Division of Information Technology
2006-2007 Annual Report

Introduction

In a time of opportunity and challenge, the Division of Information Technology continued to effectively support the research, instructional, and outreach needs of the University of Wisconsin-Madison community. The 2006-07 academic year brought continued rapid change in technology, growing expectations for new and enhanced services, and constrained budgets. Thanks to the skill and effort of its staff and campus partners, DoIT was able to pursue and complete new initiatives while maintaining essential services.

DoIT's staff numbers about 500 full-time and 200 project and student employees. DoIT was affected by staff turnover in 2006-07, with 20 employees retiring and another 26 leaving for other opportunities. Campus CIO and DoIT Director Annie Stunden retired in summer 2006 and was replaced on an interim basis by Ken Frazier, Director of UW Libraries. The process of hiring a new CIO continued into mid-2007. Turnover extended to the ranks of mid-management as three group managers left, one retired and two took promotions and changed jobs. These openings provide advancement opportunities for current DoIT staff. DoIT also extended its commitment to professional development for its cadre of staff, managers and directors and made professional development opportunities available to much of the organization's leadership.

DoIT faced the same budget challenges that were common to other State agencies in 2006-07. As part of a $16 million reduction to campus divisions, DoIT's budget for 2006-07 was cut by $1 million, or X.X% of its total GPR funding.

A key criterion in making cuts was to minimize the effect on IT services and the impact

of the IT cuts on the campus. DoIT cut some services, postponed work on projects already planned, and reduced internal expenses. While these changes posed a significant challenge to providing quality service, DoIT was able to maximize the productivity of its staff, reduce costs, and forge useful campus partnerships. We completed many projects and enabled the University to maintain its leadership role.

This Annual Report discusses DoIT's major accomplishments in 2006-2007 and its efforts to support University functions. It also lays out the technology goals and initiatives that DoIT expects to pursue in 2007-08.

Section 1: Accomplishments

The Network

The campus network, a key component of the technology infrastructure for UW-Madison, is used to support teaching, learning, research and administration. It connects the campus community; extends support for Learn@UW and administrative computing applications to other universities in the UW System; and enables the UW research community to partner with colleagues around the world.

Campus Wireless Service

The authenticated campus wireless network is now 90% complete and includes more than 160 buildings.

Firewalls

In the last year, 34 departments joined DoIT's centralized firewall service and more will choose to participate in the months ahead. For host machines, DoIT began recommending the campus use either Windows XP or Mac OS X built-in firewalls or the firewall included in the Security Starter Software distributed free by DoIT. A key feature of this product is that it can be either a stand-alone client on the desktop or part of a centrally managed system in which an administrator controls client settings. About 71% of UW-Madison students say they have installed a firewall on their computer. These projects are building blocks to enhance the security of our network and the resources the network provides.

Local: 21st Century Network Upgrade

A major milestone in the deployment of the 21st Century Network was completed in summer 2006 — new gear was installed in all buildings with adequate infrastructure. Begun in 2002, the 21st Century Network project has been an intensive effort carried out in partnership with academic departments and administrative divisions, most notably Facilities, Planning and Management. The 21st Century Network project continues, as buildings that could not previously accommodate the new technology are upgraded and other buildings are erected. DoIT has successfully negotiated with all but a handful of work groups to adopt the collaborative model for network management.

Beyond Madison and Wisconsin

Access to dedicated research networks has become increasingly important to researchers and is a key resource for maintaining the competitiveness of the UW research community. WiscWaves, UW-Madison's high-speed optical network connection to Chicago, provides researchers with 10GB dedicated research networks, or lambdas. This year, DoIT continued to work with UW-Madison's Department of Physics to deploy a dedicated lambda to the Large Hadron Collider project, located at CERN, near Geneva, Switzerland.

WiscWaves has become a touchstone in the establishment of the Broadband Optical Research Education And Science network (BOREAS). This Regional Optical Network (RON) is a partnership of UW-Madison, the University of Minnesota, the University of Iowa and Iowa State University. BOREAS connects to the CIC OmniPoP in Chicago, a gateway to such research networks as Internet2, National Lambda Rail (NLR), ESNet and other global research networks.

UW-Madison has played a major role in bringing both BOREAS and OmniPoP to reality by providing project management, engineering and administrative support. BOREAS will not only support the founding partners, but will also extend capabilities to the higher education communities in our states. BOREAS is a key component in making possible the Northern Tier Network, a regional network alliance that is building a national backbone route across the northern U.S. border west of Lake Michigan.

Engineering and Operations

A key concern of DoIT leadership has been the ability to provide business continuity in the event of the failure of computer capability caused by internal or external events. During the year we have had several incidents bring our systems due to electrical or HVAC failures. Most recently (in July), systems were endangered because of a flash flood. DoIT has been working to develop a back-up site in WARF (Wisconsin Alumni Research Foundation). This past year we re-engineered the HVAC, electrical and network infrastructure at the site and we have successfully configured some of our core infrastructure services to operate from both data centers. All of our critical data is now both mirrored and backed up at both sites. We are in the process of designing such redundant solutions for our critical central application services such as directory services, WiscMail, My UW portal, and Bucky Backup. However, a substantial investment will be required to make this redundancy possible for all of the core services that DoIT provides. We also plan to partner with other UW institutions to see if we could provide redundant sites around the state for UW system services. This initiative is highly dependent on high-speed networking being available between UW institutions. Thus the new BadgerNet upgrade is critical to the entire UW technology infrastructure.

