

Strategic Initiatives

The NITC has identified eight strategic initiatives, which address the NITC's goals of supporting the development of a robust telecommunications infrastructure; supporting community and economic development; promoting the efficient delivery of government and educational services; and ensuring the security of data and network resources and the continuity of business operations. These initiatives would materially advance the vision and statewide goals as identified by the NITC. By emphasizing selected strategic initiatives, the NITC hopes to encourage funding of these initiatives and to encourage state agencies to work together to advance these initiatives.

The eight strategic initiatives, listed as supporting the NITC goals, are:

Supporting the Development of a Robust Telecommunications Infrastructure

Nebraska Statewide Telehealth Network. The Nebraska Statewide Telehealth Network will improve access to health care, continuing medical education, and bioterrorism training and alerts by connecting all rural and critical access hospitals with regional hospitals, public health departments, state public health laboratories, and the State of Nebraska. As of July 1, 2005, most of the telecommunications lines have been installed, completing phase one of network development. Phase two will address issues such as training, maintenance, scheduling, operations, and governance. The Nebraska Statewide Telehealth Network is a collaborative effort led by the Nebraska Hospital Association.

Network Nebraska. The primary objective of Network Nebraska is to develop a broadband, scalable telecommunications infrastructure that optimizes the quality of service to every public entity in the state of Nebraska. The Division of Communications and the University of Nebraska engaged in a collaborative partnership that used existing resources to aggregate disparate networks into a multipurpose core backbone extending from Norfolk, Omaha, Lincoln, Grand Island, Kearney and North Platte to the Panhandle. Potential benefits of Network Nebraska include lower network costs, greater efficiency, interoperability of systems providing video courses and conferencing, increased collaboration among educational entities, new educational opportunities, and better use of public investments.

Statewide Synchronous Video Network. The primary objective of this initiative is to establish an Internet Protocol-based network that will interconnect all existing and future distance learning and videoconferencing facilities in the State of Nebraska. The 400+ interactive video facilities in Nebraska currently utilize a variety of video standards and bandwidth speeds that prevent interconnection between sub-networks. The Statewide Synchronous Video Network, as envisioned, would use compatible audio and video standards to enable any classroom or facility to connect with any other classroom or facility or to connect with multiple sites simultaneously. Benefits include greater sharing of educational courses and resources; more efficient use of available resources; one-to-many videoconferencing capabilities for alerts and emergency situations; and collaborative development across

The NITC has identified eight strategic initiatives, which address the NITC's goals.



various service agencies.

Supporting Community and Economic Development

Community IT Planning and Development. The primary objective of this initiative is to foster community and economic development in Nebraska communities through the effective use of information technology. The NITC Community Council has partnered with the University of Nebraska Cooperative Extension and Rural Initiative to form the Technologies Across Nebraska partnership. Technologies Across Nebraska is a partnership of over 40 organizations working to help communities utilize information technology to enhance development opportunities. Technologies Across Nebraska has helped 21 communities develop local plans to utilize technology to enhance development opportunities. Technologies Across Nebraska's quarterly newsletter, *TANgents*, reaches over 1,000 individuals with an interest in technology-related development.

Promoting the Efficient Delivery of Government and Educational Services

Digital Education. The primary objective of the Digital Education Initiative is to promote the effective and efficient integration of technology into the instructional, learning, and administrative processes and to utilize technology to deliver enhanced digital educational opportunities to students at all levels throughout Nebraska on an equitable and affordable basis.

State Government Efficiency. The State Government Council will address multiple items improving efficiency in state government, including shared services; standards and guidelines; and the project review process. The council has identified and is working to implement seven "shared services" for state government agencies. Also, the council will continue to develop standards and guidelines to better coordinate state agency technology efforts. Finally, the council will review and recommend improvements to the IT project review process. Benefits of these activities include lower costs, easier interoperability among systems, greater data sharing, and improved services.

E-Government. Through the use of technology, state agencies can enhance information sharing, service delivery, and constituency and client participation. Benefits include improved services for citizens and businesses, and increased efficiency and effectiveness for agencies.

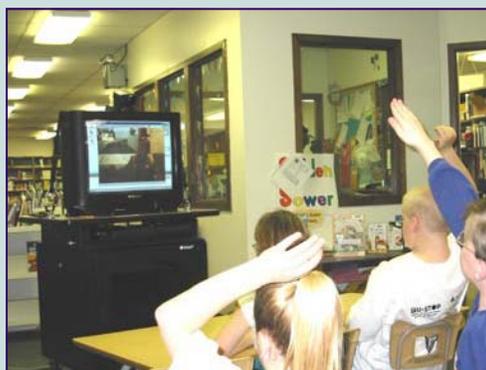
Ensuring the Security of Data and Network Resources and the Continuity of Business Operations

Security and Business Resumption. This initiative will define and clarify policies, standards and guidelines, and responsibilities related to the security of the State's information technology resources. Benefits include lower costs by addressing security from an enterprise perspective, cost avoidance, and protecting the public trust.

Each of these strategic initiatives are discussed in greater detail in the following section.

