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collaborative efforts ... statewide progress





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## collaborative efforts ... statewide progress

Technology has become so pervasive it is hard to imagine our lives without Internet access, personal computers or cell phones. We have come to expect that information will be readily available whenever we need it. Technology is no longer the responsibility of a few technical wizards working on large, complicated machines. Rather, technology planning and deployment is now integrated with many other business processes requiring the involvement of many stakeholders beyond the technology organization. In North Dakota, government and education leaders are creating synergy by collaborating on technology projects and involving stakeholders in standards decisions.

This plan lays out the general direction for a promising future and identifies the processes and people involved in refining and implementing this vision. Decisions like the choice of a specific technology or the go-ahead for an important project, which can only be made when all stakeholders understand the implications. State government, K-12 and higher education have found ways of including stakeholders in technology decisions to achieve the best possible solutions for the state.

At the heart of every technology decision is the underlying question: Will this have a positive impact on citizens or other customers? By cooperating, North Dakota state agency, higher education and K-12 leaders are building cost-effective, reliable, user-friendly systems.

**Cost-Effective:** By being good stewards of technology budgets, we reduce the burden on taxpayers. North Dakota is unparalleled in its ability to bring together state government, higher education, K-12 schools and political subdivisions onto a single, high-speed network to deliver services. Together, these diverse government entities have been able to do more than they could have individually for the same investment. Looking forward, these same entities have been working together to develop strategies for the deployment of advanced technologies like wireless and voice-over IP so that the state remains a leader.

**Reliable:** Citizens have always trusted that government and education services will be there when they need them. As more of these services are provided via technology, the same holds true. A number of the strategies in this plan emphasize protecting the infrastructure. The virus protection strategies being deployed over the network

and disaster recovery plans for important data centers are good examples. These common problems are best solved by working together on solutions for the collective good. Joint planning on many levels has helped us develop cost-effective, actionable strategies for building a reliable infrastructure.

**Responsive and Customer-Friendly:** Online access to government and education services should be easy to use for the customer on the front end. On the back end, systems should provide employees with streamlined processes so that they in turn can respond promptly to requests. ConnectND, a project to replace the state's aging financial, human resource and student administration systems, is an example of a system that provides online services and also improves the state's internal management. Once again, state agencies and higher education campuses are working together to implement a system that will meet everyone's needs. While the investment is substantial, the "enterprise" approach will be less costly than a piecemeal approach whereby the many existing agency systems would be upgraded and patched together over time. Once the system is implemented, the state and higher education will continue working together to plan upgrades and enhancements on an ongoing basis.

Where are we now? Where do we want to go? How do we get there? These three questions form the basis for every planning process. The 2005 - 2007 Statewide Information Technology Plan outlines North Dakota's goals with respect to the implementation of technology for government and education.

The plan is composed of three key areas: State Government, K-12, and Higher Education. The respective technology leaders in each area, Curt Wolfe, Chief Information Officer for the state; Grant Crawford, Chief Information Officer, North Dakota University Systems; and Dan Pullen, Director, North Dakota Educational Technology Council; have developed the goals and strategies in conjunction with various executive committees they lead.

In the plan, you will see 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.

»» government

collaborative efforts . . . statewide progress



State government provides a broad spectrum of services — from road maintenance to regulating water quality, from attracting tourists to providing assistance to needy families. Most of these programs, however different they may be, rely on technology for the delivery and management of the services.

State agencies have found common ground in the underlying technologies they use. By working together, they have been able to achieve important goals while at the same time maximizing the impact of scarce investment dollars. "Governance" is the term used to describe the combination of collaborative processes and the organizational structure used to choose the appropriate technologies for our common needs.

# GOVERNMENT

## o v e r v i e w

Enterprise architecture is the process by which state government decides its future technology direction. Over 100 people are involved, including technical staff who develop specific standards and agency directors who approve policies and set priorities. By working together, agencies are finding ways to accomplish more with less.

For example: technology teams established a goal of replacing end-user computers every four years to keep up with advances in technology. But it has been difficult to fund the investment necessary for some agencies. By aggregating purchasing and agreeing to buy from a single vendor, the state, through the enterprise architecture process, has reduced the cost of a single desktop computer by approximately \$230, making the four-year replacement cycle a possibility.

Other projects are under way to consolidate e-mail systems, migrate off the mainframe and share licensing costs for testing tools. These projects make it possible to achieve the goal of maintaining a state-of-the-art technology infrastructure while at the same time managing the cost.

*"By working together, state agencies have been able to achieve important goals while at the same time maximizing the impact of scarce investment dollars."*

In addition to Enterprise Architecture committees, the state has established a number of other governance structures to administer specific technologies:

- The organization model for managing the Criminal Justice Information Sharing architecture establishes executive leadership incorporating state and local stakeholders.
- The State Mapping Advisory Committee and Geographic Information Systems (GIS) Technical Committee, representing state and federal agencies and private industry, were created by an executive order to govern the sharing of mapping data and GIS infrastructure.
- STAGEnet, the state network, is governed by executive, management and technical committees including representatives from state and local government, K-12, colleges and universities, interactive video network, and voice communication.
- A governance structure composed of a broad cross section of stakeholders is being developed to continue making decisions about ConnectND, the shared implementation of the state's administrative systems.

The process for making a technology decision is as important as the decision itself. Input and feedback from both stakeholders and technology experts is important to generate support for implementing a decision. The state has been working to build formal governance structures for decision making where ideas can be formulated, explored and developed; ultimately generating the best, most cost-effective technology decisions for the state. The spirited dialogue and open sharing of information has a byproduct: better-informed employees and decision makers. This process depends on the leadership of many, and I wish to thank all those who have shared in developing the technology potential of North Dakota.



Curtis Wolfe, Chief Information Officer  
Information Technology Department

## STRATEGIES

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



## goal one



*Build and support automated services to meet increasing customer expectations*



## INITIATIVES

- ▶ Student Loan Servicing — The Bank of North Dakota will continue to improve the processing of student loans, enhancing its leadership in this market.
- ▶ Enhanced Support Center — As part of its emphasis on customer service, ITD is planning a major transformation of the Support Center. ITD's goal is 'Best in Class' in 6 years.
- ▶ Continuous Improvement — Throughout the biennium, changes will be made to many agency websites to update information and improve service delivery to the citizens of North Dakota.
- ▶ E-Government Presence — North Dakota state agencies intend to expand their E-Government presence via a private practitioner's portal, ShopND website, online grants software, and on-line campground reservation system.

