

INFORMATION TECHNOLOGY COMMITTEE

North Dakota Century Code (NDCC) Section 54-35-15.2 requires the Legislative Council, during each biennium, to appoint an Information Technology Committee in the same manner as the Council appoints other interim committees. The committee is to consist of four members of the House of Representatives and three members of the Senate. The Chief Information Officer of the state serves as an ex officio nonvoting member of the committee.

North Dakota Century Code Section 54-35-15.2 establishes the duties of the committee. The committee is required to:

1. Meet at least once each calendar quarter.
2. Receive a report from the Chief Information Officer of the state at each meeting.
3. Review the business plan of the Information Technology Department.
4. Address macro-level questions relating to the Information Technology Department.
5. Review the activities of the Information Technology Department.
6. Review statewide information technology standards.
7. Review the statewide information technology plan.
8. Conduct studies of information technology efficiency and security.
9. Make recommendations regarding established or proposed information technology programs and information technology acquisition by the executive and judicial branches.
10. Review the cost-benefit analysis of any major information technology project of an executive or judicial branch agency. A major project is a project with a cost of \$250,000 or more in one biennium or a total cost of \$500,000 or more.
11. Perform periodic reviews to ensure that a major information technology project is on its projected schedule and within its cost projections.

North Dakota Century Code Section 54-35-15.3 authorizes the committee to review any information technology project or information technology plan. If the committee determines that a project or plan is at risk of failing to achieve its intended results, the committee may recommend to the Office of Management and Budget the suspension of the expenditure of moneys appropriated for a project or plan. The Office of Management and Budget may suspend the expenditure authority if the office agrees with the recommendation of the committee.

The Legislative Council assigned to the committee the responsibility to receive reports from the Chief Information Officer and the Information Technology Department pursuant to NDCC Sections 54-59-12 and 54-59-13. Section 54-59-12 requires the Chief Information Officer to report to the Legislative Council regarding the coordination of services with political subdivisions. That section also requires the Chief Information Officer and the commissioner of the State Board of Higher Education to report to the Legislative Council regarding coordination of information technology between the Information Technology Department and higher education. Section 54-59-13 requires the Information Technology Department to report to the Legislative Council if the department finds that an executive branch agency or institution does not agree to conform to its information technology plan or comply with statewide policies and standards.

Committee members during the 1999-2000 interim were Senators Larry J. Robinson (Chairman), Ken Solberg, Rod St. Aubyn (until his resignation from the Legislative Assembly on August 30, 2000), and Rich Wardner and Representatives Mary Ekstrom, Doug Lemieux, Blair Thoreson, and Robin Weisz and Chief Information Officer Curtis L. Wolfe. Before the appointment of Mr. Wolfe as Chief Information Officer, Mr. Jim Heck and Mr. Mike Ressler served on the committee as Chief Information Officer.

The committee submitted this report to the Legislative Council at the biennial meeting of the Council in November 2000. The Council accepted the report for submission to the 57th Legislative Assembly.

BACKGROUND

The Legislative Assembly has been closely involved in the development of information technology at the state level for over thirty years.

1967-68 and 1969-70 Studies

As a result of a Legislative Council study during the 1967-68 interim, the 41st Legislative Assembly enacted legislation establishing the Central Data Processing Division (renamed the Information Services Division in 1989) for the purpose of establishing an electronic data processing center to be used by all state agencies except the institutions of higher education, Job Service North Dakota, and the Office of the Adjutant General. As a result of a Legislative Council study during the 1969-70 interim, a higher education computer network was funded at three institutions and was later extended to all institutions of higher education under the State Board of Higher Education.

1979-80 Study

As a result of a Legislative Council study during the 1979-80 interim, the 47th Legislative Assembly defined the responsibilities of the Information Services Division and state agencies for the use of data processing resources and provided that the director of the division was to supervise all executive branch agency data processing activities.

1995-96 Study

Recommendations resulting from a Legislative Council study during the 1995-96 interim were contained in 1997 House Bill No. 1034--that agencies prepare information technology plans; that the Information Services Division establish statewide information technology policies, standards, and guidelines; that the division and the State Board of Higher Education meet to coordinate their information technology systems and services; that the State Auditor provide information systems audits of information technology systems; and that the division perform information technology management reviews of state agencies except higher education institutions. Before final passage, House Bill No. 1034 was amended to involve the Legislative Council in the information technology planning and audit process and to remove the State Auditor from the information systems audit process.

1997-98 Study

During the 1997-98 interim, the Legislative Council established the interim Information Technology Committee and delegated to the committee the Council's authority to study emerging technology and evaluate its impact on the state's system of information technology (that authority was repealed in 1999). The committee was also delegated the Council's responsibility to receive reports regarding coordination of technology systems.

The committee received information regarding information technology plans in other states and reviewed guidelines developed by the Information Services Division for agencies to follow in preparing the information technology plans required as a result of 1997 House Bill No. 1034. The committee also received information from several state agencies regarding their efforts during the information technology planning process.

The committee reviewed the status of the statewide network, which was established in 1982. In 1991 the network's backbone was converted to digital facilities, and the Interactive Video Network was implemented. Because the committee determined that the current network resources needed to be analyzed before determining whether any change in the network should be made, the committee contracted with Inteliant Corporation for an inventory of all current networks used for voice, data, and video communications.

After receiving the report, the committee contracted with Inteliant Corporation to conduct a detailed research of five other states and develop a set of recommendations for North Dakota for implementing changes to its network. The plan presented the following recommendations:

- Establish a statewide communications infrastructure agency for all telecommunications planning, selection, implementation, and management for all state agencies, higher education, and public schools.
- Establish the director of the agency as the Chief Information Officer for the state as a cabinet-level position reporting directly to the Governor.
- Establish a state communications infrastructure board that includes representatives from the three branches of government, private enterprise, and local government with the overall responsibility to approve standards and policies related to network technologies in the state.
- Mandate that the agency develop a business plan defining rate plans, missions, goals, policies, transition plan, business objective, measurements, and general procedures.
- Establish a group within the agency for improving personnel productivity and workflow processes for customers.
- Establish a technology development fund to establish the statewide network and to evaluate emerging technologies and implement common, shared components for users of the network.
- Require each entity that uses the statewide network or is a user of agency services to file a strategic information technology plan.
- Establish a project quality assurance process to provide an independent assessment of the status of major projects.
- Create a division within the agency to plan and administer access to state information primarily through the Internet.

