Statewide Information Technology Plan 2002

STATEWIDE INFORMATION TECHNOLOGY PLAN 2002

A CULTURE OF COOPERATION

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"Looking back - we have accomplished much. Looking forward - we cannot be complacent. Continuous progress is essential if we are to survive in an age of rapid change." *Nancy Walz, Director, Policy and Planning Division, ITD.*

A CULTURE OF COOPERATION

North Dakota is a big state with a small town feel. Even within government, bureaucratic barriers and turf protection are set aside as individuals come together to accomplish great things. This has been especially true in the area of technology. Important projects like the implementation of a statewide broadband network connecting government, higher education campuses and K-12 schools; and the adoption of new administrative software and student information systems on a statewide basis would be impossible in most other states. The "culture of cooperation" found in North Dakota allows us to maximize our technology investments through the adoption of a shared vision and spirit.

Governor John Hoeven and his administration have established six pillars for building a better future for North Dakota: Excellence in Education, Economic Development, Agriculture, Energy, Technology and Quality of Life. These pillars identify focus areas for attracting new industries and growing the existing economy. Technology drives much of the change we see today, creating new challenges as well as exciting possibilities. The application of technology to excellence in education, is especially critical. Education acts as a catalyst, developing the workforce necessary to lead the transition to a new economy. Technology links people and businesses, schools and government, in ways never before possible, creating vital new opportunities for all North Dakota citizens.

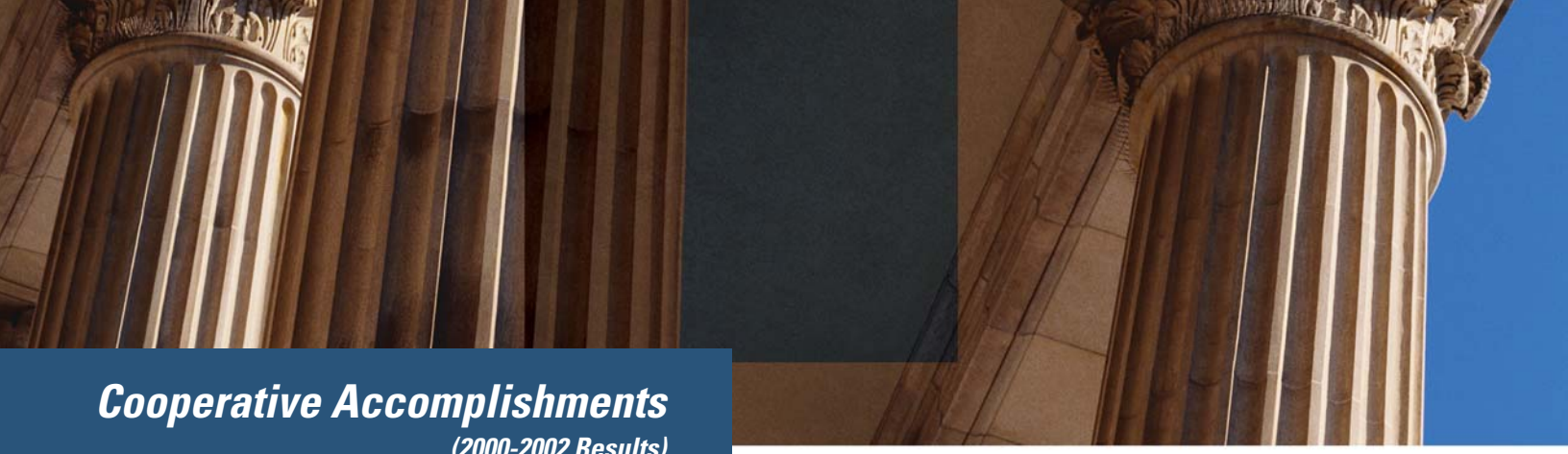
The Statewide Information Technology Plan 2002 outlines North Dakota's goals with respect to the implementation of technology for government and education. The plan is comprised of three key areas: State Government, K-12, and Higher Education. The respective technology leaders in each area are Curtis Wolfe, Chief Information Officer for the state; Grant Crawford, Chief Information Officer, University Systems; and Dan Pullen, Director, Educational Technology Council. They have developed the goals and strategies in conjunction with various executive committees they lead. In the plan, you will find a number of goals where shared efforts across the three areas are planned, demonstrating the collaborative environment unique to North Dakota. Along with the goals, the accomplishments demonstrate the strong basis on which we build and give a glimpse of how technology has enriched the lives of North Dakotans.

"We are laying the foundation for government, education business's and industries throughout the state to connect to the world — and just as important, for the world to connect with North Dakota."

Governor John Hoeven, State of the State Address, 2002.

Because the planning process is a continuous one, the Statewide Information Technology Plan 2002 provides a glimpse into the process at this point in time. The plan is simply that, a plan. The actual implementation and even the strategies will evolve depending on funding, changes in technology, or changing requirements. The purpose of the plan is to establish the overall direction and provide an important measuring tool to judge our progress. More detailed plans will be developed based on this direction and will propel us forward to greater achievements.

You are invited to gaze into the future with us and explore the possibilities defined by the goals on the following pages: online services transforming the way government works, virtual classrooms expanding the curriculum in rural schools, and world-class educational opportunities supported by the technology of the North Dakota University System. Experience the "culture of cooperation" as we create an environment in North Dakota that is seen as progressive and responsible to the changing needs of its citizens.



Cooperative Accomplishments

(2000-2002 Results)

There are many success stories to share in looking back at the goals from the Statewide Information Technology Plan 2000. The investments made in the last two years are paying big dividends for North Dakota taxpayers and form a solid foundation for moving forward.

Build E-Government

This year, the state launched 17 new online services bringing the total number of e-government services to 37. One of the most successful accomplishments is the online renewal of motor vehicle registration. The new system accepts credit cards and has reduced turnaround time by approximately three weeks. Within the first month of operation, more than 1,648 online renewals were completed.

In September, the Secretary of State's office began offering direct filing of Uniform Commercial Code (UCC) and Central Notice System information electronically. This is part of an ongoing strategy to deploy web-based tools for businesses. Earlier they deployed a tool to give customers the ability to search the agency's nearly 85,000 business records online for instantaneous, 24-hour-a-day, seven-day-a-week access.

North Dakota ranked high in a number of national surveys:

- 8th in the Digital States Survey in the Digital Democracy category, up from 38th the previous year and the most improved state in 2001
- 4th in the Digital States Survey in the Administration and Management category in 2002
- 7th in the Digital States Survey in the Taxation/Revenue category in 2001
- Among the top five states for the most citizen-friendly web portals in the nation in a recent Pricewaterhouse Coopers study
- 3rd in disability access and 12th overall compared to other states in a Brown University study in 2001

Promote Anytime, Anywhere Education

The Educational Technology Council (ETC) awarded over $2,100,000 in grants to 81 schools in six consortiums for the purposes of implementing video networking. Fall 2002 statistics indicate that 2,376 high school students are enrolled in 166 video courses.

An Education Week Technology Counts 2002 survey placed North Dakota first in the percent of teachers using the Internet at 87 percent. North Dakota ranked first among schools with Internet access from one or more classrooms at 97 percent, tied for third in the number of students per computer (2.8), and was fourth in students per Internet-connected computer at 4.9.

North Dakota is also one of only 12 states to have a "virtual high school." As part of an ETC-funded pilot project, The Division of Independent Study is offering a two-semester Spanish course to students in seven high schools using a combination of web-based activities and live video interaction.

North Dakota University System Online offers one-stop access to a wide variety of distance education courses available from the 11 colleges and universities that comprise the University Systems.

Encourage Enterprise-Wide Solutions

North Dakota continues to gain national recognition for our state's innovativeness and holistic approach in implementing technology solutions.

ConnectND is a project to replace the financial, human resource and student information systems of government and higher education with a single vendor solution. We are the first state in the nation to aggregate the information from all these entities into one system. Mayville State University and Valley City State University launched components of the system as pilot sites in October 2002.

A Geographic Information Systems (GIS) "hub" was implemented in July 2002 and web-based tools were made available online in October 2002. The web-based tools and central repository of maps and other location-based information make data easily available to all levels of government and the public as well.

PowerSchool is a promising new student information system being implemented in school districts statewide. This system provides a cost-effective, reliable, state-of-the-art student information system to help schools manage student information, collect data and report information to state and federal agencies. The Bismarck Public School system launched the pilot program in the 2001-2002 school year and now Beulah, Carson, Belcourt and Stanley are using the system. PowerSchool is scheduled for implementation in up to 30 districts by October 2003.

The Criminal Justice Information Sharing (CJIS) Initiative is a coordinated effort across all criminal justice organizations to provide effective information systems to capture and share complete, accurate

and timely information needed to make quick, informed decisions. Standards for data sharing have been developed and a plan for providing the required technology is being implemented.

Federal Health Insurance Portability and Accountability (HIPAA) mandates have a broad impact on government and health providers in the state. The state has completed an assessment to determine the agencies impacted and will coordinate compliance efforts. The State HIPAA Coordinator also facilitates the sharing of information regarding the interpretation of the law and strategies for compliance.

Reinvent Government

The first step in reinventing government is analyzing our current processes and identifying potential for efficiency. Approximately 100 state employees attended training to learn about business process reengineering tools and techniques. The Department of Transportation provided additional training opportunities to their employees.

The Tax Department has demonstrated the effectiveness of centralized Electronic Document Management System (EDMS) services by automating tax return processing, saving nearly 4,000 hours in temporary staff time and $63,000 in paper storage costs.

Strengthen Information Technology Professionals

Two bills passed during the 2001 legislative session, House Bill 1119 and House Bill 1120, provide additional flexibility for state agencies in recruiting and retaining employees. Agencies have used this flexibility and are evaluating the results.

