

ITS Applications 2007-08 Annual Report

ITS Applications supports the mission and goals of ITS and the university by providing quality software and expert staff that connect individuals to their vision. ITS Applications fulfills this purpose by providing and supporting:

- **Middleware and software infrastructure** – identity management, authentication, authorization, a batch processing environment, data access tools, enterprise workflow, e-communication and other software
- **Utilities and tools for software and Web developers** – developer environments, testing and deployment tools, developer productivity tools, monitoring and reporting utilities
- **Enterprise-wide applications where we possess business knowledge** – enterprise portal, group e-mail, Web-based collaboration software
- **Administrative applications for ITS** – administrative, accounting, billing and reporting applications for ITS
- **Contract programming and Web development resources for campus departments** – solutions that departments pay us to develop or maintain for them

In addition to the services above we also provide:

- Consulting to departments on technical issues
- Education to the community
- Leadership through best practices and research and development
- Facilitating solutions, processes, and/or policies with a broad campus impact

Priorities

2007-08 was a year of major change for ITS Applications. We selected a completely new leadership team, including a new Director and five new team leaders. The department managed these changes well, and employee morale is better than it was a year ago.

In September 2007, we spoke with customers and stakeholders and identified three priority areas for the year:

- Identity Management
- Developer Tools
- DEFINE Internals/Workflow

Although we didn't reach all of our goals, we achieved important accomplishments in each of these areas over the past year. We also tracked staff hours for the first time, and non-administrative time aligned well with these priorities as illustrated in the table below.

ITS Applications - Time Allocation

Service/Activity	Percent Time
Contracts	12.5%
Education	11.0%
ITS Support	10.5%
Identity Management	8.5%
Developer Tools	7.9%
Define Internals	5.6%
HRMS	4.5%
Research & Development	4.3%
Directory Services	3.3%
Lansa	2.8%
Campus Support	2.8%
Professional Development	2.6%
e-Commerce	2.4%
UT Direct	2.1%
Web Central	2.0%
Kuali	2.0%
Application Security	1.9%
Content Management	1.9%
Database Support	1.7%
e-Communication	1.6%
Blog & Wikis	1.6%
Authorization and Provisioning	1.5%
Python Evaluation	1.1%
Authentication	1.0%
Accessibility/Usability	0.7%
Labman	0.7%
Document Upload	0.5%
Leadership	0.5%
BevoWare	0.2%
Workflow	0.2%
Department System	0.2%

Identity Management

This line of services includes identity management, directory services, authentication, and authorization as well as services for the ID Center.

- Credentials Proposal** – Staff facilitated a working group with the Development Office, Student Information Systems and several colleges to improve identity management services for former

students. Work is still continuing in this area but an important collaborative proposal was developed to centralize functions relating to the merging of EIDs and improving password reset services.

- **Improved stability of both TIM and TED** – Staff implemented numerous “behind the scenes” changes to the uTexas Identity Manager (TIM) and the uTexas Enterprise Directory (TED). A third TED production server was installed to help manage the more than 4 million weekly directory queries we get.
- **uTexas Access Manager** – The uTexas Access Manager or TAM project was placed on hold for much of the year due to limited staff resources and higher ITS priorities. The project is now moving forward again with a detailed project plan to be delivered in September 2008.

Developer Tools

An important aspect of ITS Application’s core purpose is providing tools for other application developers on campus. Four notable accomplishments in this area were:

- **UTForge** – Staff implemented a repository of shared, downloadable code to which developers can contribute. UTForge already has over 40 projects that are suitable for campus sharing. Examples range from Javascript/AJAX apps to libraries for authentication and even connecting FileMaker Pro to the uTexas Enterprise Directory
- **XML Gateway** – The XML Gateway enables applications developed in other languages to more seamlessly access mainframe data. During the year, the XML Gateway processed over 1 million requests. The XML Gateway was migrated to more robust hardware and new functionality was added to support *USERNAME.
- **Python Evaluation** – Python was identified as a possible candidate for a new scripting language to replace webAgent in the long term. Applications staff played key roles in managing the project and writing infrastructure pieces for the evaluation.
- **Natclipse** – We conducted a pilot program that explored the use of Innowake’s Natclipse tool for Natural development and integration with version control.

