

2007 TECHNOLOGY TRENDS & ISSUES REPORT

PREPARED FOR THE TEXAS WESLEYAN UNIVERSITY TECHNOLOGY
PLANNING COMMITTEE

INTRODUCTION

This report identifies current trends and issues that may have an impact on information and instructional technologies at Texas Wesleyan University (TW) in the near future.

CURRENT TECHNOLOGY TRENDS

Internet access and support

Wireless access is on the rise; the market is likely to go over \$200 million in the next three years; 79 percent of campuses have wireless networks. The convergence of wireless devices is speeding up, and it is very likely the U.S. will have to adopt global standards soon. Research in data transport through power lines is proving productive. If this occurs, the rural-urban divide will disappear. Students are expecting more technical support for the range of devices they bring to and use on campus. Institutions providing such services and storage space for students are unable to meet the rapidly growing demands of students and are spending large portions of their budgets in an effort to keep up (University of Texas System, 2005).

IT investments

At institutions that have a fully-developed network infrastructure (servers, wiring, and switches capable of 1GB speed to every location on campus), spending on technology has begun to slow. At these institutions, productivity promises are being realized and the ability of technology to contribute to the efficiency of educational delivery is being maximized. The majority of hardware expenses at these institutions are in maintenance and replacement of equipment and not in network and service expansion (University of Texas System, 2005).

Software driving up hardware requirements

New, more powerful desktop and server software packages and operating systems, like Microsoft Office 2007, Vista OS, Media Services 9, and Citrix, are entering the market. These software packages require more speed, memory, processing power, and storage in the computer systems and servers on which they run. Many older computer systems and servers will not be able to operate the new software (Microsoft, 2007). Institutions wishing to adopt this software will be faced with the choice of replacing the computers and servers that do not meet the minimum operating requirements or dealing with the operational and support problems created by multiple software platforms.

Use of technology for continuous access to learning

Information technology is transforming the traditional pattern of learning. The old goal was site-based, standardized curriculum to impart knowledge and learning. The new goal appears to be endlessly customized programs to transmit competencies and skills, any time, any where (University of Texas System, 2005).

Political initiatives and accountability

Spurred by the rising cost of university tuition, state and federal legislators are beginning to demand proof of the value of higher education and accountability ratings for colleges and universities. Some politicians are

introducing bills that call for the development of curriculum standards and testing of university students similar to that occurring in K-12 education. It is likely that some versions of the bills being introduced will contain Technology Applications Standards that, along with other curriculum standards, would need to be met in order to qualify for some forms of state and/or federal funding (Office of the Governor, 2004).

Push for Information Literacy across the curriculum

One skill identified as necessary to be successful in the current century is information literacy, defined as the ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand. Many institutions are working to redesign their curriculum to support the development of this skill and develop information networks and services that are able to support this initiative (Milne, 2007).

Changes in legal filing requirements

Adoption of mandatory electronic filing in federal court along with adoption of the amendments to the Federal Rules of Civil Procedure that shift the focus to electronic files and electronic practice for anyone involved with the federal system has occurred. The effects of these changes will filter down to nearly every practitioner relatively soon (Tredennick, 2006).

Increased emphasis on e-learning

In 2004, nearly one million students took on-line courses, 50 percent more than in 2002, and 75 percent of higher education institutions planned to make on-line learning a strategic initiative by the end of the academic year. In order to meet the growing demand for on-line courses, institutions are: developing adequate and reliable technical infrastructures; training instructors and students to use the technical tools; and redesigning courses to incorporate e-learning into pedagogy (University of Texas System, 2005).

Shift from the Information Age to the Interaction Age

It is now being recommended by many experts in the field that campuses plan to deploy learning technologies that encourage and support interaction. In this context, interaction comes in two varieties: human-to-information and human-to-human. The focus of technology use is now shifting from delivering and accessing digital content to creating environments in which multiple people can work in a shared digital environment to publish, manipulate, and organize data collaboratively. As America enters the interaction age, current information technologies are being merged with newer technologies to emphasize interactivity over content delivery (Milne, 2007).

TOP IT ISSUES FACED BY HIGHER EDUCATION INSTITUTIONS (DEWEY & DEBLOIS, 2006)

No. 1: Security and Identity Management

Institutions face a tenuous balance between the need to expand information access and the requirements to protect information assets from unauthorized and inappropriate use. Increased use of electronic information at higher education institutions has resulted in an expanding number of accounts, passwords, and other mechanisms to permit and limit access to these resources. Managing access to this expanding set of resources has itself created overhead and increases the likelihood that access to some of these resources may not be appropriate.