Advance Project Management

More than 100 state employees have been certified in project management through a course offered by Mayville State University resulting in better qualified individuals to manage projects.

In the last year, 14 large projects (projects costing $250,000 in one biennium or $500,000 during the life of the project) were successfully completed. Seven of these projects were completed on or under budget with a total savings of $1,813,350. Of the projects completed over budget, the total overrun was $175,995.

Coordinate Technology Research and Planning

The Information Technology Department began offering Innovative Technology Forums on a quarterly basis. More than 100 people attended in person and 42 people viewed the live web cast of the forum on the topic of wireless technology. Other topics have included continuity planning and video technologies.

Fund Innovations

Funding was not appropriated during the 2001 legislative session for the "Innovation Fund." Bonding will be pursued this biennium as a way to finance the ConnectND project.

Integrate State Broadband Network

This most notable achievement in the last biennium was completion of the statewide network called STAGEnet. This network provides high-speed, broadband connections to 192 North Dakota communities and 202 schools for a total of 456 sites. Currently, 29 libraries are also connected to the network giving public access to the Internet to those who can't afford a connection to their homes.

A University of North Dakota Social Science Research Institute survey completed in June of 2002 showed North Dakota to be one of the best-connected states in the nation. Eighty percent of businesses and 70 percent of citizens indicated they used the Internet.

Modify Public Policy

E-signature legislation was passed during the 2001 legislative session to give digital signatures the same legal weight as traditional signatures. During the 2001-02 interim, the Legislative Information Technology Committee studied the technology capacity and needs of the state in response to House Concurrent Resolution 3057. Statute changes to protect security information like passwords and user IDs are being proposed in the 2003 legislative session.

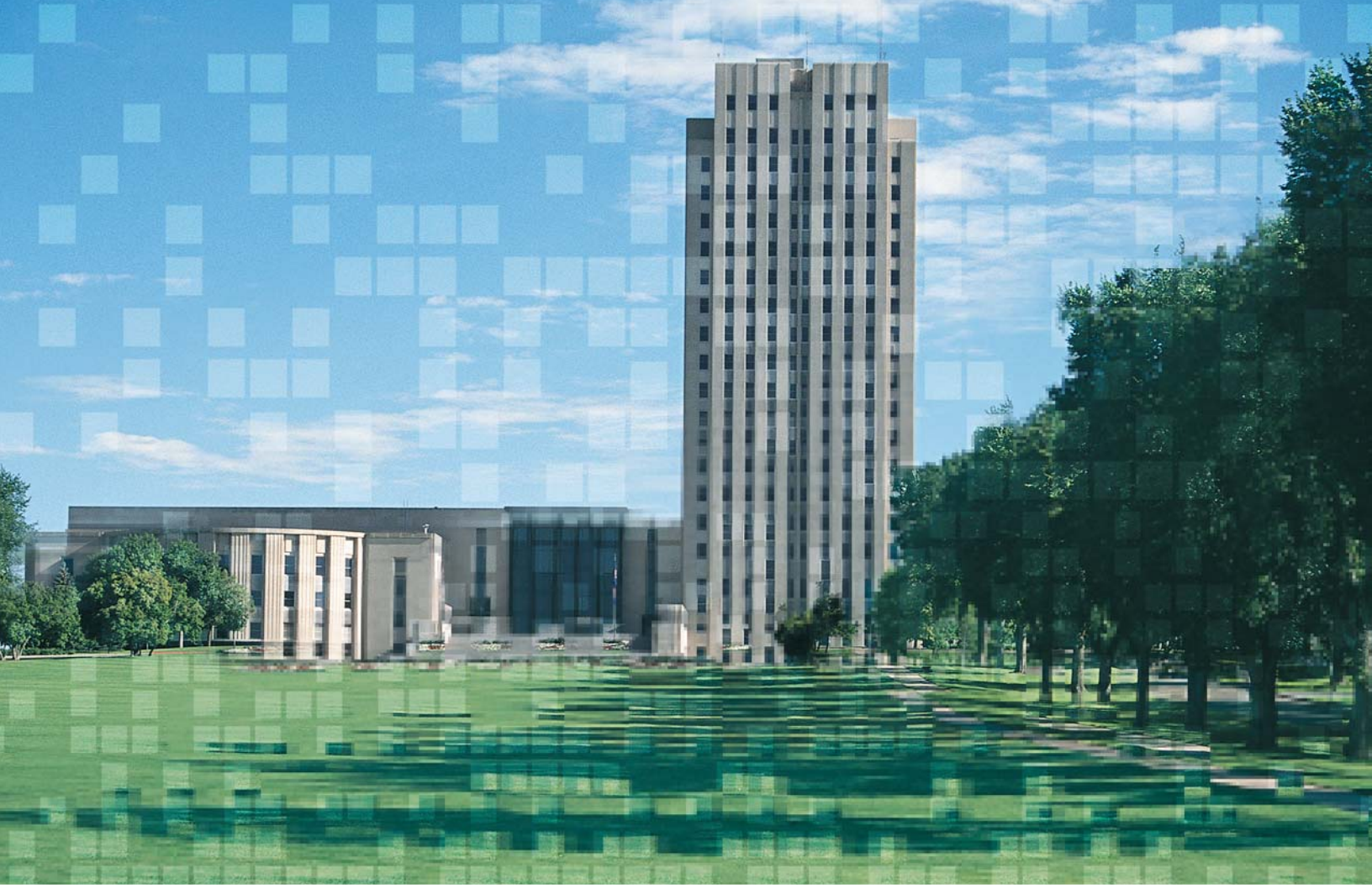
Develop Workforce

The North Dakota Workforce Development Council, in cooperation with a number of other organizations, has a project underway to survey employers' needs for qualified technology workers and plan for the development of training programs.

The Educational Technology Council (ETC) and EduTech provided a number of professional development opportunities for school administrators and teachers. This included, among others, the North Dakota Technology Academy for School Leaders attended by 475 superintendents and building principals.

Enhance State Radio Network

The state radio network expanded its mobile data terminal system by five towers, bringing the total number of vehicles with network access to 95 highway patrol vehicles. Changes in technology and a mandate from the Federal Communications Commission require a statewide upgrade from an analog to a digital system. This goal continues to be a part of the 2002 statewide plan to maintain compatibility throughout the state.



GOVERNMENT

Government Overview

By Curtis Wolfe

Growth and innovation are essential for the continued vitality of our state. I'm proud to say that the people of North Dakota have the vision to create and implement technologies that make our state a dynamic place to live and work. Our state works extremely hard to stay ahead of technological advancements, and we've become a leader in our nation, blazing the way for other states to follow. The six goals outlined on the following pages identify a number of areas where we will be partnering across government boundaries to implement innovative solutions.

Through a culture of cooperation we have implemented a statewide network that connects county, city and state government offices, as well as K-12 and higher education campuses in 192 communities. This kind of cooperation demonstrates our unique ability to achieve important goals while at the same time maximizing the impact of scarce investment dollars. In the current biennium, we are expanding the video conferencing capabilities of the network — eventually putting 80 percent of the population within 30 minutes of a video site.

This biennium we have also begun a project to replace the state's aging financial, human resource and student administration systems. Once again, state agencies and higher education campuses are working together to implement a system that will meet everyone's needs. While the investment over the next several years will be substantial, the "enterprise" approach will be less costly than a piece-meal approach whereby the many existing agency systems would be upgraded and patched together over time. This project, called ConnectND, is not just a software upgrade — it will change the way we do business by making government more efficient and providing greater accountability.

Sharing criminal justice information, posting geographic information and mapping data, and building an e-government portal are examples of the important projects outlined in the plan. In addition, we will be working to improve the management of technology and evaluating the impact of technology on policy decisions. Over the past three biennia we have implemented strategies to improve technology planning and project management. Through a new process called Enterprise Architecture, we will involve state agencies in developing technology standards and defining future technology solutions for state government.

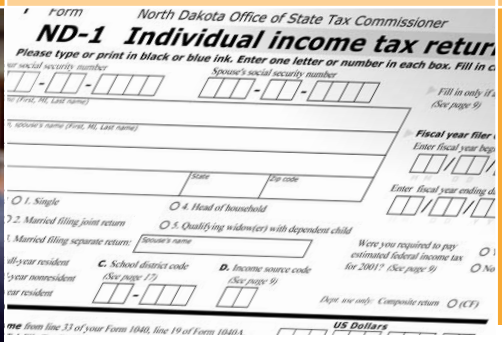
North Dakota has a number of challenges including distance barriers and declining population. Technology can play an important role in addressing these obstacles by providing cost-effective, innovative solutions. If we are to attract new businesses and citizens to the state, if we are to keep young people from leaving, we must help them to understand that North Dakota is a high-tech, digitally equipped state. Many times, the first impression of North Dakota is generated through a government service. Visitors browse the web for tourist information or hunting licenses. Businesses seek to register or to locate economic development information. Investing in up-to-date technology and offering electronic government services are critical to establishing North Dakota's image as a great place to live and work.

Please accept this as a challenge to each and every person living in our state: Let's explore future possibilities and continue to deploy modern technology to showcase North Dakota as a high-tech state.

Curtis Wolfe, Chief Information Officer
Information Technology Department

GOAL ONE

Offer multiple service methods to meet increasing customer expectations and overcome barriers of geography.



STRATEGIES

- Provide a customer-friendly view of electronic government services.
- Continue to build e-government applications to provide anytime, anywhere services.
- Coordinate statewide help desk services and explore the expansion to 24-hour-a-day, 7-day-a-week coverage based on demand.

How citizens interact with government is changing rapidly as technological advances offer new possibilities for providing service. While some people will continue to feel more comfortable filing traditional paper forms, others are demanding online access to information and services from their homes and businesses. *A survey by the Social Science Research Institute in June of 2002 showed that an astounding 70 percent of citizens and 80 percent of businesses in North Dakota use the Internet.* The vast majority of these users said that having government services online is more convenient and allows better access to information. The state has already developed 37 online applications — like the purchase of fishing licenses. Many more government applications need to be developed until eventually all forms and services are online.