Server Consolidation

In the last year we have made significant progress in server consolidation and virtualization. Good examples are our VMWare project that has consolidated 70 servers across both Windows and Linux virtualized environments to provide substantial savings in electrical consumption, cooling and network infrastructure costs. We have also been successful in consolidating Oracle environments on a few AIX machines with substantial infrastructure savings. This coupled with our expanded use of workload management technology and partitioning technology in the AIX server area has allowed us to reduce the number of AIX machines from 80 a few years ago to about 23. This initiative supports the UW conservation effort – “We Conserve” (www.conserve.wisc.edu). However, because these energy savings are not realized directly by individual projects,

but the university as a whole, this effort is not as robust as it could be. With a clearer mandate for conservation, DoIT could further consolidate and virtualize its server environment.

Disk Storage Enhancements

Over the past year DoIT has made substantial strides in moving toward “Information Lifecycle Management” by introducing several tiers of storage from which customers may choose. In general the lower the tier the more expensive the storage, but that expense comes with increased redundancy, speed and reliability. These tiers are:

- Tier 1 – Highly redundant and very fast storage for mission-critical applications.
- Tier 2 – Very reliable but not as redundant nor as fast as the Tier 1 solution.
- Tier 3 – A “lower end” solution applicable for low Input /Output applications. We also utilize this type of storage for quick access to files most recently backed up by Bucky Backup.
- Tier 4 – tape – data archiving. Retrieving data from Tier 4 is a rather slow process but the storage is very inexpensive compared to the other tiers and is thus best suited for seldom-accessed archival data.

In the next year DoIT will strive to move data more seamlessly between these tiers to provide the best value to the institution.

Database Environments

DoIT's Oracle database hosting service (the "Oracle Farm") continued to grow. This service provides a shared, secure, reliable, and high-performance database-hosting environment for many centrally hosted applications. It is a fine example of the combination of sophisticated database technology with server consolidation technology to achieve significant cost efficiencies. It now hosts more than 40 Oracle databases on two physical machines.

This year DoIT continued to take advantage of current database technologies such as innovative new Oracle features for database security, resource management, and enterprise-wide management of database systems. This year also saw the implementation and use of technology to identify “weak” (i.e., easily crackable) passwords in Oracle databases, and a significantly expanded use of Microsoft SQL Server in support of the UW system-wide Learn@UW learning management system.

Printing Services

DoIT’s Digital Publishing and Printing Services (DP&PS) continued to expand its capabilities in 2006-07. At the same time, DP&PS reduced staff costs and consolidated its roster of equipment to rely on fewer, more cost-effective and technically capable electronic printers, both color and black and white. This year, DP&PS replaced all of its color and black-and-white electronic printers with new state-of-the-art production equipment that offers greatly increased capabilities.

Another noteworthy initiative of DP&PS is Badger Accessibility Services (BAS), a Web-based accessibility resource center that provides services for locating and creating accessible audio and text documents for any learning institution nationwide. BAS now serves more than 75 different learning institutions in addition to UW-Madison, up from 56 a year ago. DP&PS also introduced its Course Packet service in conjunction with DoIT Tech Store. Sales of large-format posters grew by 25%. The internal production and sales of digital color printing grew by 35% in 2006-07.

Security

IT environments are vulnerable to attack, mishap, and deliberate or incidental abuse. After computer attacks or inadvertent release of data, many of UW-Madison's peer universities have garnered national attention. Such incidents could affect the University's systems and data, and the Office of Campus Information Security (OCIS) is committed to reducing our risk and mitigating our vulnerabilities.

OCIS and DoIT Communications developed and implemented a campuswide security campaign to bring more awareness of security concerns to our community and to provide information about "safe computing." As a result of the campaign, more than 10,000 Security Starter CDs were distributed, and almost 11,000 downloads of the CD and various versions of the Symantec Antivirus software were delivered last year. These provided security information and antivirus, firewall and spyware tools to improve individual computing security practices.

In 2006-07, OCIS completed:

- a risk assessment of Shared Financial Services (SFS) based on PCI-DSS
- UW-System IAA Auth Hub Risk Assessment based on Credential Assessment Framework / NIST 800-63 LOA Standards
- strategic planning for documenting and complying with a security program
- development of a Risk Assessment methodology
- development of a Restricted Data Security Standard based on PCI-DSS and NIST 800-53 Standards.

OCIS worked with DoIT's Professional Technical Education group to develop online training modules to increase basic security awareness among DoIT staff. Several groups outside of DoIT have expressed interest in adapting this training to their specific needs, and OCIS will explore this in the upcoming year.

OCIS processed 2,380 authorization and account maintenance requests for ERP systems such as 3270 mainframe and the Integrated Student Information System (ISIS). We have improved the process of managing forms and strive for a two-day turnaround. We are also increasing the scope of what is handled and working to streamline the mainframe audit process and manage our signers list (dean/dir list). Perhaps even more important,

the Identity and Access Management (IAM) RFP document was recently completed. The IAM system will allow us to automate our existing paper processes for authorizations.