The committee received initial cost estimates assuming that it would take six years to convert to a new network. The estimates contained in the plan were \$6.1 million additional expense during the 1999-2001 biennium; \$2.6 million additional expense during the 2001-03 biennium; \$3.6 million savings during the 2003-05 biennium; and \$12.5 million savings during the 2005-07 biennium.

Inteliant also prepared a Statewide Telecommunications Plan Financial Analysis & Fiscal Note, which was completed in January 1999. That document suggested that between 1998 and 2005 the state will increase spending for wide area network services for

state agencies from \$19.3 million to \$57.6 million.

The committee recommended Senate Bill No. 2043, which, as introduced, provided for the establishment of an Information Technology Department to replace the Information Services Division and to be responsible for all telecommunications planning, selection, and implementation for all state agencies and institutions, counties, cities, and public elementary and secondary schools. The bill provided that the department would be administered by a chief information officer appointed by the Governor. In addition, the bill, as introduced, called for the creation of an information technology board, consisting of four legislators appointed by the Legislative Council, seven members appointed by the Governor, the Chief Information Officer, the commissioner of higher education, and the Supreme Court administrator. The board would have been responsible for approving the business plan of the department, reviewing and approving statewide information technology standards and the statewide information technology plan, assessing major projects to ensure quality assurance, and reporting to the Governor and the Legislative Council on matters concerning information technology. The bill substantially implemented the recommendations contained in the Strategic Telecommunications Plan prepared by Inteliant.

The committee also recommended Senate Bill No. 2044, which, as introduced, created a Legislative Council Information Technology Committee. The bill provided that the committee's duties would include establishing statewide goals and policy regarding information systems and technology, conducting studies of information technology efficiency and security, reviewing activities of the (newly created) Information Technology Department, and making recommendations regarding established or proposed information technology programs and information technology acquisitions.

The committee reviewed information regarding the potential impact of the failure of computer hardware, software, and embedded chips due to not being year 2000 compliant. The Information Services Division sent an impact survey to 110 state agencies in March 1998 to increase agency awareness of the potential for problems. Because most state agencies indicated that agencies did not have a year 2000 project in place, the committee contracted with Inteliant to conduct a year 2000 assessment of four state agencies--the Workers Compensation Bureau, the State Department of Health, State Radio, and the State Hospital. The assessment presented by the consultant contained the following 11 recommendations:

- Appoint a state year 2000 director to provide leadership to ensure involvement by senior management in agencies.
- Appoint agency year 2000 directors to ensure accountability or responsibility for year 2000 efforts assigned to a senior management individual in each agency.
- Assess year 2000 readiness across departments to ensure there are no surprises.
- Agencies should formalize their project management, testing, and contingency plans for their year 2000 issues.
- Continue to develop material available on the state year 2000 web page to avoid duplication of effort and achieve the highest-quality processes.
- Establish public affairs programs to increase public confidence in the state's ability to mitigate year 2000 issues.
- Educate and motivate the private sector to take steps to prepare for the year 2000.
- Require all vendors providing goods and services, including service contract renewals and equipment or facility leases, to provide written assurances that they comply with year 2000 requirements.
- Review contracts to determine which party is responsible for year 2000 compliance and include specific assignment of responsibility in contracts renewed before January 1, 2000.
- Establish financial contingencies at the state and agency level, based on each agency's assessment and the overall risk of failure, and appropriate funds to the Emergency Commission to distribute as unforeseen emergencies arise due to year 2000 complications.
- Ensure that legislators are cognizant of the potential impact of 1999 legislation on an agency's year 2000 remediation efforts.

1999 Legislation

The 1999 Legislative Assembly adopted Senate Bill No. 2044, which established the Information Technology Committee and set forth its responsibilities as provided for in NDCC Sections 54-35-15.1, 54-35-15.2, and 54-35-15.3.

The 1999 Legislative Assembly also adopted Senate Bill No. 2043 (codified as NDCC Chapter 54-59), which established the Information Technology Department to replace the Information Services Division. The department is responsible for all wide area network services planning, selection, and implementation for all state agencies, including institutions under the control of the State Board of Higher Education, counties, cities, and school districts. As a result of Senate Bill No. 2043, wide area network services responsibility for state agencies and institutions became effective July 1, 2000, and with respect to counties, cities, and school districts, the bill provides an effective date of August 1, 2001. With respect to a county, city, or school district, wide area network services are those services necessary to transmit voice, data, or video outside the county, city, or school district. The department is also responsible for computer support services, host software development, statewide communications services, standards for providing information to other state agencies and the public through the Internet, technology planning, process redesign, and quality assurance.

The Governor is required to appoint the Chief Information Officer of the state on the basis of education, experience, and other qualifications in information technology and administration. The Chief Information Officer is required to administer the department.

North Dakota Century Code Section 54-59-05 provides that the department:

1. Shall provide, supervise, and regulate information technology of all executive branch state entities, excluding the institutions under the control of the board of higher education.
2. Shall provide network services in a way that ensures the network requirements of a single entity do not adversely affect the functionality of the whole network, facilitates open communications with the citizens of the state, minimizes the state's investment in human resources, accommodates an ever-increasing amount of traffic, supports rapid detection and resolution of problems, protects the network infrastructure from damage and security breaches, provides for the aggregation of data, voice, video, and multimedia into a statewide transport mechanism or backbone, and provides for the network support for the entity to carry out its mission.
3. May review and approve additional network services that are not provided by the department.
4. May purchase or lease equipment or replace, including by trade or resale, equipment as may be necessary to carry out this chapter. Each executive branch agency or institution, except the institutions under the control of the board of higher education, shall submit to the department, in accordance with guidelines established by the department, a written request for the lease, purchase, or other contractual acquisition of information technology. The department shall review requests for conformance with the requesting entity's information technology plan and compliance with statewide policies and standards. If the request is not in conformance or compliance, the department may disapprove the request or require justification for the departure from the plan or statewide policy or standard.
5. Shall provide information technology, including assistance and advisory service, to the executive, legislative, and judicial branches. If the department is unable to fulfill a request for service from the legislative or judicial branch, the information technology may be procured by the legislative or judicial branch within the limits of legislative appropriations.
6. May request information on or review information technology, applications, system development projects, and application development projects of executive branch agencies.
7. Shall study emerging technology and evaluate its impact on the state's system of information technology.
8. Shall develop guidelines for reports to be provided by each executive branch agency, institution, or department, the institutions under the control of the board of higher education, and agencies of the judicial and legislative branches on information technology in those entities.
9. Shall review the information technology management of executive branch agencies or institutions, including institutions under the control of the board of higher education as provided in section 54-59-13.
10. Shall perform all other duties necessary to carry out this chapter.

North Dakota Century Code Section 54-59-06 requires the department to develop and maintain a business plan that must:

1. Define the department's overall organization, mission, and delivery of services.
2. Define the strategies for improving personnel productivity and workflow processes of the department.
3. Determine how use of the statewide network will improve learning in the state.
4. Determine how the statewide networks can provide network services for the benefit of Indian tribes, nonprofit organizations, and noncommercial public television stations licensed by the federal communications commission to operate in this state.
5. Determine the specific strategies and processes to ensure that agencies share information, systems, and the statewide network.
6. Define the processes that will ensure that counties, cities, and school districts receive maximum benefit of the statewide network.
7. Define a fair and equitable billing structure that provides for payback of the initial investments and ongoing operations of the statewide network.
8. Address the processes that will be put in place to ensure that the department exercises its powers and duties with minimal delay, cost, and procedural burden to an entity receiving services from the department; to ensure that the department provides prompt, high-quality services to an entity receiving services from the department; to ensure that an entity receiving services from the department is aware of the technology available and to ensure training on its use; and to foster information technology innovation by state entities.
9. Address the deployment of encryption and the administration of digital signatures.
10. Address information and system backup and disaster recovery.

North Dakota Century Code Section 54-59-07 establishes a Statewide Wide Area Network Advisory Committee consisting of the Chief Information Officer or the officer's designee, the state court administrator or the administrator's designee, the commissioner of higher education or the commissioner's designee, and nine members appointed by the Governor. Of the nine members appointed by the Governor, two must represent state agencies, one must represent a county, one must represent a city, two must represent elementary and secondary education, one must represent noncommercial public television stations licensed by the Federal Communications Commission to operate in this state, and two must represent private industry and be

knowledgeable in the deployment of major technology projects.

Each agency or institution is required to appoint an information technology coordinator to maintain liaison with the Information Technology Department and assist the department in areas related to making the most economical use of information technology.

The department is required to cooperate with each state entity providing access to any computer data base or electronically filed or stored information to assist in providing economical, efficient, and compatible access. The Chief Information Officer is required to conduct conferences and meetings with political subdivisions to review and coordinate information technology.

Under NDCC Section 54-59-13, the department is required to review the information technology management of executive branch state agencies and institutions, including the institutions under the control of the State Board of Higher Education, to evaluate the entity's planning effectiveness, conformance to its information technology plan, compliance with statewide policies and standards, asset quality, and training methods. The department is also required to conduct an analysis of an entity's contract management system and each contractor's compliance with contract provisions with respect to any entity that contracts for information technology services.

The 56th Legislative Assembly also adopted House Bill No. 1037 (codified as NDCC Sections 32-12-05 and 44-04-23 and subdivision e of subsection 3 of Section 32-12.1-03), which was recommended by the interim Information Technology Committee. The legislation limited state and political subdivision liability for failure to become year 2000 compliant. Section 32-12-05 provides that the state may not be liable for a contract or tort claim resulting from failure of software, a telecommunications network, or a device containing a computer processor to interpret, produce, calculate, generate, or account for a date that is compatible with the year 2000 date change if the state has made a good-faith effort to make the computer software, telecommunications network, or device containing a computer processor compliant with the year 2000 date change. Section 32-12.1-03 also includes similar immunity for political subdivisions with respect to a tort claim. House Bill No. 1037 was amended by the Legislative Assembly to enact Section 44-04-23, which provides an exception to open records requirements for year 2000 processing information gathered by a public entity which relates to computer hardware or software, telecommunications networks, or devices containing a computer processor.

STATEWIDE NETWORK

North Dakota Century Code Section 54-59-08 requires each state agency and institution that desires access to wide area network services and each county, city, and school district to obtain those services from the Information Technology Department. The Chief Information Officer is authorized to exempt a city, county, or school district from that requirement if its current wide area network services are more cost-effective for or more appropriate for specific needs of that entity than wide area network services available from the department. The department is required to provide network services in a way that ensures the network requirements of a single entity do not adversely affect the functionality of the whole network, facilitates open communications with the citizens of the state, minimizes the state's investment in human resources, accommodates an ever-increasing amount of traffic, supports rapid detection and resolution of problems, protects the network infrastructure from damage and security breaches, provides for the aggregation of data, voice, video, and multimedia into a statewide transport mechanism or backbone, and provides for the network support for the entity to carry out its mission.

In 1984 the Higher Education Computer Network was integrated into the statewide network, which was initiated in 1982, and the North Dakota Information Network was created to jointly manage the network. North Dakota was the first state with combined state government and higher education networks. In 1985 the network was extended to all counties to provide connectivity between county social service boards and the Department of Human Services.

In 1991 the network's backbone was converted to digital facilities, and the Interactive Video Network was implemented on these new digital facilities. In 1992 the North Dakota Information Network selected AT&T's Software Defined Network (SDN) long-distance voice services, and North Dakota became an earlier adopter of virtual private network technology. In 1994 the North Dakota Information Network committed as the anchor tenant for U S West (now known as Qwest) to establish a statewide frame-relay network. Also, in 1994 the North Dakota Information Network provided Internet access from the state network, and Northwest Network was selected as the Internet provider.