In addition to having government services online, they also need to be easy to find. Citizens and businesses should not be frustrated trying to navigate a maze of state agencies and programs. The DiscoverND web site provides a one-stop approach to government services and has advanced search capabilities to get customer where they need to be. Maintaining this portal with current, fresh information will be a priority. Not only does it improve services to our citizens, but it is also a marketing tool to attract new businesses and visitors to the state.

As more and more government services go online, expectations also increase. Citizens may assume that online means always available, 24 hours a day, 7 days a week. If they need help filling out a form or accessing an application, the advantage of the online convenience is diminished if support is only available from 8:00 a.m. to 5:00 p.m. As the state moves to deploy more critical functions like law enforcement systems, it will be imperative that we examine the need for around-the-clock support. During the next biennium, as major initiatives like ConnectND and the Criminal Justice Information Sharing project are deployed, we will need to determine the requirements and costs associated with expanding support options and establish a course of action.

Jim logged on to the Internet at 4:00 a.m. and browsed for a license at discovernd.com/gnf. At 4:45 a.m. he was hooking the big one.

GOAL TWO

Maintain core business processes to reduce the risk of potential disruption to critical services.

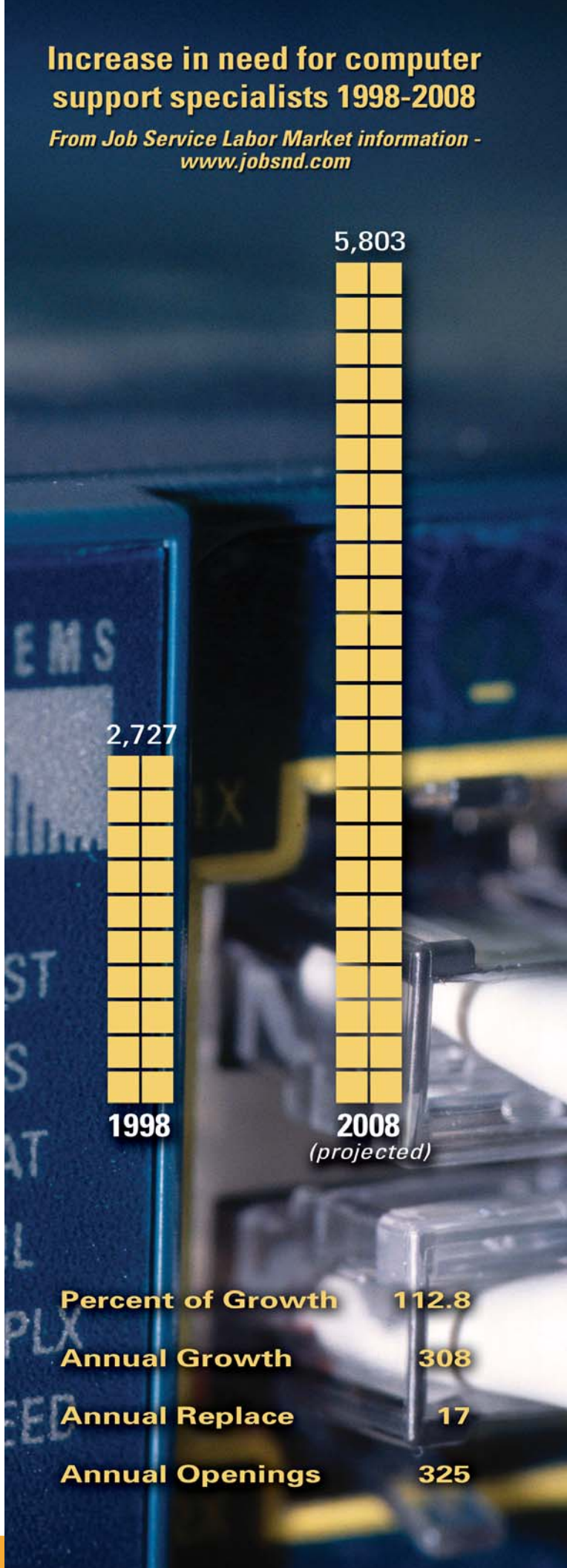
STRATEGIES

- Develop contingency plans for the effective continuation of services in the event of a disaster.
- Plan for the obsolescence of existing systems.
- Retain and train technology staff and knowledgeable workers.

In 1997 Grand Forks, North Dakota, experienced a horrific natural disaster with a flood and a fire. On September 11, 2001, our country experienced a terrorist attack that made us reevaluate our priorities. These two examples show the importance of disaster planning and also demonstrate the vital role that communication technology can play in the recovery period. Government businesses processes have become so dependent on technology that many of these processes would not function without access to the underlying systems and data. Arrest warrant systems, check writing systems, e-mail, telephone and Internet access are all examples of critical systems that are vital to ongoing operations. The state also has a major responsibility for coordinating a response in the event of a disaster. Proactive planning for catastrophic events is essential. This includes having systems in place to respond to a disaster, and restoring information quickly and efficiently.

Service may also be disrupted because of incompatible equipment and software, or the failure of hard-to-maintain, obsolete systems. Technology changes at a rapid rate and we need to plan for its obsolescence. Just as buildings and roads need to be maintained and replaced, so too the maintenance and replacement of technology investments needs to be planned and budgeted. The risk of postponing the replacement of obsolescent systems can be as disastrous as any other catastrophic event. Agencies have identified the replacement of critical systems in their technology plans and the state will need to prioritize the investment needed to replace these systems.

Maintaining the technology to support core government business processes also depends on having well-trained, experienced people. Workforce shortages in the area of technology continue to put pressure on the state to find and retain qualified staff. The state must continue to provide adequate training to update skills as technology changes. Having highly trained staff available to support and maintain the technology is a critical factor in minimizing service disruptions and down time.



GOAL THREE

Manage state government resources to enhance efficiency and improve service delivery.

STRATEGIES

- Provide modern, intergrated systems for managing financial and human resources in coordination with the North Dakota University System.
- Improve the efficiency of "back office" processes.
- Collaborate to improve the management of technology.

A culture of cooperation has been developed across state government to focus on joint initiatives and improve delivery of service. The most comprehensive technology project the state has ever undertaken, ConnectND is a replacement of North Dakota's aging administrative and student information systems. PeopleSoft's Enterprise Resource Planning (ERP) system has been chosen to replace the state's payroll, accounting, financial, student records and registration systems, some of which were first put into operation more than 20 years ago. By implementing a single statewide system across higher education and state government, we have a tremendous opportunity to do something that no other state has done. As part of the implementation, current processes and procedures will be optimized to implement the best practice solutions provided by the new software. The result will be more efficient and effective government.

The idea of making government more efficient through the use of document management is well known as the "paperless office" and "office automation." As the costs of the technologies involved have come down, the state has implemented Electronic Document Management System (EDMS) components on a centralized basis. By electronically imaging data, we can begin to minimize paper storage across the state, saving hundreds of thousands of dollars annually in storage costs. Electronic document management also improves customer service by giving employees instant access to a document via a computer rather than requiring a trip to some distant storage space. The Tax Department has aggressively pursued automation of paper handling and experienced significant savings. Other agencies are following suit. Additional capabilities to automate work flow and forms processing will be implemented to create efficiencies in document management for all agencies.

These kinds of shared initiatives have been identified through technology planning processes first mandated in 1997. Planning and project management have since improved, as agencies have put these processes into action. The state will continue to improve the management of technology by implementing a new process called Enterprise Architecture, which will drive continuous business and technology alignment in state government. Enterprise Architecture provides an overall plan for designing, implementing and maintaining the underlying infrastructure to support information sharing and resource optimization.

"By electronically imaging data, we can begin to minimize paper storage across the state, saving hundreds of thousands of dollars annually in storage costs. The Electronic Document Management System also improves customer service by giving employees instant access to a document via a computer rather than requiring a trip to some distant storage space."

GOAL FOUR

Collect and disseminate information to ensure an informed public, and informed decision making by the government employees, while maintaining the privacy and confidentiality of personal information where appropriate.

STRATEGIES

- Build a system for sharing Criminal Justice Information (CJIS) across political boundaries.
- Expand the use of the Geographic Information System (GIS) "hub" for sharing data.
- Create communication mechanisms to quickly inform the appropriate personnel of public health or safety threats.
- Identify information privacy requirements and plan for the effective resolution of privacy issues.
- Plan and implement security measures to protect information and other assets from unauthorized access.

Information is a significant asset and becomes even more valuable when it is easy to find and use. We must guard against its misuse by protecting data using strong privacy policies and security measures. Improving public safety through Criminal Justice Information Sharing(CJIS) will be accomplished by way of a plan developed under the direction of the Criminal Justice Information Sharing Board and Executive Committee. This effort involves not just state entities like the Courts, Attorney General's Office and Department of Corrections, but also local police, sheriffs and state's attorneys. From the time a crime occurs, until an arrest is made, and conviction and sentencing take place, many people in different organizations are involved. Having up-to-date, accurate information shared during the process is essential. An important component of the implementation plan is the creation of an information sharing hub to accomplish this objective.

The continued development of the Geographic Information System (GIS) hub will benefit North Dakota agencies, departments, institutions and the public by providing centralized storage of location-based information and making it accessible to agencies and to the public. Geographic information provided in the form of maps can provide data in a visual format that is easily understood. Maps of legislative and school boundaries plotted against demographic data, maps of changing water boundaries and flood plains provide more information in a single picture than pages of text can convey.