## ACCOMPLISHMENTS

*Citizens expect the same easy-to-use, anytime, anywhere service from government that they get when banking or shopping online. The state will continue to respond to the growing needs of our citizens through enhanced e-government offerings and expanded delivery methods for services. In addition, we will be striving to ensure customer satisfaction with every interaction between the citizens and their government.*

- ▶ **Web Accessibility** — The state of North Dakota was ranked first out of 50 states in disability access by a 2004 Brown University study.
- ▶ **Online Testing Results** — The State Seed Department delivers field inspection and lab analysis reporting to customers through a secured web portal.
- ▶ **Child Support Employer Web Electronic Fund Transfer** — DHS now allows employers to use a secure, Internet transaction to submit child support payments for their employees.
- ▶ **Weight in Motion** — Using embedded sensors, the Department of Transportation (DOT) and the Highway Patrol can now monitor speed, size and weight of over-the-road trucks.
- ▶ **Public Safety Answering Point** — The Division of Emergency Management upgraded this system to replace the aging 911 answering system, and updated the mapping system to allow staff to control radio and telephone communications from a single workstation.
- ▶ **Web Development Standards and Best Practices** — Standards and best practices have been developed through enterprise architecture to ensure a consistent, quality experience for users of state web sites.
- ▶ **Election Management System** — The Secretary of State deployed a new website to provide important voter information, including elections results. This system has reduced the number of phone calls to that office, and increased the availability of the information.
- ▶ **Unemployment Insurance (UI) Internet Application** — Job Service North Dakota (JSND) now provides Internet services to UI claimants and employers for claims, weekly certifications, and quarterly tax reports and payments.
- ▶ **Online Deer Lottery** — Game and Fish Department, building on past success, added the deer lottery to available online services.
- ▶ **Employee Account Access** — Public Employees Retirement System now provides state employees secure online access to their account information.
- ▶ **JOBSND.COM** — JSND replaced its static site with a dynamic user-driven site, allowing employees and employers to find each other.
- ▶ **Online Prescription Drug Guide** — In an effort to help our citizens with the high price of prescription drugs, the Governor's Office launched this site.
- ▶ **NDInterns.com** — JSND established this site to link students and North Dakota business by creating awareness and promoting internships.
- ▶ **Medicaid Workers with Disabilities** — The Department of Human Services (DHS) completed the software upgrades needed to allow disabled employees to maximize their earnings while minimizing the loss of Medicaid benefits.



## STRATEGIES

- ▶ To plan for the obsolescence of existing systems.
- ▶ To develop contingency plans for the effective continuation of services in the event of a disaster.



## goal two



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



## INITIATIVES

- ▶ Aging and Obsolete System Replacements — State agencies plan to replace the following systems: Integrated Tax System (ITS), Medicaid Management Information System (MMIS), Unemployment Insurance (UI), Women, Infants, and Children (WIC), Facility Maintenance, iTAG Institutional Offender Management System, Security Access, Roadway Information Management System (RIMS) Inventory Interface, Online Reporting System (ORS), Drivers License System and the North Dakota Legislative Council Systems.
- ▶ Mainframe Migration — ITD plans to migrate the applications from the IBM mainframe to a current technology platform, saving time and money in administration and licensing fees. Applications migrated will continue to provide service without the need for redevelopment.
- ▶ Upgrade Core Banking System — The Bank of North Dakota plans to upgrade its systems to provide improved services to its customers.
- ▶ Upgrade Pavement Management System — The DOT plans to replace the dTIMS 6.0 pavement analysis software with a package that incorporates maintenance activities.
- ▶ Develop a Second Data Center — ITD is planning a second data center to meet the availability needs of state government in the event of a major disaster at the Judicial Wing location.
- ▶ Establish a Hot Site for Disaster Recovery — Workforce Safety and Insurance plans to establish a hot site for disaster recovery and business continuity.
- ▶ Continuity of Government/Continuity of Operations (COG/COOP) — The COOP plans will be reviewed and adjusted as needed, until North Dakota has a workable recovery plan in place. These plans will need periodic review and updates to ensure they reflect the changing technology.
- ▶ Enterprise Architecture — Cross agency teams will continue to monitor technology changes and establish plans for a smooth transition into the future.

## ACCOMPLISHMENTS

*As the state's systems age, they will need to be updated or replaced. Continuous investment is necessary to avoid the system failures due to inadequate maintenance or old, unsupported technologies. These upgrades bring us newer technologies and increased functionality, producing improved customer service and efficiency. We also need to have plans in place to be able to recover essential services in the event of a disaster.*

- ▶ Construction Automated Record System (CARS)  
— DOT's DOS-based system dating from 1985 used to manage the payments on construction contracts was replaced.
- ▶ Legislator's Automated Work Station (LAWS)  
— Legislative Council converted the user interface to this system to a web-enabled, easy-to-use format.
- ▶ Budget Analysis and Reporting System (BARS)  
— OMB replaced the State Integrated Budget and Reporting (SIBR) system with the next generation budgeting tool BARS, and incorporated the submission of IT Plans to ITD, eliminating the need for a separate IT planning system.
- ▶ COG/COOP — The State of North Dakota is currently deploying the Living Disaster Recovery Planning System (LDRPS) software package to state agencies. The agencies are developing the first draft of the COOP plans, which are due November 30, 2004.
- ▶ Enterprise Architecture — Cross-agency teams have developed and documented the desired technology future state and established a common direction for the state.
- ▶ PC Replacement Contract — The state has negotiated a statewide contract for PC replacement, leveraging its buying power to save over \$1,275,000 in four years and achieve four-year replacement cycles for most agencies.
- ▶ The Aviation Weather Flight Planning System  
— The ND Aeronautics Commission upgraded the aviation flight planning stations at eight regional locations improving the safety of flight and access to airport reporting sources.
- ▶ ConnectND – Payroll — The payroll system was retired and replaced with PeopleSoft.
- ▶ ConnectND – Financial — SAMIS, the state's aging account system, was replaced with PeopleSoft Financials.



## STRATEGIES

- ▶ To provide modern, integrated systems for managing financial and human resources in coordination with the North Dakota University Systems (NDUS).
- ▶ To improve the efficiency of “back office” processes.
- ▶ To collaborate to improve the management of technology.



