOLES Web Site Redesign

ITS successfully launched a new Web site for SOLES in the spring. This project followed the same model as the other

redesign ventures at the university, with outside consultants researching customer needs, restructuring the site's information based on those needs and providing a new design in keeping with USD's branding and marketing efforts. In-house ITS staff received the new design and developed the site internally, including the transfer of site content of more than 500 pages to the new design. This joint approach allows the initial project scope to evolve based on customer feedback while ensuring the actual development of the site is done internally, utilizing technology and coding that can be supported and modified.

Linda Dews, assistant dean at SOLES, states: "The team approach to our Web site redesign process insured our successful launch in May 2008. The ITS team led us through a needs assessment and design process for our Web site when we began with little knowledge of our target audience, our media options and goals for the outcome of the redesign. We have recently completed a six-month review of the Web site, and the data demonstrate we are reaching a broader audience and providing information about our school much more successfully than we have in the past. We are grateful for the ongoing assistance ITS provides us as we continue to enhance our communication with our applicants, current students, alumni, faculty and visitors to our Web site."

Future enhancements to SOLES' online environment include increased communication methods such as e-mail and newsletter marketing, social networking (which includes SOLES-focused Facebook and Flickr areas) and additional multimedia.

Student Services

One Stop Student Center

The One Stop Student Center, located in University Center 126, opened in Summer 2008 under the direction of Steve Schissler. The center's mission is to consolidate the business transactions of financial aid, registrar, and student accounts into one location where students can receive outstanding customer service in all of these areas without having to visit multiple offices.

ITS worked closely with One Stop Center leadership to furnish responsive technology for student needs, largely based on the Banner Student System and Luminis portal. ITS helped install computing kiosks and Sony LCD displays for information and queue listings.

ITS continues to work with the One Stop Center to find technology and online solutions that will improve administrative services for students.

STA Projects

Launched in Spring 2007, the Student Technology Assistance program has seen some exemplary technology-based projects resulting from collaborative student-faculty partnerships. This program is designed to engage faculty in the use and implementation of technology in teaching and curriculum development, both online and in the classroom. Faculty are able to provide richer content that would be difficult to create without the dedicated human resources and skills provided by the students. Another goal is to give those students the opportunity to learn

practical work skills, such as project management, skills in Web publishing, digital media, and various technologies which can enhance their resumes.

Full-time instructors are invited to submit proposals for consideration for a semester-long technology-based project. These proposals are reviewed by an advisory group consisting of faculty, ITS professionals, and administrators who evaluate the submissions and select seven projects each semester. Selection is based on a number of criteria including the anticipated impact of the project on learning and teaching, the innovative implementation of technology in the enhancement of curriculum, the number of students that will benefit from the outcomes of the project, skills that will be acquired by the STA student during the course of his/her work, specific knowledge and creativity the STA student brings to the project, and future benefits that may result from the project.

Selected projects are examined for complexity and technological skills required for the execution of the project are determined. Students are hired, coached and trained by ITS, and receive additional specific technical training as necessary. The student's abilities are evaluated, faculty and students are paired up, specific goals are identified, and timelines are established.

STAs have completed such projects as digitization of 35mm slide collections, scanning of photos and digital enhancement/cataloging of images, searchable image database creation, WebCT CE8 course creation, audio and video capture and editing, Web site development, interactive training simulation development, Flash math tutorial series creation, and 3D modeling and development of gaming simulations for training purposes.

Learning Spaces

For several years, ITS has been exploring innovative learning spaces with an eye toward improving classroom design in ways that facilitate teaching and learning with technology. ITS proposed building a pilot classroom that would create such a space on campus by renovating a classroom where faculty could test innovative technology in a safe environment.

The Serra Hall 155 computer classroom with its inflexible rows of individual tables with attached seats was converted to a collaborative space with round tables and flexible seating in order to enable group work and accommodate 26 students. The outcome is a space rich with technologies intended to serve pedagogy and increase collaboration.

SLP and Auxiliary Services

When the new Student Life Pavilion opens in Fall 2009, the community will find plenty of new technology, both visible and behind the scenes, that will enhance services to students, staff and faculty. Computer gaming systems, electronic menu boards, collaborative computing and technology-rich informal gathering spaces are just some of the innovations that will greet visitors and entice them to spend time there.

Over the past year ITS has been working with Auxiliary Services to plan for these exciting changes, as well as to improve and upgrade many of the existing systems that provide the backbone of dining services, campus card, parking and the

bookstore. Here are just a few of projects that are now underway and planned for the coming months:

- Reissue of all campus cards
- Online meal plan purchases
- Online parking permits for students
- Digital signage
- Computer gaming area
- Upgrade of the bookstore point-of-sale and inventory system
- Assessment of wireless point-of-sale technology for sports and other venues
- Deployment of food-ordering kiosks
- Installation of new barcode systems for retail locations

Better Cell Phone Coverage

In 2002, the university contracted with several cellular companies to place their cell towers on the USD campus. Currently on campus are AT&T, T-Mobile, Sprint/Nextel and Verizon, several of which have more than one tower. Users have seen an improvement with cellular service even in one of the ITS data centers which is located well below ground.

Additionally, Telecommunications has been exploring the need to improve services further in several buildings. Information on cellular service was gathered from a student survey in Fall 2007 followed by a site walkthrough. A solution to enhance coverage has been found and will be promoted for the 2009-2010 fiscal year.

Verizon Wireless is currently piloting an in-building solution for the Jenny Craig Pavilion.