OCIS response staff processed 3,550 communications sent to *abuse@wisc.edu* in FY07. These included informational reports and items that required direct action by response staff, such as 313 reports of infected campus machines and 1,152 reported cases of infringement. Response staff also processed 196 requests for server certificates commonly used by campus Web servers.

OCIS response staff also:

- assisted with a variety of proactive security measures including offering a central network vulnerability scanning service and a Web vulnerability scan engine
- assisted with the rollout of the campus firewall service
- provided operations security services to the Public Health Information Network (PHIN)
- implemented a network intrusion detection system for the DoIT data center
- performed routine reviews of network sensors to learn of possible compromised hosts
- helped to host Lockdown, the annual information technology security conference
- when information security issues arose, assisted other campus departments, including University Legal Services, Dean of Students and the Campus Police.

OCIS continued to participate in research and development of security technologies, including evaluating several security event management solutions and two factor-authentication systems. The campus continued to seek guidance from OCIS in developing a Best Practice in encryption standards for workstations. We launched a team with representatives from DoIT and campus technical staff and, with the Division of Enrollment Management, will test candidate products.

Middleware

A key initiative in support of more secure services was accomplished as part of the middleware environment in the past year. A Digital ID (public key infrastructure) service was put in place that members of the campus community could use to secure their e-mail. This is especially important when sending confidential information such as grades and health care information via email. The campus Digital ID service supports encryption of documents as well as digital signatures.

uPortal

A major middleware accomplishment this past year was the release of the new technology infrastructure for My-UW Madison, the campus enterprise portal. The University made a decision about three years ago to migrate to the open source uPortal

environment, a portal technology environment built by and for higher education. As part of our work on the migration, we have become leaders in bringing about enhancements to uPortal, as well as extraordinarily knowledgeable about the technology environment. While we had hoped to migrate the environment sooner, deliberate planning and testing as well as coordination of migration schedules with key campus constituents resulted in a successful cut-over in June 2006. Much portal application implementation has been postponed waiting for the new infrastructure, and we expect to see a host of new applications becoming available in this current year.

Single Sign-on

A key feature of the new portal infrastructure is web single sign-on, sometimes called Web ISO. This feature supports one sign-on in the portal environment that allows users to access all applications that they are eligible to access. There is a tradeoff between this user convenience and system security. However, efforts are underway to minimize any security risk that Web ISO might expose.

Service Oriented Architecture (SOA)

SOA is a key initiative for the organization, primarily due to its potential for lowering the costs of inter-system integration. DoIT's Application Development and Integration group has started a multi-phased proof of concept (POC) effort to better understand the various components that comprise a SOA infrastructure (middleware). This specific POC utilized a composite application that employed a series of reusable Web services to present a comprehensive view of student data from a number of enterprise systems. The POC goals were successfully met using Oracle middleware. The next phase of the POC will expose the same application and the same services — that is, prove reusability — using other vendors' middleware (e.g., Sun, Open Source). Objectives of the POC effort are to produce reference architecture and a standardized methodology guiding all future inter-system integration.

Identity Management

Important work has continued on the Identity Management Project with support of the Identity Management Leadership Group. An assessment of the current PASE (Populations, Affiliations, and Service Entitlements) project was recently completed. This review led to the selection of the Grouper/Signet software suite developed collaboratively by Internet2 and several higher education institutions. This software will provide the infrastructure for managing groups and enabling access to campus resources and services in a centralized system with delegated administration. Functional components of PASE will go into production starting in Fall 2006.

Enterprise Administrative Applications

For those in DoIT who support the University's central administrative applications, 2006-07 was spent consolidating gains from previous years, achieving dramatic progress in entirely new areas, and planning for further future implementation. ISIS, the student administrative system, took advantage of a breather of sorts by focusing on integrating major projects completed the previous year into the operational stability that ISIS has always strived to produce.

The campus ISIS team also explored the functional and technical opportunities that an upgrade to Oracle/PeopleSoft Release 9.0 might provide the campus. The System-wide shared financial system, SFS, successfully upgraded to Release 8.9 in preparation for the finalized implementation of the new Grants Management system due early in calendar 2008. The campus joined with System in kicking off a project to identify needed purchasing changes. This work will be expanded in fiscal 07-08 to understand details and costs associated with potential implementation of necessary improvements.

The System-wide project to implement the Oracle/PeopleSoft HR/Payroll system was initiated, with DoIT involved in helping to review consultant partners RFP responses. An effort to assess system readiness is expected to be completed early in fiscal 07-08.

<u>Human Resources Applications</u>

Office of Human Resources (OHR) Document Imaging Project — DoIT worked closely with OHR to implement a vendor software suite (Perceptive Software's "ImageNow") for the purpose of capturing, indexing, storing, retrieving, displaying and distributing images of classified personnel documents. These documents will also be linked to records within the Integrated Appointment Data System (IADS).

Insurance Pre-Pay Project — DoIT collaborated with the Office of Human Resources to develop an application for collecting insurance payments for employees on a leave of absence and no longer eligible for payroll deduction. It will calculate premiums, generate invoices, record payments, and submit reports to insurance companies and Employee Trust Funds.

Legislative Budget Information System — This system provides the UW System Budget Office with a method of organizing data for the System's biennial budget request to the Legislature. It provides online and batch access to base budget data and increases to the base budget in a variety of statistical categories such as salaries, fringe benefits and capital.

