

**UNIVERSITY OF  
WISCONSIN  
SYSTEM  
ADMINISTRATION**

**2001  
INFORMATION  
TECHNOLOGY PLAN  
COVERING  
FISCAL YEARS  
2002 and 2003**

UW SYSTEM ADMINISTRATION  
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## EXECUTIVE SUMMARY

The formation of the University of Wisconsin System Administration 2001 Information Technology Plan Covering Fiscal Years 2002 and 2003 centers around several questions identified through discussions with System Administration Vice Presidents and System Administration staff. They are:

1. Should people working for SA have non-place specific access to central computing resources? That is, should a person have a "network" identity that provides authenticated access to central computing resources? "Central computing resources" are defined as System Administration email account, group-scheduling software, network-stored files, and other items associated with an individual's business role.
2. Do our web sites meet the accessibility standards as outlined by the December 5, 2000, letter from the Office of Learning and Information Technology Associate Vice President Ed Meachen to the University of Wisconsin institution Vice Chancellors and Chief Information Officers?
3. Are my technology assets at System Administration appropriately secured from outside threats?
4. Will System Administration be able to remove existing applications from the DoIT mainframe by June 30, 2003?

Achieving solutions to these questions is the focus of this IT Plan. The strategic directions in this IT Plan also introduce policy issues to be addressed by System Administration departments. These policy issues range from costs of supporting remote access for employees to deciding which security risks to mitigate and which to live with.

The strategic directions, their goals and projects are summarized below. The plan explains each of them in more detail.

### IT Strategic Direction #1

*System Administration will transform its current technology infrastructure to enable its staff to perform essential job functions anywhere and anytime.*

**Goal 1:** Provide System Administration staff with their view of business related information and applications anywhere and anytime.

**Goal 2:** Ensure System Administration technology resources are appropriately secured from outside threats.

#### Projects:

1. Implement Common Directory Services
2. Implement a UWSA Intranet and Secure It for Remote Access
3. Develop and Implement a Technical Security Policy

## **IT Strategic Direction #2**

*System Administration will ensure that access to information is available to all customers including those with disabilities.*

**Goal:** Ensure that System Administration web sites are accessible to all customers including those with disabilities.

**Project:**

Ensure that System Administration Web Sites Comply with Guidelines

### **Ongoing Projects from Previous Plans**

The list below indicates the projects from previous plans that are still ongoing. The IT Plan year is in parenthesis.

- Reengineer Student Retention (1997)
- Develop Phase 4 (Degree Progress Review) for TIS (pre-1995)
- Implement an Application Development Architecture (1999)
- Staff Research Support (1997)
- Implement Data Management Policies for Web Sites (1999)

**JULY 1, 2003**

A UWSA staff person attends a conference in Minot, North Dakota. She uses one of the PC's provided at the conference to connect to the UWSA web site. After providing a user ID and password, her web page appears. On the page are links that allow her to read her email, check her calendar, browse documents on her local area network (h:\, g:\, u:\), run the Tax Shelter Annuity application, and update the Shared Financial System information, all without requiring additional logins. Her web page also contains links that she has determined to be important to her job. Another UWSA staff person at the same conference uses her wireless handheld PC to do comparable functions.

A malicious hacker creates an email virus. The UWSA staff person is a recipient of this virus. She does not worry about the virus because her network filters it out.

A disabled colleague also connects to his web page at the UWSA web site. He is able to experience his web pages because the UWSA web site conforms to accessibility guidelines.

## **INTRODUCTION**

*The University of Wisconsin System Administration, in partnership with system institutions, the Board of Regents, and state government, leads, plans, coordinates, evaluates, facilitates, and communicates the benefits of public higher education to further the interests of the people of Wisconsin and the greater society. Fulfilling this mission involves System Administration in a variety of activities, many of which are dependent to some extent on the use of data that are electronically gathered, analyzed, and produced for presentation, and in the use of technology as a vital tool for analysis and communication.*

This is our fifth plan. This plan represents our continued effort to implement System Administration strategies through Information Technology (IT). It is also a tool to help manage IT solutions in support of System Administration business needs.

The Appendix to this plan illustrates the status of the projects initiated in previous plans. There are tables for projects that were completed since the 1995 IT Plan was submitted, and projects that are scheduled for completion in fiscal year 2001, scheduled for completion by fiscal year 2003.