No. 2: Funding IT

For the past 10 years, Funding IT has been listed as one of the top two concerns of institutions. For most colleges and universities, 2006 was a year of “treading water” simply because non-IT demands (such as substantial increases for utilities) on the budgets of higher education institutions increased considerably. In

2007, most colleges and universities will be faced with a critical choice: significantly increase funding for IT or eliminate, reduce, or consolidate some IT services.

No. 3: Administrative/ERP/Information Systems

Nearly 70 percent of all institutions responding to the most recent EDUCAUSE Core Data Service survey reported having implemented or being in the process of implementing an Enterprise Resource Planning (ERP) system. In addition, the survey shows substantial commitment to other information systems that are not necessarily part of an ERP package, such as Web portals and course management systems. Projects of this scope might take three years or more and demand large and sustainable investment and commitment by institutional and IT leadership, both throughout and after implementation.

No. 4: Disaster Recovery/Business Continuity

IT disaster recovery and business continuity plans involve technology, people, and communications. Comprehensive plans define the time-critical activities necessary during an emergency response and crisis coordination, as well as the longer-term protocols for business continuity and institutional resumption. This type of institutional insurance policy can require substantial (and ongoing) financial and staffing commitment.

No. 5: Faculty Development, Support, and Training.

Several key trends identified in *The Horizon Report, 2006 Edition* impacting the teaching and learning environment include the pace of change in development of collaboration tools, interest in individualized computing experiences such as “personal broadcasting,” and the impact of mobile computing technology on potential delivery methods. Additionally, properly addressing intellectual property continues to be a challenge in the instructional technology arena.

As new technology offerings are released and as student expectations increase along with them, it will undoubtedly remain a strategic challenge for IT organizations to make these technologies available, usable, and scalable for faculty while maintaining support and training services for “more traditional” information and instructional technologies.

No. 6: Infrastructure

Managing IT infrastructure in today’s higher education environment requires a careful balancing of cost, manageability, flexibility, stability, security, and performance. Institutions constantly strive to improve communications and services for students, faculty, alumni, staff, friends, and prospective members of the community. Expectations are high, and project delivery schedules become increasingly short at the same time that integration and security requirements become more complex. Service Level Agreements (SLAs) are a useful tool for establishing expectations and understanding the requirements of internal customers.

Institutions continue to view technologies as a competitive opportunity requiring the ability to adopt and adapt quickly. IT organizations must deploy the right combination of hardware, software, and services in a workable information architecture to facilitate the organization, storage, access, and maintenance of strategic information services and resources.

No. 7: Strategic Planning

Strategic planning is one of IT’s core responsibilities. Planning informs and builds confidence in IT’s ability to deliver services and programs to organizations. Strategic planning helps the institution forecast needs and look to the future. For this reason, strategic planning is one of the essential organizational artifacts of all IT organizations.

The importance of a well-articulated and practiced planning process is critical to the success of all major IT projects in the long term. Without a focus on the path to enabling collaboration, communication, and project management, strategic planning efforts result in faded artifacts stored in a binder on the shelf. Important questions and issues about the process are used to establish a viable strategic plan and to guide the

management of the IT enterprise. Strategic plans must be flexible and vetted to inform campus leaders about the near- and long-term value of IT type services.

No. 8: Governance, Organization, and Leadership

Governance, organization, and leadership in IT play a critical role in successfully managing the other nine current issues identified here. Without strong leadership and a visible role in the institution, IT may watch from the sidelines until there is a reason—such as a disaster—for involvement.

No. 9: E-Learning/Distributed Teaching and Learning

Increasing numbers of postsecondary schools are taking advantage of the wide range of available computing and communications technology capable of providing learning opportunities far beyond the time and place constraints of the traditional classroom. E-learning has emerged from an add-on to traditional education to a mission-critical component of the educational environment. While institutions have begun to address many issues surrounding e-learning, there are still challenges to address.

No. 10: Web Systems and Services

A Web service is a software system designed to support interoperable machine-to-machine interaction over a network. The ultimate vision is faster implementation and reduced maintenance costs through use of reusable components from multiple providers, plus improved end-user convenience and satisfaction.

Web services most commonly implemented today include integration with established internal applications, security, integration with existing external partners, Web content management, personalization, payment and billing, and order fulfillment. Access to silo data is a driving need. Amazon's shopping cart system, eBay's bidding system, Google Maps, and the FedEx tracking system are exemplary examples of Web services. Most importantly, they demonstrate organizational agility evidenced by fast response to customer needs and expectations. These businesses are directly driving the personal and academic expectations of students, faculty, and staff. The higher education sector, trailing the commercial sector in Web services implementation, is being challenged to meet these expectations.

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