North Dakota University System
System Information Technology Services
Annual Report 2011-2012

Presented By:
Randall Thursby
Chief Information Officer
Table of Contents

A MESSAGE FROM THE CIO ........................................................................................................... 3

WHO WE ARE AND SERVICES PROVIDED ........................................................................... 5

Background................................................................................................................................ 5

System Information Technology Services (SITS) .................................................................. 5

SITS DEPARTMENTS .................................................................................................................. 6

  Office of the CIO ....................................................................................................................... 6
  ConnectND .................................................................................................................................... 7
  Academic, Research and Learning Technologies (ARLT) ..................................................... 7
  Higher Education Computer Network .................................................................................... 8
  North Dakota University System Online (NDUSO) ............................................................... 8

STRATEGIC ARCHITECTURE .................................................................................................. 8

  Everything Is Connected ......................................................................................................... 10

SYSTEM INFORMATION TECHNOLOGY SERVICES - GOALS .......................................... 11

  Goal 1 – Support North Dakota University System infrastructure needs ................................ 11
  Goal 2 – Improve North Dakota University System information technology-enabled
           business processes and services while providing and managing resources to align
           with NDUS strategic goals ...................................................................................................... 11
  Goal 3 – Improve and enhance North Dakota University System student learning
           and customer focus ............................................................................................................... 11
  Goal 4 – Improve and enhance North Dakota University System collaborative
           efforts ....................................................................................................................................... 11

MAJOR ACCOMPLISHMENTS .................................................................................................. 11
A MESSAGE FROM THE CIO

The North Dakota University System, System Information Technology Services (SITS) has had another busy year implementing several important initiatives that will increase efficiencies and effectiveness for all of the university system. Additionally, SITS has been working on preparing action plan recommendations and implementing approved action plans that are included in the State Board of Higher Education’s “Maximizing Results Through Efficiencies” initiative.

The Maximizing Results Through Efficiencies document states: “Working in consultation with the campuses, the chancellor will pursue a strategy to implement systemwide services that are cost-effective, easily integrated and constantly improving.” The following six IT initiatives are included:

- Learning management system (LMS), including a consistent software approach; shared curriculum content, when appropriate; content repository; and, consistent mobile device interfaces.
- Lecture capture system, including common software; hosting; and content delivery, when appropriate. March 31, 2012, was the target date for a plan of action. Tegrity was chosen as the system-supported solution, to be implemented at all 11 NDUS institutions during the summer of 2012.
- Document image scanning system, including common software and hosting. A May 31, 2012, completion date was set for this initiative’s action plan recommendation. ImageNow was the selected product and will be implemented as an enterprise-hosted service through the NDUS data center.
- Expand and enhance human resources electronic workflow, including centralized payroll processing from one or more sites.
- Unified communication system to deliver a consistent set of services and integrate voice mail, e-mail, instant messaging, phone, mobile devices and personal computers.
- Integrated approach to delivering IT services. The plan for an integrated approach to delivering IT services includes the merger of UND’s CIO information technology department with SITS. The combined staff and operations will aid in providing IT services to all 11 NDUS institutions and the NDUS System Office.

One additional item I would like to mention is the SBHE approval of a funding plan for construction of the new NDUS IT facilities in Grand Forks. This includes a new NDUS Information Technology office building, and renovation of an existing building into what will become the new NDUS Data Center. Both of these facilities will be located on the UND campus but will be NDUS facilities. Contract completion for both facilities is due by September 2013. This initiative alone will have a major influence on how IT services are delivered well into the future.

In closing, I want to thank the staff that have been instrumental in implementing and providing services for the North Dakota University System. And I hope that the information within this report is useful to you.
Architect’s rendering of the new NDUS IT Office building.
WHO WE ARE AND SERVICES PROVIDED

Background
The Sixtieth Legislative Assembly (2007) passed HB1461 that created and enacted a new section to chapter 15-10 of the North Dakota Century Code (NDCC) giving responsibility for NDUS to manage technology efforts. Hence, the State Board of Higher Education was given authority to manage and regulate information technology planning and services for institutions under its control.