SNDLC pioneers the Digital Frontier

The Southeast Nebraska Distance Learning Consortium (SNDLC), involving schools from Educational Service Units 3, 4, 5, and 6, has been pioneering the digital frontier for Nebraska teachers and students. It is fitting that the effort includes connections to the Homestead National Monument of America at Beatrice, site of the nation's first homestead in 1862. Today, nearly a century and a half later, digital pioneering is expanding learning opportunities through Internet 1 connections to such places as



SNDLC students ask questions of staff from the Homestead National Monument in Beatrice. Photo courtesy of SNDLC

- Little Rock Central High School National Historic Site in Arkansas
- Cabrillo National Monument in California,
- Nicodemus National Historic Site in Kansas,
- Henry Doorly Zoo and Homestead National Monument of America in Nebraska
- Badlands National Park, Minuteman Missile National Historic Site and Mount Rushmore National Memorial in South Dakota
- Arches National Park, Canyonlands National Park and Hovenweep National Monument in Utah.

Educators at each of these sites work with classroom teachers to provide standards-based enrichment experiences that are directly tied to what is being taught in the classroom. Distance-learning technology allows two-way live interaction between the presenter and the students; they can hear, see and talk to each other in real time. Today's students can share the rich history of our country without leaving the classroom, and can interact with students from other states as they discover and share the unique differences that exist in our world today. Best of all, Nebraska teachers and students are setting the stage for students from all over the world to explore the resources of America, as well as those of Nebraska.

Today's students can share the rich history of our country without leaving the classroom.

Nebraska Statewide Telehealth Network



Objective

The Nebraska Statewide Telehealth Network will improve access to health care, continuing medical education, and bioterrorism training and alerts by connecting all rural and critical access hospitals with regional hospitals, public health departments, state public health laboratories, and the State of Nebraska.

Description

The Nebraska Statewide Telehealth Network is an interactive video and data network that provides integration among the hospitals, public health departments, public health laboratories and other entities across the entire State of Nebraska. The major functions of the Network are to improve quality and access to care, particularly in rural Nebraska, to provide patient, provider and community education and to provide another communication source in the event of a natural, man-made or terrorist emergency.

The Nebraska Statewide Telehealth Network is a collaborative effort led by the Nebraska Hospital Association. Partners include:

- Nebraska Hospital Association
- Nebraska hospitals
- Nebraska Public Health Departments
- University of Nebraska Medical Center
- Universal Service Administrative Company
- University of Nebraska System
- Nebraska Information Network
- Nebraska telecommunications companies
- Central Nebraska Area Health Education Center
- Northern Nebraska Area Health Education Center
- Nebraska Panhandle Area Health Education Center
- Nebraska Medical Association
- Nebraska State Government
 - Lieutenant Governor's Office

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- Nebraska Public Service Commission
 - Nebraska Division of Communications
 - Nebraska Health and Human Services System
 - Bioterrorism Preparedness and Response Section
 - Office of Rural Health
 - Nebraska Information Technology Commission
 - Nebraska Office of the Chief Information Officer
 - Nebraska Department of Education
 - Nebraska Educational Telecommunications Commission

By the end of 2005, most of the telecommunications lines will be installed, completing phase one of network development. Phase two will address issues such as training, maintenance, scheduling, operations, and governance. A partnership with the Nebraska Medical Association has been formed to promote use of the network among physicians. The Telehealth Network Education Subcommittee is working to create a listing of educational offerings provided over the network.

The successful implementation of the Nebraska Statewide Telehealth Network may also help lay the foundation for the development of a statewide electronic health record system and the adoption of health information technology. President Bush has made the adoption of health information technology including electronic health records a national priority.

Benefits

A telehealth network which connects all hospitals, providing access to consultations with medical specialists, continuing medical education, and bioterrorism training and alerts is critical to the provision of health care in rural areas of the state. There is a lack of specialist services in rural areas, particularly mental health services. Telemedicine has proven to be an effective way to provide consultations with specialists. Currently mental health consultations and teleradiology are the two most common types of specialist services provided via telemedicine. Rural health care providers also have fewer opportunities for continuing medical education in their community and must often drive several hours to attend training. Continuing medical education is currently being provided via telehealth in Nebraska and has proven to be an effective and efficient method of delivery. It is also critical that all hospitals are connected to a telehealth network in order to prepare health care providers to respond quickly to bioterrorism threats and other public health risks.

The Nebraska Statewide Telehealth Network will provide access to consultations with medical specialists, continuing medical education, and bioterrorism training.

The widespread adoption of health information technology (including electronic health records) is expected to reduce health care costs for employers, reduce costs and increase efficiencies for third party payers, and to improve the quality of health care.

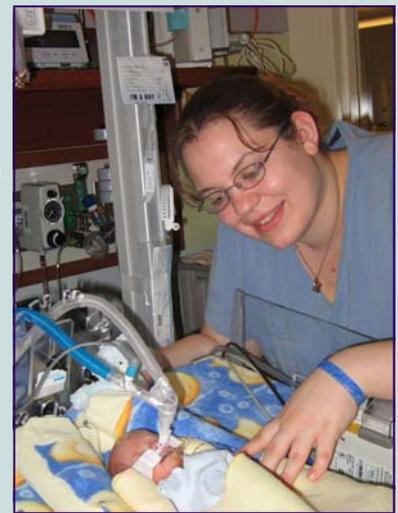
Through the Nebraska Statewide Telehealth Network, Jessica was able to arrange support services for the family; family members in North Platte were able to see Trey and to visit with Jessica; and Trey's neonatologists at Saint Elizabeth and his physicians in North Platte were able to discuss his medical needs and care.

