



**University of Wisconsin-Extension
Information Technology Strategic Plan
2001-2003**

June 4, 2001

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1.0 INTRODUCTION

Information technology services within UW-Extension support the initiatives of the institution in its statewide instruction, research, and public service mission. These services are fundamental to UW-Extension's efforts to develop, implement, and deliver its programs. Information technology services include support for programs; business operations; human resource activities; student, faculty, and staff support systems; and technology research and development.

Staff members, working in units throughout UW-Extension, provide information technology services. This Strategic Plan primarily addresses the infrastructure and services that have institutionwide implications; however, programs within specific organizations are also covered where information technology resources perform a critical role in the success of the program.

2.0 INFORMATION TECHNOLOGY MISSION AND STRATEGIES

The mission of UW-Extension information technology services is to effectively research, define, develop, implement, and maintain information, computing and telecommunications technologies and services that support UW-Extension in addressing the educational needs of the people of Wisconsin, wherever they live and work.

The mission of UW-Extension information technology services is based on the following six strategies:

1. Effective and efficient management of UW-Extension's day-to-day information technology services and resources.
2. Professional, courteous, and timely response to user's needs for access to services, support, information, and technology.
3. An effective organizational structure, technical architecture, and development environment within which the institution's information technology services can be managed.
4. A clear definition and understanding of roles, responsibilities, and authority for all information technology staff members.
5. Successful research, development, and implementation of stable and reliable information technologies that enhance UW-Extension's programs.
6. Clear and consistent communications regarding information technology resources and support services.

3.0 GOALS AND HIGH-LEVEL STRATEGIES

This strategic plan describes over-arching strategies and goals. For some goals presented, additional information must be collected and processed before priorities can be established and solutions can be realized. For other goals, immediate actions can be taken to make progress toward solutions. As work is completed to implement the strategies, more detailed information will be presented to UW-Extension faculty and staff.

The goals of the strategic plan follow:

- Goal 1 - Enhance the UW-Extension network infrastructure, software, and services to support UW-Extension's programmatic initiatives and internal processes.
- Goal 2 - Establish a plan for UW-Extension E-Learning and E-Business initiatives in partnership with UW-Extension units.
- Goal 3 - Establish an institutionwide network security program.
- Goal 4 - Establish a Technology Access Program to ensure that UW-Extension's services accommodate the abilities of all individuals that use its services.
- Goal 5 - Establish a formal information technology research and development program.
- Goal 6 – Establish a UW-Extension information technology organizational structure that meets UW-Extension's evolving needs.
- Goal 7 – Establish UW-Extension as a leader in utilizing technology associated with the convergence of network and broadcast technologies.
- Goal 8 - Continue to implement new systemwide academic and administrative systems in partnership with UW System Administration.

Goal 1 - Enhance the UW-Extension network infrastructure, software, and services to support UW-Extension's programmatic initiatives and internal processes.

The network is quickly becoming the most indispensable component of the information technology infrastructure. The "network" consists of connections within buildings, throughout the institution, among institutions, and throughout the state and world. It must be stable, reliable, secure, available, scalable, and extendable. If the network fails to operate correctly, there will be considerable implications for anyone using services enabled by the network.

Within UW-Extension, the network is the foundation for delivering programs and supporting internal business services. Traditionally, the network was used to deliver data (primarily E-mail and web pages). In the future, the network will be increasingly used to deliver video, audio, web-based courses, student services, and faculty and staff services. The network will also become the primary enabling technology for E-business and E-learning services. Users will expect guaranteed end-to-end delivery, with an assured quality of service.