Wellness Point and Click

The Center for Health and Wellness Promotion is upgrading its electronic scheduling and records system with the Point and Click Solutions software package.

This system allows for a seamless data experience from appointment to diagnosis and treatment, without paper or forms. The scheduling of appointments can now be done online, and all examination notes and suggested treatments are documented via electronic workstations and handheld devices. Prescriptions can be sent electronically to pharmacies and lab results imported into the client's medical records almost immediately.

All medical records are held and maintained in the secure ITS datacenter environments. ITS has installed both main and backup servers, allowing for a fully redundant system providing the Center for Health and Wellness Promotion the ability to serve their customers with the reliability and confidentiality necessary for their offices.

Single Sign-on through Portal

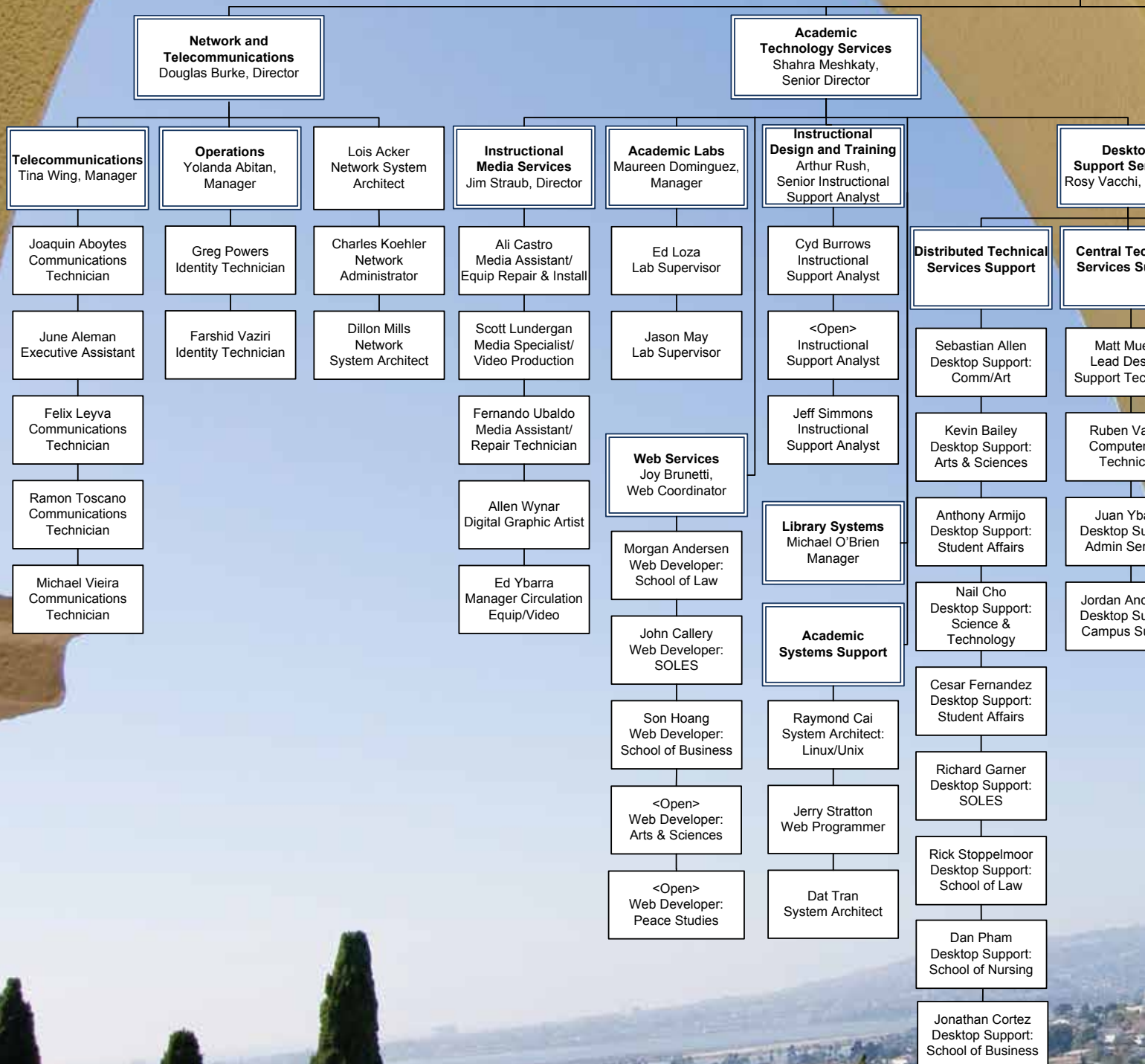
The MySanDiego portal continued to grow in 2008. With the implementation of Banner, a tight integration between Banner and Luminis was added. Students, faculty and staff can now view Luminis Channels containing Banner data without completing an additional sign-on.