State Board of Higher Education Policy Section 1901.3 states:

Consistent with North Dakota Century Code section 15-10-44, the state board of higher education shall manage and regulate technology planning and services for institutions under its control.

The Chancellor is delegated authority and directed to develop information technology planning, policies, standards and guidelines, and project management oversight and reporting in conjunction with the state information technology department. NDUS Information Technology (IT) projects shall comply with established standards, guidelines, procedures and processes.

Not more frequently than every two years, a comprehensive information technology plan shall be submitted to the Board for its review and approval. In addition, periodic progress reports on goal progress shall be submitted to the Board.

The NDUS definition of Information Technology (IT) includes, but is not limited to: hardware, software, services, and supporting infrastructure to manage and deliver information using voice, data, and video.

The North Dakota University System, System Information Technology Services (SITS) has been delegated these responsibilities by the Chancellor.

System Information Technology Services (SITS)
The North Dakota University System (NDUS) SITS provides secure information management and technology services to North Dakota University System students, faculty, staff and state residents. SITS links academic and business services with the NDUS community, connecting users to the information and educational resources they need to accomplish their goals.

System Information Technology Services is responsible for a wide portfolio of technological activities in support of the North Dakota University System. The SITS office is led by the NDUS Chief Information Officer (CIO) and is responsible for providing overall leadership, vision, strategy, management and accountability for systemwide information technology services. Working with the institutions, the CIO is responsible for carrying out the following NDUS information technology goals:

- Support North Dakota University System infrastructure needs (aligns with and supports NDUS Strategic Plan Goal #1: The North Dakota University System is accessible, a view held by all North Dakotans).
- Improve North Dakota University System information technology-enabled business processes and services while providing and managing resources to align with NDUS strategic
goals (aligns with and supports NDUS Strategic Plan Goal #2: North Dakotans recognize that the North Dakota University System is affordable at a level that can be sustained).

- Improve and enhance North Dakota University System student learning and customer focus (aligns with and supports NDUS Strategic Goal #3: The North Dakota University System increases the overall vitality of the state through exceptional education, research, training and service).
- Improve and enhance North Dakota University System collaborative efforts (aligns with and supports NDUS Strategic Goal #4: The eleven institutions comprising the North Dakota University System work together to achieve the vision effectively).

SITS DEPARTMENTS

Office of the CIO

The Office of the CIO includes the Chief Information Officer for the North Dakota University System along with administrative and support staff. Additionally, the following functions are included in this area:

- **Administrative Support**: Support for the System Information Technology Services division and the NDUS CIO are provided through the Office of the CIO. Included are all aspects of support, such as budget preparation, management for the division, staffing and resource management, scheduling of meetings and logistics, records management, etc.
- **Enterprise Project and Portfolio Management**: This area has responsibility for project management oversight of IT projects that are primarily those considered a Large IT Project (one with a cost of $250,000 or more in one biennium or has a total cost of $500,000 or more) and are required by North Dakota Century Code to be reported to the Legislative IT Committee; IT Planning which includes both the Statewide IT Plan and the NDUS IT Plan (including ensuring IT projects undertaken fit with the intent of the North Dakota University System Strategic Plan); and IT enterprise strategic architecture administration – the foundation for how systems need to function so they work together.
- **Strategic Architecture**: A strong University System technology plan starts with the premise that services must be connected and integrated to meet the needs of students and faculty. This premise is a driving force in shaping the IT architecture of System Information Technology Services. Services that cannot be connected often lead to additional costs and poor overall service. By focusing on integrated services, SITS achieves four goals:
  - Improved integration of system-wide applications
  - Improved coordination of resources, applications, and processes
  - A consistent end-user experience
  - Better support for collaborative students
- **Contract Management and Software Site Licenses**: Responsible for management of all SITS contracts to ensure that contracts do not lapse, enhancements are negotiated for the benefit of all NDUS institutions, and awarded contracts are stored at one location for the division. Systemwide software site licenses leverage the overall buying power of the NDUS, thereby reducing the costs for all institutions. This simplifies license administration and increases efficiency in license distribution and compliance.
- **IT Security**: The NDUS Information Technology Security Officer (ITSO) coordinates IT security policy, programs, processes, and incident response for the North Dakota University System. The NDUS ITSO also serves as the registered agent for Digital Millennium Copyright Act (DMCA) violation complaints and issues.
**ConnectND**