Planning Allocation System — DoIT partnered with UW System's Budget Office, UW-Madison, and UW-Milwaukee to develop the Planning Allocation System. This system is used to set the target figures for the budget process and to document the source of each

allocation. It also provides an audit trail of dollars and FTEs allotted to budget units each fiscal year.

My UW Portal Enhancements — Employee annual tax statements for 2006 (W2 statement, 1042S statement and Fellowship Tax Letters) were added to the Work Record tab on the My UW-Madison portal.

Shared Financial System

SFS, the software supporting UW financial systems, is engaged in a major expansion. New modules to support Grants Administration and Travel Reimbursement are being implemented. The Program Release is a coordinated effort focused on implementing PeopleSoft Projects, Grants, Contracts and Expenses. The LAST (Legacy Accounting to SFS Transition) Project is an additional component of the Program Release. ECRT, a replacement for the current Personnel Activity Reporting (PAR) system, is being prepared for release to campus. Modifications to the production SFS system round out the complement of projects included in the Program Release.

Several components of the Program Release have been completed. SFS was successfully upgraded from Release 8.8 to 8.9 in March of 2007. In July of 2007, Madison purchasing systems were linked to SFS Purchasing and Accounts Payables using new component interface technology. JET, the Journal Entry Tool, went live in July. Through services provided by JET, departments across campus can interface transactions into SFS.

Work on the Program Release continues as the new modules are prepared for production. Module configuration, data conversion and development efforts are ready for integrated testing. The new SFS services will enhance the University's ability to manage financial aspects of research grants, respond to reporting requirements of diverse grant sponsors, expedite travel reimbursements and minimize the manual operations involved in accounting transactions.

Oracle E-Business Suite Applications

The Department of Family Medicine's implementation of Oracle's E-Business Suite (GL Module only) was successfully upgraded from the unsupported 10.7 version to the 11.5.10 version. DoIT's implementation of Oracle's E-Business Suite (CBS) was upgraded from version 11.5.8 to 11.5.10. In addition, many modifications were made throughout CBS to accommodate the UW-Madison campus fiscal year 07-08 changes affecting SFS codes, cash cards, and the elimination of requisitions.

Learn@UW Course Management System

All University of Wisconsin schools use the Learn@UW course management system. DoIT provides this service, with the support of the UW System's Office of Learning and Information Technology (OLIT). In 2006-07, our ability to provide steady performance and stable service continued to improve.

- The start of the Fall ’06 semester went well. A new cluster of database servers handled the high volume that the start of the semester typically brings. The use of Learn@UW has increased steadily, and meeting user needs within budget has been a challenge.

- At UW-Madison, usage of Learn@UW continues to grow rapidly. In 2006-07, more than 2,500 Learn@UW course sites were activated for timetable courses, an increase of about 40% over the previous year. Use of Learn@UW for non-timetable purposes is also on a similar growth track.

- An upgrade to a major release of the Desire2Learn (D2L) application (8.x) was completed. This release is built on the .Net framework and involved significant work to convert the tremendous amount of data into the new architecture.

- We continued to measure, test, analyze, model and improve the performance of the production system, including assessing options for upgrading the application server cluster. Two additional application servers are ready for deployment in the first quarter of FY08.

- DoIT helped UW System Administration to develop and deploy a survey of UW faculty on Web-based teaching and learning. More than 2,000 responded, providing feedback on what they use, what they like and dislike about D2L, and their interest in using other Web-based technologies, such as blogs, wikis, and podcasts. The results will help inform a UW System-sponsored working group focusing on long-term planning and strategizing for continuing eLearning services/technologies.

- UW-Madison began a Milestone Review report, due in fall of 2007, to assess the impact of Learn@UW on the campus and to identify strengths and weaknesses of the system’s capabilities and its supporting services (training, support, and communication). The results will inform the Learn@UW-Madison team of satisfaction levels and improvement needs. Results will also be shared with the UW System working group.

- The Learn@UW team worked with campuses that upgraded their PeopleSoft systems to successfully maintain the reliability and supportability of Learn@UW integration with Student Information Systems (SIS).

- Grade submission from Learn@UW to student systems was expanded to a total of six production campuses, with expansion to another campus now in progress.

- UW-Madison is providing links from Learn@UW courses to Library Course Pages (includes e-reserves and other resources tailored to each course). Ongoing efforts will focus on supporting direct links from Learn@UW to Library

resources, as recommended by the Council on University of Wisconsin Libraries (CUWL).

- UW-Madison completed a number of projects pertaining to the automatic course creation and library course page integration processes that save technical support costs.

Services

DoIT provides a wide range of technology services to the UW community (see a summary at **www.doit.wisc.edu)**.

Help Desk

In 2006-07, the Help Desk answered more than 34,000 student questions and 55,000 questions from faculty and staff. This was a 4% increase in contact volume from the year before. The average call waited for less than one minute and lasted for six minutes. A weekly customer survey indicated that 88% of Help Desk customers were satisfied or very satisfied with the overall service that they received.

The Help Desk's Advanced Desktop Support group responded to 2,965 cases, a 10% increase as compared to last year.

Users visited the Help Desk's online knowledgebase more than 4.7 million times, a 37% increase over the previous year. Most of these users were able to solve their problems by using the knowledgebase documentation.