Ensuring that the network is stable, reliable, secure, available, scalable, and extendable will become a primary focus of information technology service organizations and will require fundamental changes in the way information technology services are deployed and managed; for example, individual local area networks (LANs) will no longer be needed. Instead, a common set of standards and procedures will need to be agreed to across the institution, common devices and protocols will be essential, and deployment of new services will need to be coordinated as a natural part of the way business is conducted. Further, the needs for standards must be balanced with an openness to understand that there will be unique needs that must be accommodated. UW-Extension will

- Specify the Extension Building, Pyle Center, and Vilas Hall as its primary information technology service centers.
- Install telecommunications infrastructure to connect the primary information technology service centers, establish redundant access to the facilities, install consistent information technology components in each of the facilities, and distribute backup and redundant components among the facilities to achieve better network services for the facilities.
- Investigate limits of existing internal building network wiring and upgrade wiring where possible.
- Implement state-of-the-art server and data storage facilities to support all services (e.g., file and print services, audio and video archives, and backup services).
- Implement and support wireless technologies and broadband services as needed.
- Implement more comprehensive disaster recovery processes and procedures to help ensure continuity of operations for all services.

Initially, tasks will be undertaken to inventory the network infrastructure and to develop a plan to upgrade the network. Critical network needs will be identified, an inventory of all UW-Extension network infrastructure and services components will be completed, units responsible for specific components and services will be identified, and network connectivity among all UW-Extension facilities will be analyzed. Further, work will be undertaken to better understand the implications associated with UW-Extension's use of the UW-Madison's network infrastructure.

In addition to the network infrastructure, software and services, commonly called "middleware," must be implemented across UW-Extension. For new network services to work effectively and efficiently, it is critical that middleware implementation be coordinated throughout the institution.

Middleware is specialized network software or applications that are shared by network administration applications, databases, and end-user applications to make network-based applications work across the enterprise. Three major middleware services that must be implemented within UW-Extension and across the UW System are (1) identification, authentication, and authorization services, (2) directory services, and (3) emerging tools for security services [Public Key Infrastructure (PKI)].

Properly implementing middleware technologies will allow UW-Extension to:

- Establish and maintain an accurate and up-to-date directory of all UW-Extension staff.
- Manage access to information technology resources using a common set of policies and procedures across UW-Extension (e.g., enable single logon capability for all services).
- Take advantage of selected UW System initiatives for network-based services that are deployed throughout the UW System.
- Ensure that all transactions and data on the network are safe and secure.

Goal 2 - Establish a plan for UW-Extension E-learning and E-business initiatives in partnership with UW-Extension units.

UW-Extension programs and administrative services are becoming increasingly dependent on E-learning and E-business processes. Whether using the Internet or using network services on the campuses, the institution will deploy and manage more E-learning and E-business services. This deployment and management process must be organized and thoughtful, considering best practices, economically viable business models, and supportable guiding principles. E-learning and E-business opportunities will increase for internal business operations, student support services, faculty and staff services, instruction, product sales, and customer service activities. To achieve UW-Extension's E-learning and E-business objectives, the institution should:

- Continue to document and implement E-learning and E-business projects for UW-Extension.
- Work with information technology staff and units to develop plans for each project.
- Review current internal business processes and evaluate how to implement practices under new models.
- Continue to provide real-time interactive multipoint multimedia applications and services.
- Disseminate information concerning "best practices" approaches for each activity.

Goal 3 - Establish an institutionwide network security program.

As dependence on the network increases, vulnerabilities increase accordingly. Establishing an institutionwide network security program will help reduce UW-Extension's risk as it deploys network-based applications and programs. The primary requirements of this program deal with three distinct aspects of computer security: confidentiality, accuracy (integrity), and availability. UW-Extension information technology services must be deployed and supported in such a way that everyone using them (internally and externally) regards them as safe and secure.

To establish a formal network security program, UW-Extension must

- Designate a person as the UW-Extension Network Security Manager.
- Define information technology security requirements.
- Develop, implement, and maintain an information technology security policy that addresses all UW-Extension information technology activities.
- Update and maintain disaster/recovery plans for all UW-Extension information technology services and resources.
- Continuously evaluate information technology security products to protect investments.
- Increase awareness of information security issues among all UW-Extension faculty and staff.
- Implement more comprehensive procedures for password management; incident reporting and response; and security management of network devices, servers, and other information technology components.