DEFINE Internals and Enterprise Workflow

ITS Applications provides the workflow, authorization and system configuration elements for *DEFINE (the university’s distributed administrative Enterprise Resource Planning (ERP) system). In the last year, we extended these offerings through increasing support of ERP development on the Web. This increase in Web support is in keeping with the Core Application Strategy for the Enterprise (CASE) and in support of major administrative initiatives.

- **Increased focus on Web development** – Staff realigned Web directories and scripts to distinguish workflow functions and to clarify Web architecture. We also streamlined command authorizations to facilitate the use of workflow functions in a Web-based application context.

- **User Interface enhancements** – We created new invocable Web Workflow Widgets for use by electronic document developers in rich Web interfaces, and staff also provided Forward Routing Information on the Web to improve Web-based workflow processes. These functions are being incorporated into the new HRMS interfaces. We also aligned the Web and mainframe Inboxes to encourage smooth transition of workflow functions and users to the Web.

Finally, to support Enterprise Workflow for campus, this year we investigated Kuali Rice. Kuali Rice is the software infrastructure of the Kuali community source ERP system being developed in higher education. We continue to investigate this and other avenues toward the improvement of our processes, our systems, and our understanding of the needs and opportunities in this area.

HRMS

The Human Resource Management System is an important campus collaboration to enhance the University's human resource information and systems. While ITS Applications staff did not lead this project, we contributed two full-time employees (FTEs) to work on the project, contributed office space for HRMS project staff, and enhanced numerous software infrastructure components to better support the project. These enhancements include improved authorization information, workflow, and interface elements.

Community Education and Training

An important leadership role that ITS Applications plays is developer community education. Approximately 11% of departmental time (the equivalent of four FTEs) was devoted to education and training in 2007-08. Highlights included:

- Teaching twenty-one secure coding classes attended by hundreds of campus developers
- Contributing two Education Coordinators to the Information Analyst training program
- Coordinating the SY 101 program and the FYI program, which are continuing education efforts for developer/analysts
- Interviewing and hiring twenty-four trainees for the Information Analyst Training Program.

Conferences

In addition to educating the campus community, ITS Applications staff also presented the following talks at national and regional conferences.

- Application Security pre-conference workshop at EDUCAUSE
- Natclipse Development tool presentation at Natural conference
- Web Accessibility at presentation at annual AccessU seminar in Austin
- Mysoft User's Forum at annual Compco Conference

Staffing

During 2007-08, ITS Applications management recruited and hired an entirely new leadership team. These changes contributed to improving overall health and morale in the department. In addition, we created a new position of Software Practices Manager to evaluate existing software development practices and coordinate improved practices.

Contracts

During 2007-08 ITS Applications resurrected and restructured our contract programming services. These programming services include targeted development projects (generally shorter than four months) and ongoing software and Web maintenance. Total contract revenue exceeded \$200,000. Notable contract efforts the past year included:

- Department of Advertising – Upgrade of AdGrad, a social networking site, for Advertising students and alumni
- Career Exploration Center – Applications to help manage academic credentials and a new events calendar for the department
- UTeach Institute – Web site containing course materials and a database for gathering program data
- Counseling and Mental Health – An online interactive Stress Management tutorial
- Undergraduate Studies – Web site maintenance and enhancement to the EUREKA application for undergraduate research opportunities
- Texas Union – Web site maintenance and new sites for the Special Events Committee and the Texas Union's 75th anniversary

ITS Support

ITS Applications also supports numerous ITS administrative applications with TRAC and Mysoft being the mostly widely used.

TRAC

TRAC manages subscriptions and billing for computing services like Austin Exchange Messaging, Unix Timesharing Services, and campus printing. During 2007-08, The TRAC System was extended to include support for SharePoint services, Austin Bulk Disk, Digital Certificates, Austin Exchange Messaging at no cost, and Resnet. TRAC support for Resnet also enabled us to retire an old application called NetDirect.