## goal three



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



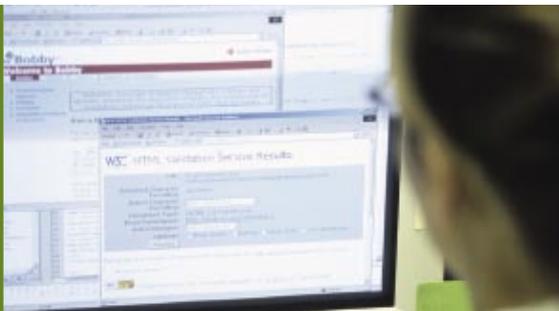
## INITIATIVES

- ▶ Veterans Home Training — Veterans Home plans to use computer-based training to reduce the number of hours spent delivering training sessions.
- ▶ Time and Attendance — The Department of Human Services plans to implement a single time and attendance reporting system, eliminating the use of two systems to perform the same function.
- ▶ Insurance Form Filing — The Office of the Insurance Commissioner anticipates linking the industry’s state electronic rate and form filing system with the department’s filing application, eliminating redundancy in the filing process.
- ▶ Electronic Submittal for Medical Billing — Workforce Safety and Insurance plans to work with medical providers to create efficient electronic processes for submitting medical billing informations.
- ▶ Past Perfect Collections Software — The Historical Society intends to use this system to provide accurate tracking and inventory of the collection.
- ▶ Weight in Motion Data Analysis — The Department of Transportation plans to modify the Traffic Data Editing Analysis (TDEA) system to include reports, historical and summarized data, and calculated information such as Equivalent Single Axle Loading System (ESALS) from Weight in Motion.
- ▶ Highway Project Scheduling — The Department of Transportation intends to modify the process used to schedule projects by work type.
- ▶ CVISN (Commercial Vehicle Systems and Networks) — The DOT plans to continue CVISN, a federal initiative with three major components: Safety, Credentialing and Roadside Enforcement. A primary focus of this initiative will be the motor carrier rewrite project.
- ▶ Electronic Imaging Systems — The Office of Administrative Hearings and the Office of the Insurance Commissioner intend to expand or develop the use of EDMS.
- ▶ Enterprise Time and Attendance — Planning is under way for an enterprise time and attendance solution to provide information to manage labor resources in agencies.

## ACCOMPLISHMENTS

*Having information available electronically allows state employees to respond to citizens' questions and requests as promptly as possible. Computer applications allow for complex processes to be completed automatically.*

- ▶ **ConnectND – HRMS** — The PeopleSoft Human Resource Management System (HRMS) provides a common tool for the state.
- ▶ **Automated Data Capture and Imaging, Electronic Filing and Payment** — The Tax Department has reduced the cost of tax collection and increased responsiveness of staff while providing convenience to the taxpayer.
- ▶ **Unemployment Insurance Imaging and Workflow** — By using imaging and workflow, Job Service North Dakota will save over nine work weeks each year in handling Unemployment Insurance operations.
- ▶ **Computer Aided Design and Drafting (CADD) Engineering Tools** — DOT's latest update to the CADD software has decreased cost and time to create, print, handle and ship engineering documents required for highway construction.
- ▶ **2D-3D Ortho-photogrammetry** — Highway designers at the Department of Transportation now have the ability to view and work with ortho-photography using 2D and 3D software tools.
- ▶ **Functional Consolidation** — Through economies of scale, state government has eliminated more than 100 servers, thereby reducing the cost of server administration while maintaining service levels.
- ▶ **Enterprise Project Management** — In the last two years, 18 large IT projects were completed. Sixteen of those were under budget by a total of \$4,098,095.
- ▶ **Student Loan Guarantor System** — The Bank of North Dakota has replaced the Student Loan Guarantor System, providing a significant decrease in processing costs, substantial increases in customer service, and efficiencies in loan processing.
- ▶ **Instant Messaging** — ITD has selected Microsoft's Live Communication Server to provide internal instant messaging, allowing staff to communicate more effectively.
- ▶ **Segue Application Functional Testing Suite** — North Dakota has selected the suite of functional and regression testing tools from Segue Software. These tools will provide repeatable, consistent testing, reducing the impact on end users and ensuring quality software products are placed in production.
- ▶ **Child Support Employer Web Electronic Fund Transfer** — DHS now accepts child support payments from employers via a secure web link.
- ▶ **iTAG Visitors Application** — The Department of Corrections and Rehabilitation now uses a module of the iTAG system to track visitors, reducing the cost of ID tags and improving the accuracy of the data.
- ▶ **Electronic Document Management System (EDMS)** — The number of employees using EDMS has surpassed 1,000 and continues to grow. Faster and simpler access to documents enables them to serve citizens better.
- ▶ **DOT EDMS** — The Department of Transportation continued the establishment of an EDMS for the DOT that allows files, created both internally and externally, to be electronically stored, indexed, and retrieved.
- ▶ **Work Management System** — ITD receives almost 10,000 requests a year. This new system was implemented to better serve ITD's customers and provide a single interface to request services.



## STRATEGIES

- ▶ To establish and expand the use of “hub and spoke” architectures where appropriate for sharing data across organizational boundaries.
- ▶ To create efficient data reporting systems by deploying electronic reporting mechanisms and accessible data warehouses.
- ▶ To identify, plan and implement measures necessary to ensure privacy, confidentiality and security of the information and other assets.



## goal four



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



## INITIATIVES

- ▶ Case Management System — Highway Patrol plans to install an off-the-shelf system to provide integration of case-related data between the patrol cars and HP offices.
- ▶ Wireless Field Reporting — Highway Patrol plans to use field reporting to allow troopers to complete required paperwork while remaining on patrol, increasing their effectiveness.
- ▶ CJIS Hub Enhancements and Support Services — Enhancements are planned for the Criminal Justice Information Sharing (CJIS) hub to share additional data with law enforcement agencies, courts, and state’s attorney offices across the state. Centralized services are planned to ensure ongoing support and after-hours access.
- ▶ Computer Aided Dispatch (CAD) — The Division of Emergency Management anticipates using CAD to improve the dispatch process allowing for a faster, more appropriate response to emergency calls.
- ▶ Legal Application Consolidation — Workforce Safety and Insurance (WSI) intends to expand the Case Management System (CMS) application to collect data and track information from internal and external counsel.
- ▶ Data warehousing — Workforce Safety and Insurance plans to create a data warehouse to enhance data availability and improved querying and trend analysis.
- ▶ Geographic Information System (GIS) — Adding data is planned in the areas of Digital Elevation Models, aerial photography and National Hydrological Data Set.
- ▶ Support Repositories — Plans include the development, deployment and support of repositories for GIS, Electronic Health Certificates, National Animal Identification, and WSI data.

## ACCOMPLISHMENTS

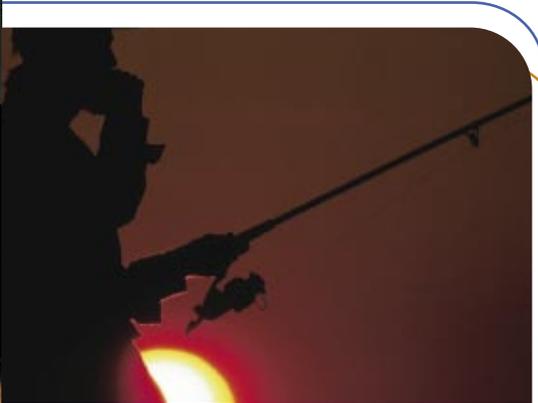
*As the amount of data continues to explode, along with the desire to have access to that data anytime, anywhere, the deployment of centralized hubs and warehouses will provide access to those who need it, while protecting the security of the data.*