Goal 4 - Establish a Technology Access Program to ensure that UW-Extension's services accommodate the abilities of all individuals that use its services.

Title II of the Americans with Disabilities Act (ADA) requires that a public institution of higher learning take appropriate steps to ensure that communications with persons with disabilities are "as effective as communication with others" (28 C.F.R.35.160 (a)). The conditions that constitute "as effective as" are "timeliness of delivery, accuracy of translation, and provision in a manner and medium appropriate to the significance of the message and the abilities of the individual with the disability." The UW-Extension Office of Equal Opportunity and Diversity Programs, information technology service groups, and UW-Extension programming units will work together to address these challenges and opportunities.

UW-Extension strives to advance the abilities of people with disabilities to meet their individual life goals through the use of information technologies. To accomplish this, UW-Extension will make every reasonable effort to ensure that its facilities and information technology systems are designed to accommodate people with the widest range of abilities and disabilities. Access considerations include facilities (computer training rooms, video/audio conference rooms, and general classrooms); hardware and software; instructional materials (video and audio cassettes, CDROMs, DVDs, web-based courses, web pages, teleconferences, and audio and video teleconferences); and web content (audio, video, interactive forms, menus, graphics, and text).

To accomplish its technology access goals, UW-Extension will

- Formally establish an on-going Technology Access Program.
- Designate a person as the UW-Extension Technology Access Coordinator.
- Establish policies and procedures to guide the Technology Access Program.
- Establish an on-going education program for UW-Extension faculty and staff.
- Conduct an assessment of the workplace and the services offered to better understand technology access issues and conduct an inventory of adaptive and assistive technologies available within UW-Extension.
- Establish partnerships with UW-Madison, the County Extension Offices, and UW campuses to effectively evaluate facilities, conduct individualized evaluations and training, and share resources.
- Develop effective communications to distribute information regarding the Technology Access Program.

Goal 5 - Establish a formal information technology research and development program.

New information technologies are being released at an unprecedented rate. These innovations have the potential to fundamentally change how institutions of higher education deliver their services and manage their operations. To most effectively understand how to identify, select, and evaluate emerging information technologies, UW-Extension must establish formal processes that involve the appropriate units and individuals. Coordination of the evaluation and adoption of technologies is critical to effective decision-making. These processes must address the adoption of new technology as well as the disposition of research and development projects that do not result in successful implementations.

To implement UW-Extension's formal information technology research and development program, the institution should

- Embrace emerging technology research and development as a natural part of UW-Extension's business process.
- Set priorities for research and development activities.
- Establish cooperative teams of staff among units to address emerging technology research and development tasks.
- Develop a methodology for identifying and evaluating emerging information technology that may benefit UW-Extension and a process for concluding research and development activities that will not lead to adoption or implementation.
- Continue applications research and development in emerging real-time interactive multimedia communications networks and equipment in support of future institutional program delivery needs.
- Create an information technology architecture group to work with cross-divisional teams that evaluate best practices, workflows, and new information technologies.
- Evaluate "in-house" and outsourcing approaches for adopting or integrating new technologies.
- Communicate results of research and development activities to UW-Extension faculty and staff and others systemwide through multiple channels.

Goal 6 - Establish a UW-Extension information technology organizational structure that meets UW-Extension's evolving needs.

Within UW-Extension, significant ambiguity exists regarding the appropriate relationship among the numerous information technology operations throughout the institution. Planning, budgeting, and system architecture decisions made by individual units are often not well coordinated with those made by other units, resulting in security, efficiency, and compatibility issues. These complementary, albeit sometimes competing, relationships need to be rationalized, made explicit, and communicated. As the business of higher education becomes more dependent on network-based services, better coordination among the units is imperative, and it is essential that the institution become more proactive in its approach to managing all information technology services.