For 2007-08, the Help Desk plans to expand knowledgebase documentation and features, replace its incident tracking system and utilize chat to serve our customers.

InfoLabs

The InfoLab program sponsored more than 75 kiosks for easy access to online resources. Four new kiosk locations were added this past year.

InfoLab spaces at Sellery and Witte were remodeled to replace Gordon Commons. Additionally, there are now seven Technology Learning Centers (TLCs; formerly ARCH centers) under UW Housing's support team. The InfoLab program has also remodeled the second-floor center of the College Library for use as a study and collaboration space specifically designed to accommodate laptops users. Plans include redeveloping other InfoLabs and new campus areas into technology-rich learning spaces.

The InfoLab program has enhanced and upgraded the laptop checkout system to send automatic emails to students to simplify checkout. These emails remind students about due dates, reservations and fines. More than 500 laptops are now in circulation, including 20 Apple iBooks. Plans for laptop checkout include adding nearly 200 dual-boot iBooks for 2007-08.

Tech Store

Once again, the Tech Store introduced new students and their parents to campus computing resources at SOAR, at other campus presentations and resource fairs throughout the summer, and during Wisconsin Welcome. These presentations reached more than 6,300 SOAR parents/guests. The Tech Store also consulted with incoming students and their parents about their campus computing needs while distributing Security Starter Software CDs and other relevant handouts at campus resource fairs. About 10,900 Security Software CDs were distributed to faculty, staff and students throughout the year. Tech Store staff provided consulting and advice about security and a variety of technology products and services to some 34,000 customers. Tech Store customers continue to benefit from deeply discounted educational pricing on a wide range of products, including Apple, Dell, Microsoft and Adobe.

In June 2006, the DoIT Tech Store launched an online survey to measure its levels of service. Of the more than 6,000 responses received, 97% indicated that the Tech Store was able to address their question or sales need.

The Tech Store also worked with other groups in DoIT to create the DoIT Number, a new payment method for departmental customers. With the implementation of the PeopleSoft Financial Systems on the Madison campus, internal requisitions were eliminated at the beginning of FY08. The DoIT Number enables departmental customers to direct charge their Tech Store purchases. Using a self-service Web-based system, customers can set up their own DoIT Number. They appreciate the detailed itemization of purchases on their monthly statements. DoIT Numbers can also be set to a specific date range or be non-expiring.

Support for Teaching and Learning

Easy Course Creation with the Learn@UW Course Management System
Learn@UW instituted a new "Easy Course Creation" process this year, automatically generating spaces for all courses and eliminating the need for instructors to contact DoIT to get a course created. This saves hundreds of hours of support staff time and reduces instructors' dependency on technical support. Usage of Learn@UW continues to rise each semester. In Spring 07, Learn@UW was used by 1,200 courses and more than 27,000 students at UW-Madison.

Engage Program
The Engage Program helps instructors solve teaching challenges through technology. For the coming year, Engage is focusing its collaboration with faculty on solving challenges in teaching and learning. Formal partners include the Engage Faculty Advisory Group, the Teaching Academy, the Delta Program, and the Engage Award recipients' learning communities. Engage solicited input from faculty and staff to identify the top teaching challenges and new technologies to explore. The top teaching challenges identified were:

- delivering lecture materials online
- alternatives to traditional assessment and testing
- offering broader access to course materials (The Wisconsin Idea)
- developing engaging hybrid courses
- facilitating collaboration and group projects

Engage is facilitating conversations with faculty and staff around these topics to understand campus needs surrounding these issues. The results will inform the Faculty Advisory Group's choices for future award program topics.

DoIT Academic Technology (AT) has formalized partnerships with two campus groups focused on effective teaching: the Teaching Academy and the Delta Program.

Engage sponsored "Play@Pyle," a half-day event focused on the use of simulations and games as learning tools in higher education. More than 100 faculty and staff attended the event. In the semester following the event, Engage and AT staff used a rapid prototyping process to work with 22 faculty to brainstorm and prototype a game or simulation that would enhance teaching and learning.

Engage has increased its focus on evaluating the award programs and their successes in transforming teaching and learning for students and instructors. It is also using the data to improve future Engage award programs and enabling instructors to use themselves in improving teaching and learning.

Engage has partnered with faculty and staff to enable faculty to use authoring tools for quickly and easily building interactive learning objects that can be incorporated into online courses. The eTEACH tool for authoring and delivering online lectures with synchronized slides, originally developed in the College of Engineering, has been augmented and upgraded by DoIT to work on both Mac and PC platforms. The lecture delivery interface incorporates additional accessibility features that enable those with visual or auditory impairments to interactively navigate and control the presentation.

Podcasting
DoIT's Engage program helped 143 instructors create multimedia course podcasts. Students found podcasting a convenient way to access and study course materials, and instructors were able to produce new course content with relative ease. Several instructors, including Randy Dunham (Business) and Tim Osswald (Engineering), received national attention for their pioneering efforts in podcasting.

Expanded online courses and user interface development
AT produced several courses rich in multimedia and interactivity for the College of Letters and Science. These courses are available to both campus and nontraditional distance learners. For an online course he developed with DoIT, Jan Miernowski of the Department of French and Italian has been recognized with an R1edu Faculty

Award for contributions to online learning. The fully online course includes multimedia lectures, printed text readings, interactive online reading assignments, a discussion forum, and automatic feedback for exercises. The class allows students to interpret complex and multilayered texts, a concept that can be applied to a variety of other fields.