- ▶ **Student Data Warehouse** — The Department of Public Instruction's new data warehouse will provide decision support at all levels of public education. This, among many other purposes, will assist North Dakota in complying with the No Child Left Behind Act (NCLB).
- ▶ **Incident Based Reporting (IBR)** — The Office of Attorney General's new IBR repository provides improved reporting of criminal activities for more accurate analysis of crime data.
- ▶ **Electronic Crash Reporting System** — The Department of Transportation is collecting electronic motor vehicle crash data at the crash location and transmitting the data directly to a central database.
- ▶ **Construction Automated Record System (CARS)** — The Department of Transportation enhanced the existing CARS system to allow project managers and inspectors to record construction activity as they occur in the field using remote PC technology.
- ▶ **Disease Reporting Epidemiological Assessment and Monitoring System (DREAMS)** — The Health Department developed a public health surveillance environment which will provide the department a more efficient and more rapid means of reporting disease information to appropriate agencies.
- ▶ **Security Standards** — Standards have been developed for the deployment of virus protection, intrusion detection measures, and security measures to ensure the protection of state assets.
- ▶ **Geographic Information System (GIS)** — Several new applications and a number of data sets were added to the GIS Hub hosted by ITD and under the guidance of the GIS Technical Committee.
- ▶ **Health Insurance Portability and Accountability Act (HIPAA)** — DHS has met compliance with federally mandated HIPAA standards. These standards provide a uniform format and privacy of health care-related reporting.
- ▶ **Medicaid Workers with Disabilities** — The Vision system at DHS has been modified to incorporate changes to the Medicaid benefits calculations for people with disabilities.
- ▶ **Public Safety Answering Point** — The Division of Emergency Management overhauled its Public Safety Answering Point System, providing the tools needed to allow operators to respond to emergency calls faster and access more detail.
- ▶ **Mobile Offender Management Systems (MOMS)** — The Department of Corrections and Rehabilitation (DOCR) deployed this system to provide officers in the field access to parole/probation offenders' information.



## STRATEGIES

- ▶ To manage network services to state government, education and political subdivisions to ensure availability at a reasonable cost.
- ▶ To provide centralized hosting of applications for political subdivisions.
- ▶ To upgrade the capabilities of the state radio network to incorporate digital technologies and maintain interoperability.



## goal five

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



## INITIATIVES

- ▶ Public Safety Mobile Communications Conversion to Digital — The Division of Emergency Management with ITD and DOT plan to convert the radio network to digital technology. This will allow improved communications between local, state and federal agencies.
- ▶ Field Office Network — Game and Fish intends to connect the final four field offices with DSL or better connections, allowing staff in those locations to utilize more of the email and online systems.
- ▶ Deployment of IP Telephony — ITD anticipates the start the long-term project of migrating phone service from the traditional PBX to the new IP telephony system, providing improved service and reduced costs.
- ▶ Upgrade the Current Statewide Network With New Technology to Serve Through 2013 — ITD expects to secure a new contract for network services before June 2006. This will provide increased capacity needed to serve government and education through 2013.

## ACCOMPLISHMENTS

*By creating a robust, shared infrastructure, the state leverages its investment dollars. In a state as sparsely populated as North Dakota, a centrally managed network and centrally hosted applications provide cost-effective solutions and deliver state-of-the-art capabilities to state agencies and political subdivisions.*

- ▶ CallPilot — ITD replaced the aging Meridian Mail with CallPilot, which includes unified messaging, allowing voice, fax and email to be accessible via a single application.
- ▶ Network Expansion — Network circuits were added, and capacity increased to meet the growing needs of the state.
- ▶ Unified Court Information System (UCIS) — The Judicial Branch has deployed a single case management system for all North Dakota courts to use. This has improved the information flow between the courts and other interested parties.
- ▶ PowerSchool — Hosted by ITD and supported by Education Technology Services (EduTech), PowerSchool has been implemented in 56 school districts.
- ▶ Law Enforcement Records Management System (LERMS) — ITD, under the guidance of CJIS, offers the LERMS software to local law enforcement agencies as a cost-effective solution. It provides a system for managing caseloads and reporting criminal activity to the state.
- ▶ GPS Tower Upgrade — The DOT converted the decommissioned Air Force site in Medora to a Nationwide Differential Global Positioning System (GPS) station. This system increases the accuracy and support of GPS applications.
- ▶ Mobile Data Terminals — The Highway Patrol expanded its use of data terminals in patrol cars as well as increasing the number of towers, providing improved coverage across the state.



k-12 education >>

collaborative efforts . . . statewide progress



It was not that long ago when information technology (IT) in K-12 schools consisted of a few isolated hardware/software systems used by specialists to accomplish a few tasks. IT systems have now become ubiquitous in schools with administrators, teachers, students and support staff all using a variety of technologies to accomplish the work of schooling.

Technology in schools has become mission-critical. So it has become essential that all IT systems work well and work together to create efficiencies and help improve student achievement.

The mission of the North Dakota Educational Technology Council (ND ETC) is to develop technology systems and coordinate their use to enhance and support educational opportunities for elementary and secondary education (ND Century Code 54-59-17 & 18). The ND ETC members represent the stakeholder groups that must collaborate and make decisions that will ensure existing and developing

technology systems work to the benefit of schools. State government, higher education, school leaders and teachers are all represented on the Council. Their input is critical to ensuring that the IT systems of state government, the Department of Public Instruction (DPI), higher education and K-12 are coordinated to maximize efficiency and effectiveness.

To conduct its business, the ND ETC in 2002 adopted "Policy Governance," a system that focuses the work of the Council on big-picture goals called Results Policies; defined the activities of the Council itself through Governance Process Policies; and defined the work of the ND ETC Director through a series of Council/Director Relationship Policies and Director Limitations Policies.

The five Results Policies developed and adopted by the Council guide the work of the ND ETC Director as well as the work of the Division of Independent Study and EduTech, the state's K-12 IT services and training provider.

## K-12 overview

### As a result of the ND ETC's efforts:

- *North Dakota educational technology systems will continuously improve educational opportunities.*
- *Technology systems to enhance educational opportunities will be more efficient, effective and coordinated on a statewide basis.*
- *Distance education systems will be in place to deliver a comprehensive curriculum to North Dakota students.*
- *Professional development related to the use of technology will be available to meet changing education needs.*
- *Policies and practices will be maintained to sustain the stability and integrity of the educational technology systems.*



Dan Pullen  
ND Director of K-12 Technology

*"It was not that long ago when information technology in K-12 schools consisted of a few isolated hardware/software systems used by specialists to accomplish a few tasks."*

## STRATEGIES



- To connect every school district to STAGEnet.
- To implement a statewide web meeting application to facilitate K-12 needs for widespread communication involving dozens of end-points.
- To implement K-12 educational projects in cooperation with the North Dakota University System using Internet2 capabilities such as virtual field trips.
- To expand the implementation of PowerSchool to every school district that wants to use it as a student information system.
- To develop and implement a plan for the Division of Independent Study to be completely self-supporting by 2010.

goalone



*North Dakota educational technology systems will continuously improve educational opportunities*

k-12 education >>

## INITIATIVES

All statewide educational technology initiatives will remain focused on improving the learning opportunities and outcome of students. Robust network connectivity, online planning tools and data systems benefit students by enabling teachers and administrators to better track student progress and identify learning difficulties quickly so effective action can be taken toward improvement. Providing new opportunities to students and teachers through Internet2 and video networking help expand the horizons of North Dakota students.