## **UW SYSTEM ADMINISTRATION TECHNOLOGY VISION**

The University of Wisconsin System Administration takes advantage of the opportunities information technology presents to:

- Improve communication among System Administration staff and its constituents
- Encourage close collaboration among System Administration staff
- Facilitate decision making
- Coordinate policy planning
- Manage resources
- Further our partnerships with the Department of Administration and other state agencies and organizations

## INFORMATION TECHNOLOGY PRINCIPLES

The University of Wisconsin System Administration has a substantial and growing investment in information technology. Wise management of this investment is critical to meeting System Administration's business needs. Guiding this management are underlying principles that provide a framework for policy decisions.

### Principles

- System Administration treats information and technology as strategic resources, supporting and safeguarding them as critical assets.
- System Administration has a common understanding of what constitutes ethical use of IT and is a role model for the appropriate use of IT.
- System Administration links its IT budget to its IT plan.
- System Administration staff associated with IT is competent and knowledgeable about current practices, methods, and technology. Staff is provided appropriate equipment and training to effect maximum productivity and quality. Equipment and training selection is approached on the basis of maximizing System Administration's return on investment.
- System Administration has a clear delineation of roles and responsibilities in regard to data. This includes the access, use, acquisition, and validation of data.
- Users are responsible for ensuring the appropriate use of data.
- Data custodians are responsible for ensuring appropriate access to data.
- System Administration staff communicate transparently across application, platforms, and geographical locations.
- Where appropriate, System Administration applications have a common presentation format and are portable from platform to platform. System Administration applications are supported by pertinent designs, methods and tools, as well as a robust technical infrastructure.

## THE PLANNING ENVIRONMENT

In speaking with the System Administration Vice Presidents and other System Administration staff, we have identified the following questions the 2001 IT Plan should answer by the end of fiscal year 2003.

1. Should people working for SA have non-place specific access to central computing resources? That is, should a person have a "network" identity that provides authenticated access to central computing resources? "Central computing resources" are defined as System Administration email account, group-scheduling software, network-stored files, and other items associated with an individual's business role.
2. Do our web sites meet the accessibility standards as outlined by the December 5, 2000, letter from the Office of Learning and Information Technology Associate Vice President Ed Meachen to the University of Wisconsin institution Vice Chancellors and Chief Information Officers?

3. Are my technology assets at System Administration appropriately secured from outside threats?
4. Will System Administration be able to remove existing applications from the DoIT mainframe by June 30, 2003?

Portions of question 4 were addressed in the 1997 IT Plan. The last part is removal of the Retention and Credits to Degree systems as well as the removal of the Payroll/Appointment System.

The following Strategic Directions are conceived to direct System Administration Information Technology projects and activities to manifest solutions to these stated questions.

## **INFORMATION TECHNOLOGY STRATEGIC DIRECTIONS**

### **IT Strategic Direction #1**

*System Administration will transform its current technology infrastructure to enable its staff to perform essential job functions anywhere and anytime.*

**Goal 1:** Provide System Administration staff with a their view of business related information and applications anywhere and anytime.

**Goal 2:** Ensure System Administration technology resources are appropriately secured from outside threats.

The steps necessary to implement these goals are:

- Consolidate and synchronize directory services for role management and service provisioning
- Implement single sign-on for applications as appropriate
- Standardize the configuration of a web client for access to central computing services
- Develop and implement a technical security policy

To achieve these goals, we propose the following **projects**:

**Implement Common Directory Services** - [FY01-FY03] - the outcome of this project will be directory services that will simplify user access to resources, improve security administration and simplify user administration.

**Implement a UWSA Intranet and Secure It for Remote Access** - [FY01-FY03] - the outcome of this project will be a view of information and applications pertaining to an individual's business role.

**Develop and Implement a Technical Security Policy** - [FY01 – FY03] - the outcome of this project will be a foundation for security of UWSA technical assets. This will include a security analysis assessing the risks, a strategy on what risks to mitigate and what risks can be tolerated, product selection, and operational practices development.

### **IT Strategic Direction #2**

*System Administration will ensure that access to information is available to all customers including those with disabilities.*

**Goal:** Ensure that System Administration web sites are accessible to all customers including those with disabilities.

The steps necessary to implement this goal are:

- Assess the impact of the changes needed
- Develop a plan to prioritize and organize the work

To achieve this goal, we propose the following **project**:

**Ensure System Administration Web Sites Comply with Guidelines - [FY01-FY03]** - the outcome of this project will be web sites that are compliant with Web Accessibility Initiative (WAI), W3C guidelines, Priority 1 Standards. We will further work on compliance with Level 2 and 13.6 of Level 3.