Technology plays a vital role in informing the appropriate personnel of public health or safety threats. One program launched to communicate health emergency information is the Health Alert Network, part of North Dakota Department of Health's bioterrorism readiness program. It was established under a cooperative agreement with the U.S. Centers for Disease Control and Prevention and serves as a communication network among state and local public health agencies, health care providers, hospitals and emergency management officials. Another program being implemented by January 1, 2003 is Amber Alert, a partnership between law enforcement agencies and broadcasters to send an emergency alert to the public when a child is abducted and believed to be in grave danger. As with other efforts, North Dakota excels in bringing people and ideas together for the best possible solution.

In a June 2002 survey, nearly two-thirds of North Dakota citizens expressed concern about privacy on the Internet. With the ability to easily collect and access information comes the responsibility for protecting the privacy of personal information and securing data from unauthorized uses. The public's need to know must be balanced with the rights of individuals for privacy. Initial policies have been developed for state agency practices based on principles of notice, choice, access and security. Additional study of state and federal legislation, including coordination of the Health Insurance Portability and Accountability Act compliance, will provide the background for planning next steps to address privacy issues. A comprehensive security framework will be developed to outline the roles and responsibilities of everyone involved in protecting information and technology assets, from the system administrator to the end user.

"From the time a crime occurs, until an arrest is made, and conviction and sentencing take place, many people in different organizations are involved. Having up-to-date, accurate information shared during the process is essential."

GOAL FIVE

Leverage state government spending to create viable economic development opportunities in North Dakota.

STRATEGIES

- Assist political subdivisions to find cost-effective, last-mile connectivity solutions in individual communities.
- Facilitate partnerships with private industry and non-profit organizations to encourage resource sharing.

By facilitating partnerships, state government is able to leverage spending and promote the adoption of cost effective technology solutions in North Dakota. Two ways to advance greater professional, economic and political change include finding connectivity solutions for individual communities, and facilitating partnerships with private industry and non-profit organizations. Last-mile connectivity costs remain a barrier to linking local government offices within a community. Technical support is needed to evaluate options and identify economical solutions for connecting multiple sites. The Information Technology Department has provided this support to a number of North Dakota communities, resulting in higher bandwidth connections at a lower cost. The continuation of this service is essential to leverage the benefits of the state network and find affordable options for more cities.

Ideally, private industry will provide direct delivery of telecommunications services to citizens and businesses. In North Dakota, lack of population density can make it difficult for private industry to justify significant investments. In these cases, state government can partner with commercial customers to create a higher level of demand. In other cases, the state can facilitate cooperative arrangements between commercial or non-profit entities. Rural health clinics provide an example of the need for cooperation. Competing hospitals have established separate, duplicate networks to deliver telemedicine services to remote clinics. In one case, video equipment and network connections from two hospitals sit at opposite ends of the same room in a rural clinic. The hospitals have asked the state to explore the creation of a single network with costs shared by the participating entities. In order to promote service delivery and economic viability in rural North Dakota, the state will continue to explore these kinds of strategic partnerships as they arise.

GOAL SIX

Build an affordable, shared infrastructure to deliver core services to North Dakota citizens.

STRATEGIES

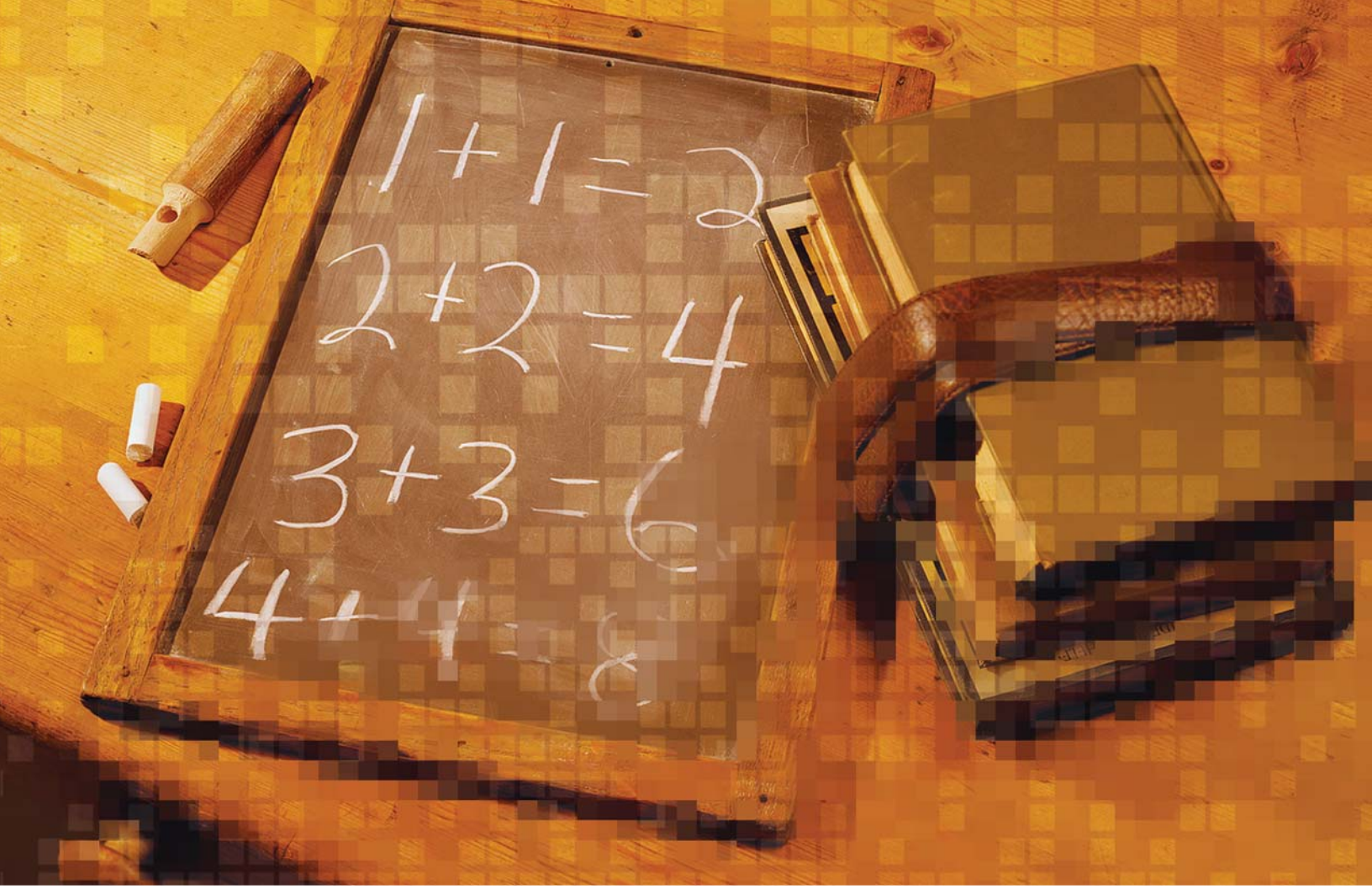
- Manage network services to state government, education and political subdivisions to ensure availability at a reasonable cost.
- Provide centralized hosting of applications for political subdivisions.
- Upgrade the capabilities of the state radio network to incorporate digital technologies and maintain interoperability.

Aggregating the investment dollars from multiple entities is the only way a sparsely populated state like North Dakota can fund the robust infrastructure required for the new economy. Communication between state government, K-12 and higher education entities, and political subdivisions requires a single, secure, integrated wide area network that is properly managed, always available, and has the capacity to grow. North Dakota's network, called STAGEnet (Statewide Technology Access for Government and Education), provides high-speed broadband connections to 192 North Dakota communities and 202 schools for a total of 456 sites. The state's investment made it economically feasible for local telecommunications providers to upgrade their services in rural areas. These same providers can now offer expanded services like ATM and DSL to non-government entities as well. Because of the overwhelming success shown by STAGEnet, the state of North Dakota has learned how powerful an integrated network can be in providing a foundation for video capability and access to centrally hosted applications. As usage of the network continues to grow, it is important for the state to provide the security and reliability necessary for government and education while at the same time controlling cost. Maintaining and supporting this network infrastructure is essential as more and more government and education services depend on it to reduce distance barriers and reach out to rural areas of the state.

The connectivity provided by the state network has made it possible for the Information Technology Department (ITD) to offer additional services to local governments and K-12 school districts. ITD hosts a student information system, PowerSchool, on a centralized basis for schools throughout the state. Bismarck Public Schools piloted the system and over 60 additional districts plan to implement the software. The centralized hosting model has reduced licensing fees and eased the burden of technology support for the school district. Other education applications will be evaluated for centralized hosting as needed. The state plans to follow this successful model as a component of the Criminal Justice Information Sharing (CJIS) architecture as well.

The state radio network has provided the infrastructure for public safety communications for many years. Changes in technology and a mandate from the Federal Communications Commission now require a substantial statewide upgrade from analog to digital mode. Some local jurisdictions have already converted by establishing independent networks. It is imperative that the state act soon to maintain compatibility throughout the state. Because the cost of the upgrade will be considerable, State Radio plans to convert to digital using a phased approach as funding becomes available. Standards will be established so that equipment purchases by local entities will be compatible once the entire network is upgraded. A detailed plan will be developed and implemented that maintains existing interoperability and allows for a smooth transition.

"Communication between state government, K-12 and higher education entities, and political subdivisions requires a single, secure, integrated wide area network that is properly managed, always available, and has the capacity to grow."



K-12

EDUCATION

K-12 Education Overview

By Dan Pullen

Can you imagine what our lives would be like if we all had the opportunity to grow up in the twenty-first century? We have all heard stories from our parents or grandparents such as, "I had to walk five miles to school in three feet of snow," or "We had to warm our ink by the coal-burning stove before we could have our penmanship lessons." These may be exaggerations from decades past, but they make good stories. What kind of stories will today's children tell about growing up in North Dakota, and the experiences they take from schools today?