In 1996 all buildings on the Capitol grounds with the exception of the Governor's residence were connected with fiber optics cable; and in 1997 state government entered a partnership with Montana-Dakota Utilities Company for fiber optics cable connection of 10 state government buildings in Bismarck to the Capitol. In 1998 the state moved its cross-LATA connections to Dakota Carrier Network.

In late 1999 and early 2000, the Chief Information Officer held meetings with representatives of Dakota Carrier Network and Qwest regarding a negotiated contract for a new statewide network. However, Dakota Carrier Network withdrew from the negotiations because its representatives indicated they were unable to discern any benefits of a joint proposal with Qwest.

On March 27, 2000, the Information Technology Department issued a request for proposals for a new statewide network. The contract proposal was divided into four components, and the department received 12 responses to the four components. The department established three evaluation teams to review the proposals--one team from the department, one team from higher education, and one team from elementary and secondary education.

Sprint was determined to be the best bidder with respect to the Internet access component with a price of \$13,900 for 45 megabit service. The bid price was approximately 50 percent lower than the prices being paid by the department. Norstan was determined to be the best bidder with respect to the video bridging component. However, because it was determined the bidders did not fully understand the requirements of the request, the department delayed awarding the video portion of the bid. In addition, the evaluation teams recommended that the department negotiate a contract with General Datacom for MPEG2 video equipment. With respect to the customer premises equipment portion of the proposal, Corporate Technologies submitted the best bid for wide area network and local area network and IP telephony equipment. Corporate Technologies offered a 36 percent price discount on Cisco hardware and software, a 29 percent discount on Cisco Smartnet maintenance, a 35 percent discount on most Nortel equipment, and a 34 percent discount on Paradyne and other Nortel equipment. With respect to the transport component of the proposal, Dakota Carrier Network submitted the best bid for network transport and access. Dakota Carrier Network was determined to be the best bidder due to its network design, the potential for local jobs, and a significantly lower cost. The backbone of the network consists of eight ATMs and 31 additional ATM switches with a network operations center located in Bismarck.

When the new statewide network is fully implemented, there will be 552 physical connections to the network. Phase 1 of the network rollout includes connections to 218 locations in 64 communities. The department's goal is to have 177 locations converted to the new network by December 1, 2000. As of November 3, 2000, 152 locations had been converted. In addition, fiber optics connections had been installed to all 11 college and university campuses by November 3, 2000. Although funds were not specifically appropriated by the 56th Legislative Assembly for implementation of the new statewide network, funds from existing budgets were used to cover approximately \$3 million in equipment and circuit costs during the 1999-2001 biennium.

The department presented its proposed budget for Phase 2 of the network rollout during the 2001-03 biennium. The network rollout budget includes over \$17 million to build a telecommunications infrastructure and support for the network. Most of the funds will be used to connect to high schools and libraries in the state and provide training and support for those users. The \$17 million proposed budget does not include \$3.7 million in reimbursement as a result of the federal e-rate credit. Under the proposal, the state will cover the cost of basic T-1 connectivity and one-time and recurring costs of \$4,260,765. Dakota Carrier Network is purchasing the routers and including the cost in the circuit cost so that the e-rate reimbursement may be maximized. The proposed budget includes funds for the following entities and uses:

Center for Innovation in Instruction	\$594,000
Educational Telecommunications Council	\$129,000
Elementary and secondary education equipment - Video and local area networks	\$6,000,000
Interactive Video Network - Statewide video support	\$2,739,194
SENDIT technology services	\$1,427,000
ExplorNet	\$590,300
North Dakota Association of Counties	\$248,000
Higher education (work force education)	\$1,856,280
CPE - Elementary and secondary education/libraries - One-time expenditure	\$3,340,000
Recurring costs	\$4,260,765

Service rates charged by the department for the 2001-03 biennium will increase with respect to programming and systems analysts services while central processing unit (CPU) rates and disk storage rates are expected to decrease. In addition, with the conversion to the new statewide network, device connection and circuit connection rates will increase.

The Statewide Wide Area Network Advisory Committee provided for under NDCC Section 54-59-07 was established to advise the department with respect to planning and implementation of network services provided by the department. Now that the statewide network is being implemented, the need for the advisory committee appears to be obviated. In response to a request from the committee, the Governor appointed a network implementation and utilization task force to address telecommunications infrastructure implementation and support, public policy issues, information technology work force development and training needs, and economic development initiatives. Because there is likely to be a continuing need for a group to advise the

department with respect to statewide information technology planning concerning electronic government services, technology infrastructure to support economic development and work force training, and other statewide information technology initiatives and policy, there was interest in establishing a new advisory committee to consult with the department on those issues.

INFORMATION TECHNOLOGY DEPARTMENT PROPOSED 2001-03 BUDGET

The budget request for the Information Technology Department for the 1999-2001 biennium was \$49,659,295, \$250,000 of which was from the general fund. In September 2000, the Emergency Commission approved an additional \$6,562,800 in spending authority for the department to be used for a Job Service North Dakota project, contract programming services, and operating and equipment expenses for the wide area network. Thus, the total budget for the biennium is \$56,222,095.

In its 2001-03 budget request, the department is requesting an increase from the 1999-2001 biennium. The proposed budget will include an additional \$31,046,098 in special funds, much of which would be dedicated to the Department of Human Services' Health Insurance Portability and Accountability Act project. However, as discussed under MAJOR INFORMATION TECHNOLOGY REPORTS, that project may be reduced in scope, which would result in a reduced special fund appropriation to the department. The proposed budget also includes an additional \$8,198,543 in general funds. Thus, the total budget request will be \$95,466,736, which is an increase of \$39,244,641 over the 1999-2001 biennium. The proposed budget for the department includes 60 new full-time employee positions and 77 new contract programmers. In addition, the proposed budget includes \$1 million for an innovation fund. The proposed innovation fund would be used to provide funds for any state agency that may develop a new project for which it did not request funding. The Chief Information Officer indicated that the details of the application and approval process for the innovation fund have not been fully developed.