ConnectND is comprised of the human resource management, financial management, and student information management systems for the North Dakota University System. ConnectND also includes several third-party systems such as: Kronos (time reporting); Ad Astra (room scheduling); FAMIS (facility management); Adirondack (housing management); T2 Systems (parking management); and TouchNet (online credit card transaction payment), to name a few.

The State’s Information Technology Department (ITD) hosts the ConnectND human resource management system and the financial management system at the State’s data center.

**Academic, Research and Learning Technologies (ARLT)**

Academic, Research and Learning Technologies is comprised of the Online Dakota Information Network (ODIN), Advanced Learning Technologies (ALT), Foundational and Emerging Technologies, and enterprise security that reports to the Executive Director, ARLT.

- **Online Dakota Information Network (ODIN):** Provides a computer-based library management system for the North Dakota University System libraries and other libraries, including various K-12, state agency, and public libraries in the state. Operated by the NDUS, with offices located on the University of North Dakota campus, ODIN has been online since 1989. Currently, ODIN supports more than 100 libraries and branch libraries. ODIN is part of a regional network linking North Dakota libraries with libraries in Minnesota and South Dakota.

- **Advanced Learning Technologies (ALT):** Focuses on access, innovation, and excellence in the delivery of instructional systems and services for the University System. ALT technologies include video and audio conferencing, web conferencing, learning management software, and other related academic technologies. In addition, ALT works with institutions to evaluate emerging technologies and find technology-based solutions that meet instructional needs and desired outcomes.
Higher Education Computer Network (HECN)

- The Higher Education Computer Network data center, located at the University of North Dakota, hosts the ConnectND student information system and many of the associated auxiliary/ancillary systems. These services are administered through a Service Level Agreement (SLA).

- Additional services for SITS, including support for regional network services, IT forensics, and software site licensing are provided through a Service Level Agreement with the Division of IT at North Dakota State University.

North Dakota University System Online (NDUSO)

Reporting to the NDUS Vice Chancellor for Academic and Student Affairs, the NDUSO is a system-wide collaboration that provides access to all online learning degree and certificate programs that are available from institutions of the North Dakota University System. Through the collaboration of the 11 NDUS institutions students have access to courses from multiple campuses during the same semester, can receive financial aid for all courses, have a single academic record, and receive a single bill.

STRATEGIC ARCHITECTURE

As stated earlier, all things need a solid foundation to build upon. The System Information Technology Services division has defined a strategic architecture to which IT services and applications provided by the NDUS System must adhere.

NDUS institutions implementing an IT service or application must receive approval from the NDUS CIO prior to purchase so as to ensure it will be compatible with other IT systems and services, and that it will not duplicate an existing System-provided application or service. NDUS Procedure 1901.3 defines the process for gaining approval and provides information on what systems of specific interest are included within the NDUS Strategic Architecture requiring NDUS CIO approval.

The System Information Technology Services strategic architecture is best described as a visual, layered pyramid depicted as follows:
Starting on the lowest layer, the “foundation” that all else is built on, is the Common Communication System that is based on the State’s STAGEnet network.