# APPENDIX

**1995, 1997, and 1999 UWSA Strategic IT Plan *Completed* Projects**

<b>Project</b>	<b>Deliverable</b>	<b>Stakeholders</b>	<b>Status</b>
Desktop Computer Replacement (1997)	Systematic Plan for the Renewal/Replacement of System Administration Staff Desktop Computers every 3-5 Years	UW System Administration Staff	Completed  Ongoing Renewal
Facility CDR/Insurance System (1995)	Re-engineer on-line Facility and Insurance System	UW System Administration Staff, UW System Staff, State of Wisconsin Department of Administration	Completed  Ongoing Maintenance
Transfer Information System (TIS) (pre-1995)	Complete Phase 3 (Academic Courses and Programs)	UWSA Office of Academic Affairs, UW System Registrars, UW System Admissions Offices, UW System Advisors, Students	Completed  Ongoing Maintenance
Transfer Information System (TIS) (pre-1995)	Change Phase 2 (Institutional Information) from a Gopher application to a WWW application	UWSA Office of Academic Affairs, UW System Registrars, UW System Admissions Offices, UW System Advisors, Students	Completed  Ongoing Maintenance
Desktop Computer Applications	Query and maintain UWSA staff personnel information (1997)	UW System Administration Staff, UWSA Office of Personnel Services	Completed  Ongoing Maintenance
Market Research Data Coordination (1997)	Service individual institutions and consortia of institutions looking at specific market niches or enrollment dilemmas	UW System Institutions, UWSA Market Research Unit	Completed  Ongoing
Training (1997)	Training for OIS supported software to UWSA staff on a timely basis	UW System Administration Staff	Completed  Ongoing
User Support Services (1997)	Support UWSA staff in information technology areas	UW System Administration Staff	Completed  Ongoing
IT Planning and Budget Development Link (1995)	IT planning for System Administration occurs before OIS budget is developed	UW System Administration Staff	Completed  Ongoing
Network Upgrades and Improvements (1995)	Upgrade portions of the network to support 100Mbps line speed	UW System Administration Staff	Completed
Network Component Replacement (1997)	Improved network infrastructure so it will support constantly changing and more demanding network based applications	UW System Administration Staff	Completed

<b>Project</b>	<b>Deliverable</b>	<b>Stakeholders</b>	<b>Status</b>
Program Management Information System (PMIS) (1995)	Reengineer system which provides information essential for the general management, academic planning, and budget planning efforts Instructional Analysis Information System (IAIS) - new name	UW System Administration Staff, UW System Staff	Completed except for Cost Per Credit Expenditures which will not be completed until the Shared Financial System project is complete
OPAR Data and Application Integration	Integrate Distance Education course offerings into curricular data warehouse (1997)	UW System Administration Staff, UW System Staff	Completed
Desktop Computer Applications	Compute MEA calculations for TSA participants (1997)	UW System Administration Staff, Enrolled UW System Staff	Completed  Ongoing Maintenance
Year 2000 Implementation (1997)	UWSA hardware, software, etc. are Year 2000 compliant	UW System Administration Staff	Completed
OPAR Data and Application Integration	Re-engineer Financial Aid Reporting, Multiple Admissions and Applications Database, Student Statistics Book (1997)	UW System Administration Staff, UW System Staff	Completed  Ongoing Maintenance
World Wide Web Coordination (1997)	Guidelines delineating department, University Relations, and OIS responsibilities	UW System Administration Staff	Completed
Server Upgrade (1997)	Increase capacity of System Administration World Wide Web and data warehouse servers	UW System Administration Staff, UW System Staff	Completed
Upgrade Email System (1999)	Implement an email system that supports industry standard protocols and a variety of non-proprietary email clients	UW System Administration Staff	Completed
Replace Calendar System (1999)	Implement an online calendar and schedule system supporting internet access	UW System Administration Staff	Completed
Upgrade Network Operating System (1999)	Build a foundation for supporting secure remote access to LAN resources and create a basis for System Administration common directory services	UW System Administration Staff	Completed
Reconstitute System Administration Web Site (1999)	Implement logically separated functional web sites	UW System Administration	Completed
Security (1997)	Guidelines for proper use of data, protection against unauthorized changes to data, open access to data where appropriate	UW System Administration Staff	Completed