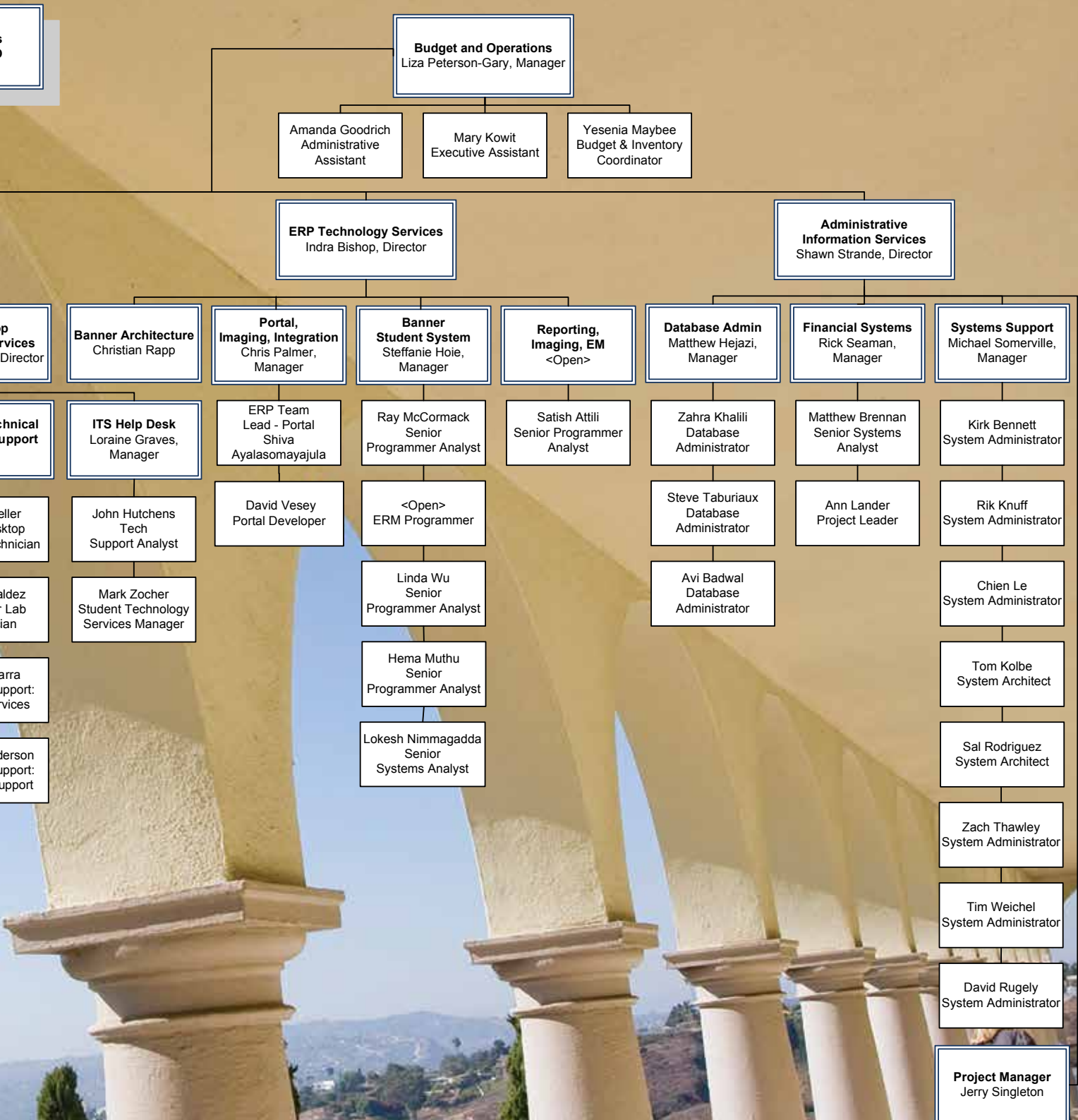
Students are able to register online, view their grades, pay fees and review their financial aid awards via the MySanDiego

Information Technology Services

Organizational Chart

Christopher Wessells
Vice Provost and CIO





portal and Banner. Faculty are able to view class rosters, add grades, check information on their advisees and view enrollment in their courses. Also added was a real-time, standards-based integration between CE8 (formerly WebCT) and Banner. Students and faculty now have seamless access to data stored in both systems and redundant data entry has been eliminated. With this integration, a CE8 section is generated for every course created in Banner. When the registrar creates a new term, sections for every course are added automatically to Banner. The Luminis solution synchronizes the tables in Banner with the course listings in CE8. As courses are added, those sections are automatically created in CE8.

The number of channels continues to grow, providing more online services to the user community. The new deferment channel, where students can submit a deferment request online, and meal plan channels have received great feedback. More personalized tabs have been added to the portal including tabs for undergraduate business students, MBA graduate students, seniors, prospective students, applicants and admitted students, and also for Xtender and Cognos users.

The demand for portal usage continues to grow, with options for parents and alumni and various specialty programs within the university.

NROTC Classroom

This past summer, Network and Telecommunications Services (NETS) and Media Services worked with U.S. Navy contractors to remodel Sacred Heart Hall's NROTC classroom into a cutting-edge, modern digital classroom.

The new setup includes state-of-the-art workstations for each student, all networked together at high speed. The classroom also includes multimedia components such as a high-quality data projector and a "smart" whiteboard.

The classroom greatly enhances the midshipmen's learning experiences by allowing new teaching approaches, such as using U.S. Navy ship simulation software. In the future, the classroom will be connected to similar setups at other universities to allow the educational group simulation software to be run over the network.

Network Improvements

Next Generation Wireless

In Summer 2008 ITS purchased Aruba wireless "N" radio technology which provides greater bandwidth with less interference, resulting in improved performance and reliability throughout the main campus. USD is among the top one percent of universities to have deployed the latest version of wireless network technology in all academic buildings. The first phase of the "N" deployment involves the main campus classrooms and the second phase will be the residence halls.

The USD network team is participating in a collaborative study with Aruba on their Adaptive Radio Management (ARM). ARM ensures appropriate network resources for different applications. ITS is conducting a pilot study in Copley Library and will incorporate Olin Hall for high-density deployment testing.