"Mom, I toured NASA today and I want to work in the space program!" Virtual field trips now make this and other trips possible — with the leadership of our teachers, a staff guide presenting at the actual location, and technology to make it a reality. Schools are now using online tours and field trips as important additions to in-school learning resources. How many children, and even adults, will ever be able to travel to NASA, the Holocaust Museum or the Smithsonian? The truth is, most children will never have the opportunity to travel to national and international sites and learn firsthand, but with a little ingenuity and high-quality technology systems, we can travel and visit and learn without leaving the local classroom.

"I learned five new Spanish 'palabras' from kids in another class, but they are part of my class too!" With the technology we have right now in North Dakota schools, students are learning new "words" through video networking, learning from qualified teachers, and learning with students in other locations. Because of distance education systems like ours, students can now take advanced math courses, foreign languages, and other courses that might not otherwise be available because of the school's location. Now each child can receive an equal education with equal opportunities. Schools can offer an expanded curriculum and high-quality instruction, even as student numbers decrease and the teacher shortage continues.

"Dad checked my test scores on our computer at home last night!" With the implementation of PowerSchool in many North Dakota schools, parents can now interact with children's

schoolwork and teachers without interrupting daily activities and schedules. PowerSchool allows parents to check grades, view attendance records, learn class schedules and more — all in a secure environment over the Internet. In the end, parents can become more active in their children's schooling and have the information they need to work more closely with teachers to guide and reinforce student learning, plus have more time with their children to pursue other family activities.

The opportunities our children have today are far beyond those of our parents and grandparents. And they have improved avenues of learning because the state of North Dakota is truly a leader in education technology, and cares about the advancement of our youth. We need to have more NASA tours, learn more "palabras" through video networking, and continue to upgrade the technology systems we have already implemented … in order to advance into a brighter tomorrow with even more opportunities for students to excel.

With better learning tools in our schools today, we will build a better future for our children and grandchildren.

Dan Pullen
ND Director of K-12 Technology

G O A L O N E

Provide leadership and coordination of K-12 technology services to improve educational opportunities in North Dakota.

S T R A T E G I E S

- Expand the leadership role of the North Dakota Education Telecommunication Council (ETC).
- Evaluate the effectiveness of technology use in K-12 schools through a systematic assessment process.
- Identify additional web-based applications that meet K-12 customer needs, which can be deployed statewide to create efficiencies.
- Support the operation of Prairie School Television.
- Ongoing strategies.

Leadership and coordination of K-12 technology services are essential elements in enhancing educational opportunities across North Dakota.

The role of the North Dakota Education Telecommunication Council (ETC) will continue to grow in the coming years as it becomes recognized as the coordinating body for statewide technology initiatives. The merger and reorganization of the Center for Innovation in Instruction (CII) and Sendit Technology Services (STS) into EduTech will be completed and a single EduTech budget will be submitted for funding by the 2003 legislative session. The ETC will research the benefits of common hardware and software configurations for key K-12 local area network and desktop applications, and take on the responsibility of approving all school technology plans for state and federal purposes. In addition, the ETC will work closely with the North Dakota Department of Public Instruction (DPI) and other state agencies on coordination of educational technology and information technology systems for K-12 schools.

To evaluate the effectiveness of technology integration, a school technology assessment has been deployed to gather data on the use of educational technology in a school district. As of September 2002, four North Dakota school districts had conducted comprehensive technology assessments. The assessment process was developed over the last three years by EduTech staff in conjunction with the North Central Regional Technology in Education Consortium in Illinois. The process includes surveys of teachers, administrators, students and parents; onsite interviews and observations by external evaluators, and evaluation of student work. EduTech will provide incentives to four or five North Dakota schools in 2002-2003 to complete a comprehensive technology assessment process. Five to six schools per year will participate in the technology assessment process as part of their school improvement work or as part of an evaluation of federally funded technology projects.

Based on the successful rollout of PowerSchool, a student information system, other high-need applications will be identified and pilot projects conducted to discover those network-based applications that can be efficiently implemented on a statewide basis. The North Dakota Information Technology Department, along with other vendors, will be evaluated as the statewide application service providers. Results will include increased effectiveness for K-12 schools and cost-savings statewide. Schools using the new services will pay the ongoing costs.

Based on successful implementation of Prairie School Television (PST) programming as a free service to North Dakota schools, the North Dakota ETC will seek continued funding to support its operation to help it expand in scope and usefulness to schools.

As in the past, the North Dakota ETC will continue to support the expanded use of technology in schools through a program of grants that focuses on high priority needs. Requiring districts to provide matching funds will continue to be part of the ETC grant programs.

"Assessing the impact of technology on student learning is a difficult but critical component of technology planning."

GOAL TWO

Coordinate the efficient and effective use of technology systems to enhance educational opportunities on a statewide basis.

STRATEGIES

- Connect every school district to ND STAGEnet.
- Implement a statewide "web meeting" application to facilitate K-12 needs for a widespread communication involving dozens of end-points.
- Implement K-12 educational projects in cooperation with the North Dakota University System (NDUS), using Internet2 capabilities such as virtual field trips.
- Expand the implementation of PowerSchool to every school district that wants to use it as a student information system.
- Develop and implement a plan for the North Dakota Division of Independent Study to be completely self-supporting by 2010.
- Ongoing strategies.

Cost-effective, affordable solutions are necessary if every student in North Dakota is to receive the educational opportunities required to prepare them for the 21st century. Technology, coordinated on a statewide basis, plays an important role in providing these opportunities.

This coordination includes the implementation of STAGEnet, a statewide broadband network, one of the state's most notable achievements. STAGEnet makes possible educational programs such as interactive video classes, web-based research by students, and the development and delivery of course materials by teachers in all subject areas. STAGEnet makes distance-learning opportunities available so that geographical location is no longer a barrier. Currently, STAGEnet provides high-speed broadband connections to every public high school district in North Dakota, plus 25 K-8 districts. The remaining 16 K-8 and rural districts will be evaluated in 2003 and connected to STAGEnet when it is practical and cost-effective.

STAGEnet will be the vehicle for implementing web-based meetings as a cost-effective solution for connecting people throughout the state. Web meeting technologies make it possible to communicate effectively with dozens of end-points on an ad-hoc basis, something not practical using standard videoconferencing technologies. Meetings and in-service sessions of EduTech, the North Dakota Association of Technology Leaders and the Department of Public Instruction are potential initial users.

The implementation of educational projects such as Internet2 provide potential for K-12 teachers and students to participate in new educational experiences that require higher capacity than the traditional Internet. Examples include access to specialized research equipment and worldwide multipoint videoconferencing. Participation in Internet2 by North Dakota K-12 schools requires the cooperative efforts of the North Dakota Education Telecommunication Council (ETC), the North Dakota Information Technology Department (ITD), the North Dakota University System (NDUS), and EduTech.

PowerSchool is another promising program that provides a cost-effective, reliable, state-of-the art student information system to help schools manage student information, collect data and report information to state and federal agencies. PowerSchool allows teachers and administrators to manage student records online with ease, with automated tasks including attendance, grades and class scheduling. It is operated on a centralized basis by ITD with access through the state network. By October of 2003, up to 30 school districts will be using PowerSchool as their student information system. Based on initial success, it is expected that an additional 50 schools may implement PowerSchool.

The North Dakota Division of Independent Study (NDIS) will continue to play a critical role in delivering distance education to students in North Dakota and throughout the United States. The director and staff of NDIS in consultation with the director of the ETC, will develop a plan to make NDIS self-supporting by 2010. This will eliminate the need for the general fund appropriation that NDIS now relies on to cover about 17 percent of its total budget.

The ETC will continue to improve its organizational structure and operation as a governance board, and continue to fund the director's position to fulfill the mission of the ETC in coordinating educational technology programs. ETC's ongoing coordination efforts will include leading the state's E-rate application filing and state educational technology planning processes. The newly reorganized EduTech will continue to provide schools with cost effective information technology services such as e-mail, web hosting and a help desk. It will also coordinate state buys of educational software and support statewide applications such as BlackBoard for enhancing face-to-face instruction and video delivered instruction, and as a stand-alone delivery method for completely web-based courses.

"ITD deployed a system called PowerSchool, where teachers can track attendance and keep virtual grade books. Parents can even check their children's schoolwork … from the privacy of their homes."

GOAL THREE

Provide distance education systems to deliver a comprehensive curriculum to North Dakota students.

STRATEGIES

- Support the implementation of video networking in schools that need video to share courses.
- Develop a distance education clearinghouse site for K-12 high school and dual-credit courses.
- Support the implementation of video networking capabilities in at least one site in every North Dakota school district.
- Implement video networking capabilities and strategies to connect K-12 schools to educational resources outside of the state.
- Develop educational resources and activities based on the Lewis and Clark theme in cooperation with other state agencies.
- Ongoing strategies.

All students in North Dakota should have access to a comprehensive curriculum regardless of their geographic location or school size.

With the implementation and continued support of interactive video networking, students have the opportunity to take courses that might not be offered within their own schools. This technology is especially important for rural students, because they can share classes with their regional neighbors, and not be limited because of teacher shortages or unqualified instructors.

Students from any location can take higher-level courses such as advanced math, specialized sciences and language courses, even courses for college credit, not available within their own schools.

With the increasing number of high school, advanced placement and dual-credit courses available online, a statewide web-based clearinghouse of K-12 course offerings will be developed in 2003. All schools that have courses available for use by students outside of their video consortiums will post those

"Students can 'travel' to museums, interpretive centers and national education resources such as NASA, and learn the same content as if they had toured the actual facility."

offerings with course and contact information available to others who may be interested.