- Ongoing support continues for existing technology systems.
- EduTech will bring a total of 72 schools onto PowerSchool by June 2005.
- ND ETC will fund a statewide K-12 membership in Internet2, enabling North Dakota K-12 into full partnership with higher education in the Internet2 Sponsored Education Group Participation (SEGP).
- Additional Internet2 educational activities will be facilitated and funded for K-12 on a pilot project basis.
- The use of the North Dakota Professional Competency Continuum (PCC) will be continued and coordinated with the DPI for purposes of reporting state progress toward specified No Child Left Behind Act (NCLB) goals.



## STRATEGIES



- To expand the leadership role of the ND Educational Technology Council.
- To evaluate the effectiveness of technology use in K-12 schools through a systematic assessment process.
- To identify new web-based applications that meet K-12 customer needs, which can be deployed statewide to create efficiencies.

## goal two

*Technology systems to enhance educational opportunities will be more efficient, effective and coordinated on a statewide basis*

k-12 education >>

## INITIATIVES

In order to maximize local, state and federal investments in school technology systems, statewide coordination and state level leadership are required. Purchasing key applications and infrastructure at the state level creates efficiencies statewide.

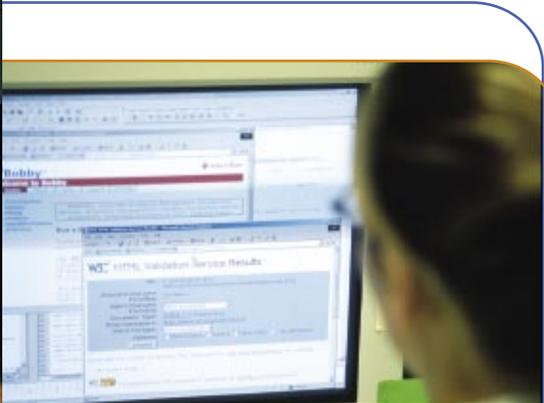
- Ongoing leadership in cooperative efforts continues to support existing technology systems.
- The ND ETC will participate with other stakeholders in a school data systems advisory committee led by the Department of Public Instruction.
- The ND ETC will lead the revision of the State Educational Technology Plan in order to be in compliance with federal requirements by July 2006.
- The ND ETC will work with the North Dakota University System to implement a single Learning Management System statewide, including K-12 users and educators and students at the Division of Independent Study.

## ACCOMPLISHMENTS

- The ND ETC led the development and approval of the state educational technology plan.
- The ND ETC organized and led a statewide E-rate team made up of representatives of ND ETC, ITD, EduTech, DPI, the State Library, and K-12 schools in order to oversee the preparation of the annual E-rate application for federal funds to pay for over 60 percent of the costs of STAGEnet for K-12.
- The ND ETC approved all school technology plans in order for schools to meet requirements for applying for E-rate and federal Title funds.
- EduTech worked with DPI on assessing the effectiveness of school technology initiatives funded by competitive Title II-D funds administered by DPI.
- EduTech led the revision of the North Dakota Essential Condition for Technology Integration document that is used statewide for technology planning and for assessing the results of technology initiatives.
- EduTech provided eight regional information technology specialists across the state to serve school needs for IT services and professional development.
- The ND ETC conducted statewide school visits in order to assess the effectiveness of educational technology initiatives to date and determine needs based on input from school administrators, technology coordinators and educators.



## STRATEGIES



- To support the implementation of video networking in schools that need video to share courses.
- To support the implementation of video networking capabilities in at least one site in every North Dakota school district.
- To implement video networking capabilities and strategies to connect K-12 schools to educational resources outside of the state.
- To develop educational resources and activities based on the Lewis and Clark theme in cooperation with other state agencies.

## goal three



*Distance education systems will be in place to deliver a comprehensive curriculum to North Dakota students*

k-12 education >>

## INITIATIVES

As student numbers in North Dakota schools continue to decrease, distance learning becomes increasingly important for providing students with a comprehensive curriculum, including specialized high school courses and advanced placement and dual credit courses. The use of video and web-based courses continues to increase in K-12 schools and the courses available through the Division of Independent Study are an increasingly important state asset.

- Ongoing support for existing distance education systems continues.
- The ND ETC, EduTech and the Division of Independent Study will work with the North Dakota University System to implement a single Learning Management System statewide, including K-12 users and the educators, and students at the Division of Independent Study.
- The Division of Independent Study will offer four new advanced placement (AP) courses within the next year including calculus, biology, US history and English.
- Additional work will be done to offer professional development to educators who teach by video network in order to improve the quality of instruction.
- A state-level committee led by the director of the Division of Independent Study and DPI will work on issues related to distance education, including funding distance learning options for students, teacher certification, and virtual school accreditation.

## ACCOMPLISHMENTS

- The ND ETC awarded \$441,000 in grants to 27 schools to build new video classrooms or to add H.323 capabilities to their distance learning systems.
- Over 2,700 ND high school students attended classes on video during spring semester 2004.
- Courses shared by consortiums of schools using video included core and elective offerings, 25 percent of which were for dual credit.
- EduTech and Interactive Video Network (IVN) supports a consortium leaders group that meets quarterly to work on statewide video issues.
- During the 2003-04 school year, over 1,800 North Dakota high school students took a course through the Division of Independent Study either online or through print-based delivery.
- The ND ETC participated in the statewide advisory committee to determine the specifications for a new statewide Learning Management System to be adopted by all K-12 users in the next two years.
- The Division of Independent Study offered four courses by video to students in three schools during the 2003-04 school year, in addition to offering English courses to 89 students in one school using a combination of print-based and video delivery in the first semester of 2004-05.



*The ND ETC awarded \$441,000 in grants to 27 schools to build new video classrooms...*



## STRATEGIES

- To implement the use of interactive video networking and web delivery for professional development opportunities for K-12 educators.



## goal four

*Professional development related to the use of technology will be available to meet changing education needs*

k-12 education >>

## INITIATIVES

Without adequate professional development for teachers and administrators, the technology systems in place cannot effectively serve student needs. The increasing numbers and kinds of administrative and academics technology systems and resources available in school make high-quality professional development a high priority. Developing, coordinating and offering professional development at the state level is both cost-effective and provides consistency across all districts without regard to size or location.