Telecommunications is currently backfilling the residence halls with additional Aruba access points with the intent of installing all "N" wireless access points in the 2009-2010 academic year. As part of the deployment the number of wireless access points has been more than doubled to improve capacity and throughput.

One unique feature of the Aruba wireless radios is their ability to load-balance users without dropping packets. So as a lecture hall or large tiered classroom fills to capacity, when a radio reaches 15 users, the system migrates users to less saturated radios to increase the signal, thereby improving the client's wireless performance.

Data Center Power and Cooling

Power and cooling are two of the most critical issues for a data center. Even with a trend toward making data centers "green," power, cooling, and the management of those utilities is still key. ITS currently maintains four data centers and monitors the utilities 24/7.

Two of the data centers shared the same power and uninterruptible power supply (UPS) and it was discovered last year that maximum power limits for both rooms had been reached. An engineering company was hired to help plan an upgrade to separate the power sources, install another UPS, transfer switches, transformers and a generator connect box. Also installed were some mobile vents called "Ductsox" to direct cool air exactly where it is needed.

In January 2009, ITS cut over to the new power source, splitting the two rooms and reducing the electric load for both. In turn, the reduced power load and the use of the directed airflow devices will reduce some of the air-conditioning cycles and improve reliability of critical systems.

One of the other smaller data centers will receive an additional air-conditioning system, which will provide a backup to the larger air conditioner. This also was completed during Intersession 2009.

Identity Management (IdM) – Harmony Project

The "Harmony" project is ITS's Identity Management (IdM) effort to provide a highly integrated system of processes, policies and technologies that will allow USD to facilitate and "harmonize" the entire lifecycle of a user's identity. Harmony will provide IdM as an enabling service to other online USD and non-USD services such as Web sites, applications, mail, and collaboration tools in support of emerging technologies. Harmony will allow for centralized management of identities to efficiently create, maintain and remove a community user's access to university resources. Presently the USD system creates a user account but does not manage nor maintain that account and its accesses, resulting in an inability to effectively support the university's current and growing online community.

In 2008 an IdM team was established to begin the administrative and technical research on identity-related issues and, more importantly, to discuss solutions for the university. Many departments met with the IdM team throughout the year to discuss digital identities, access, and authorization issues,



workflow processes, customer service requirements, and existing concerns in an effort to provide a better understanding of identity issues that may arise. As a result of these cooperative efforts, a USD IdM steering committee has been proposed to formalize recommendations designed to address these issues with an all-inclusive, community-wide focus.

It is the goal of the Harmony project to address identity management and access requirements with a reliable and secure enterprise IdM system/service that will satisfy growing community requirements for years to come.

Enhancements to Cabling Infrastructure

Over the past year, Telecommunications has added roughly 100,000 feet of new voice, data and television cabling to the campus infrastructure. The majority of the new cabling was put in place during the three busiest months of the year for Telecommunications—June, July and August—during which roughly 66,000 feet were installed. One of the largest spaces to come online was the One Stop Student Center, providing voice and data cabling for eight counseling stations and data cabling to support an island of self-help stations.

The Campus Card office, which moved from Loma Hall to the University Center, was provided an abundance of voice and data cabling to accommodate the larger number of students needing services. Serra Hall 155 received an extensive upgrade in technology, beginning with replacement of the outdated cabling infrastructure and providing a new data distribution design under a three-inch raised floor, which creates flexibility with the placement of mobile lab stations promoting collaborative possibilities to accommodate instructor teaching styles.

Simultaneously, Telecommunications, along with NETS, installed another 30% of the data cabling to support increased density requirements for the “N” wireless technology. Even though the university is blanketed by wireless, these devices still require cabling back to a wiring closet for network access.

During 2009, Telecommunications will be deeply involved in the new Student Life Pavilion, opening in Fall 2009. Telecommunications will build the communication and data network for all Pavilion operations.

Cox Communications

In May 2008, the university signed a five-year agreement with Cox Communications for voice, video and data services. Over the summer, Telecommunications completed the installation

and Cox is now providing 70 channels to the campus. Cox has provided USD with a backup Internet connection since 2003, which is now bundled with their voice and broadcast television to the campus. Additionally, Student Affairs funded the upgrade of the video cabling infrastructure that will help facilitate the delivery of digital and high definition TV service to the campus.

Network Reliability and Improvements

Over the past several years USD has invested in and implemented major improvements to the campus core and wireless networks, resulting in a much more reliable network. USD's core network reliability is assessed at 99.98% due to regular preventive maintenance on existing equipment and implementation of key features of such equipment to increase network performance and dependability. Preventive maintenance includes software and hardware upgrades coupled with proactive resolution of any technical issues.

Additionally, the core network and many core business applications are monitored 24/7 by a local company. Other systems also protect our network, such as SafeConnect, a Network Access Control (NAC) appliance, which reinforces continual compliance with the USD Responsible Use Policy.

TippingPoint, an Intrusion Prevention System (IPS), analyzes network traffic and preemptively eliminates threats such as viruses, worms and Trojans. When a virus or worm packet is detected, it simply drops the packet. TippingPoint gets weekly updates and requires no human intervention.

During Intersession, the NETS team installed a third TippingPoint device. This device will stop Denial of Service (DDoS) attacks from the Internet, automatically terminating access to the internal campus network whenever an attempted DDoS is detected.

IT Communication, Research and Outreach

Employee Hiring

In the 2007-2008 fiscal year, the ITS department hired seven new employees. Hiring spanned all divisions of the organization and will greatly enhance customer support and services in all areas to the entire university community.