While North Dakota is convinced that students deserve curriculum opportunities, funding for video networking can be a challenge. Although state and federal grant funds provided grants of up to $20,000 in support to North Dakota schools in 2002 for implementing video networking capabilities, not all schools that applied for grants were able to be funded. Twenty schools with no current videoconferencing capabilities will be funded to support implementation of video in 2003. An additional 25 schools will be funded by Education Telecommunication Council grants to add Internet Protocol (IP) video capabilities to existing video networks. Over 90 video network sites are already operating statewide, and with 35 or 40 additional sites to be added in the near future, every school district in the state will have the ability to communicate and interact through video networking.

The sharing of high school courses isn't the only benefit of video networking. Video is becoming an important tool for administrative meetings, statewide professional development and intra-consortium planning. To ensure that all schools have capabilities to use video for these purposes, 35 sites will be funded for adding IP video conferencing capabilities in 2003.

Another important capability of video networking is the connection of K-12 schools to educational resources outside of the state, such as "virtual field trips." In order to implement the use of these resources by K-12 teachers and students, new policies and procedures must be developed by the North Dakota Interactive Video Network (IVN) and ITD. Training of school video coordinators and teachers will be necessary to ensure appropriate use and success.

Students can also take an expedition in their own classrooms with the Lewis and Clark Resource Collection. Additional state funding has been requested to enhance this collection. With this collection, teachers bring the history of the expedition to their classrooms using technology-based learning materials that focus on Lewis and Clark as a common theme across the curriculum, including the core subjects and North Dakota history, cultural perspectives and the arts.

The North Dakota Division of Independent Study will continue to expand distance education opportunities for students through traditional, web-based and video delivery of courses for middle- and high-school students. EduTech will provide ongoing support for video consortiums that share courses and other resources using video networking, and continue supporting the use of web course development and delivery tools for K-12 teachers.

GOAL FOUR

Increase professional development opportunities for North Dakota school staff to ensure students have adequate technology instruction.

STRATEGIES

- Implement the use of interactive video networking and web delivery for professional development opportunities for K-12 educators.
- Ongoing strategies.

In order for students to excel in a high-tech environment, educators must be trained to use technology and feel comfortable with it before they can incorporate it in their courses. Additionally, technology support staff must have the training they need to keep networks and systems operational.

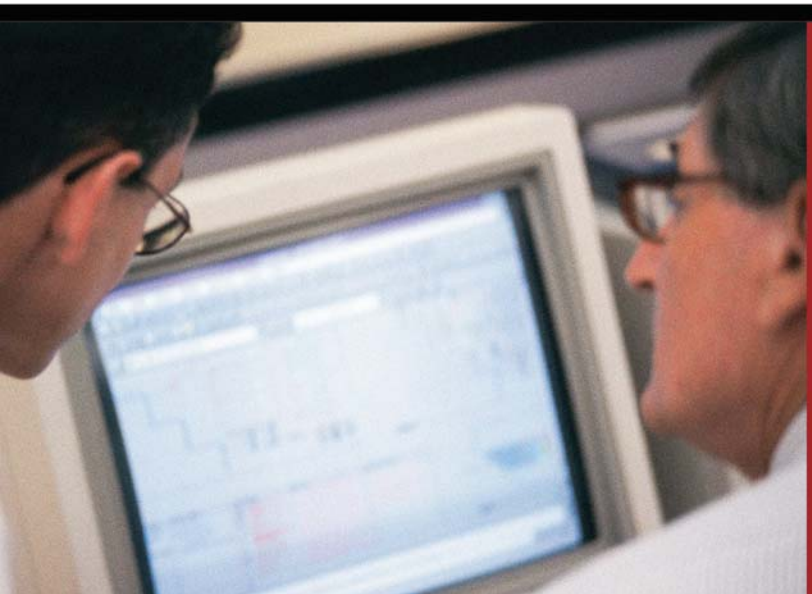
Interactive video networking is an excellent way for school administrators, technology coordinators, teachers and board members to receive training and instruction. High-speed networks allow school representatives to meet with individuals in other locations to hold meetings, discuss information and technology, and provide learning sessions. With the continued development and support of video networking, school systems will reduce travel expenses and time away from the classroom.

Another opportunity for professional development is web delivery. Much like video networking, web delivery is convenient for teachers and administrators because they can connect to the Internet from any location and receive training at their convenience.

Professional development opportunities developed by EduTech will continue to be delivered to schools by the EduTech lead staff and regional support personnel. Training for administrators, technology coordinators and distance education teachers will continue to be focused on applications to engage all educators in practices that allow them to be more efficient and effective in classroom management and instruction. Teacher training will include both basic technology skills and advanced curriculum integration sessions based on authentic classroom activities.

Technology can eliminate distance barriers for North Dakota educators and enable them to learn and instruct — worldwide. EduTech will continue to develop and deliver new professional development opportunities for North Dakota educators using video networking and web delivery. Because of the progress our state has already made, a variety of opportunities provide flexibility for educators in terms of time, place and frequency of training opportunities.

"Interactive video networking has created enormous opportunites and potential for citizens across North Dakota. Already, the impact of video conferencing has left lasting impressions on high school and college students, adult learners, and public sector employees."



"It is essential that our teachers have the necessary skills and tools to integrate technology into the curriculum and use new methods of delivery."

GOAL FIVE

Develop and administer security policies to sustain the stability and integrity of the educational technology systems.

STRATEGIES

- Implement statewide virus protection in every K-12 school connected to STAGEnet to ensure the stability of the shared infrastructure.
- Ongoing strategies.

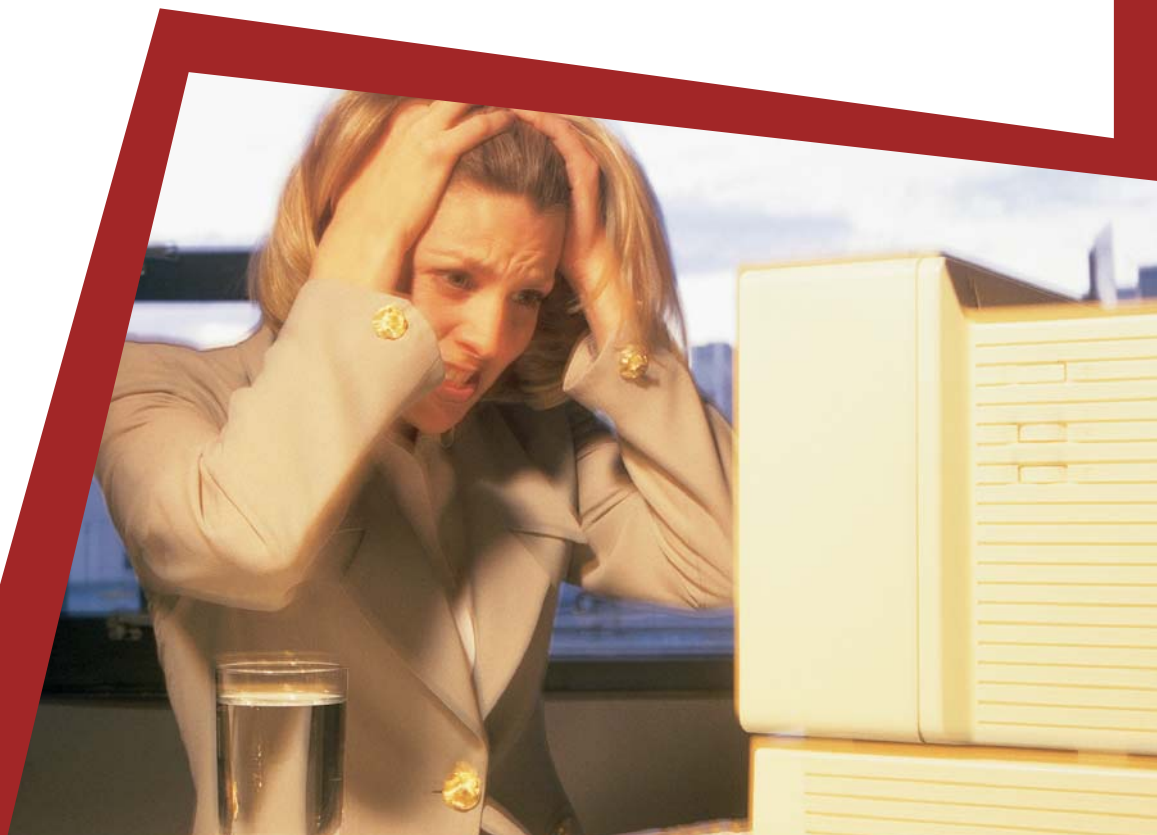
As our educational system becomes more dependent on technology, the reliability and integrity of the information systems and the underlying network are essential. These assets must be protected by implementing measures for the secure transmission, storage and processing of information.

Implementing virus protection in every K-12 school connected to STAGEnet is a first step in protecting critical systems. The number of computers protected through the statewide anti-virus contract must be increased. EduTech will budget for the contract and maintain the required hardware and software to provide this service on a statewide basis. Schools not participating in the anti-virus plan administered by EduTech will certify to EduTech that they have their own virus protection plan that meets EduTech standards.

Security awareness training for school leaders and others will be considered as a way to promote best practices for protecting information systems. We must continue to educate and disseminate up-to-date information to leaders who can evaluate the effectiveness of current protection measures and make necessary improvements.

The North Dakota Education Telecommunication Council (ETC) will continue to update its policies and practices in order to ensure technology systems are reliable for K-12 mission-critical functions. EduTech will continue to work with the North Dakota Information Technology Department (ITD) on issues of risk management and security of network-based resources made available to schools. EduTech will continue to support statewide Internet filtering for K-12 schools to ensure Children's Internet Protection Act compliance for local and state E-rate applications and to ensure the filtering system meets the needs of K-12 educators and students. Because Internet filtering is required by most federal programs and is also an important instructional management tool for schools, a statewide Internet filtering system will continue to be maintained as part of each school's connectivity to STAGEnet. EduTech will continue to manage the filtering system for all schools statewide. Help desk services will continue to be coordinated with ITD and the North Dakota Interactive Video Network (IVN) in order to ensure seamless coverage across the variety of technology systems now in place.