The second layer from the bottom is the Common Operating Systems: Windows Server, Linux, etc. Operating systems are the “brains” of a computer and the software that instructs the computer how to perform basic tasks such as input from the keyboard, sending output information to the display screen, keeping track of files and directories on disks, and controlling peripheral devices such as disk drives and printers. An operating system provides a software platform on top of which other programs/applications can run. It is the “traffic director” that makes sure different programs and users running at the same time do not interfere with each other and is also responsible for security to make sure that unauthorized users do not access the system.

On the third layer, SITS has standardized by using the Oracle database as the Common Data Base System.

Layer four consists of Middleware/Supporting Applications. Middleware includes such things as security software, directory services, and applications that assist in controlling other applications. It may include software that allows for applications to exchange data even when operating on two different operating systems. Middleware sits between an operating system and applications.

The fifth layer portrays where NDUS integration services take place between the middleware/supporting applications and the applications where the user community interacts with the system.

Layer six is where the applications that users are familiar with and use are depicted. Among others, these include applications such as ConnectND, the third-party systems, Learning Management System (LMS), ODIN library services, e-mail and calendaring systems, and the NDUS Help Desk.
The Web Portal is portrayed at the seventh layer. The portal is the window that is used to access applications.

**Everything Is Connected**

Many of the applications provided through/by SITS are interwoven. The following visual depicts this relationship:

Because today’s systems are complex and tightly integrated, it is difficult to think of one system without also taking into consideration how an action taken in that system will impact others. An upgrade or enhancement in one system may require an upgrade or change to another system before it will function properly. This tight integration of systems requires a great deal more planning before any action/change can be taken, and requires more effort in ongoing support and/or maintenance of these systems.
System Information Technology Services (SITS) has established four goals as guiding principles for information technology planning and system implementations. These goals are sufficiently broad to allow information technology goals at the NDUS’ eleven institutions to roll into that of SITS and in turn, roll into the strategic plan of the State Board of Higher Education.

**Goal 1 – Support North Dakota University System infrastructure needs.**
Infrastructure holds information technology systems together and allows systems to communicate with each other over a network. It includes such things as security and access control for which guidelines must be developed and updated as needed. Enterprise Architecture provides a blueprint for establishing information technology policies, procedures, and guidelines to promote effective use of information technology.

Goal 1 aligns with and supports NDUS Strategic Plan Goal #1 – The North Dakota University System is accessible, a view held by all North Dakotans.

**Goal 2 – Improve North Dakota University System information technology-enabled business processes and services while providing and managing resources to align with NDUS strategic goals.**
In order for the NDUS institutions to remain competitive and offer information technology support for students, faculty, and staff, including research and public service, the NDUS must provide and manage information technology resources alignment with NDUS strategic goals.

Goal 2 aligns with and supports NDUS Strategic Plan Goal #2 – North Dakotans recognize that the North Dakota University System is affordable at a level that can be sustained.

**Goal 3 – Improve and enhance North Dakota University System student learning and customer focus.**
The focus of this goal is to empower student learning and development through the use of technology by providing a near seamless environment for learning through boundless access to informational, educational and research resources, both inside and outside the classroom, for all types of students from undergraduates to the life-long learners. The NDUS encourages and supports an operational environment in which characteristics of its customers – student, faculty, staff, North Dakota residents, and affiliates worldwide – are identified, their needs are understood, relationships and expectations are effectively managed, and quality assurance is fostered for high-quality services and support.

Goal 3 aligns with and supports NDUS Strategic Plan Goal #3 – The North Dakota University System increases the overall vitality of the state through exceptional education, research, training and service.

**Goal 4 – Improve and enhance North Dakota University System collaborative efforts.**
By working together with the State, K-12, and other constituents, the NDUS is able to bring new technologies to North Dakota and support existing ones. Communicating with stakeholders is an important factor and everyone must work together in making necessary information available to every administrator, faculty, staff, and student across the North Dakota University System institutions.

Goal 4 aligns with and supports NDUS Strategic Plan Goal #4 – The eleven institutions comprising the North Dakota University System work together to achieve the vision effectively.