FINANCING OF INFORMATION TECHNOLOGY PROJECTS

The Chief Information Officer reported that the Attorney General informed the Information Technology Department that state law did not specifically authorize the department to finance the cost of acquiring equipment or software. Therefore, the department could not continue to acquire equipment by financing the purchase. Because of the need of the department to have the ability to finance large purchases, the Chief Information Officer requested the committee to consider a bill draft to authorize the department to finance the purchase of equipment and software.

INFORMATION TECHNOLOGY INITIATIVES

In implementing the goals of the Information Technology Department's business plan and the statewide information technology plan, the department reviewed several of the department's initiatives.

E-Government

E-commerce is the use of internetworked computers to create and transform business relationships. E-commerce applications are designed to provide business solutions to improve the quality of goods and services, increase the speed of service delivery, and reduce the cost of business operations. The Information Technology Department developed a new statewide portal to provide a user-friendly access to state government, one-stop shopping for government information and services, and an enterprise approach to maximize efficiencies. To address the state's e-commerce needs, the department purchased hardware and software, trained staff, provided marketing assistance to agencies, and created a special team to work on e-commerce projects.

Despite the progress in implementing e-government initiatives such as on-line game and fish licensing, there are challenges to be faced in the implementation process. Before e-government can be successful, citizens must trust the security and privacy of the systems. In general, if information is being collected from consumers, consumers should be told the information is being collected and for what purpose. In addition, consumers should be given the choice to decline to allow collected information to be used for certain purposes. Consumers should also be given access to personal information to verify its accuracy. Finally, measures must be in place to secure information from unauthorized use. The adoption of the Uniform Electronic Transactions Act, which was recommended to the interim Judiciary Committee by the North Dakota Commission on Uniform State Laws, is an essential element to furthering the progress of e-government in the state.

The department has included \$481,842 in its proposed 2001-03 budget to address e-government. The Chief Information Officer indicated that the e-government initiatives will be implemented in three phases. The first phase, which will be implemented through 2002, involves moving a small amount of low-risk, clearly bound, constituent-focused services on-line. The second phase, between 2002 and 2005, will integrate different bureaucratic departments. During the third phase, beginning in 2005, there will likely be legislative mandates to drive the organizational reinvention necessary to synchronize government processes and jurisdiction with Internet front-ends.

Enterprise Resource Planning

The higher education system has used its administrative mainframe system, which supports student information and financial systems, for approximately 25 years. Because the technology is becoming outdated and the software being used by many of the larger school districts in the state will no longer be supported, a new integrated system is envisioned to address the needs of the institutions of higher education, students, the State Board of Higher Education, and other users, e.g., elementary and secondary education. A new integrated system will integrate student, financial, and human resource systems serving higher education, state government, and elementary and secondary education. Along with the new statewide network rollout, the enterprise resource planning initiative of the Information Technology Department is to allow e-purchasing, employee access, public access, and agency operation to provide improved financial information. The State Board of Higher Education has indicated that the board's 2001-03 budget request will contain a request for funds to begin replacement of the administrative system. Because the estimated cost of the project is approximately \$25 million, the Chief Information Officer has proposed that the project be financed through the issuance of bonds. The proposed 2001-03 budget request of the department contains \$469,931 for enterprise resource planning.

Geographic Information Systems

Several state agencies have been using geographic information systems for several years, and the needs of state agencies for additional applications are increasing. The Governor established a geographic information systems technical committee to organize geographic information systems activities of the various agencies of state government. In 1998 the committee requested the Information Services Division to fund a study of geographic information systems activities and to prepare a plan for the future of geographic information systems in the state. Because that study was not funded, the committee requested the Information Technology Department in 2000 to fund a study. The department contracted with a consultant to conduct a study and prepare a plan. The major finding of the study was that geographic information systems data is difficult to share because of the lack of a central depository. After receiving comments from the various agencies using geographic information systems, the department proposed the creation of a centralized hub within the department. The proposed 2001-03 budget request of the department includes \$1,059,317 to support the establishment of a geographic information systems hub.

Electronic Document Management Systems

Electronic document management systems are a collection of enabling technologies, the common components of which include document management, imaging, electronic forms, workflow, and data stores. The purpose of such systems is to increase the efficiency of information creation, capture, storage, and retrieval; to provide a common interface for storing and accessing information; to provide increased security of sensitive and confidential information; and to support decisionmaking by providing access to up-to-date information.

The Secretary of State and the Workers Compensation Bureau have established electronic document management systems. In addition, 21 agencies included plans for implementing electronic document management systems technology in their 1998 information technology plans. Although agencies with large systems in place will continue to use those systems, the Information Technology Department will attempt to build a system with the flexibility necessary to meet the needs of most agencies. As a result, participating agencies will have the ability to share information. The proposed 2001-03 budget request of the department includes \$1,309,317 in special funds to address electronic document management systems needs.

Information Technology Purchasing

The Information Technology Department reported that it had implemented purchasing initiatives through which state agencies may purchase products at lower prices. The department entered an agreement with Oracle Corporation through which agencies will receive a volume discount that may amount to 50 percent. Although the Attorney General advised the department that participation in the Western States Contracting Alliance was not authorized by state law, representatives of the department indicated that the department will propose legislation to allow the state to enter the alliance. The department is also cooperating with the State Board of Higher Education to address telephone long-distance purchasing.

Information Technology Grants

The Information Technology Department has not engaged in the active pursuit of grants. However, because numerous grant sources are available, the department reported it will actively seek grants to supplement or replace general funds. To initiate this process, the department has indicated that an employee may be assigned to identify priorities, develop plans, and identify grant sources.

Criminal Justice Systems

The Information Technology Department has established a goal to create a strategic plan by March 2001 to integrate criminal justice information systems. Integration of criminal justice systems will provide efficiency benefits through the use of graphical interfaces and centralized data repositories; easy and secure access to selected judicial information via electronic means; and

more informed decisionmaking due to accessibility of justice-related information. To begin the study process, a grant of \$25,000 has been secured from the National Governor's Association to pay travel expenses to meetings and workshops. In addition, a second potential grant source may have been identified as a source of funding for the planning phase. To be successful, the process will attempt to include participation from state, county, and city officials.