"To date, over 25,000 computers are protected by the anti-virus software plan managed by EduTech."



HIGHER EDUCATION

Higher Education Overview

By Grant Crawford

After careful consideration, North Dakota took a chance and made a giant leap forward. We became the first and only state to combine many university system services with K-12 and government into joint offerings. This three-way information technology partnership has resulted in exciting changes for us. Through this culture of collaboration, we walk a new path, untried elsewhere in the country. This path provides new opportunities and services for the citizens of North Dakota.

Probably the most significant testament to this collaboration is the staff that did it willingly. This was not a change borne out of intense financial pressure, nor was it a change brought about by administrative or legislative decree — it was done because it made sense to work together … and because the other partners involved tried to understand and appreciate our issues as we tried to understand and appreciate theirs. The progress we've already made through investments in our state and our number one resource, our people, is astounding. As a result, the possibilities for everyone continue to grow.

Within higher education administration through thoughtful implementation of our ConnectND project, we can minimize duplication of effort for applicants, provide clearer student records, and improve the student's chance for success. We've passed the stage where college students stood in line for hours to register for classes, often to be told that after several hours of waiting, those courses were filled. But we still have improvements to make to provide the online services people expect in the age of Internet commerce. As ConnectND reaches out to all campuses, students will be able to register for classes on-line at their own convenience, apply for financial aid over the Internet, enjoy faster application processing times, and reduce paper waste at the same time. Campuses will be able to recruit students and collect fees online through streamlined resources.

Through advancements in technology, the information we seek is no longer located solely on some library shelf. For years it has been unnecessary to stand for hours reviewing card catalogs to find the right book for a certain assignment. Increasingly, students do not need the hard copy found in books or periodicals to research papers — the information is available electronically. And if the information is available electronically, we can even omit the trip to the library. With the upcoming enhancements to the Online Dakota Information Network (ODIN), patrons will more often be able to use "virtual" libraries to collect information via the Internet. Again, because technology is the catalyst to an advanced future, North Dakota entities combined efforts and programs to create electronic ease and efficiency in the way we locate information.

Because of explosive growth in video conferencing using Interactive Video Networking (IVN), North Dakota students are able to experience face-to-face education from almost 200 locations around the state. Best of all, they can interact with students and professors as if they shared one geographic location. This vastly improves course alternatives and the richness of an education in a rural setting.

As we implement better services, students no longer have to limit their education to one institution. Through Internet courses they can obtain a degree in Management at Minot State University, they can take Electric Power Technology at Bismarck State College, and they can explore Technology Teacher Education at Valley City State University.

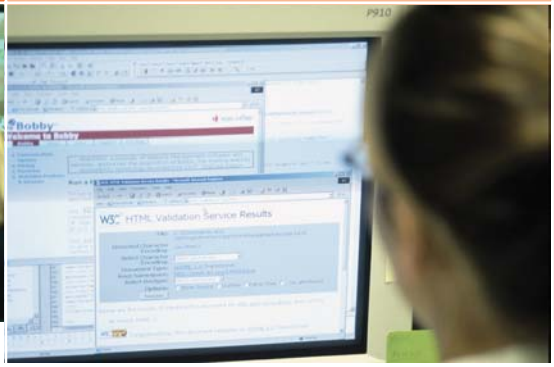
These leading edge services are available because of improved communication and technology skills found right here in North Dakota. Students attending college in North Dakota know our State is a great place to be. They want to study here, graduate here, and hopefully stay and work in a state that invests in their future. They are no longer limited by bricks and mortar — now by their own imaginations. We feel it is important to secure the future of education for today's youth by advancing technology beyond the boundaries of tradition.

In short, we are creating systems that obey the "Principle of Least Astonishment" — things work the way people think they should. All of this is happening because we joined efforts and ideas, working together to reach a common goal. We may not be as populous as other states, but we certainly can provide leading edge services and opportunities for our citizens. With an environment like this, I personally can't wait to see what tomorrow brings!

Grant Crawford, Chief Information Officer
North Dakota University System

GOAL ONE

Improve North Dakota University System (NDUS) information technology-enabled business processes and services.



STRATEGIES

- With state government, implement the new ConnectND administrative system.
- Begin installation of Online Dakota Information Network's (ODIN) new library system.
- Significantly expand Interactive Video Network (IVN) video networking services within the North Dakota University System, state and local government, K-12 schools and non-profit organizations.

We strive to deliver the most effective technology we can for the money we have. To that end, ConnectND, our new Enterprise Resource Planning (ERP) system, allows school administrators, faculty and students to conduct business online with applications such as financial management, purchasing, budgeting, human resources, payroll, asset management and student information. Not only will ConnectND bring improved administrative services to the North Dakota University System's eleven campuses, it will also provide the same integrated services to state government. To illustrate our ability to make progress, in less than five months we were able to use the new system for admission and recruitment services at two pilot campuses (Valley City State University and Mayville State University). Normally, such a step takes one to two years. Because of the vast number of services offered and the complex nature of administering state government and a whole university system with one software package, it will take us the next two years to finish the installation and configuration of the software. To this end almost one hundred staff representing all eleven campuses and the system office will configure and test as well as migrate existing student records to the new system. This development requires that agencies and governments work together to minimize duplication efforts, increase the sharing of common business practices, and foster innovations in the application and deployment of information technology. Such an implementation will be unique in the country.

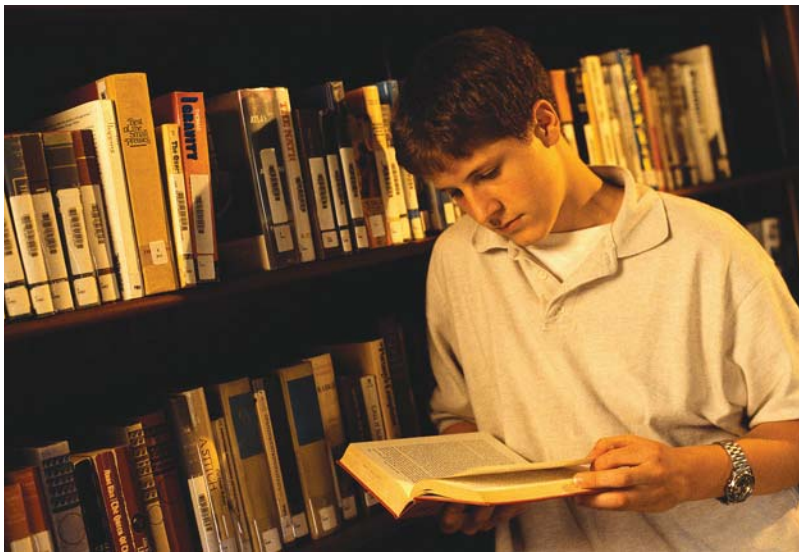
Another program that enhances the quality of life in North Dakota is the replacement of the Online Dakota Information Network's library system. It provides public access to library information and research materials of its more than 50 member libraries. Increasingly, people no longer visit libraries to check out books. It's not the hard copy they want, but the information provided inside — and they can now access this information over the Internet from a classroom or within their own homes. With continued funding and updates, technology experts will replace the existing library management software found in this "virtual" library system, as well as provide common hardware, platforms and support.

Higher education officials are also working to continue their six-fold increase in the interactive video network (IVN), thereby increasing the benefits of distance education and bringing more learning opportunities to students and faculty, state and local governments, and nonprofit organizations. IVN has already created enormous opportunities for students who choose to take advanced classes such as math, specialized sciences and language courses not available within their own schools because of teacher shortage or qualification restrictions. With the increasing number of high school, advanced placement and dual-credit courses available online, a statewide web-based clearinghouse of course offerings will be developed in 2003.

IVN has already created enormous opportunities for students who choose to take advanced classes such as math, specialized sciences, and language courses that are not available within their own schools.

GOAL TWO

Support North Dakota University System's (NDUS) infrastructure needs.



STRATEGIES

- Offer reliable, cost-effective and appropriate North Dakota Univeristy System network services.
- Provide middleware tools and data to help people more easily use networked resources and services with security and privacy.
- Enable libraries to provide easy access to licensed electronic information.
- Provide information technology architecture leadership.

"Technology must obey the principal of least astonishment." In other words, computer systems should work the way people expect them to work. The glue that holds these systems together is called an infrastructure. From years of experience we learned that "the systems of today are the components of tomorrow." What that means is the very complicated stand-alone e-mail package of yesteryear has been integrated with calendaring and web-browsing to provide what the industry calls a "collaboration toolset," and it is all connected together seamlessly by a wide area network such as STAGEnet. Users of these services expect fast, efficient and intuitive ways to communicate with the click of a button.

Because of security, privacy and cost issues, we cannot allow unfettered use of our services. People need IDs, passwords, and authorization to use specific services. The software that manages this aspect of the infrastructure is called "middleware." Having software to control access to services is not enough. There must be policies to guide the implementation of the middleware – essentially, the rules that we operate by in allowing access and encouraging good behavior. These policies must be developed and updated with the involvement of the communities of people who use the services, and keeping in mind the purpose of the facilities, and the inherent security required to protect the rights of all parties involved.

Infrastructure needs for North Dakotans extend into libraries, where in the past people traveled to a facility and checked out a book. Information is no longer just found in books, as subscriptions to very large, remote databases and publications are becoming affordable due to inter-library cooperation that allows bulk buying. These kinds of new facilities bring the largest information collections within reach of the most remote of North Dakota centers.

"North Dakota is one of the very few states where all higher education institutions share an IT service infrastructure. It has proven to be a very successful model because it provides a significant level of computing and networking capabilities and support for students, faculty and staff, while holding down costs."