Nebraska Statewide Telehealth Network eases baby Trey's transition back home

Born four months early and weighing only 13.9 ounces, Trey Keifer is a medical miracle. He is the tiniest baby to ever survive at Saint Elizabeth Regional Medical Center. His mother, Jessica, was airlifted from North Platte to Lincoln where an emergency Caesarean section was performed to save her life and hopefully that of her unborn son. Both lives were saved to the amazement of the medical teams.

During Trey's four-month stay in the Saint Elizabeth newborn intensive care unit, videoconferences were set up between Saint Elizabeth and Great Plains Regional Medical Center in North Platte using the Nebraska Statewide Telehealth Network. Through videoconferencing, Jessica was able to arrange support services for the family; family members in North Platte were able to see Trey and to visit with Jessica; and Trey's neonatologists at Saint Elizabeth and his physicians in North Platte were able to discuss his medical needs and care.

Impressed with how well videoconferencing has eased Trey's transition back home to North Platte, doctors and nurses at Saint Elizabeth now plan to regularly set up videoconferences with the families and doctors of infants with special medical needs who reside outside of the Lincoln area.



Jessica Keifer smiles at her son, Trey. Photo courtesy of St. Elizabeth Regional Medical Center

Network Nebraska

Objective

The primary objective of this initiative is to develop a broadband, scalable telecommunications infrastructure that optimizes the quality of service to every public entity in the State of Nebraska. The Division of Communications and the University of Nebraska engaged in a collaborative partnership that used existing resources to aggregate disparate networks into a multipurpose core backbone extending from Norfolk, Omaha, Lincoln, Grand Island, Kearney, and North Platte to the Panhandle. The next phase of this initiative is to formalize business relationships and agreements and to enhance rural bandwidth through local aggregation.

Description

The major components of this initiative include:

- Development of a scalable, reliable, and secure telecommunications infrastructure that enables any type of eligible entity (i.e., local and state government, K-12 and higher education, health care institutions) to purchase the amount of service that the entities need, when they need it, on an annual basis;
- Establishment of a catalog of value-added applications that enables eligible entities to pick and choose services that are pertinent to them (e.g., Internet1, Internet2, and videoconferencing);
- Implementation of a network operations center that offers a helpdesk, network diagnostics, and engineering assistance in order to ensure acceptable qualities of service;
- Establishment of a billing or accounting center to accept service orders, extend service agreements, provide consolidated billing, and to maintain customer accounts.

Benefits

Through aggregation of demand, adoption of common standards, and collaboration with network services and applications, participants can achieve many benefits, including:

- Lower network costs;
- Greater efficiency for participating entities;
- Interoperability of systems providing video courses and conferencing;
- Increased collaboration among all K-20 educational entities;
- New educational opportunities;

Through aggregation of demand, adoption of common standards, and collaboration with network services and applications, Network Nebraska participants can achieve many benefits.



Wayne's last mile aggregation provides better services at lower costs

By Dennis Linster, Wayne State College

In November 2002, Wayne City Administrator Lowell Johnson and Wayne State College CIO Dennis Linster presented a proposal to the NITC Technical Panel for approval of a plan to aggregate all of the tax-supported IP-based telecommunication services in Wayne, Nebraska and centrally distribute those services to the tax-supported entities. The initial plan included hosting the telecommunications services for Wayne city offices and NorthStar Regional Services at Wayne State College through a wireless connection. The NITC Technical Panel endorsed the plan as feasible and a promising example of Tier II aggregations among municipalities. The project was named the "Last Mile Project" by their technical team.

Wayne State College had several characteristics that made it a logical service consolidator. The President of the college lent support for this undertaking. The college had a network operating center that was open 24 x 7 and a very high-quality staff to ensure the success of the project. And, the City of Wayne was eager to make this project happen. The technical team chose a wireless transport solution to facilitate a connection between campus and the main city office building. Wireless technology was also used to connect the seven remaining city buildings to the main city office. The city and college technical staffs worked in partnership to make these connections functional. In February 2003 the connection was completed, and it has been working flawlessly since. After more than two years of rain, sleet, snow, high



Wireless antenna and tower arrays connect Wayne municipal public entities with the Wayne State College campus. Photos courtesy of Wayne State College

winds, fog, virus outbreaks, and even power outages, the wireless connection performed very reliably. In 2004, NorthStar Regional Services and Wayne Public Schools were also connected by wireless. NorthStar Regional Services provides community-based services to people with developmental disabilities.

As a Tier II aggregation site, Wayne State College has been able to aggregate public entities' municipal Internet demand with their own and then contract with Network Nebraska for Internet service. The combination has not only improved the quality of service for the involved partners but also lowered costs.