ERP Unit in ITS

With the transition to a modern student system based on technology that requires Oracle database technology and



strong programming talent, ITS has created an internal technical group called Enterprise Resource Planning (ERP) Technology Services.

Student systems are significantly more complex and visible to faculty, students and parents. Therefore, the attention and care needed to keep the Banner environment stable and functioning smoothly requires an IT unit focused on those activities on a daily basis. Director Indra Bishop brings more than 25 years of experience in technical IT work to help lead this new unit. The ERP staff includes highly skilled programmers/developers, analysts, and report/imaging specialists who have a wide range of talent in supporting and improving Banner, Luminis and our imaging tool.

Disaster Recovery Planning and Support

During 2008, ITS supported several university-based emergency response events as part of refining a comprehensive technology disaster preparedness plan. Many federal and state regulations have established best practices for the protection of personal or financial data, which impact both IT planning and the reputation of an organization. Failure of a single core system would have a major negative impact on a university.

ITS undertook some organizational changes to improve management and communications, one of which is more centralized coordination of all emergency planning and disaster response activities. This change also reflects the ITS response plan to support USD Critical Incident and Emergency Response Management planning.

Internally, ITS continues with disaster planning and support in several ways:

- Current effort to establish virtualization of our key servers can provide much improved emergency response capability. Virtualization partitions a physical host server into multiple logical servers, each securely segregated from the others. Virtualization makes it possible to deploy a replacement server on existing hardware, significantly decreasing the cost and time to “bring back” failed servers.
- ITS is developing a methodology of using R25 in support of disaster planning and recovery. R25 can provide significant information and support should one or more buildings on campus become disabled.
- ITS is working to form a reciprocal agreement with a peer institution to share data center space. This agreement would

help USD locate some critical technology (e-mail and Web servers, for example) at another geographic location. Those key systems could be activated in the event of a crisis or catastrophic event at USD.

Web Development Staff

Web staffing in ITS increased during the past fiscal year, thanks to several new shared positions. Now in addition to a Web coordinator and Web programmer, there are three new positions on staff who work part-time in ITS and part-time in an academic area to help support Web site needs and projects across campus. Currently these split Web developer positions serve the schools of Business, Law, and Leadership and Educational Sciences and work closely with ITS to ensure technology on the USD Web site remains centralized and in keeping with our long-term site plans and initiatives.

Two additional shared positions are planned for the coming fiscal year for the School of Peace Studies and the College of Arts and Sciences. Both of these areas are undergoing site redesigns and their new developers will ensure the new sites evolve and improve.

Services provided by the Web team include campus redesign development and coordination, special project assistance, social networking implementation, and general technical advising.

New Faculty Orientation

The New Faculty Orientation took place in August 2008. Twenty-three new faculty members were introduced to the array of software, hardware, systems and services available to them for enhancing their classes. Representatives from the office of the provost and ITS welcomed the new faculty to the university, shared the mission and the vision of ITS, and extended their partnership and commitment to academic excellence.

A highlight of the day included faculty members using interactive, hands-on Guided Discovery Stations (GDS) representing instructional tools, Web services, technical support services, and Banner. The technologies and services were outlined at each station, focusing on how the technology can be of benefit and how it can be acquired or accessed by professors.

Computer Replacement Program

The Computer Replacement Program (CRP) provides computers for tenured or tenure-track faculty and benefits-based employees on a regular cycle. Standard computer options include

both Macintosh and Windows-based laptops and desktops. Configuration upgrades are regularly made to meet changing operational needs.

In August 2008, ITS upgraded the standard Windows desktop to using a 19" monitor and 4 GB of memory. Standard Windows laptops, as well as Apple desktops and laptops, were also upgraded to 4 GB of memory.

ITS began offering Hewlett Packard (HP) computers as an alternative Windows option in late 2008. This will increase the number of choices of standard computers from four to six machines (four Windows and two Macintosh).

During the 2007-2008 fiscal year, 1,052 computers were acquired and delivered to faculty, staff and public workstations, including labs. Included in this figure were 867 (82%) Windows-based systems and 185 (18%) Macintosh systems. Approximately 25% of all computers acquired were laptops. Through the CRP, ITS funded all or part of 816 computers. Approximately 310 computers were funded through individual departments, faculty grants and research grants. These systems are not on the CRP. Regardless of funding, ITS orders, installs and supports all university-owned systems.

The goal of ITS is to replace all leased systems and systems on the CRP every three years.

Engineering Labs

During Summer 2008, the engineering department agreed to pilot HP workstations in their labs. The department had a total of 94 workstations installed and tested the CPU, cache, RAM and video cards after loading the workstations with all of their software. Based on the results of this pilot, ITS now offers an HP desktop and laptop alternative to the Dell in selecting a standard computer.

Bookstore Hardware/Software Technology Sales

As USD students arrive equipped with many different kinds of computers and applications, standardization has become an important agenda for ITS. Increased teamwork between ITS and the computer department of the USD bookstore helps ensure selections of the appropriate hardware and software that will be supported on campus. ITS is responsible for ordering and purchasing computers for faculty, staff and the computer labs. ITS works closely with the computer department of the bookstore to procure Macintosh machines for faculty and staff for business use.

Other activities conducted by ITS involve negotiating software licensing agreements and hardware configurations with Dell, Apple, HP and other vendors. Upon finalizing these agreements, ITS extends the information and pricing contracts to the bookstore. The bookstore in turn carries those particular models and products in store or online for order.