**MAJOR ACCOMPLISHMENTS**

Thanks to the support of the Governor, the Legislature, and the State Board of Higher Education, the NDUS has continued to successfully manage its systems and IT efforts, and has achieved significant
accomplishments as a result of this support. A large number of smaller initiatives and projects have been completed this past year, but the following are those that are considered major or complex. The time frame during which projects listed below occurred or were completed is indicated in (italics) after each accomplishment.

- **NDUS Lecture Capture Solution** – A lecture capture system for all 11 NDUS institutions was selected and implemented. This project was included in the State Board of Higher Education’s Maximizing Results through Efficiencies initiative. *(Completed June 2012)*

- **Migration of the NDUS Office Staff to the NDUS Active Directory and Enhancement of Desktop Support** – The NDUS System Office was migrated to the NDUS Active Directory and an enterprise desktop support plan was initiated for all staff members. *(Completed April 2012)*

- **Data Element Dictionaries** – The first phase of this initiative for the ConnectND Student Information System was completed with in June 2011. *(The first phase of the HRMS Data Element Dictionary was completed in 2010). Additional phases of populating the dictionaries for the Student Information and Human Resources systems took place during the 2011-2012 fiscal year. While there is an ongoing operational need to continue to add fields to the dictionaries, the primary initiative to establish the dictionary and define the information in each field was completed. *(Ongoing)*

- **Updated Interactive Video Network (IVN) Scheduling Processes** – Reviewed and configured the IVN class scheduling software. The class scheduling process was successfully moved from a homegrown class scheduling system to a vendor-provided scheduling software. In addition to the transition of the class scheduling process, a module was added to the Microsoft Exchange environment that, in the future, will provide the capability to schedule IVN events. *(Completed October 2011)*

- **Implementation of Identifier (ID) Change Process and Anonymized Identifiers for FERPA Requirements** – A process was developed whereby students and employees who had a name change for any reason, or preferred a different ID, could use this process to have their identifier changed. In concert with this, a process to anonymize identifiers was implemented to comply with FERPA requirements. Students, the NDUS, and institutions all benefited from this process. *(Completed October 2011)*

- **Desktop Anti-Virus Software Renewal/Replacement** – After examining options at the time, the current contract for desktop anti-virus and malware protection was due for renewal, a decision was made to move to Microsoft’s Forefront Endpoint Protection. Forefront was already included in a systemwide master contract negotiated by the NDUS, thus the move provided the same protection at considerable cost savings. *(Completed March 2012)*

- **Web-Hosted Non-Credit Enrollment Management Software** – The NDUS negotiated a contract that provides the NDUS institutions discounted pricing for web-hosted non-credit enrollment management software for NDUS continuing education and extended learning programs. This unique solution provides continuing education programs the ability to manage both open enrollment and contract training all in one system. This is vital as we continue to support individuals with a wide range of lifelong learning opportunities, while also fulfilling the training needs of the growing business community across our state. *(Completed December 2011)*

- **5-Digit Dialing** – Several NDUS institutions implemented a telephone 5-digit dial plan which allows institutions to call each other using the STAGEnet Internet Protocol (IP) data network, avoiding the need to place the call as a long-distance call. At present, Lake Region State College, Mayville State University, North Dakota State College of Science, North Dakota State University, University of North Dakota and Valley City State University have this capability. NDSU’s Telecommunications Department was asked to take the lead on this initiative by the NDUS CIO. *(Completed May 2012)*

- **Online Dakota Information Network (ODIN) Library System** – ODIN provides library online catalog services to all NDUS institution libraries, the North Dakota State Library, various K-12 and public libraries, as well as some state agency libraries. ODIN also provides licensed database access to all North Dakota libraries. A significant undertaking this year was the migration to a vendor-hosted solution, thereby maintaining high availability of the library system for staff of all
ODIN libraries, as well as all library users in the state. The migration reduced operational costs, negated the need for purchasing new hardware to refresh aging equipment, and allowed for redirection of local resources. *(Completed May 2012)*