Information Technology Personnel Recruitment and Retention

Because of the high demand for and a national shortage of skilled information technology employees, the Information Technology Department and other state agencies are faced with problems in recruiting those employees. Although the department has experienced a relatively low rate of turnover, the Department of Transportation and the Department of Human Services have not been as fortunate.

The Information Technology Department contracted with a consultant to survey its employees and contractors to determine how to best prepare for the future, identify training and developmental needs, gather information on organizational effectiveness and key management subject areas, strengthen the department's strategic business and planning processes, and identify actions that will allow the department to be more successful. The results of the survey indicated that the strengths of the department are a strong personal satisfaction and pride among its employees; clear and reasonable expectations linked to the department's mission and goals; a strong customer focus; and responsible employees with initiative. The survey indicated that weaknesses to be addressed related to performance and work unit measures, organizational and interpersonal communications, empowerment of employees, recognition and compensation, and work and job design.

Subsequent to the survey, actions were taken to address the findings of the survey, including implementing flexible work arrangements and additional solicitation of employee comment. In addition, the department conducted a compensation study to compare its salaries with the private sector and contracted for an organizational study to restructure the department and improve its services and efficiency. The department also is cooperating with the Central Personnel Division, the Department of Human Services, Job Service North Dakota, and the Department of Transportation to form a committee to address recruiting and retention issues. Short-term solutions identified to address the shortage of skilled employees include revising minimum qualification requirements, streamlining job classes to provide for additional flexibility, and revising and emphasizing new recruiting efforts. Longer-term solutions include performance recognition and an increased focus on all aspects of employee job satisfaction.

INFORMATION TECHNOLOGY DEPARTMENT BUSINESS PLAN

North Dakota Century Code Section 54-59-06 requires the Information Technology Department to develop and maintain a business plan. Pursuant to that directive, the department prepared a plan that identified the following four general components that form the nucleus of the statewide vision for information technology:

1. State government should be customer-focused.
2. State government should be efficient.
3. State government should be well-managed.
4. State government should provide the leadership for developing a shared infrastructure.

The plan also identified the following critical issues the department must address to transition itself for a successful future:

1. Promote and coordinate the evaluation, integration, and application of current and emerging information technologies within state government.
2. Enhance and manage an effective integrated communications network infrastructure capable of supporting the statewide vision for information technology.
3. Promote, coordinate, and assist state agencies in moving government on-line.
4. Improve services to agencies by developing closer relationships to better understand their business needs.
5. Foster the communications of information technology activity by becoming the communication "catalyst" within state government.
6. Create technology standards and best practices to ensure accountability and interoperability among governmental entities in support of the statewide vision for information technology.
7. Utilize the department's information technology resources and investments effectively and efficiently.
8. Continue to enhance the agency information technology planning process to meet the needs of the various stakeholders.
9. Recruit, develop, and retain skilled information technology workers.

In response to the critical issues and vision threads identified by the department, the department developed the following four strategic goals:

1. Align information technology with customers' businesses to better understand customer business requirements and raise

awareness of technologies available to provide products and services that will assist them in accomplishing their goals and objectives.

2. Provide statewide direction and leadership to provide strategic information technology direction for government and education in the state and influence the deployment of information technology throughout the state.
3. Provide value to the department's customers to continually strive to improve the quality and timeliness of the department's services while maintaining competitive rates.
4. Maintain human resources to achieve an efficient, motivated, and educated work force with knowledge, skills, and ability to meet the department's current and future challenges.

In the business plan, the department identified the following four principles and philosophies under which it operates:

1. The department has an obligation to balance the individual needs of agencies with the best interest of the state as a whole.
2. The department is an extension of the agencies' information technologies and is committed to being proactive in an effort to assist its customers in using the available technologies to effectively and efficiently accomplish their goals and objectives.
3. The department is committed to dealing openly and honestly with its customers and continually improving the quality, price, and timeliness of its services.
4. The department is in the business of providing knowledge to its customers and is committed to developing and maintaining a level of expertise through education, acquiring the proper tool set, and focusing on its customers' needs.

The department also adopted a mission statement that states the department is to "provide leadership and knowledge to assist our customers in achieving their mission through the innovative use of information technology."

Although the business plan is complete, it is viewed as a "living" document that is subject to change based upon changing expectations and changes in technology. As technology changes and the information technology needs of state agencies change, changes will be needed in the business plan. In addition, after the transition from the Information Services Division to the Information Technology Department and the implementation of the new statewide network, the statutory requirements regarding the contents of the business plan may require revision.

INFORMATION TECHNOLOGY POLICIES, STANDARDS, AND GUIDELINES

North Dakota Century Code Section 54-59-09 requires the Information Technology Department to develop statewide information technology policies, standards, and guidelines based upon information received from state agencies and institutions. Except with respect to academic and research uses of information technology at the institutions under the control of the State Board of Higher Education, each executive branch state agency and institution is required to comply with the policies and standards developed by the department.

The department has adopted standards and policies in a variety of areas and continues to update and adopt new standards and policies as necessary. Policies and standards adopted or under consideration include contract guidelines for information technology projects, policies for e-business security, and geographic information systems standards. The department held several standards and policies review group meetings with representatives of state agencies to discuss the adoption of standards and policies.

INFORMATION TECHNOLOGY PLANS

North Dakota Century Code Section 54-59-11 requires every executive branch agency to prepare an information technology plan, subject to approval by the department. The plan must be submitted to the department by January 15 of each even-numbered year. The plan must be prepared based on guidelines developed by the department; must provide the information technology goals, objectives, and activities of the entity for the current biennium and the next two bienniums; and must include a list of information technology assets owned, leased, or employed by the entity. Each entity required to file a plan must provide interim updates to its plan if major information technology changes occur which affect its plan. The department is required to review each entity's plan for compliance with statewide information technology policies and standards, and the department may require an entity to change its plan to comply with statewide policies or standards or to resolve conflicting directions among plans. Agencies of the judicial and legislative branches are required to file their information technology plans with the department by January 15 of each even-numbered year.