Mysoft

Mysoft is an application used by Telecommunications for billing and work orders. During 2007-08 the mPower upgrade included over 100 customizations including:

- Numerous changes and improvements to the most used screens in MySoft
- Fifty custom searches
- Report enhancements

In addition, ITS Applications staff chaired the Issues Committee serving as a liaison between Compco and the MySoft user community.

Retired Applications

Retiring old code and applications also represents an important accomplishment because it enables developers to focus on new systems and adding important functionality. In 2007-08 ITS Applications retired the following systems:

- TXCALN – Natural-based scheduling program
- Tech Calendar – Application to display tech events and schedules
- UT Direct Events Calendar – Online events calendar in UT Direct; replaced by new OnCampus events Calendar
- NetDirect – Management of network port sign-up; replaced by new functionality in TRAC
- PADLock – Second secret that was intended to supplement EID and password for certain applications; never adopted
- Thousands of pages on Web Central Web sites including TENET, Health Research Network, and the Virtual Computer Library

Research and Development

Research and development is an important goal of the department to support innovation. Approximately 4% of staff time was spent on R&D in 2007-08. Several areas of focus were:

- Kualu Rice- Staff spent several months evaluating and researching Kualu Enterprise Workflow (KEW) and the Kualu Rice infrastructure components.
- Java Web Frameworks – Staff researched Java Web frameworks for use in future identity management applications. They identified Apache Wicket (<http://wicket.apache.org>) as a top choice.
- Python and frameworks – ITS Applications staff led community-wide research and development in support of the Web scripting language evaluation.
- PHP Web frameworks – We investigated multiple PHP-based frameworks with the goal of identifying a single framework to adopt.
- Application security – Our staff led research into methods of improving the security of our Web applications.

New Services

Blogs and Wikis

ITS Applications collaborated with the Division of Instructional Innovation and Assessment (DIIA) to conduct a pilot program for blogs and wikis in the classroom. This pilot was conducted in the Fall 2007 semester with a limited group of classes. This pilot laid a foundation for implementation of enterprise blog and wiki solutions. WordPressMU, a multi-user blog system was implemented and Confluence, an enterprise wiki solution was also selected. Both of these solutions were launched to a small number of customers at the end of 2007-08.

Document Upload

Staff worked with developers in Student Information Systems to provide a solution for the uploading of admission essays and letters of recommendation for graduate applications. This solution provides a Java interface to store documents in Tamino and convert them to PDF upon retrieval. This will go into production in early fall.

Statistics and Usage

The following table illustrates the scope and impact of the work that ITS Applications does for the University.

uTexas Enterprise Directory (TED)	Campus LDAP used for queries	Average over four million queries a week
XML Gateway	Gateway to enable non-mainframe programs access mainframe data	One million transactions for the year
Web Central	University's main web presence, www.utexas.edu	Four million page views per month (UT Home page)
UT Direct	University's portal	Over three million page views per month (UT Direct Home Page)
WebXM	Web scanning tool that checks for quality and accessibility items	239 users; 597064 scanned pages;
Mysoft	Telecommunications accounting and billing tool	206,757 transactions were processed and billed for a total of \$17,604,406.25
DEFINE Internals	Infrastructure software used for enterprise workflow and authorizations	Over 1.9 million documents were created and routed
mobile.utexas.edu	UT Web resources designed for mobile devices	989,000 page views (140% increase from 2006-2007)

Looking forward

In the upcoming year, we plan on building upon the foundation we set last year. Major initiatives for 2008-09 include:

- Authorization – Enhancements to the existing Apollo system and planning for TAZ, the next generation authorization system
- Continue work with the developer community and ITS Systems to incorporate Python into the administrative toolset.
- Extend the document upload solution developed for SIS to a more general campus solution.

- Implement the uTexas Access Manager (TAM) solution for improved Web-based single sign on.
- Continue our commitment to HRMS (two FTEs), and the analyst education program (one Education Coordinator at all times)
- Establish roadmaps and service level agreements for our critical services.
- Fully staff the department.
- Implement improvements to our software development process.

Through these efforts we hope to improve our ability to connect our customers to their vision.