- **NDUS Help Desk initiatives** – The NDUS Help Desk service continues to evolve. The total number of calls received during 2011-2012 was 39,296. Overall satisfaction was 4.6 out of 5 (where 1 is low, and 5 is high). Two important initiatives undertaken included:
  - **IT Problem Tracking System Implementation** – The problem tracking system that had been in use by the NDUS Help Desk was retired and replaced with a hosted service that is part of the overall NDUS Help Desk 24x7 hosted service. The software tracks NDUS institutional problems related to IT services and allows staff to better manage those services. *(Completed June 2012)*
  - **NDUS Help Desk Conference** – A conference was held as an outreach to the NDUS institutions to bring IT support staff together where training sessions could be attended and conversation could be held with the hosting vendor representatives. Feedback on the conference was positive and the conference was well received. *(Completed June 2012)*

- **Tuition and Fee Estimator Stage 1** – This initiative allows students, parents or any individual to easily view and determine estimated costs for attending NDUS institutions. The Fee Estimator can be found at [http://fees.ndus.edu/](http://fees.ndus.edu/). *(Completed January 2012)*

- **NDUS Active Directory (AD) Transition and Training** – The NDUS Active Directory has been transitioned to operational status. With the NDUS AD, students, faculty and staff can logon to networked services using the same credential across the NDUS. ConnectND and other NDUS system services have been integrated into the NDUS AD. Bismarck State College and Dickinson State University have been using the NDUS AD successfully. UND’s Information Technology Systems and Services (ITSS) staff are currently working with individual institutions on Statements of Work to facilitate transition to the NDUS AD. (Transitions are expected to continue into 2013.) Along with the transition to the NDUS AD, SITS offered several training sessions to NDUS staff, including:
  - **Active Directory Training** – A comprehensive 4-day training course was offered in both Bismarck and Fargo to campus IT system administrators. Basic AD training was provided the first two days and intermediate/advanced AD training was presented the final two days. Training was tailored to the configuration of the NDUS AD. Training was provided to 25 individuals during the process. *(Completed Fall 2011)*
  - **Microsoft PowerShell Training** – PowerShell is a scripting language used to administer Windows products. NDUS hosted a 5-day class from December 5th through 9th that covered Microsoft PowerShell training, from basic to advanced. Training was provided to 23 NDUS staff. *(Completed December 2011)*

- **STAGEnet IPv6 (Internet Protocol version 6)** – IPv6 is a communications protocol that routes network traffic over the internet. IPv6 is meant to succeed IPv4 over time. IPv6 will support vastly more IP addresses than IPv4 can and offers security enhancements not present in the current IPv4 protocol. The State’s Information Technology Department (ITD) plans to support IPv6 on the State’s data network (STAGEnet) during the summer of 2012. IPv6 training was made available to the NDUS institutions in both May and June 2012, and SITS will work with the institutions to facilitate the implementation of IPv6 when they are ready to use it. *(Implementation of IPv6 will be ongoing)*

- **NDUS-Systemwide Wireless Implementation** – Through the implementation of a systemwide wireless network, faculty, staff and students throughout the NDUS will be able to authenticate to the wireless network by using their NDUS Active Directory credentials and will be able to reach the services needed regardless of their primary NDUS institution. Pilot implementations of a systemwide wireless network called “NDUS-Systemwide” were completed at North Dakota State College of Science, Williston State College and Dickinson State University. Implementation across the NDUS should be completed by December 2012. *(Pilot sites completed Spring 2012)*

- **ConnectND Campus Solutions (Student Information System)** – Several software
upgrades were completed during the year, including:

- **PeopleTools Upgrade** to version 8.51 – PeopleTools is the technology platform that underlies our PeopleSoft systems. The upgrade to PeopleTools 8.51 introduced a number of new features, including a new user interface, related content and collaboration features, feed publishing, new integration tools, and more features that the entire NDUS will benefit from. Customer comments were positive and the increased functionality was well received. *(Completed October 2011)*