The Information Technology Department prepared guidelines to be used by state agencies in preparing the plans required by NDCC Section 54-59-11. The guidelines were developed to ensure that the plans submitted by agencies are useful for the agencies and provide information necessary for the budget process for the agency and the Office of Management and Budget. The guidelines were also designed to require agencies to provide information standards compliance information.

Although representatives of various state agencies expressed concerns regarding the value of the plans and amount of work required to prepare the plans, there were assurances from the department that agencies would be given the flexibility needed to make the plans a document that will prove to be a valuable resource for the agencies. Agency representatives also indicated that changing the deadline for submission of the plans from January 15 to March 15 would assist the agencies in the budgeting process.

Representatives of the department testified that there is some confusion regarding whether information submitted to the department in the information technology planning process is open to the public. The Chief Information Officer stated that representatives of the Information Technology Department would like the flexibility to release records that are obviously not considered confidential or to refer open records requests to the agency that submitted the information to the department.

INFORMATION TECHNOLOGY DEPARTMENT COORDINATION OF SERVICES

North Dakota Century Code Section 54-59-12 requires the Chief Information Officer and the commissioner of the State Board of Higher Education to meet at least twice each year to plan and coordinate their information technology. The Chief Information Officer and commissioner are required to consider areas in which joint or coordinated information technology may result in more efficient and effective state government operations. Upon request, the Chief Information Officer is required to report to the Legislative Council or its designated committee regarding the coordination of services with political subdivisions, and the Chief Information Officer and commissioner are required to report to the Legislative Council or its designated committee regarding their findings and recommendations.

The Chief Information Officer and representatives of the State Board of Higher Education cooperated in developing the request for proposals for the new statewide network and in reviewing the proposals. In addition, the department and representatives of the State Board of Higher Education worked closely in addressing proposals for student information systems, financial systems, and human resource systems. Representatives of the two entities also serve together on a number of committees set up by each entity.

The Chief Information Officer and representatives of the department participated in several meetings sponsored by the North Dakota League of Cities and the North Dakota Association of Counties to provide information regarding the rollout of the new statewide network. In addition, counties and the department cooperated to provide information technology services in several areas.

MAJOR INFORMATION TECHNOLOGY REPORTS

The committee is authorized to review any information technology project or information technology plan. If the committee determines that a project or plan is at risk of failing to achieve its intended results, the committee may recommend to the Office of Management and Budget the suspension of the expenditure of moneys appropriated for the project or plan. In addition, the committee is directed to review the cost-benefit analysis of any major information technology project of an executive or judicial branch agency. A major project is a project with a cost of \$250,000 or more in one biennium or a total cost of \$500,000 or more.

The committee reviewed the quarterly lists of major projects compiled by the Information Technology Department as well as cost-benefit analyses of proposed major projects. The committee did not recommend the suspension of any project. However, the committee did express concern with respect to the vehicle registration and titling system project undertaken by the Department of Transportation. Although the project was significantly behind schedule, the major vendor for the project was required by the project contract to pay liquidated damages to the department for costs incurred by the department as a result of the delays. The Information Technology Department conducted an audit of the project and assisted in establishing a revised project schedule. Although the project was not fully implemented as of November 6, 2000, the first phase of the implementation process began on October 14, 2000, as provided for in the revised schedule.

Representatives of the Department of Transportation testified that the implementation process was progressing well as of November 6, 2000.

Representatives of the Information Technology Department and the State Board of Higher Education expressed concern that the cost-benefit analysis requirement did not exempt higher education institutions with respect to academic and research projects. Requiring a cost-benefit analysis for those types of projects would place a substantial burden on the department and be of little value because many of those projects do not involve state funds. It was suggested that NDCC Section 54-35-15.2 be amended to limit the cost-benefit analysis requirements to only projects that significantly impact the statewide wide area network or the statewide library system or are administrative projects.

The committee also received reports regarding major projects proposed for the next biennium. Of particular interest to the committee was the project required by the federal Health Insurance Portability and Accountability Act. Although the project was

originally expected to cost approximately \$25 million, it is now anticipated that due to revisions in the scope of the project, the potential cost of the project may be \$8.9 million.

REPORTS OF NONCONFORMANCE

North Dakota Century Code Section 54-59-13 requires the Information Technology Department to report to the Legislative Council if the department finds that an executive branch agency or institution does not agree to conform to its information technology plan or comply with statewide policies and standards. Although the department reported that not all agencies had been diligent in preparing agency information technology plans, all agencies ultimately submitted the plans as required.

YEAR 2000 PREPARATION AND REMEDIATION STATUS REPORTS

Because of concerns with the difficulty of computer processors in recognizing the year 2000, the committee requested regular updates from the Information Technology Department regarding the status of state agencies in addressing potential year 2000 problems. As part of the year 2000 education process, the department cooperated with the Department of Transportation to distribute at least 350,000 informational brochures with motor vehicle license and registration renewals. The Information Technology Department also held monthly meetings with state agencies and regular meetings with representatives of cities, counties, and school districts. The department posted all state agency year 2000 progress reports on its web page.

Although many agencies were unable to begin year 2000 remediation efforts until the beginning of the new biennium, every agency completed its efforts before January 1, 2000. Despite investing less than most states in the nation on remediation efforts (\$25 million) state government experienced very few year 2000 problems. Of the problems reported, most were minor and required an average resolution time of 15 minutes or less. According to those involved in the year 2000 remediation processes, the investments in remediation were crucial to the fact that few problems occurred.

CONSULTANT STUDIES

The Legislative Council contracted with the Inteliant Corporation and Nexus Innovations, Inc., (the Bismarck branch of Inteliant was purchased by the Bismarck Inteliant employees and assumed the Nexus name) to conduct studies to assist the committee in its deliberations.