**1995, 1997, and 1999 UWSA Strategic IT Plan Projects *Scheduled for Completion by Fiscal Year 2003***

Project	Deliverable	Stakeholders	Status
OPAR Data and Application Integration	Re-engineer Student Retention (1997)	UW System Administration Staff, UW System Staff	In progress
Transfer Information System (TIS) (pre-1995)	Develop Phase 4 (Degree Progress Review)	UWSA Office of Academic Affairs, UW System Registrars, UW System Admissions Offices, UW System Advisors, Students	In progress
Data Model (1995)	Ideal and Corporate models specifying how UWSA data is organized in support of UWSA business rules and requirements	UW System Administration Staff	In progress
Data Dictionary (1995)	Dictionary of definitions of UWSA data (elements, calculations, algorithms, transformations; identification of data stewards and location of data), public access to the Dictionary	UW System Administration Staff, UW System Staff	In progress
Data Management (1995)	Policies and Procedures supporting consistent, accurate, and secure UWSA data	UW System Administration Staff	In progress
Implement Data Management Policies for Web Sites (1999)	Departments have custodial responsibilities for information from identification through distribution	UW System Administration Staff	In progress
Implement an Application Development Architecture (1999)	Build an infrastructure that will allow SA developers to incorporate web technologies with the SA business processes	UW System Administration Staff	In progress
Staff Research Support (1997)	Identify and understand UWSA staff future technology needs	UW System Administration Staff	In progress

**1995 and 1997 UWSA Strategic IT Plan *Suspended/Deleted* Projects**

Project	Deliverable	Stakeholders	Status
Desktop Computer Improvement (1995)	Video Conferences at the Desktop	UW System Administration Staff	Suspended Technology still needs work
Document Management (1995)	Improved access to needed documents	UW System Administration Staff	Suspended
Imaging Pilot (1995)	Pilot implementation of an electronic imaging system for ELFS forms and Trust Fund vouchers and ledgers	Staff Benefits and Payroll Policy and Trust Funds Operations	Suspended
Public Relations Data (1997)	Warehouse of easily accessible public relations data	UW System Administration Staff, UW System Staff	Suspended
Critical Business Process Disaster Recovery (1997)	Identification of and restoration solutions for System Administration critical business functions	UW System Administration Staff	Suspended

## UWSA Strategies, Standards, and Guidelines for Information Technology

System Administration has adopted the following strategies for information technology. The n/a's indicate that it may not be appropriate and/or necessary to use software on that platform. The blanks mean that there may in the future be strategies or guidelines for that platform