Linster comments about the 'Last Mile Project', "It is evident that the collaboration of support is something that was seriously needed in our community, and likely is needed in other communities as well. Along with the collaboration of support, we have aggregated the services and expanded the opportunities of all partners technically. This is nothing short of a win-win scenario in which the taxpayers are the real winners. Better services, lower costs."

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—Dennis Linster

Project 42 joins Network Nebraska, gains bandwidth and reduces costs

By Alan Wibbels, ESU 10

Project 42—a consortium formed by ESUs 10, 11, 15, and 16—serves 163 school districts in 33 counties and covers approximately 32,000 square miles. Over 10,000 faculty and staff have e-mail accounts provided by the consortium and 50,000 students currently use the network to access the Internet and web-based services available both at the ESUs and around the world.

Prior to joining *Network Nebraska*, Project 42's Internet access costs were approximately \$500 per megabit of bandwidth per month (\$10,000 per month for 20 megabit) before the e-rate discount. By moving to the state network, the cost per megabit has dropped to \$150 per megabit per month and Project 42 has been able to expand the bandwidth to 30 megabit. As a result, Project 42 is able to deliver greater bandwidth and experience a savings of \$5,500 per month!

Project 42 anticipates continued reduction in costs as more customers join *Network Nebraska*. Obviously the cost for transport across the state will not be free. However, as more customers share the cost of the transport and the state uses its aggregated purchasing power to buy greater amounts of Internet access, all



By moving to the state network, the cost per megabit has dropped to \$150 per megabit per month.

participants should realize reduced costs per megabit of bandwidth.

In addition to basic Internet services, *Network Nebraska* provides K-12 schools with the opportunity to participate in Internet 2 services and activities as outlined on the Internet 2 (I2) initiative web site (<http://k20.internet2.edu/about/goals.html>). Project 42 has used the high-speed I2 access to download large data files and to create interactive connections with students across the United States. Examples of interactive projects include:

- Sixth graders from Bertrand connected with a senior high class in Texas for a lesson on cotton and its many uses.
- Second grade students from Pleasanton connected with second graders in two communities in Texas and New York to share information about their hometowns and cultural differences.
- Several schools in Project 42 interacted with Mr. Cox, a World War II veteran in Texas, who had survived the sinking of the USS Indianapolis by the Japanese in the South Pacific. Students had the opportunity to hear the story first hand and to interact with him.
- A number of connections have been established with the Lewis and Clark Expedition project for the purpose of training teachers how to use Internet2.



Then Lt. Governor Dave Heineman, UNL Assistant Vice Chancellor Kent Hendrickson, UNK Chancellor Doug Kristensen, and ESU 10 Systems Engineer Ron Cone “turned on” access to Internet 2 by Nebraska schools. July 2004 photo courtesy of ESU 10

Statewide Synchronous Video Network

Objective

The primary objective of this initiative is to establish an Internet Protocol-based network that will interconnect all existing and future distance learning and videoconferencing facilities in the State of Nebraska. Nebraska currently has approximately 300 high school distance learning classrooms, 30 higher education distance learning classrooms, over 50 state agency videoconferencing rooms, and (soon-to-be) over 60 videoconferencing facilities for telehealth in local and regional hospitals. More growth and proliferation of distance learning and videoconferencing equipment and sites is expected in the near future. These 400+ interactive video facilities currently utilize a variety of video standards and bandwidth speeds that prevent interconnection between sub-networks. The Statewide Synchronous Video Network, as envisioned, would use compatible audio and video standards to enable any classroom or facility to connect with any other classroom or facility or to connect with multiple sites simultaneously.

Description

The major components of this initiative include:

- A single, interconnected synchronous video network with various levels of authorization and traffic prioritization;
- An event clearinghouse and scheduling system that would allow registration for interactive video events;
- Development of a network bandwidth management system or network operations center that assures pre-determined qualities of service, depending upon the type of video traffic.

Benefits

Interactive videoconferencing and distance learning developed rapidly across Nebraska in the 1990's. Prior to recognized video standards or a coordinating body, entities were free to adopt any equipment, standard, or system that met their needs. Little thought was paid to interconnectivity or compatibility. Consequently, Nebraska became a state of disparate, redundant systems that prevented multi-jurisdictional collaboration or maximization of educational opportunities outside of a particular geographic boundary or system.

The enterprise benefits of an interconnected video system include:

- Greater sharing of educational courses, events, and training across sub-network boundaries, irrespective of geography;

The Statewide Synchronous Video Network would use compatible audio and video standards to enable any classroom or facility to connect with any other classroom or facility or to connect with multiple sites.



- More efficient use of available resources—more classrooms and sites are available within less distance of the user at more convenient times;
- One-to-many videoconferencing capabilities for news alerts, bioterrorism alerts, or other emergency uses;
- Collaborative development across various service agencies (i.e., medical services to schools, and adult and continuing education opportunities).

Numerous schools have taken part in similar NASA programs, live discussions with Nebraska native Astronaut Clayton Anderson, and also the Edgerton Explorit Center's own unique programming.