Building on the success of the Library Web site redesign project, AT now has a team dedicated to interface design, focused on user- and learner-centered design and will work this year with the Teaching Academy and the Teaching and Learning Excellence sites under the oversight of the Vice Provost for Teaching and Learning.

Educational technology partners, collaborative events, and national recognition
DoIT and the Community of Educational Technology Support (ComETS) co-sponsored an event at which Larry Johnson, the CEO of the New Media Consortium (NMC), discussed emerging educational technology trends and consulted with several campus groups. The NMC named the Digital Media Center @ Biotech, along with other campus technology partners, as a 2007 Center of Excellence, recognizing UW-Madison's demonstrated excellence and outstanding achievement in the application of technology to learning or creative expression. The award specifically cited the efforts of the media centers across campus, groups supporting podcasting and games and simulations for learning, the ComETS, the Engage program and DoIT Academic Technology.

Research support
Academic Technology staff provided support for a wide range of campus research activities including the Research Support and Services Work Group (RSSWG). RSSWG is sponsored by the Office of the CIO and is charged with exploring opportunities to enhance IT support for research across campus. The work group membership includes researchers and IT staff from diverse campus departments including DoIT. Focused work occurs through existing or planned special interest areas. Campus activities include monthly brown-bag sessions highlighting the work of campus peers, an email list service facilitating discussion of current topics and issues, and annual workshops bringing national perspectives to campus initiatives.

MINDS@UW
DoIT, in collaboration with the library Digital Collections Center, produced and hosts MINDS@UW, a repository and searchable Web interface to store, index, distribute, and preserve the digital materials produced by UW faculty and staff. MINDS@UW is building a substantial collection of digitized theses and dissertations thanks to collaboration with Wisconsin Library Services (WiLS). It is also hosting work from the College of Agricultural and Life Sciences Honors and Undergraduate Research Program, as well as newsletters from the Cooperative Children's Book Center, the Max Kade Institute, and the Dictionary of American Regional English.

Information Technology Academy
The Information Technology Academy (ITA), a four-year, pre-college program for

students of color and economically disadvantaged students, graduated its fourth class this year. All 14 graduates plan to attend higher-education institutions fall 2007. The University regards this program as a success and plans expansion to double the size of the program by the 2009-2010 school year.

Student Technical Training (STT) online
STT expanded learning opportunities by developing an online version of its Web Design I curriculum. Offering this training both online and in the classroom allows more students to learn skills and become certified in Web Design.

MyWebSpace interactive training
DoIT designed and created user-centered interactive online training lessons for users of My WebSpace. The tutorial, which employs Flash animation and narrated audio, quickly orients users to essential My WebSpace features and applies them in real-time examples.

Apple Computer highlights UW Madison
Apple Computer is highlighting UW Madison in the first of a series of videos profiling higher-education and K-12 institutions. Included in the video were segments about Digital Academic Television Network (DATN) and podcasting for teaching and learning.

This narrative has focused on major new implementations or initiatives and on significant changes in DoIT's service delivery. It is by no means comprehensive. The next section presents a list of service facts and figures for the 2006-2007 academic year.

Section 2: Facts & Figures for 2006-2007

My WebSurvey — Users of UW's online survey service have created more than 1,600 surveys with more than 101,000 respondents since the service began.

My WebSpace — UW-Madison's Web-based file sharing and storage system has more almost 50,000 active accounts in the fall of 2007, up from 24,000 in November 2005.

My UW-Madison — The campus portal has as many as 55,000 unique users per month during the school year, logging in two million times in an average month.

WiscMail — The campus mail service routinely handles four million messages per day, up from three million per day a year ago and one million a day in fall 2004. About 60% of these messages are identified as spam.

Almost 52,000 students and more than 25,000 staff have WiscMail accounts.

The WiscMail system deploys about six terabytes (GB) of storage, almost twice the storage used a year ago.

Training — In 2006-07, DoIT's training group conducted 250 classes, attended by almost 3,000 people. The Software Training for Students program offered 750 instructor-led, hands-on classes last year, teaching more than 6,600 students.

Learn@UW course management system — Learn@UW was used in about 2,500 Timetable courses last year.

Security Starter CD — Almost 11,000 of these CDs were distributed. The package was also downloaded about 11,000 times.

WiscCal — Almost 9,000 faculty/staff logged in to WiscCal, UW-Madison's free online calendaring system, in August 2007.

Help Desk calls — About 55,000 faculty and staff and 34,000 students posed questions to the DoIT Help Desk.

DoIT Tech Store — About 34,000 people sought the help of DoIT Tech Store consultants last year. Another 8,200 reached the Tech Store by phone or email and received consulting or advice from staff.

Section 3: Strategic Initiatives for 2007-2008

IT Leadership, Governance, and Funding

This current year is anticipated to be a year with some important changes in how IT is directed and funded at the UW-Madison.