- Ongoing support for existing professional development activities continues.
- Current professional development initiatives will be maintained and expanded, including video initiatives for delivering training for distance educators, technology skills and integration training, and other academic and administrative IT systems.
- Professional development will be targeted to better meet educator/school needs for time, location and content.
- New training related to Internet safety will be developed and supported.
- New professional development and training for distance education teachers will be created and delivered to all educators who teach using video or web-based technologies with a goal of improving the quality of instruction and the achievement of students.

## ACCOMPLISHMENTS

- Fifteen professional development offerings delivered via video were made available to North Dakota teachers by EduTech.
- Four professional development offerings for school technology coordinators were delivered by video in 2003-04. Three additional face-to-face offerings were made available. These activities were made possible through a cooperative arrangement with DPI and the support of federal funds.
- EduTech began working with Prairie School Television to offer online professional development to teachers through "TeacherLine."
- The Teaching and Technology (TNT) conference continued, offering educators professional development in a summer, hands-on setting.
- EduTech began delivering training for teachers and administrators in new K-12 IT systems including Atlas curriculum mapping.
- Advanced PowerSchool training was offered to schools able to use the full suite of PowerSchool tools.
- Participation by teachers in EduTech professional development workshops continued to increase each year with 3,400 participants in 2003-04. Over 440 of those participants received graduate credit.
- The ND ETC partnered with the North Dakota Leadership and Educational Administration Development (LEAD) Center, Teaching With Technology (TWT) and EduTech to deliver training for district and building administrators related to using the data from the Professional Competency Continuum for planning individual and building-based professional development.



*Fifteen professional development offerings delivered via video were made available to ND teachers by EduTech.*



## STRATEGIES

- To implement statewide virus protection in every K-12 school connected to STAGEnet to ensure the stability of the shared infrastructure.



## goal five



*Policies and practices will be maintained to sustain the stability and integrity of the educational technology systems*

k-12 education >>

## INITIATIVES

As technology systems become mission-critical in schools, their use cannot be interrupted for long by network outages or local system failures before courses are negatively affected and school business practices are threatened. State level security and support systems provide an effective and cost-effective way for schools to use high-performance systems on a daily basis with a high degree of confidence and success.

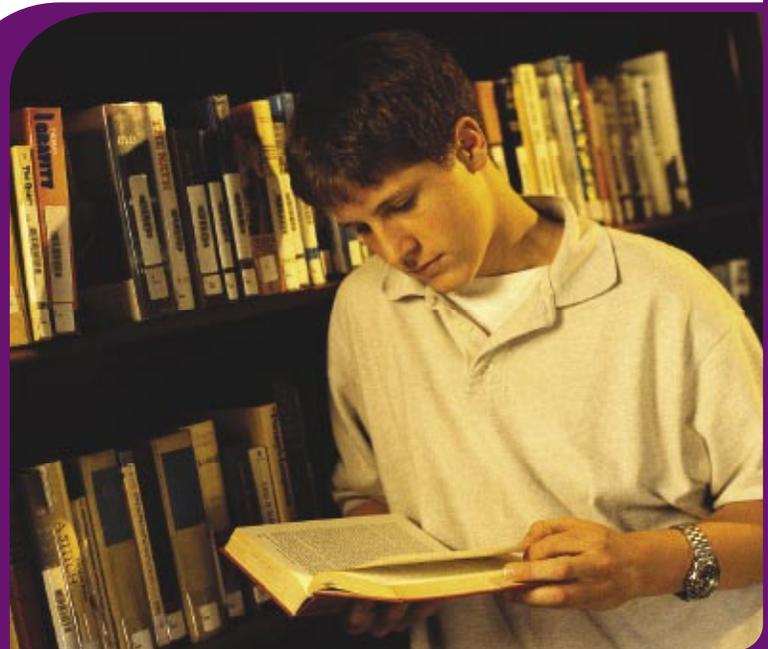
- Ongoing support for existing distance education systems will continue.
- An improved SPAM filtering system will be implemented on EduTech e-mail accounts.
- Statewide virus protection will be maintained and enhanced.
- Internet safety and network and data security issues will be emphasized in ongoing communication and professional development for K-12 personnel.

## ACCOMPLISHMENTS

- ITD has mapped STAGEnet to ensure that K-12 has a separate virtual network in order to increase security and safety for K-12 users.
- EduTech manages a statewide K-12 virus protection system for all K-12 computers connected to STAGEnet, which has kept the network relatively virus-free in the past year. The cost-savings of the centrally purchased and managed anti-virus system are 60 percent statewide.
- EduTech blocks over 200,000 viruses per month in the 40,000 e-mail accounts it maintains for K-12 teachers and students. In addition EduTech blocks over 750,000 SPAM messages per month.
- EduTech manages a statewide Internet filtering system that provides a safe Internet environment for students in the state. Filtering, required by the federal Children's Internet Protection Act, is flexible and allows each school district to determine the level of filtering it wants. The cost savings of the centrally purchased and managed filtering systems is 75 percent.
- EduTech help-desk personnel provided ongoing IT troubleshooting and consultation to schools across the state.
- EduTech worked cooperatively with NDSU to offer a conference specifically dealing with network security.



*The cost-savings of the centrally purchased and managed anti-virus system are 60 percent statewide.*





higher education

collaborative efforts . . . statewide progress



Working together works! That was celebrated nationally when the E-Gov 2003 Conference and Exposition recognized ConnectND as an exemplary achievement in e-government and higher education service delivery.

ConnectND, our joint effort between state government and higher education, provides state-of-the-art integrated software systems that enhance service to our students, our employees and our other constituents. These new systems also help us define our information technology goals and strategies. ConnectND is just the latest example of working together to accomplish necessary change. Collaborations like this maximize resources and reduce duplication.

## HIGHER ED o v e r v i e w

Information technology leadership is vital in supporting North Dakota University System (NDUS) infrastructure needs. A new council made up of the senior technology leader from each campus is embracing that leadership role in addressing information technology policy and strategic issues. Among its responsibilities, the CIO Council oversees development of the enterprise architecture process within the NDUS. As it shapes and maintains an infrastructure appropriate to higher education's needs, this informed and insightful leadership allows us to work with state government and the K-12 sector to craft statewide collaborations for the implementation and use of technology.

*Our mission is to secure the future of education for today's youth by the judicious application of technology. We are creating and enhancing systems that work the way people think they should. This is happening because we cooperate, we join efforts and ideas ... and as a result, we succeed in reaching common goals.*

With recent installation of the new Aleph 500 library system by the Online Dakota Information Network (ODIN), researchers and other patrons aren't threatened by crucial operational software becoming unsupported. This is important because students today don't always need the hard copy found in books or periodicals to complete their assignments and papers — an increasing amount of that material is available electronically.

Because of explosive growth in video conferencing using the Interactive Video Network (IVN), North Dakota students experience face-to-face education from almost anywhere in the state. 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. Geographic distances aren't a barrier — students are no longer restricted by the location of bricks and mortar. North Dakota University System Online provides a single point of contact for distance education opportunities. To better manage online courses and academic degrees, campuses and a 12-member task force selected by the Academic Affairs Council have recommended that Desire2Learn be installed as the common learning management system. We will phase in that program on five pilot campuses and we plan to extend it throughout the university system with full integration into the NDUS administrative system.