Edgerton Explorit Center connects to NASA

In December of 2003, the Edgerton Explorit Center (EEC) in Aurora launched its Distance Learning Program by connecting students at the EEC with educators from NASA's Johnson Space Center. Since this time, numerous schools have taken part in similar NASA programs, live discussions with Nebraska native Astronaut Clayton Anderson and also the EEC's own unique programming, which includes "Seeing Through the Eyes of Discovery", "Virtual Dissection" and "Supercold Chemistry". Programs are specifically designed to meet the needs of educators and the Nebraska Department of Education Science Standards.

The EEC Distance Learning Room has the capabilities to connect with almost every school in the state via a direct scheduled connection, through the internet by dialing an IP address or via a transferred satellite connection. School groups, summer camps, scout excursions, business meetings, and educational planning sessions have been conducted with groups from across the state and beyond. The classroom is equipped with a digital microscope camera, document camera, electronic white board, retractable ceiling video screens, and work desks/chairs with microphones.

In January of 2005, the EEC added experiences that were truly interactive. Students who log onto the EEC website during a distance learning event are able to control demonstration equipment from their classroom. This follows directly from Doc Edgerton's philosophy that we all learn best by getting our hands on things.



Members of the first Edgerton Elite Science Camp videoconference with NASA astronaut and Nebraska native Clayton Anderson from the Edgerton Explorit Center's distance learning room. Photo courtesy of Edgerton Explorit Center

Community IT Planning & Development

Objective

The primary objective of this initiative is to foster community and economic development in Nebraska communities through the effective use of information technology.

Description

The NITC Community Council has partnered with the University of Nebraska Cooperative Extension and Rural Initiative to form the Technologies Across Nebraska partnership. Technologies Across Nebraska is a partnership of over 40 organizations working to help communities utilize information technology to enhance development opportunities. Technologies Across Nebraska facilitates technology-related development by building partnerships, leveraging resources, and strengthening community capacity.

For the past three years, Technologies Across Nebraska has helped 21 communities develop local plans to utilize technology to enhance development opportunities through the IT Planning and Mini Grant program. Through the program, participating communities and regional groups receive a \$2,500 mini grant and assistance from the Nebraska Rural Initiative's Communities of the Future Team and the Nebraska Information Technology Commission. The *Community IT Assessment and Planning Workbook* helps simplify the assessment and planning process for communities. The impact of the program has been significant. Edgar received a \$250,000 Community Development Block Grant to build a community center which will include a technology center. Crawford now has a community technology learning center and wireless broadband service thanks to a \$154,000 grant from the USDA Rural Utilities Service. In Keya Paha, Brown, and Rock Counties, the region now has more class offerings, two community Web sites, and a new technology retail store. In West Point a videoconferencing system has been installed for use by area businesses.

Technologies Across Nebraska's quarterly newsletter, *TANgents*, reaches over 1,000 individuals with an interest in technology-related development. Articles from *TANgents* have been reprinted by several organizations including *Government Technology*. Readers find *TANgents* a valuable source of information. One reader commented, "*TANgents* plays an important role in keeping Nebraskans aware of development and new opportunities to improve IT options for rural citizens in the State. I hope you will continue to provide this service." A recent survey of readers found that 89% felt reading *TANgents* has helped them learn about available resources; and 79% indicated that reading *TANgents* has helped them better understand the importance of IT-related community and economic development.

Technologies Across Nebraska, in partnership with the Rural Development Com-

The NITC Community Council has partnered with the University of Nebraska Cooperative Extension and Rural Initiative to form the Technologies Across Nebraska partnership.



mission, has also examined e-commerce use by Nebraska businesses and e-commerce training in the state. Nebraska firms appear to be adopting e-commerce at a slower rate than firms nationwide. A 2004 survey of Nebraska businesses found that only 31% of small businesses had a Web site. In comparison, 45% of small businesses nationwide had a Web site in 2001.

Benefits

The potential benefits of information technology to communities, businesses, health care, local government, education, and citizens are numerous:

- Communities can use the Internet to publicize community events, communicate with former residents, and advertise available commercial sites.
- Businesses can use information technology to decrease costs, increase sales, and provide better customer service.
- Local governments can use information technology to more efficiently deliver services and provide information to citizens.
- Students can take advanced placement courses or study a foreign language through distance learning.
- Through telemedicine, patients can receive medical care from specialists and doctors can participate in continuing medical education without leaving their rural communities.
- Citizens can easily access the minutes and agendas of local governments, update their skills through continuing education, and share photos with distant family members.
- The effective use of information technology can improve a community's quality of life and can enhance economic development efforts.

Nearly all residents and businesses in Nemaha County will soon have broadband available to them.

NCDA, JAGWireless partner to bring broadband to Nemaha County

Thanks to the efforts of the Nemaha County Development Association (NCDA), nearly all residents and businesses in Nemaha County will soon have broadband available to them. The Nemaha County Development Association had talked to a number of service providers about providing broadband service over the past 5 years. NCDA's first effort involved collecting the names of Auburn residents and businesses interested in subscribing to DSL and presenting the list to the local telephone company. Satisfied that there was sufficient demand in Auburn, the telephone company began providing DSL.