Software agreements such as those with Microsoft, Adobe, ESRI, EndNote or AntiVirus for campus use are researched and negotiated by ITS staff. Students and staff can then purchase campus-negotiated packages at the bookstore at educational prices, which are typically significantly discounted from suggested retail prices.

Other technology tools requiring close coordination have

included the selection of the student response system, the eInstruction Clickers, and the introduction of a service by Computrace, a provider of LoJack, to secure laptop computers from theft. Most recently, upon negotiation with AT&T and Verizon, ITS again collaborated with the bookstore in extending services for the purchase of mobile devices and cell phones.

Desktop Support Statistics

The ITS Help Desk uses FootPrints to track problems and incidents reported by customers online, via e-mail, telephone or in person.

The following statistics come from the data tracked between July 1, 2007, and June 30, 2008:

- 9,349 support tickets were opened for the USD community
 - * 7,670 support tickets were opened for faculty and staff
 - * 1,679 support tickets were opened for students
- 433 software installations were performed
- 457 new computers (not including computer labs) were installed
 - * Approximately 2,056 work hours of computer installations were performed by Desktop Support technicians
- 5 computer labs, totaling 147 computers, were installed
- 96% of customers were satisfied with the service they received from Desktop Support Services
 - * 60% of customers said the service they received exceeded expectations

Future Initiatives

Telephone System Enhancements

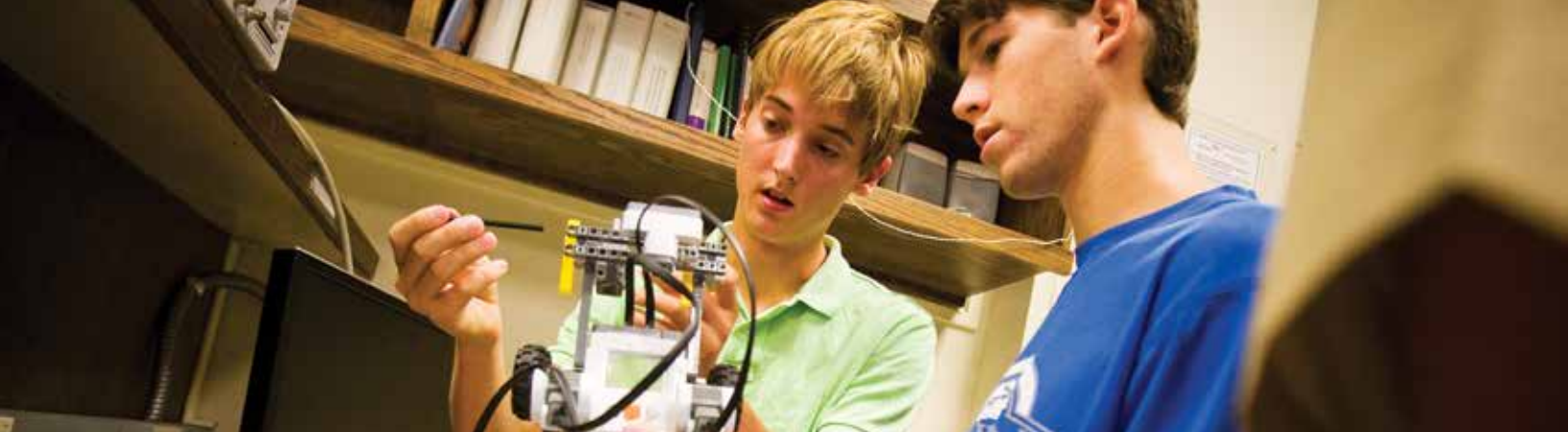
As part of USD's contract with Cox Communications, Telecommunications increased the number of lines to the university. The additional lines will provide increased capability for emergency message broadcasts to the campus phone system. While increasing the number of incoming calls, it also provides more lines dedicated for outgoing 911 calls.

Other enhancements to the telephone system include Automatic Call Distribution (ACD). ACD improves call routing in several departments such as Financial Aid, the One Stop Student Center, Student Financial Services and the Help Desk. Menus direct the call to the correct person and provide for more efficient call distribution, streamlining wait times for available personnel. Later this year ITS will be purchasing the ACD call reporting tool, which will further improve service by categorizing and logging hold times, call drops, call durations, abandoned calls, number of rings and other information.

Personal Web Site Development

ITS recognizes the critical role that Web sites and blogs play in academia. In Fall 2008, ITS tested a new software platform which will facilitate the creation and maintenance of personal Web sites at the university.

USD Sites is based on the popular blogging platform WordPress, but can accommodate tens of thousands of users. The system will empower faculty and staff to create rich Web sites,



while at the same time reducing or eliminating the Web's barriers-to-entry. It will allow faculty and staff to create fully featured Web sites and/or blogs with little or no HTML experience, no software to purchase, and with many open-source add-on features.

Templates will be available for use on USD Sites, which will give users a total of four designs. Some of the most prominent features of the Sites system include media and podcast tie-ins, Web site analytics, event calendars, and an archive of pages for historical reference.

By breaking down (or eliminating) the barriers to entry in developing faculty/staff Web sites, ITS hopes to change the way faculty and staff are able to communicate with multiple audiences, while at the same time contributing valuable content to the academic community.

iPhone Apps

Stanford University opened up its systems to allow students to develop applications that integrate basic student data with the Apple iPhone and iPod Touch. The results brought course registration, bills, the campus map, the campus directory and sports scores and schedules to Stanford iPhone owners, through a project managed by Registrar Thomas Black. The Stanford students have formed a corporation, TerriblyClever.com, that is now working with Duke University on similar mobility applications that are useful to students.