Finally, information technology architecture leadership is a key in supporting NDUS infrastructure needs. This leadership not only develops an infrastructure appropriate to higher education's needs, it allows us to work with state government and the K-12 sector to develop statewide standards for the implementation and use of technology. In the end, this means the services work the way people expect – fast, efficient and easy.

GOAL THREE

Improve or enhance North Dakota University System's collaborative efforts.

STRATEGIES

- Fully implement a North Dakota University System help desk.
- Improve communication with all stakeholders of North Dakota University System/Common Information Service (NDUS-CIS).
- Collaborate with North Dakota University System campuses, K-12, state and local governments, and libraries to identify appropriate learning and research support systems.
- Work with Online Dakota Information Network (ODIN) libraries to expand digital holdings.
- Promote Internet2 and advanced networking.
- Provide training and support for network videoconferencing user groups.

People with ideas working together tend to produce products and services with improved efficiencies. If this way of working becomes commonplace within a community, you have developed a "culture of collaboration." Our challenge is to continue doing this in an increasingly complex environment. It takes a significant amount of effort to coordinate the activities on one campus, let alone a whole state. We keep our sanity by working on the interfaces — the places where the "communities" touch. Mostly, this is where they interchange information. As an example, the North Dakota University System help desk presents a collaborative opportunity, specifically because students' "work" days don't typically end at 5 p.m. They often study during night hours, and can't put questions on hold until the morning. Students experience a need for information 24 hours a

day, whether it's for a class they are taking at their local university, or one from across the state. Through technology in North Dakota, we are trying to give them the access needed. By working together to provide off-hour support for distance education students through supportive help desks, these students can receive answers to their questions day or night.

We will work harder to communicate with our partners and within our community, as well as among other technology groups in the state. This communication must easily reach from every campus administrator to every staff member. One way we will do this is by appointing a communications coordinator who can relay technical messages to a non-technical audience.

The Online Dakota Information Network (ODIN) helps individuals, agencies and government work together to increase electronic subscriptions, research journals and databases available to member libraries (and all North Dakota libraries where possible). ODIN provides public access to library information and research materials to its member libraries and acts as a virtual library for on-line users. By joining efforts and upgrading technology, the future of ODIN will see improved services, speed and efficiency, and allow its users to access information with technology in an even more timely manner than they do today.

Now that many citizens have come to rely on the Internet, a new form of communication is emerging within higher education. Internet2 is the "next network." In the future, Internet2 will help North Dakotans transmit information more efficiently. It provides a higher connection speed and is currently used for research. It will be used to develop, test, and change network protocols, thereby resulting in better and faster ways of transmitting data without swamping the current network. Currently, participating in Internet2 activities allows us to show other states that North Dakota is staying in the technology forefront. To do otherwise is to disappear from the technology map in the future. To eventually emerge as a leader, we must "keep up" with the latest developments by understanding and implementing this new technology.

North Dakota has a crucial need for this technology – we can enable our students to excel in advanced courses by using video networking. Others will communicate better and faster than ever before. Still others can research topics at the click of a button. We need to keep up with the new trends and simplify the learning curve so that the technology increasingly obeys the Principle of Least Astonishment. In this way a richer and more capable technology environment will be integral to the future of North Dakota.

"As the North Dakota University System help desk grows, our help desk services must keep pace."

GOAL FOUR

Provide and manage resources to align with North Dakota University System's strategic goals.

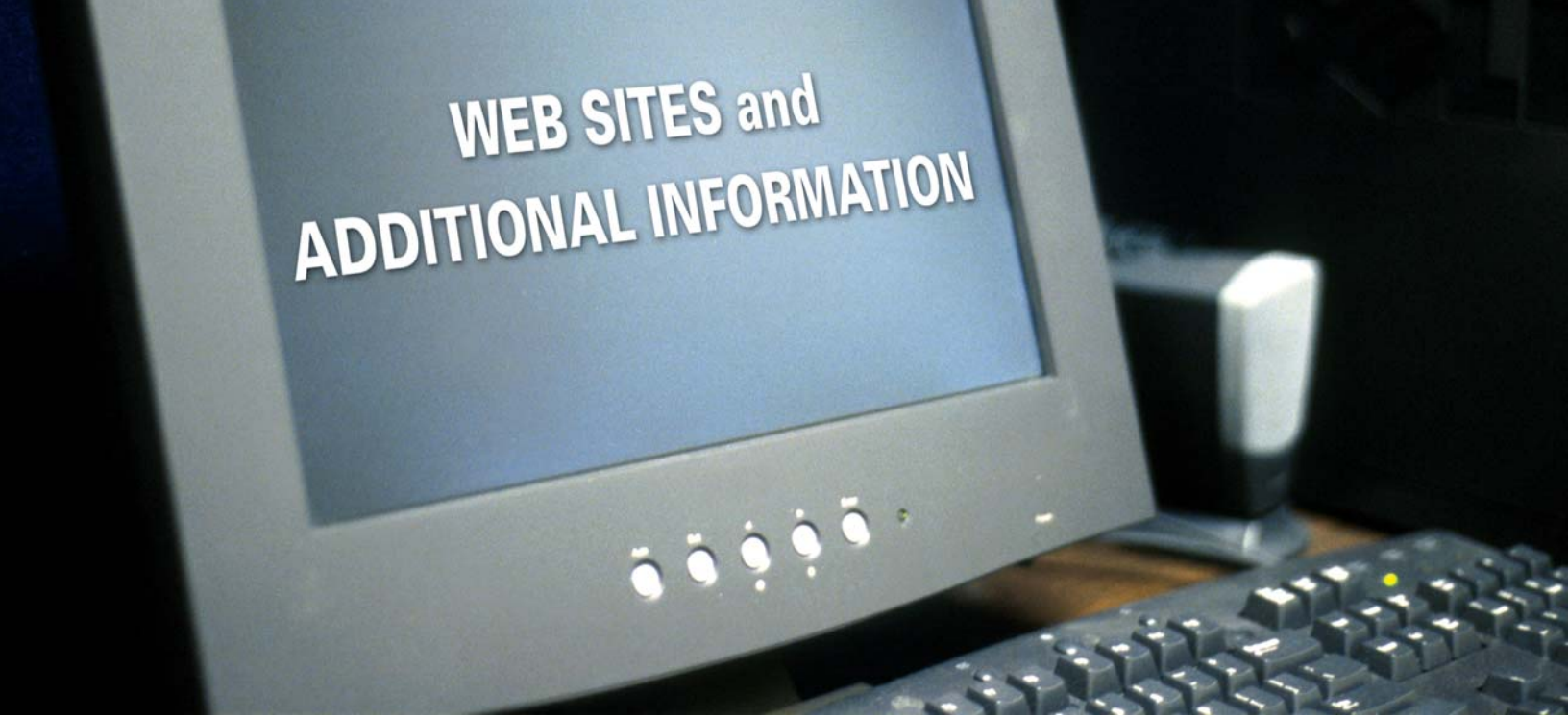
STRATEGIES

- Identify new resources or re-purpose existing resources to enhance current services or initiate new services.
- Provide professional staff to meet North Dakota University System needs.

In order for higher education institutions in North Dakota to remain competitive and to offer support for students, faculty and staff, we must provide and manage resources to align with the North Dakota University System's strategic goals. To "keep our eye on the ball," we watch industry developments as we work to anticipate campus needs for new services and then develop the skills and facilities to provide those services. Where possible we transform existing offerings rather than radically altering the technology environment, building on our strengths in the most effective manner possible. We regularly evaluate the efficiency, quality and productivity of our technology services within the North Dakota University System, and analyze the success of the current offerings. After we've reviewed the use and effectiveness of our efforts, we enhance the most attractive services and drop ineffective ones. This allows people to continuously become more productive. For example, future system enhancements may include increased attention to additional system-wide or state-wide software site licenses, the potential for broader use of a common e-mail address and format, the possibility of branching into portal services and the addition of auxiliary systems to take advantage of the initial implementation of ConnectND.

"For North Dakota to become a player in the digital economy, the state needs a highly trained work force to attract new businesses and provide technical support to existing businesses."

At times, being a service provider in the higher education environment can be challenging. The need for campuses to retain a unique mission as well as nurturing entrepreneurial behavior means the common services we provide must be malleable into different environments, yet robust enough for a production environment serving over 60,000 people each year. Of course, none of this is possible without a trained, professional staff that meets the needs and requirements of our campuses. No state agency within any state can successfully deliver technology services without highly skilled, trained professionals who can educate and develop further projects. It is critical for our state to support a highly skilled workforce capable of developing and supporting the necessary infrastructure. This in a competitive environment where the number of technology positions in North Dakota is expected to grow by over 90 percent by the year 2005. We strive to offer better salaries, interesting jobs, and challenging careers. We continue to promote educational opportunities that bring new knowledge to North Dakota or help to tell others of the wonderful things we have done here.



The main North Dakota portal:
www.discovernd.com

Information Technology Department (ITD):
www.discovernd.com/itd

North Dakota University System (NDUS):
www.ndus.nodak.edu

North Dakota University System Online:
www.nduso.org

ND Interactive Video Network (ND IVN):
www.ndivn.nodak.edu/index.htm

Online Dakota Information Network(ODIN):
www.odin.nodak.edu

Education Technology Council (ETC) :
www.state.nd.us/itd/etc

EduTech:
www.edutech.nodak.edu

STAGEnet:
www.stagenet.nd.gov

ConnectND Project web site :
www.nodak.edu/connectnd

ND Geographic Information System Hub (GIS):
www.state.nd.us/gis

The ND Criminal Justice Information Sharing portal (CJIS) :
www.ndcriminaljustice.com

ND Health Insurance Portability and Accountability (HIPAA):
www.discovernd.com/hipaa

Enterprise Architecture:
www.discovernd.com/ea

For more information or to request additonal copies of the report please contact:

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An electronic copy of the Statewide Information Technology Plan 2002 can be found at www.state.nd.us/itd/planning/plan.html