Over the years NCDCA continued its efforts to work with providers . In 2004, NCDCA began discussions with JAGWireless to provide service to rural Nemaha County. Funding and assistance through Technologies Across Nebraska's IT Planning and Mini Grant and the Nebraska Public Service Commission's Nebraska Internet Enhancement Fund aided NCDCA in their efforts. JAGWireless put up a Web site with information about their planned wireless broadband service. NCDCA publicized the site and encouraged residences and businesses interested in subscribing to register at the Web site. JAGWireless broadband service is expected to be available in Nemaha County in early 2006.

Cuming County redesigns Web site to meet constituent needs

With assistance from a Technologies Across Nebraska IT Planning Mini Grant, Cuming County Clerk Bonnie Vogltance solicited citizen input on e-government services.

"We wanted to make the Cuming County Web site more user-friendly and to find out what specific items residents would want to find and use," said Patty Schinstock, who is working as a consultant to Cuming County on their Web site redesign. "Participants included mayors, county supervisors, school officials, village board members, and residents."

There was widespread agreement that the Cuming County Web site should be used to promote economic development and tourism and should link to community pages. Communities also realized that it was important for them to keep their sites updated. Additional economic development links, a community calendar, and a search option will be added to the redesigned Cuming County Web site. Seasonal pictures will be featured on the site, helping to publicize local events and depicting county life. A list of frequently asked questions (FAQs) will be developed for each office. Fillable forms will also be made available. Nebraska.gov is working with Cuming County on the redesign and plans to have the new site by this fall.

"We wanted to make the Cuming County Web site more user-friendly and to find out what specific items residents would want to find and use."

—Patty Schinstock

Digital Education



Objective

The primary objective of the Digital Education Initiative is to promote the effective and efficient integration of technology into the instructional, learning, and administrative processes and to utilize technology to deliver enhanced digital educational opportunities to students at all levels throughout Nebraska on an equitable and affordable basis.

This initiative will involve the coordination and promotion of several major systems and applications that heretofore have either been developed mostly at the local level or have not been replicated statewide.

The initiative will be dependent upon adequate Internet connectivity and transport bandwidth for learners, instructors, administrators, and for educational attendance sites. A minimum acceptable level of classroom technology will have to be established for the initiative to be successful.

Description

The Digital Education Initiative will recognize that many standalone and disparate software applications are needing to undergo integration and convergence so that an instructor can: 1) research digital content, 2) construct a lesson or unit on a computer in a series of virtual or face-to-face or videoconferencing activities using rich multimedia, 3) assess the learners electronically, and then 4) move the student data to a database or data warehouse, 5) export relevant achievement and attendance data to a web-based student information system so parents, or the students themselves, can view it from home; 6) export data to a statewide student information system; and then finally 7) make “real-time” instructional decisions based upon the recently documented progress of the learners.

The primary components of the Digital Education Initiative would include:

- A statewide telecommunications network capable of transporting voice, video, and data between and among all education entities [see Network Nebraska];
- Ample bandwidth for local and regional transport to accommodate present and future education technology applications [see Statewide Synchronous Video Network];
- Distance insensitive Internet pricing for all Nebraska education entities;
- Development of a statewide eLearning environment so that every teacher and every learner has access to a web-based, digital curriculum;
- Development of a statewide digital resource library so that any teacher or learner will be able to retrieve digital media for use in instructional and student projects;

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- Synchronous videoconferencing interconnections between all schools and colleges [see Statewide Synchronous Video Network];
 - The means to coordinate and facilitate essential education opportunities for all students through a statewide student information system; and
 - Regional PreK-20 education cooperatives that vertically articulate educational programs and opportunities.

Benefits

Establishing a Digital Education Initiative is critical to Nebraska's future. Internet has gone from a "nice to have" educational application of the 1990's to the "must have" mission critical application of the 2000's. So much of what teachers, students, and administrators do today is tied to Internet-based information and communication. Nebraska's ranking of 6.5 students per Internet-connected computer in the classroom seems to compare favorably with the U.S. average of 8.0 students per Internet-connected computer. (Technology Counts 2005 Report) However, it still makes it challenging for students to complete their digital assignments when they are expected to share six or seven students to a computer.

The benefits of the Digital Education Initiative would include:

- Greater technical capacity for schools and colleges to meet the increasing demands of a more diverse customer base;
- More equitable Internet access for Nebraska schools and colleges that is not dependent upon distance-sensitive pricing;
- A comprehensive Web-based approach to curriculum mapping and organization and automation of student assessment data gathering and depiction;
- The availability of rich, digital media to the desktop that is indexed to Nebraska standards, catalogued, and searchable by the educator or student;
- A more systematic approach to synchronous video distance learning that enables Nebraska schools and colleges to exchange more courses, staff development and training, and ad hoc learning opportunities.

Each of the components of the Digital Education Initiative are vital to future student success in Nebraska. The components are especially pertinent in that these applications and services provide the foundation for capacity building in our schools and colleges.

The Digital Education Initiative will promote the effective and efficient integration of technology into the instructional, learning, and administrative processes and to utilize technology to deliver enhanced digital educational opportunities to students.