Environment	Desktop Computing	Basic File Server Computing	Application Server Computing	Database Server Computing	Web Server Computing
<b>Word Processing</b>	Microsoft Word2000	n/a	n/a	n/a	n/a
<b>Spreadsheet</b>	Microsoft Excel2000	n/a	n/a	n/a	n/a
<b>Presentation Graphics</b>	Microsoft PowerPoint 2000	n/a	n/a	n/a	n/a
<b>Electronic Mail</b>	Netscape Communicator 4.75	Netscape Messaging Server 4.15	UCB Sendmail 8.9	UCB Sendmail 8.9	UCB Sendmail 8.9
<b>Calendar</b>	Corporate Time 5.2	Corporate Time 5.2 (database)	n/a	n/a	n/a
<b>FTP Services</b>	WSFTP-32; Netscape v3.0+	Netware 5.1 FTP	AIX FTP Server v4.1	AIX FTP Server v4.1	AIX FTP Server v4.1
<b>Web Services</b>	Netscape Communicator 4.74	ftp to AIX			Apache HTTP v 1.3.3
<b>Viewers</b>	Acrobat; QuickTime; Mpeg; Microsoft PhotoEditor; RealPlayer; Windows Media Player				
<b>Electronic Forms</b>					
<b>Mainframe Access</b>	QWS3270	n/a		n/a	
<b>CASE Tool</b>	PowerDesigner v7.3	n/a	n/a	n/a	n/a
<b>Database Engine</b>	Microsoft Access 2000	n/a	n/a	Oracle v8.0.6; Oracle v8.1.7; ADABAS v3.1.1.12	n/a
<b>Database Connectivity</b>	SQL via Oracle Net8; ODBC	n/a	JDBC	SQL via Oracle Net8	JDBC
<b>Database Server Access Tools</b>	PowerScript7.0 From PowerBuilder; InfoMaker v6.5; Natural; PLSQL v8.0.4.2.1; SQL*PLUSv8.0.4; Microsoft Query: PC SAS; ESRI Arcinfo 2.1	n/a	Natural PL/SQL v8.0.6; SQL*PLUSv8.0.6; Java; JSP	Natural v3.1.1.11 PL/SQL v8.0.6; SQL*PLUSv8.0.6; SQL Worksheet 8.0.6	
<b>Statistical Analysis</b>	Microsoft Excel2000; PC SAS v6.12	n/a	SAS v6.12	n/a	n/a
<b>GIS</b>	ESRI Arcview 8.1	n/a		n/a	n/a
<b>Operating System</b>	Windows2000	Novell v5.1	AIX v4.3.3; Novell v4.11; RedHat Linux v7.0	AIX v4.3.3	AIX v4.3.3; RedHat Linux v7.0
<b>Hardware Platform</b>	Pentium IV; 256M RAM; 10+ G Disk; 17" Mon.; CD-RW/DVD; sound card	Compaq ProLiant 6500; 512 M RAM; RAID 5 - 24+ G Disk; Compaq ProLiant ML 1G RAM, 10-50 G RAID5 Disk	IBM RS6000, S7A, 2 2 G RAM, 4 CPUs, 18.2. G Disk	IBM RS6000 J40, 640 Mb RAM, 8 CPUs, 40.5 G Disk	IBM RS/6000 F50, 512 Mb RAM, 2 CPUs, 27.3 G Disk
<b>Basic File Server Access</b>	Novell Client32	NDS			NFS Connectivity
<b>Network Technology</b>	Ethernet - Ethernet_II Framing	Ethernet - Ethernet_II Framing	Ethernet - Ethernet_II Framing	Ethernet - Ethernet_II Framing	Ethernet - Ethernet_II Framing
<b>TCP/IP Access</b>	Microsoft IP Stack 2	Novell 5.1	AIX v4.3.3	AIX v4.3.3	AIX v4.3.3
<b>Virus Protection</b>	Sophos Sweep v3.46	Sophos Sweep v3.46	n/a	n/a	n/a

## ***Ensure System Administration Web Site Comply With Guidelines***

### **Purpose**

The purpose of this project is to assess the impact of the Web Access for Individuals with Disabilities initiative on the web sites authored by UWSA staff, and to develop a plan to prioritize and organize the work.

### **Scope**

The scope of this project is limited to all pages within the uwsa.edu domain and all pages within the www.wisconsin.edu host domain. Each department will be responsible for the resources needed to update their web pages to meet the standards as laid out in the December 5, 2000, letter from Ed Meachen to the Vice Chancellors and Chief Information Officers.

### **What Needs to be Done?**

The below is a list of items that need to be done to assess the impact and start the project.

- Appoint a coordinator
- Raise the awareness of System Administration staff through newsletter articles. Departments will have to realize that their pages are most likely out of compliance.
- Define the criteria for compliance
- Inventory the number of pages on our websites. Identify and assess the pages that need to comply. There are pages that are mostly content related that may need little change. There are pages that are more complicated that may need many changes.
- Develop detailed plans for compliance. The plans should include testing the pages.
- Prioritize the changes. The priority should be two phased: new pages (phase 1) and existing pages (phase 2)
- Identify the resources needed to make the change. Include budget and timeline.
- Develop project plans to effect the changes that need to be done.

### **Who Can Help?**

All departments in System Administration will need to assess, plan, and implement the changes to ensure compliance with the disability standards. Some departments have already started to do some of the functions needed to make their web sites comply.

- OIS will set up test labs at Regent Street and at Van Hise. These test machines will hold different versions of Netscape and IE as well as screen reader software and Bobby software.
- OIS will develop techniques for accessibility. These techniques will include a "standard procedure" for ensuring web pages are accessible.
- OIS and University Relations will together develop templates and cascading style sheets that will probably cover some aspects of checkpoint compliance. The templates and style sheets are not necessary for compliance but will in the future make compliance an easier task.
- Each department will have to designate a person to ensure their web pages are updated
- Each department with the assistance of the coordinator will have to develop a project plan as to how they are going to change their web pages.