One of the key personnel retirements at the end of 2005-2006 academic year was that of the UW-Madison CIO and the Director of DoIT, Annie Stunden. An interim CIO, Ken Frazier, the University Librarian, was appointed to serve until a new CIO is recruited and hired. It is expected that a search committee will be appointed in early fall and that UW-Madison will be successful in its recruitment and hiring of a new CIO. It is also anticipated that the new CIO will have more responsibility for IT campus-wide. In the past, the CIO had minimum authority for campus IT initiatives, with great authority residing in the Schools and major divisions.

As part of the transition planning, the University engaged in an IT study with both external and internal review groups. The external review group identified two key concerns, IT governance and IT funding. The governance issue is about how major IT decisions are made at Madison. And this is complicated at Madison in that UW System Administration makes many key IT decisions. The shared governance Information Technology Committee is very helpful with IT policy decisions. However, decisions to implement major system initiatives are either made in the UW System Offices or in the Directorate of a major division. They are not typically made relative to other work underway or the effect on future initiatives.

A strong recommendation of the external review team was that the IT funding model for DoIT be reconsidered. As part of the 21st Century Network Project, a major assessment and overhaul of how networking and network services are funded at UW-Madison took place.

Administrative Computing Initiatives

The campus and DoIT commenced a number of very large initiatives in administrative computing in fiscal 2006-7. Significant progress, in line with project expectations and plans, has taken place.

Madison has begun migrating to the UW-System implementation of the Shared Financial System. The Grants project is moving into a period of extensive testing with an expected go-live date in the latter half of FY08.

Planning has begun to implement the PeopleSoft/Oracle Human Resource Information System for all UW campuses. That project is being directed by the UW System office with project management from DoIT.

The following administrative ERP applications are in progress or planned for the next five years:

MSN Accounts Payable/Purchase Order
Starting in FY08, Madison Purchasing is recording all Purchase Orders in SFS. This is an incremental step to support the new Grants Administration system.

Procurement
A second supply chain project envisions a UW System-wide procurement process that will increase the efficiency of purchasing and financial processes. Preparatory work for this project will begin in FY08.

LAST
LAST is a collection of projects focused on transitioning automated support for accounting functions and business processes from the mainframe into SFS. Changes to Accounting and Grants business processes are interrelated and must occur at the same time. LAST projects will align accounting processes with the New Grants processes.

ATS Travel Expense
The Automated Travel System (ATS) builds upon UW Madison's migration to SFS and adds functionality to reimburse UW travelers for their expenses. The new system will speed up the reimbursement process and provide for automatic deposit of reimbursements to checking accounts.

SFS 8.9 upgrade
Upgrading SFS to release 8.9 was completed in March of 2007. The new release added functionality needed for both the Grants Administration and Automated Travel Systems.

ECRT
ECRT is software purchased from a vendor that will enhance UW Madison's ability to accurately report time spent by grant recipients on their research projects. This is a crucial component of the overall Grants reporting and financial management process. ECRT positions UW Madison to meet current reporting requirements.

Grants
UW Madison is on the forefront of research in many disciplines. Both the number and size of grants received by faculty and staff is increasing. The growing portfolio of grants generates complex and changing requirements for tracking and reporting on grants financial transactions. New software to support this critical activity will go into production in FY08, replacing 30-year-old mainframe-based software. The new PeopleSoft software will provide expanded functionality that is aligned with today's requirements and will integrate financial management of grants with other UW Financial systems.

Course Guide
DoIT is collaborating with the Office of the Registrar to develop a new online service that will provide a radical new way for students, faculty, advisors, staff and the general public to interact with course guide information. We are still in the discovery phase, but features will likely include detailed course information in one location, electronic repository of advisor course recommendations, and course "favorites" lists. Timelines are not set for this project.

Common Scholarship Application
DoIT is collaborating with the Office of Student Financial Services to develop a new one-stop place for students to apply for undergraduate scholarships. This will be linked to ISIS to efficiently make application information available to schools, colleges and departments. The project launched in July 2007, targeting a first-phase rollout in early 2008.

ISIS Upgrade to PeopleSoft version 9.0
Planning has begun for an upgrade to PeopleSoft v9.0. The target date is August 2008, but there are still some hurdles to overcome before the upgrade could begin. If planning shows that August 2008 is not reasonable, there will be an analysis of implementing either v9.0 in 2009 or v9.1 in 2010. Version 9.1 is not yet released.

HR/Payroll/Benefits/Budget
The consulting firm Ciber, Inc. has been engaged to produce a detailed project plan and supporting budget for the implementation of a system-wide HR/Payroll & Benefits system. Interviews of stakeholders are underway and scheduled for completion and reporting in the fall of 2007. A fit/gap process involving UW functional and technical experts will begin early in 2008, with the goal of producing a plan for governance review in the fourth quarter of FY 2008. The potential for replacing the home-grown student payroll system will be studied during the fit/gap process.

The My UW-Madison Portal

The migration to uPortal as the underlying framework for My UW-Madison has allowed for easier integration with campus applications. We will attempt to foster more involvement with and input from the campus community and end users regarding the portal. We will be concentrate on new populations, content and features as well as continue to enhance portal performance, stability and reliability.

Service Oriented Architecture (SOA)

SOA is one way to lessen the pain and burden of system upgrades and all of their connections that require attention. DoIT has a pilot underway to demonstrate that this concept works. Assuming this is the agreed-to methodology, it should be actively implemented as part of system implementation projects.