Inspired by the Stanford iPhone project, ITS is working with USD's Mathematics and Computer Science department to see whether iPhone integration with USD's systems can be developed through independent study by students in Computer Science. In addition, ITS is exploring opportunities with TerriblyClever to adapt mobility applications to the backend student systems that are unique to USD.

The project, still in its infancy, will require sharing data across applications and departments at the university, working closely with student developers, and listening to the needs of students, faculty and employees. But with a full browser, GPS, camera and computer in our pockets, the possibilities are inviting.

Future Online Event Management Services

Each year USD provides support for thousands of events for both USD organizations and external organizations. Many of these events are highly publicized and attended by hundreds of people.

Numerous USD organizations arrange these meetings, conferences and seminars. Many generate revenue and demand close management from initial customer contact through the final close-out actions following the event. These organizations have used a variety of software systems to carry out the event marketing, management, event delivery and fiscal control requirements.

In the past, ITS support of online registration required creating a unique, tailored online registration site for every event, created by staff with specific knowledge. These online registration pages could not be created by event managers, but required staff with specific Web-based programming skills.

In 2008, ITS initiated a dialogue with event managers across campus in an attempt to define common event management requirements. If common requirements could be found, a common software or services solution might be feasible, effective and economical. ITS is currently researching vendor options for university needs.

Outsourced Student E-Mail

The university maintains more than 17,000 e-mail addresses for students, faculty, staff, administrators, board members and executives. Each year ITS receives millions of e-mails and calendar invitations. Storing this data and making it highly available in an enterprise of this size is best handled by enterprise e-mail leaders at Google.

Migrating student e-mail services to Google will allow USD to provide 13,000 student e-mail accounts with a 7 GB mailbox, and will save USD the costs of the storage, licensing and hardware maintenance.

In addition to providing a USD-branded Gmail experience, students will benefit from the more robust Google Calendar as well as Google Talk.

The savings for USD will be substantial and the expansion in quality and number of services to the students will be even greater.

Torero Card

In Fall 2008, ITS began working with Auxiliary Services to issue new USD ID cards to all students, staff and faculty. The primary impetus for the project was completion of the Banner student implementation which required that all students, staff and faculty have a single, nine-digit Banner ID. Historically, seven-digit, unique ID numbers have been issued, with additional

IDs issued whenever a person changed status. Coincidentally, in Summer 2008, USD entered into a partnership with U.S. Bank that provided an opportunity to use ID cards as ATM cards if they were coded appropriately.

With a deployed card base of more than 10,000 constituents, and hundreds of card devices across campus, re-carding was a monumental task that required careful planning and coordination with nearly every department including Residential Life, Public Safety, the One Stop Center, Marketing and Strategic Partnerships, and many others. The re-carding effort has achieved several important outcomes:

- Review and update of standard operating procedures for the card office, as well as the maintenance and support for physical card readers
- Consolidation of identities for people with multiple IDs
- Review and update of various operating procedures for card-based security and access controls
- Replacement of the PVC card stock with sturdier and longer-lasting composite technology
- New levels of convenience for students who want to do their banking with U.S. Bank
- New Torero Card branding and design (through the leadership of USD's office of Marketing and Strategic Partnerships).

The new Torero Cards were distributed in January 2009 and activated in early February.

In-Progress/Future Web Redesigns

Web redesigns recently underway in ITS include projects for the schools of Law, Peace Studies and the College of Arts and Sciences. Law and Peace Studies both went live in early 2009, while the College and its 35 departmental sites will all assume a new design and enhanced functionality in the spring.

In the near future, USD will begin a more comprehensive redesign of the USD Web site. The focus of this redesign will include a dynamic online environment for Admissions and for Student Affairs. Today's prospective students, current students, parents and visitors expect an engaging and interactive online community. Along with providing a fresh new design, the redesign will allow the site's navigation menus and top-level pages to be restructured, providing all constituents with a more accessible and readily available manner of accessing information.

R25 Custom Application for Emergency Response

Throughout the past year, USD has continued its incident and emergency response planning and training, during which it became clear that there was need to reschedule an entire academic term's classes quickly and accurately should one of USD's academic buildings "go offline" for some reason.

Typically, a single USD academic term consists of more than 1,400 classes, all of which are scheduled and assigned rooms in R25. Once the classrooms are assigned, the information is transferred to the Banner Student System for student registration. As the term starts and room changes are made, those changes are passed automatically between Banner and R25.

One of the 2008 USD emergency response training sessions involved a hypothetical scenario in which three academic buildings were taken offline due to limited fire and smoke damage. In this exercise, using actual course offerings for Fall 2008, 251 classes were affected and needed to be moved to other rooms within 24 hours.

ITS and selected academic schedulers were successful in using R25 in re-assigning all the classes within the required time-frame. During this exercise, it became apparent that the rescheduling process could be significantly increased with a tailored application to support this effort, which is now underway. The initial phase of this effort was completed prior to January 2009.

Advance BSR Web

For the past five years, University Relations (UR) has used the SunGard Advance application for core fundraising, constituent relationship management and event management. Until recently, the application did not provide a full-featured Web interface allowing development officers to carry out their work while in the field.

In Fall 2008, the UR information systems staff approached ITS to install a newly released Web version of the Advance application so that an evaluation could begin. This evaluation is designed to review and test core functionality, determine systems integration requirements, review current policies and procedures and evaluate existing reports with an eye toward redesign.