- **Judicial System Upgrade** – Upgrade to a new web-based version of disciplinary case management for housing offices on University System campuses. Campus users are excited with the increased functionality and power of the report features. *(Completed June 2012)*

- **Parking System Administrative Console Upgrade** – Upgrade to allow local updating of forms and pages in the parking system, along with integration with our payment processing vendor, for secure PCI-compliant payments in the parking system. *(Completed June 2012)*

- **Housing System Upgrade** – The housing system was upgraded, providing increased stability and functionality. *(Completed June 2012)*

- **Provision of data for the Statewide Longitudinal Data System (SLDS) and Succeed 2020** – NDUS Campus Solutions staff are conducting on-going work with the Department of Public Instruction and the state Information Technology Department to provide data for the State’s SLDS, the State Fiscal Stabilization Fund grant, and Succeed 2020 (Hess Grant) requirements. *(Ongoing)*

- **ConnectND Human Resources Management System (HRMS) and Financials Infrastructure Changes** – Several of the projects accomplished by the HRMS and Financials teams this year focused on infrastructure changes, not easily noticed by end-users, but important projects to lay a foundation for the future, freeing up time to work on projects with more direct benefits to end-users:

  - **PeopleSoft Environments Partitioning Project (PEPP)** – The PeopleSoft Environments Partitioning Project was launched to physically separate State Government data from NDUS data. This technically complex project reduced the size of the respective databases, allowing upgrades, patches and fixes to be applied within acceptable outage windows. *(Completed March 2012)*

  - **ConnectND Priorities** – This project was about formalizing the change process to the ConnectND database. How we approach work requests was outlined into six priority levels and an approval process was implemented to ensure work efforts are approved before they are undertaken. In addition, documentation of database changes has been standardized. *(Completed January 2012)*

  - **PeopleSoft Testing Framework (PTF)** – Every patch, fix or upgrade requires significant testing. PTF automates functional testing, which enables testers to execute more tests with greater accuracy during a shorter time. Staffs have built test scripts using this new tool. *(In place May 2012 – will continually evolve)*

  - **Data Edits** – Many hours (sometimes days) are spent by functional and technical analysts cleaning up problems caused by data entry errors. A number of data edits were identified and put into the systems this year to help end-users avoid such errors. *(Completed May 2012)*

- **ConnectND Human Resources Management System (HRMS) and Financials Functionality Changes** – Other projects enhanced or expanded functionality available to users of these systems:

  - **Expense Module** – The setup and configuration of the Expense module in Financials (travel expense submissions and approvals) was completed and is now available to NDUS entities. *(Completed September 2011)*

  - **Departmental Budget to Actuals** – While campus centralized staff have been able to run reports that tell them what actual expenditures are compared to the budget, this functionality was made more broadly available this past year, for all individual departments. *(Completed July 2011)*
Grants Milestones – Milestones functionality provides for setting deliverable dates on awards, and automated notifications about those milestones to those responsible for completion. *(Completed April 2012)*

Consolidated Financial reporting – A myriad of new reports, new queries and revisions to existing queries and reports were made to ease the fiscal year-end process for campuses and the Chancellor’s office. Reports/queries for long-term liabilities, investments by risk category, capital assets and intangibles, cash flow, SITS receivables/payables and assessments, payments to component units, budget-to-actuals, fund balances, new allocations, and functional expense classifications were placed into production. Fields were added at end-user request for reports/queries dealing with advances from the Bank of North Dakota interest earned, and insurance proceeds received. *(Completed June 2012)*

Recruiting Solutions – This HRMS functionality was implemented for the SITS Office in January 2012. Campuses have decided to wait to use this until another module (Candidate Gateway), which provides web-based employment applications, is implemented.