Research Computing

The Research Support and Services Work Group (RSSWG), sponsored by the Office of the CIO, is exploring ways to enhance IT support for research at UW-Madison. The workgroup membership includes researchers and IT staff from diverse campus departments including DoIT. Groups are focusing on:

- Scholarly asset management. With the Library, this group is interested in short- and long-term management of scholarly assets and output.
- Collaboration tools. Examines the use of collaboration tools for academic purposes on campus. Tools range from email and group lists to complex virtual organizations.
- Storage. Reviews short-term and long-term storage needs and solutions for campus research, including backup processes, data retention policies and procedures, evolution of technologies and standards, portability, disaster planning, and related topics.
- Licensing (software). Working to help campus researchers work together to take advantage of group pricing when licensing common software.
- Networking. Creating awareness of advanced data networking capabilities at UW-Madison and how that can help researchers more effectively collaborate and utilize resources around the world.
- Identity Management. Focused on providing electronic identities to researchers, allowing access to on- and off-campus computing systems using a common logon.
- High Performance Computing (HPC) and High Throughput Computing (not yet a specific working group). Working with campus providers (GLOW, Engineering) and collaborating with the recently formed Milwaukee HPC consortium [Southeast Wisconsin High Performance (SeWHiP) group].

Security

Restricted information carries a high liability when inadvertently disclosed. The Office of Campus Information Security (OCIS) has defined *restricted data* as personal information defined by state statue 895.507 or personal health information.

In 2007-08, OCIS will focus on:

- identifying the locations and amounts of restricted data
- completing standards-based risk assessments of ERP systems
- developing a security training program for IT personnel
- developing best practices
- developing a restricted data security awareness campaign
- maintaining existing efforts to identify vulnerabilities and manage incidents and authorizations.

OCIS plans to conduct a triage risk assessment across the campus to identify the locations and amounts of restricted data. This information will be shared in a summary report with the deans, division heads and other senior administrators. The commitment to deal with the proliferation of restricted data is a bigger and much more expensive step than triage risk assessment and confronts the issue of who is accountable if the data falls into the wrong hands.

OCIS will continue the risk assessments of ERP systems, with the Shared Financial System (SFS) being the first. Findings and recommendations will be based on compliance with national standards. The systems will need to be re-assessed in future years for progress toward compliance.

OCIS is developing best practices, identifying common software solutions and creating a library of tools for IT professionals to help secure their IT systems. We are developing a security training program for IT professionals. We will work with campus administrators to eliminate the Social Security number from our campus ID cards and related IT systems. We will also develop a campaign to increase awareness of the restricted data issue.

Disaster Recovery Planning, Business Continuity Planning

Disaster recovery planning has been ongoing in the past several years. The past year has seen several incidents on the computer platform where plans were implemented. Our staff are skilled at handling the immediate, assuming the event is manageable. We have been fortunate that power or HVAC have been returned in time to prevent extended outages of basic technology infrastructure for the campus and for the entire UW System. But, we have come very close to not being able to recover in a timely manner. A back-up generator is becoming essential as the technology infrastructure has become critical for the campus. Additional investments in back-up and recovery capability in the alternate data center in the WARF building are necessary. It would be wise to plan with some of the other UW schools for back-up emergency capability for even such simple-sounding things as an emergency web site in the event we have a challenge that brings all campus capability down. As with the Security Plan, it is time to review and update the Disaster Recovery Plan and to provide funding for its implementation.

The Network

BOREAS — the optical network that connects UW-Madison, the University of Minnesota, Iowa State University and the University of Iowa — went live in February 2007. This was an extraordinary effort of the IT leadership and network engineering staffs of these four universities. BOREAS connects us all to national and global network infrastructure in Chicago, with an alternative route to the world via Kansas City. Our universities have put in place network capability that will well support our research and academic missions and will be a resource to our colleagues.

In Wisconsin, we anticipate that BOREAS will be available for use by all UW System schools. The BOREAS Operating Group (the governance group of CIOs) also anticipates that the universities in the Northern Tier Network Consortium (NTNC) will be able to take advantage of the BOREAS resource. BOREAS is changing the footprint of the national higher education network.

Smartphones

DoIT Voice Services is now examining usage and support issues pertaining to smartphones. Formerly called handheld devices, smartphones integrate mobile phone technology with that of a PDA and/or other informational device. The demand for smartphones is great and, as this is a relatively new and changing market segment, state contracts are often inadequate for the needs of UW faculty, staff and students. The increasing demand for devices and service plans that can be used for both business and personal use further complicates this situation.

Public Health Information Network (PHIN)

We expect to evaluate our continued participation in PHIN this year. Given the direction of PHIN development and a declining development budget, we may consider transferring responsibility for it to a department more closely aligned with its goals.

Summary

This discussion of 2006-2007 initiatives is by no means a comprehensive list of the work to be accomplished in this academic year. DoIT has a large list of new projects and pending projects that will be underway or completed. DoIT also has a significant portfolio of tasks to accomplish as part of ongoing operations, from answering questions at the Help Desk to keeping hundreds of servers current in their OS environments, to managing the network and the course management system for all of the UW System.

The initiatives discussed here require the consideration and attention of UW-Madison and, sometimes, UW System leadership. They are IT issues that make a difference for the entire UW-Madison community, and sometimes, for the entire University of Wisconsin System.