"It is not unusual for students to post five to 20 messages on the discussion board the evening before a major exam!"

—Brenda Zabel

Westside High School enhances learning through Blackboard support

A key technology component of the Zoology and Physiology courses at Westside High School is their online support site created using Blackboard.com. Two years ago science teacher Brenda Zabel initiated the course Web site that is expanded and updated each year. Announcements, important documents, assignments, pdf versions of PowerPoint presentations, videos, lecture notes, and practice assessments support every aspect of the courses.



Nebraska's 2005 Teacher of the Year Brenda Zabel assisting a student as she accesses the Zoology course Web site.

Video tutorials on a streaming server let students replicate and review the lab activities they've done while in the classroom. Posted assignments can be printed and completed in a traditional way, or they can be completed electronically, thus allowing students to pace their own work, collaborate with others, and revise as often as they wish before pressing the SEND button. A discussion board provides "virtual office hours." Students may electronically post comments and questions, and classmates and teacher can respond to their postings wherever they are.

"It is not unusual for students to post five to 20 messages on the discussion board the evening before a major exam!" said Zabel. Students also contribute weblinks to outside resources they find while doing independent research. Instructors and students both benefit from these digital resources. Because all these support materials are web-based, students may access them 24 hours a day, seven days a week, and anywhere they have Internet access.

State Government Efficiency

Objective

The State Government Council will address multiple items improving efficiency in state government, including shared services; standards and guidelines; and the project review process. The council has identified and is working to implement seven “shared services” for state government agencies. Also, the council will continue to develop standards and guidelines to better coordinate state agency technology efforts. Finally, the council will review and recommend improvements to the IT project review process.

Description

The primary components of this initiative are:

- **Shared Services.** The State Government Council has identified a number of potential shared services. The council chose seven shared services for further study and implementation at this time. Interested agencies are meeting to further develop these services.
 - Blackberry
 - Business Continuity / Disaster Recovery
 - Directory Services
 - E-mail
 - Enterprise Maintenance / Purchase Agreements
 - Field Support Services
 - SAN (Storage Area Network)
- **Standards and Guidelines.** The State Government Council, working with the Technical Panel, will continue to develop standards and guidelines to better coordinate state agency technology efforts.
- **IT Project Review Process.** The State Government Council and Technical Panel will review and recommend improvement to the IT project review process. This process is primarily used in the review of IT projects as part of the state budget process.

The State Government Council will address multiple items improving efficiency in state government, including shared services; standards and guidelines; and the project review process.

Benefits

Benefits of this initiative include lower costs, easier interoperability among systems, greater data sharing, higher reliability, and improved services.



"The ability to transmit our bid electronically saves us the time and cost of traveling to Lincoln to work on and submit the bid. We like the system."

—Nancy Jahn

Department of Roads Internet bidding saves contractors time, money

The Nebraska Department of Roads' (NDOR) first Internet bidding was held November 4, 2004, with 19 contractors participating, according to Liz Wunderlich, NDOR Contracts Manager. Contractors are now able to submit their bid via the Internet using the Bid Express (BidX) Internet bidding service. This method of bidding alleviates the contractors from having to submit paper bids, bid bond forms and a computer diskette on letting day.

Nancy Jahn, Western Engineering Company, Inc., Harlan, Iowa, said they were familiar with BidExpress as they had used it in Iowa for the past two years. She said their estimators like the ease of the system. "Estimators know immediately if the bid is submitted correctly," she said. "It allows them to make last minute changes in our bid and transmit those changes quickly and easily."

Jahn said BidExpress also saves them time and money. "The ability to transmit our bid electronically saves us the time and cost of traveling to Lincoln to work on and submit the bid. We like the system."

John Christensen, Christensen Bros., Inc., Cherokee, IA, said they had used the system in Iowa for about five years and the system worked really well for them. He said it saved a four-hour drive to Lincoln and working late hours in a hotel the night before the bid letting. "Now I can just send it over the computer and go to bed," he said. "Also, it is real easy to change the bid at the last minute, with a couple of presses of the computer keyboard. It is much more efficient and eliminates mistakes."

Julie Budnick, Werner Construction, Inc., of Hastings, agreed that the system was much more efficient overall. She said more can be accomplished in less time and with the use of less resources and equipment.

E-Government

Objective

The State Government Council will continue to implement action items that further the use of e-government to improve services and increase the efficiency and effectiveness of agencies. The e-government principles guiding the council are:

- E-government should be considered a continuous process of using technology to serve citizens and improve agency operations;
- Internet technologies create new opportunities for major change, including self-service, integration of information and services, and elimination of time, distance and availability of staff as constraints to providing information and services;
- Agencies have responsibility for performing statutory functions, which means that agency directors must retain ownership of data, responsibility over the use of information technology, and prioritization of projects within the agency to achieve the greatest benefit;
- Cooperation is critical to achieving the goals of e-government, in order to integrate information and services and allow the easy exchange of information;
- An enterprise approach is essential to e-government, including the topics of accessibility for disabled persons, architecture, directories, funding, portal, privacy, security, and other issues; and
- E-government is defined as the use of technology to enhance information sharing, service delivery, constituency and client participation, and governance by transforming internal and external relationships.