Telecommunications Study

The telecommunications study focused on elementary and secondary education, telecommunications funding, economic development, and fiscal measures. In conducting the study, representatives of Inteliant gathered information from the states of South Dakota and Wyoming, education groups, and economic development professionals.

The study of other states demonstrated that training is vital to the effective utilization of the statewide network. To provide that training, a substantial financial investment will be needed. However, education officials expressed great concern regarding the issue of state funding being available to school districts so that schools will have access to essential network services.

The study concluded that telecommunications spending by the state will increase, but efficiencies will be gained through the implementation of the new statewide information network. Grants will be essential to obtain funds to assist in the implementation of the network. In addition to grant funds, the study concluded that a significant state investment by the Legislative Assembly will be needed.

The study found that because broadband access is essential to successful economic development efforts, the statewide network will be a vital asset to economic development at the local level. Additional technology factors that affect economic development are a technology-literate work force, cooperation with higher education and research institutions, and access to venture capital.

As a result of the study, Inteliant recommended that schools must be included in the statewide network. Inteliant also recommended that an entity be established to provide leadership for educational development in the utilization of technology. Inteliant recommended that training and programmatic areas be emphasized and that the state aggressively pursue outside funding sources in a cohesive, multiagency approach.

E-Rate Study

The federal government established the e-rate program in 1998. Under the program, funds are available for elementary and secondary schools and libraries to provide financial assistance for telecommunications services, Internet access, and internal connections. The study concluded that to capitalize on the maximum e-rate reimbursement, it is vital that the state determine the most advantageous manner for structuring contracts with vendors in the implementation of the statewide network. To

maximize the e-rate reimbursement, Inteliang recommended the statewide network contract should be structured so that the vendor purchases equipment such as routers and includes the cost in circuit costs.

Education Funding Study

The funding of network services and video services for elementary and secondary education and the appropriate organizational structure for elementary and secondary education network operations was also studied. The study found that bandwidth demand by schools has been rising dramatically, and the cost of T-1 service has been cost-prohibitive for many school districts. The study also found that school officials continue to express concerns regarding potential actions by the Legislative Assembly with respect to the provision of network services.

Nexus surveyed school districts regarding the cost of frame relay T-1 service and found that the average cost is \$6,467 per year. However, annual costs are as high as \$29,000 per year for some school districts. The estimated cost under the new statewide network for ATM T-1 service is \$6,048 per year. The study concluded that the biggest winners under the new statewide network will be the smallest schools, which generally are the highest-cost customers.

The Nexus study found that school districts desire greater distance learning capabilities, in part due to teacher shortages. Existing interactive video consortiums have proven to be valuable sources of information as the state makes decisions regarding the implementation of the video component of the new statewide network. The study found that there is not a unified voice for elementary and secondary education with respect to technology issues. Therefore, by restructuring the Educational Telecommunications Council and including representatives from SENDIT Technology Services, the Center for Innovation in Instruction, the Division of Independent Study, and various educational groups, and allowing the restructured council to hire a technology director, a coordinated approach could be taken to address school technology needs. Nexus recommended that the state provide a general fund appropriation to provide for a T-1 connection to each high school. The estimated one-time cost of each connection is \$11,000. The recommendation suggests that elementary schools that are not connected physically to a high school be connected to the network during the next biennium. Nexus recommended that the Legislative Assembly continue the current level of funding for the Educational Telecommunications Council to allow investment in interactive video. Nexus also recommended changing the structure of the Educational Telecommunications Council and authorizing the restructured council to set priorities for interactive video investment.

Because the Nexus report was presented at the last meeting of the committee before the Legislative Council meeting, the committee was unable to consider a bill draft implementing the recommendations of the Nexus study. However, because the committee is a statutorily created committee, the chairman of the committee requested the Legislative Council staff to prepare a bill draft that would restructure the Educational Telecommunications Council and place the new entity under the budget authority of the Information Technology Department. The chairman indicated that the committee would meet again before the convening of the 57th Legislative Assembly to consider the proposed bill draft.

COMMITTEE CONSIDERATIONS

The committee considered a bill draft that would have changed the deadline for agencies submitting information technology plans from January 15 to March 15 of each even-numbered year.

The committee considered a bill draft that would have exempted from the major project cost-benefit analysis requirements academic and research projects of institutions of higher education.

The committee considered a bill draft that consolidated the two bill drafts discussed above with other proposed amendments to NDCC Chapter 54-59 which were suggested by the Chief Information Officer. The bill draft required the Information Technology Committee to review the cost-benefit analysis of any major project of the State Board of Higher Education or any institution under the control of the board if the project significantly impacts the statewide wide area network, impacts the statewide library system, or is an administrative project. The bill draft authorized the Information Technology Department to purchase equipment and software through financing arrangements. The bill draft also specified additional requirements that must be included in the Information Technology Department's business plan. The bill draft replaced the Statewide Wide Area Network Advisory Committee with a State Information Technology Advisory Committee that will be responsible for advising the Information Technology Department regarding statewide information technology planning, including providing electronic government services for citizens and businesses, developing technology infrastructure to support economic development and work force training, and developing other statewide information technology initiatives and policy. The bill draft also changed the deadline for agencies submitting information technology plans from January 15 to March 15 of each even-numbered year. The bill draft also clarified that information collected by the Information Technology Department from agencies regarding information technology standards, compliance reviews, and plans is exempt from open records requirements.

RECOMMENDATION

The committee recommends [Senate Bill No. 2043](#) to require the Information Technology Committee to review the cost-benefit analysis of any major project of the State Board of Higher Education or any institution under the control of the board if the project significantly impacts the statewide wide area network, impacts the statewide library system, or is an administrative project. The bill authorizes the Information Technology Department to purchase equipment and software through financing arrangements; specifies additional requirements that must be included in the department's business plan; replaces the Statewide Wide Area Network Advisory Committee with a State Information Technology Advisory Committee; changes the deadline for agencies submitting information technology plans from January 15 to March 15 of each even-numbered year; and clarifies that information collected by the Information Technology Department from agencies regarding information technology standards, compliance reviews, and plans is exempt from open records requirements.