To accomplish institutionwide coordination of information technology services, UW-Extension should:

- Establish a team that cuts across divisions and represents the information technology interests of the divisions.
- Review and evaluate the effectiveness of the existing information technology organizational structure, study alternative organizational models, and confirm that the existing structure is appropriate or recommend an alternative structure.
- Review the roles and responsibilities of all UW-Extension information technology staff members.
- Identify "the total cost of operation" for specific information technology activities and establish Extensionwide costs for service for specific activities.
- Identify opportunities for doing more things alike among units (e.g., LAN services, application development services, and system administration services).
- Establish a plan for disseminating information technology-related information throughout UW-Extension.
- Convene institutionwide information technology staff meetings to coordinate development activities and share ideas concerning projects.
- Hold periodic open forums to discuss progress concerning information technology efforts.
- Convene professional development programs to share how specific information technology programs are being run.
- Continue to improve the information technology training program to support staff development.

Goal 7 – Establish UW-Extension as a leader in utilizing technology associated with the convergence of network and broadcast technologies.

The convergence of traditional broadcast technologies and information technologies is opening exciting new opportunities for UW-Extension. Wisconsin Public Television and Wisconsin Public Radio are increasingly using information technologies to develop, produce, and manage their programming. In addition, work to integrate web-based content with traditional programming is creating new education opportunities.

UW-Extension will take actions to ensure that it applies the resources needed to develop services and programming that use broadcast and Internet-based technologies to extend educational services to appropriate audiences. These new information technologies will provide more programming flexibility and choice for services delivered via advanced networks.

To accomplish this, UW-Extension should

- Research and test information technology equipment that will be used to develop, produce, and manage content.
- Assess issues associated with large data storage facilities, web-based technologies and services, and streaming services.
- Investigate digital asset management systems that could be used for all UW-Extension content.
- Conduct programs to evaluate opportunities for interactive and enhanced television.
- Establish partnerships with other institutions to deliver programs and content via Internet2 and other emerging networks.
- Develop training programs to assist staff with the transition to information technology products and services needed to support digital broadcast production and management.

Goal 8 - Continue to implement new systemwide academic and administrative systems in partnership with UW System Administration.

The UW System is in the process of establishing a common set of administrative and academic applications to support faculty, staff, and students. In partnership with UW System Administration and other institutions, UW-Extension will continue to implement new systemwide academic and administrative systems.

As part of its commitment to systemwide information technology activities, UW-Extension will

- Continue support for the systemwide Web-Based Learning Support System.
- Provide ongoing support for the deployment and support of the Peoplesoft Shared Financials System.
- Contribute to the development of strategic directions for distance learning technologies.
- Participate in the development of the systemwide Identification, Authentication, and Authorization Directory Services System.
- Help plan for implementation of the new Appointment, Payroll, and Benefits System.
- Prepare the institution's information technology infrastructure to support new technologies and services that require systemwide implementation.
- Train and allocate staff to ensure that users receive the support necessary to integrate systemwide services and technologies into UW-Extension business processes.

4.0 CONCLUSIONS

A recurring theme within this Information Technology Strategic Plan is that the ability of groups within UW-Extension to work well together will have a dramatic impact on the institution's ability to research, develop, deploy, and support new capabilities that take advantage of the power of the network and new technologies. Achieving success will require improved communications and coordination throughout the institution and close attention to the effectiveness of organizational structure adaptations.

The institution must minimize unnecessary duplication and ensure a high degree of reliability for its information technology services. The information technology infrastructure and organization must enable a new generation of applications, promote a rapid transfer of research and development to everyday use, and enable access to rich media on demand.

UW-Extension's greatest challenge during the next few years will be to improve faculty and staff skills and to understand how best to use new technologies to advance the institution's instruction, research, and public service missions. This Plan will be coordinated with groups across the institution, and every UW-Extension employee and partner is welcome to participate in further defining and implementing the Plan's goals and strategies.