Description

The three goals for e-government are:

- **Government-to-Citizen and Government-to-Business.** Anyone needing to do business with state government will be able to go to the state's Web site, easily find the information or service they need, and if they desire, complete all appropriate transactions electronically. Areas to be addressed include citizen portal enhancement; business portal enhancements; education portal; and forms automation.
- **Government-to-Government.** State agencies will improve services and increase the efficiency and effectiveness of government operations through collaboration, communication, and data sharing between government agencies at all levels.

Internet technologies create new opportunities for major change, including self-service, integration of information and services, and elimination of time, distance and availability of staff as constraints to providing information and services.



- **Government-to-Employee and Internal Operations.** Agencies will examine internal operations to determine cost-effective e-government applications and solutions. The purpose of these efforts is to improve efficiency and effectiveness by replacing manual operations with automated techniques.

Benefits

The primary benefits from the use of e-government are:

- Improved services for citizens and businesses.
- Increased efficiency and effectiveness for agencies.

BillTracker allows our office to put additional resources toward meeting constituent needs in our district because we've significantly reduced the time we spend wading through daily legislative updates.



BillTracker allows legislative offices to devote resources to constituent services

Each year, hundreds of legislative bills, amendments and resolutions are introduced in the Nebraska Legislature. Tracking legislative activity in a paper-based environment drains resources from the offices of elected officials, agency staff, businesses, statewide associations and others interested in the legislative process.

A partnership between the Nebraska Legislature and Nebraska.gov led to the introduction of the BillTracker service in 2005. The system allows users to establish profiles to monitor legislative activity and receive automated e-mail updates each day. According to one legislative staff member, "BillTracker allows our office to put additional resources toward meeting constituent needs in our district because we've significantly reduced the time we spend wading through daily legislative updates."



Banks, title companies and law firms obtain records from their offices using JUSTICE

In rural Nebraska, businesses such as banks, title companies and law firms often serve a clientele that extends across multiple counties. In the course of doing business, it is often necessary to obtain court records from multiple counties. Until recently, this required a visit to each individual courthouse, requiring personnel resources and the associated time and expense.

With the introduction of JUSTICE court records searches in early 2004, these businesses can now obtain court records statewide (185 of 186 county and district courts) online. From the convenience of their offices, these businesses can search and retrieve the records they need without the time and expense of visiting each individual county.

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Security and Business Resumption



Objective

This initiative will define and clarify policies, standards and guidelines, and responsibilities related to the security of the state's information technology resources. Information security will serve statutory goals pertaining to government operations and public records. These include:

- Insure continuity of government operations (Article III, Section 29 of the Nebraska Constitution; Nebraska Revised Statutes Sections 28-901 and 84-1201);
- Protect safety and integrity of public records (Nebraska Revised Sections 28-911, 29-2391, and 84-1201);
- Prevent unauthorized access to public records (Nebraska Revised Statutes Sections 29-319, 81-1117.02, and 84-712.02);
- Insure proper use of communications facilities (Nebraska Revised Statutes Section 81-1117.02); and
- Protect privacy of citizens (Nebraska Revised Statutes Section 84, Article 7).

Description

Major activities include:

- Developing an overall security strategy, including policies, security awareness, and security infrastructure improvements;
- Network security standards and guidelines;
- Education and training;
- Authentication (directory services project);
- Disaster recovery for information technology systems (as part of a broader business continuity planning);
- Compliance with federal privacy and security mandates;
- Security assessments.

Benefits

Benefits will include lower costs by addressing security from an enterprise perspective, cost avoidance, and protecting the public trust.

Portable system can be deployed for emergency communications

In 2004 the State's Division of Communications received federal grant money for the purchase of telecommunications equipment. The goal of the Division of Communications was to design a self-contained telecommunications system that could be deployed anywhere in the state at a moment's



notice. Criteria was developed in order to make the system as flexible as possible, and meet telecommunication needs in a variety of circumstances. Once the criteria was laid out a system was designed, purchased, and built with the following capabilities:

- 24 analog trunks for connectivity to the public telephone network
- 24 digital trunks for connectivity to the public telephone network
- 6 Motorola bag phones with analog adapters that serve as PBX trunks
- 32 analog telephone extension ports w/telephone sets
- 8 wireless ports w/wireless handsets capable of operating within 1square mile of system
- 7 multi-line digital telephone sets
- 1 multi-line attendant console
- 4 port voicemail system
- 8 IP telephone ports w/telephone sets capable of operating anywhere on the state network
- Equipment capable of delivering three 30 mile wireless broadband connections for connectivity to an available IP network or Internet
- CISCO routers and switches for workstation and laptop connectivity
- 3 portable gasoline generators capable of operating entire system for extended periods of time

The telephone system and its components are rack mounted in a 3'x3'x5' box with wheels. All other auxiliary components and telephone sets are packed in durable wheeled plastic containers. The entire system is self-contained and able to be palletized for easy transport.

With federal funding, the State has designed and purchased a self-contained communications system that could be deployed anywhere in the state at a moment's notice.