Grant Crawford, Chief Information Officer  
North Dakota University System

## STRATEGIES



- To grow into and more fully capitalize on the potential presented to us through the new ConnectND administrative system, along with state government.
- To leverage Online Dakota Information Network's (ODIN) new library system into new services and additional libraries.
- To implement a statewide learning management system.
- To continue expansion of the Interactive Video Network (IVN) video networking services within the North Dakota University System, state and local government, K-12 schools and non-profit organizations.

## goal one



*To improve North Dakota University System (NDUS) information technology - enabled business processes and services*



higher education

## INITIATIVES

- With ConnectND, students will 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. ConnectND's benefits for students alone are estimated at \$87 million over a 10-year period.
- A new program ancillary to ConnectND will replace the facilities management portion of the current administrative system at the University of North Dakota, North Dakota State University and the State College of Science, which are serving as pilot sites. Other ancillary projects cover management of parking, campus housing, document archiving and room scheduling.
- Campuses participating in phase one of the Desire2Learn learning management system implementation are Bismarck State College, Dickinson State University, Mayville State University, North Dakota State University and Williston State College.
- Mayville State University has adopted the tablet PC for student and faculty computing.
- Board of Higher Education members are using laptop computers to manage their meeting materials and other information.

## ACCOMPLISHMENTS

- On any given school day last year, IVN actively supported 100 videoconferences from a pool of more than 300 endpoint connections. IVN supported nearly 18,000 videoconferences involving more than 59,000 room connections during the year.
- Last year, the North Dakota University System accounted for 97 IVN rooms located at the 11 campuses, the university system office, NDSU research extension centers, UND medical education centers and various outreach sites across the state. Nearly 4,000 students participated in 187 academic classes over the IVN.



- The state's secondary schools last year accounted for 151 sites on the network spread across 10 different video consortia and the North Dakota Division of Independent Study. Those consortia used IVN technology to deliver 359 classes to 5,378 students.
- ODIN is providing consolidated computing operations for 88 libraries, handling more than 20 million transactions per year and serving 162,000 registered library users. ODIN supports the North Dakota University System campus libraries, private higher education libraries, many K-12 school libraries, public libraries, state agency libraries and other special libraries. Member libraries own more than 5 million items.

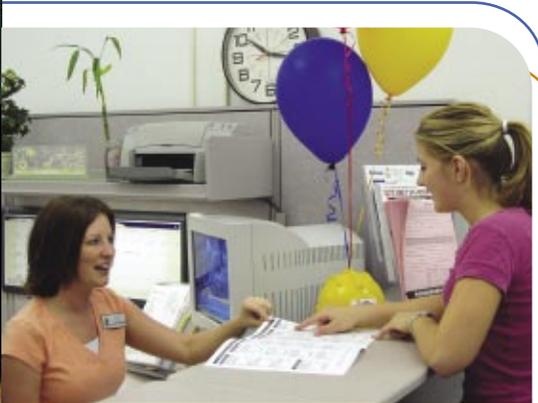
We strive to deliver the most effective technology within available resources. ConnectND allows campus administrators, faculty and students to conduct business online with applications such as financial management, purchasing, budgeting, human resources, payroll, asset management and student information. ConnectND also provides integrated services to all of state government.

Quality of life in North Dakota has been enhanced through upgrading the Online Dakota Information Network's library system with Aleph 500, produced by Ex Libris. Also, subscriptions to very large, remote databases and publications are more affordable due to inter-library cooperation that enables bulk purchasing. These large information collections are within reach anywhere in North Dakota and growing the number of libraries in ODIN will increase our buying power.

In addition to higher education course offerings, IVN has already created enormous opportunities for students who choose to take advanced classes and courses not available within their own schools because of teacher shortages or qualification restrictions. IVN has begun offering "MeetMe" audio (or telephone) conferencing and has also developed video and audio "streaming" capability, which delivers a videoconference live over the Internet. IVN is also poised to offer video MeetMe capabilities. As we continue to develop and upgrade video and audio equipment, facilities and support, we are also refining appropriate structures for financing those services.

Phase one of the new statewide learning management system has begun with the initial focus on converting courses from existing systems for delivery online using Desire2Learn. Initial implementation will also include configuration of servers, training and development of help desk services.

## STRATEGIES



- To offer reliable, cost-effective and appropriate North Dakota University System network services.
- To provide middleware tools and data to help people more easily use networked resources and services with security and privacy.
- To enable libraries to provide easy access to licensed electronic information.
- To provide information technology management, planning, project oversight and architecture leadership.

## goal two



*To support North Dakota University System (NDUS) infrastructure needs*

  
higher education

## INITIATIVES

- Future network requirements will include services and features capable of supporting integration of voice (VoIP), video and data over STAGEnet. Video and data are already integrated — adding telephone to a single network eliminates the needs for a separate network infrastructure and the support systems for voice, creating the potential for significant cost savings.

## ACCOMPLISHMENTS

- Over the past year, Higher Education Computer Network (HECN) staff added 55 servers, 1.5 terabytes of disk, and additional tape storage capacity for the transition of campuses to ConnectND. This new capacity will allow for decommissioning of the mainframe during the coming year.
- HECN staff regularly monitors network traffic patterns for anomalies and reports compromised machines or excessive network use to the campus involved. As a result, our bandwidth usage is being tightly managed.



- Three additional Sun servers with 20 processors were installed to accommodate the ODIN transition to the Ex Libris Aleph library software system. Converted were 2,805,645 bibliographic entries, 4,438,789 library items, and 133,580 library patron records. Staff continued to maintain the existing ODIN PALS library systems while working toward ODIN Aleph implementation. The mainframe supporting the PALS system will be retired early in the coming year.
- The NDUS security officer has worked with campus IT security officers and volunteers to update and refine the NDUS computer and network usage policy to address current challenges, and coordinate communication and efforts between the campuses and external entities regarding complaints from individuals and inquiries from law enforcement.
- Finalized plans for quadrupling the Internet bandwidth available to NDUS campuses.

Infrastructure holds information technology systems together. We have 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 a “collaboration toolset,” and it is all connected together seamlessly by a wide area network such as STAGEnet.

However, because of security, privacy and cost issues, we cannot allow unfettered access to our services. People need IDs, passwords and authorization. The software that manages this aspect of the infrastructure is called “middleware.” In addition to controlling access, there must be policies to guide the implementation of the middleware. These policies must be developed and updated with the involvement of the communities of people who use the services.

Enterprise architecture provides a process or blueprint for establishing information technology policies, standards and guidelines to promote effective use of information technology and related resources. Our new CIO Council has appointed chairs of enterprise architecture domain teams for security, network and video, and will soon address teaching and learning (including learning management systems).