Podcasting in the Classroom

In September 2008, the USD podcast server went live. A podcast is a collection of media files (usually audio, video or PDF) listed in an RSS feed. USD's podcast server lets users upload media files and automatically lists them in an RSS feed. This RSS feed can be advertised on Web sites for people to use in Web browsers or in programs that understand RSS feeds such as iTunes.

The user's RSS reader will automatically notify them when there are new files available to download. Some will also automatically download the files as soon as they are available. The user can then access these media files from anywhere, even if they are not connected to the Internet.

While media recording was once the province of specialized hardware and software, today most current computers already have everything needed for recording audio and video. If lecture-recording is needed, many classrooms are already equipped with microphones to record lectures as they are given.

ITS has developed an easy-to-use application for the Macintosh called Castaway that helps capture lectures directly from a streaming microphone to a computer's hard drive. ITS will be providing software for Windows as well, and in the future, enabling video podcasts from classrooms.

Cell Phone Technology

New cell phone service and hardware contracts from AT&T are available to all university students, faculty and staff. A special 15% AT&T monthly service discount is available to all USD faculty and staff.

The Apple iPhone and other touch-based smart phones are becoming important tools for academia. The mobility of students and their propensity for nomadic learning is beginning to include the handheld smart phone as a device that supplements the utility offered by laptop computers. As new academic smart phone applications emerge from universities and from firms like TerriblyClever.com, we anticipate the likely shift from laptop computing to handheld smart phone computing. ITS has initiated discussions with software development firms that can assist in the development of applications of use to students and faculty.

Digital Signage

Digital signage provides an innovative way for colleges and departments across campus to provide up-to-the-minute information using the Web, streaming video, presentations, and/or live television on the same screen.

ITS has selected a single system for digital signage from Cisco Systems, Inc. Cisco's Digital Signage is a comprehensive solution for flexible and centralized management and publishing of digital media to networked, on-campus digital signage displays.

Departments or colleges wanting to purchase televisions for conference rooms, lounges, digital signage or any other purpose should be aware that Sony televisions are now the campus standard. ITS evaluated the Sony product line and found it meets the requirements of our new digital signage system. Standardizing should help "future-proof" television purchases by selecting a single manufacturer's product line.

Enhanced Language Lab

ITS has witnessed a dramatic increase in the use of technology by the department of Languages and Literatures during the past year. Requests for customized workshops in CE8 or use of Wimba have escalated considerably.

Collaboration and coordination between the two departments led to creation of a virtual "LL Faculty Office" on CE8. This virtual space serves as a portal for faculty to combine resources and access them by language, level, type of activity, grammar or culture.

The new portal encouraged faculty to visit ITS frequently seeking to enhance their curriculum using the support available to them. Now ITS hopes to be able to augment language learning at USD with the long-awaited language lab.

A flexible system is proposed, where students can listen to or watch a DVD, complete a self-study lesson or work through tutorials before or after a class. This lab will contain 24 networked stations with an instructor console equipped with earphones and microphones, full AV systems, a printer, DVD player (zone-free for foreign DVDs), loaded with language software (including dictionaries). The room is to be partially sound-isolated for individuals or pairs to work, rehearse and do oral drills in dedicated corners of the language lab. Using Wimba, students can record their voices, conduct interviews in the language of their choice, and review their presentation, pronunciation and grammar use as they complete their assignment or homework.

With pervasive audio and video media as part of language textbooks, students often prefer to do their homework in dedicated study areas where there are robust computers with adequate software, high-speed internet and support staff. In a language lab, students will find access to a wealth of practice material in various media that is not available for their use at home. Phonetics and linguistics classes can also be taught more effectively with immediate feedback provided to individuals or to the whole class while doing drills with the professor is an invaluable component of the proposed lab.

VMware

Virtualization of servers allows for multiple operating systems and therefore multiple applications to run on hardware that was originally designed for only one operating system and one application. The market leader in virtualization of Windows and Linux servers is VMware. With dozens of Windows servers successfully virtualized and now providing production-levels of service, ITS is continually expanding the VMware infrastructure on the new HP foundation.

Many of the current physical Windows and Linux servers using less than 50% of their resources will be migrated to VMware at the same time that older hardware is retired.

Almost all new production Windows servers will be installed in a virtual machine. ITS estimates that as many as 20 virtual servers can be installed on one physical server. VMware's advances in providing high availability and disaster recovery will not only allow USD to save money by buying less physical hardware but also decrease power and cooling costs necessary to maintain the data centers.

Once the VMware expansion is complete, ITS is looking forward to decreasing administrative technical overhead for servers, providing an increased level of service and reliability while at the same time saving administrative time, money and energy.

Links and Resources

Academic Technology Services	www.sandiego.edu/ats
AT&T Premier Service	www.att.com/wireless/sandiego
Computer Lab Reservations	www.sandiego.edu/its/labs/labrequest.php
Scheduling Calendar	www.sandiego.edu/usdcal
Help Desk Online	www.sandiego.edu/tsconline
Instructional Design and Training	www.sandiego.edu/idt
Instructional Media Services	www.sandiego.edu/ims
iPhone DevCenter	http://developer.apple.com/iphone
Podcasts	www.sandiego.edu/webdev/podcasting
Software	www.sandiego.edu/its/software
Stanford iApps	www.stanford.terriblyclever.com
Streaming Server	streamer.sandiego.edu
StudioAbroad	http://gointernational.sandiego.edu
USD Policy Manual	www.sandiego.edu/legal/policies
Web Services	www.sandiego.edu/web
Student iPhone applications	http://www.sandiego.edu/its/iphone





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