## STRATEGIES



- To further develop the NDUS help desk.
- To improve communication with all stakeholders of NDUS Common Information Services (NDUS CIS).
- To collaborate with NDUS campuses, K-12, state and local governments, and libraries to identify appropriate learning and research support systems.
- To work with Online Dakota Information Network (ODIN) libraries to expand digital holdings.
- To promote Internet2 and advanced networking.
- To provide training and support for network videoconferencing user groups.
- To help expand and adapt online educational opportunities to meet changing needs.

## goal three



*To improve or enhance NDUS collaborative efforts*



## INITIATIVES

- Using Internet 2, Minot State University's proposed Flatlands Disability Network will connect adult disability centers, the Anne Carlson Center in Jamestown, Minot State, the University of Nebraska, and all other federally funded medical centers, to create a high-speed network for telehealth, training and planning to support North Dakotans with developmental disabilities.
- Joining North Dakota in the Northern Tier Networking Coalition (NTNC) are South Dakota, Minnesota, Iowa, Wisconsin, Montana, Idaho and Washington. North Dakota participants in the NTNC initiative are North Dakota State University, the state Information Technology Department, Turtle Mountain Community College and the University of North Dakota.
- To improve access for students working downtown, Bismarck State College is moving Allied Health program labs, IVN studios and phone systems from campus into downtown space shared with the city of Bismarck.
- Bismarck State College will demonstrate a connection with Minot State University-Bottineau's information technology programs and classes, and will host a "Tech Summit" for students from within the Center of North America Coalition Zone.

## ACCOMPLISHMENTS

- Currently, there are more than 500 courses available online from the campuses of the North Dakota University System. There are 24 certificate programs, 33 associate degrees, 15 four-year programs, and four graduate degrees — totally online. During the 2003-04 academic year, there were more than 18,000 enrollments in online courses.



- Internet2 provides for classroom videoconferencing, weather tracking, virtual field trips and laboratories, the world's largest videoconference, and many other single events — even a live interview for Turtle Mountain middle school classes with NASA's first Native American astronaut.
- Internet2 membership by UND and NDSU is extended through Sponsored Education Group Participation (SEGP) to the other North Dakota University System campuses, as well as K-12 schools, libraries, museums, arts councils and other similar consortia.
- The NDUS help desk is proving its worth and demonstrating its professional service, in particular, as students, faculty and staff learn to use the new ConnectND features. Problem tracking and reporting at the help desk assists us in understanding where systems or training need to be improved.

We recognize the importance of communicating with our partners and within our community, as well as among other technology groups in the state. We must work together in making necessary information available to every campus administrator and every staff member.

The Online Dakota Information Network (ODIN) helps individual libraries, agencies and government share the expense of increased electronic subscriptions, research journals and databases that are available to member libraries (and all North Dakota libraries where possible). Because of joint efforts and upgraded technology, users now acquire information in a more timely manner.

Our state is rich in educational, research and economic capability and potential. Along with government and industry, our leading research campuses are engaged in data-intensive activities that rely increasingly upon advanced computing and networking. Internet2, the "next network," is helping North Dakotans transmit, share and access information more efficiently. Its higher connection speed is particularly valuable for research; however, there are already a variety of other uses. In addition, we are working together with seven other states to build much greater broadband network capacity along a route between Chicago and Seattle, which includes a region of the country that has been underserved for almost 20 years. This Northern Tier Network Consortium initiative is pursuing a robust network of at least 10 Gigabit capacity, approximately 200 times North Dakota's current Internet2 research network access.



## STRATEGIES

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



## goal four

*To provide and manage resources to align with NDUS strategic goals*

higher education

## INITIATIVES

- 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, and the possibility of branching into additional portal services.
- While we have thrived and shared accomplishments under our partnership with the state, proposed legislation would appropriately place management authority for our information technology programs with the Board of Higher Education. The Board could delegate to the Chancellor those responsibilities for planning, standards and policies, project management and oversight. We have already moved in that direction through our budget and oversight office expanding and structuring our capability and involvement with information technology project management and project management oversight. Close cooperation with the North Dakota Information Technology Department would continue, ensuring collaboration and sharing of resources between higher education and state government.

## ACCOMPLISHMENTS

- The common services we provide are malleable into different environments, yet also robust enough for a production environment serving more than 60,000 users.
- The senior technology leader from each campus has been named to the new NDUS CIO Council, which is embracing a leadership role in addressing information technology policy and strategic issue.



Information technology is a necessary and increasingly more important resource in achieving the North Dakota University System's goals for student learning, expanded research and public service. In order for campuses to remain competitive and offer support for students, faculty and staff, we will provide and manage resources to align with the North Dakota University System's strategic goals.

We track industry developments 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 serve our constituents most efficiently by working with the state and other partners.

We also regularly evaluate the efficiency, quality and productivity of our technology services within the North Dakota University System, and analyze the success of current offerings. We're approaching this formally through a comprehensive review of how all services are provided, managed, supported and paid for, and how processes, structures and funding sources should be adjusted. The CIO Council is the steward of this review process, assisted by our program directors as providers and by campus chief information officers as representatives of the users.

Assisted by technology resources, student learning and research are integral to economic development in our state. To support those ends, we will continue our emphasis on recruiting and retaining a trained, professional staff. We continue to promote educational opportunities that bring new knowledge to North Dakota and help tell others our wonderful story of what we have accomplished here by working together.





websites  
and  
additional  
info

North Dakota portal:  
[www.discovernd.com](http://www.discovernd.com)

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

North Dakota University  
System (NDUS):  
[www.ndus.edu](http://www.ndus.edu)

North Dakota University  
System Online:  
[www.nduso.org](http://www.nduso.org)

ND Interactive Video Network (ND IVN):  
[www.ndivn.nodak.edu](http://www.ndivn.nodak.edu)

Online Dakota Information Network(ODIN):  
[www.odin.nodak.edu](http://www.odin.nodak.edu)

Education Technology Council (ETC) :  
[www.discovernd.com/itd/etc](http://www.discovernd.com/itd/etc)

EduTech:  
[www.edutech.nodak.edu](http://www.edutech.nodak.edu)

STAGEnet:  
[www.stagenet.nd.gov](http://www.stagenet.nd.gov)

ConnectND Project web site :  
[www.nodak.edu/connectnd](http://www.nodak.edu/connectnd)

ND Geographic  
Information System Hub (GIS):  
[www.discovernd.com/gis](http://www.discovernd.com/gis)

The ND Criminal Justice  
Information Sharing portal (CJIS) :  
[www.ndcriminaljustice.com](http://www.ndcriminaljustice.com)

Enterprise Architecture:  
[www.discovernd.com/ea](http://www.discovernd.com/ea)

The 2005-2007 State IT Plan:  
[www.discovernd.com/itd/planning/plan.html](http://www.discovernd.com/itd/planning/plan.html)

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