Electronic W-2s – Programming was performed to produce a printable W-2 available to employees directly through employee-self-service. Prior to this, the information was available to employees online by looking at their last yearly paycheck advice, but not in a format acceptable to use with tax forms. *(Completed December 2011)*

Legislative changes – Every biennium, legislative changes require programming changes. The 2011 session resulted in a larger effort than usual. Changes included: 1) increasing retirement contribution percentages, 2) changes to new hire reporting for child support purposes, 3) creation of a new high-deductible health plan, and 4) increasing the dependent sick leave benefit. *(Completed July 2011)*

While projects are defined as an activity having a defined start and end date, it is important to note that there are many other activities that fall into operational activities that SITS staffs are involved with on a daily basis. One such activity is implementation of patches, fixes and updates to systems managed by the North Dakota University System. These all take time, staff, and a budget, and while they do have a start and end date, they happen on a continued/frequent basis throughout each year and may consume (along with the normal system support activities) a considerable amount of time that can have an impact on completion of projects. Several of these activities occurred in all areas for SITS services this year.

**FUTURE CRITICAL ISSUES**

Several initiatives have been identified as critical issues to be dealt with in the next fiscal year and/or biennium. Identified items at this time include:

- 5-digit dialing – As noted previously, eight NDUS institutions have implemented 5-digit dialing. Moving forward, the goal is to implement 5-digit dialing to include all NDUS institutions, the System Office, and ultimately, integration with the State Information Technology Department. Design engineering is underway.

- Implementation of State Board of Higher Education, Maximizing Results Through Efficiencies Initiatives, upon approval of recommendations in each area:
  - Learning Management System (LMS)
  - Document Imaging
  - Expanded and Enhanced Human Resources Workflow
  - Unified Communications
  - Integrated Approach to Delivery of IT Services

- Identity Management (IdM) ramp up – SITS is currently using an interim IdM solution. A decision is to be made on a final product and implementation will follow.

- Microsoft Office 365 migration – All employees currently on the Microsoft Business Productivity
Online Suite (email and calendar) will be migrated to Office 365 at the end of September 2012. Students currently on Microsoft's Live@edu email offering will be migrated to the same platform.

- Work with the Online Dakota Information Network (ODIN) libraries to expand virtual and digital holdings.
- Mobile Access to Library Services – Implementation of mobile access to ODIN library services is currently in test. When implemented, library users across the state will have access to the ODIN library catalog and library online resources. Library users will be able to view the current status of materials, renew materials, place holds, request interlibrary loan, and utilize other standard library functions via a mobile device. To be fully deployed in 2013.
- Mobile Access to ConnectND – Implementation of mobile access to ConnectND Campus Solutions and Human Resources systems is underway with expected completion of the first phase by September 2012. This access allows students to look up grades, class schedules, and instructor and advisor information; faculty to look up course and advisee rosters, and course schedules; and employees to view paycheck, direct deposit, leave, and benefit information. Additional functionality will continue to be deployed over the next year.
- Student Administration Integration Pack (SAIP) – SAIP allows for an open, standards-based integration with PeopleSoft’s student administration system and several Learning Management Systems (LMS).
- Manager Self-Service (MSS) – A study group was formed and they recommended the implementation of the employee onboarding and termination portions of PeopleSoft. They made their recommendation in the fall of 2011 and the project was planned for a post-PEPP start. However, with the advent of the Maximizing Results Through Efficiencies effort, this project is now working its way through that approval process. If approved, this will be implemented in the 2012-13 academic year.
- Post-payroll Funding Changes (PFC) – Every pay period, payroll expenses are distributed to the appropriate funds and accounts and sent to the PeopleSoft Financial system. However, there are a number of funding changes that are made after-the-fact. While the number of these changes is small in relationship to the total number of payroll transactions, the time this rework takes is significant, and the risk of these changes negatively affecting other data and processes is high. This study, which will identify opportunities for reducing the number of these changes, has started as part of the Maximizing Results Through Efficiencies effort, and will continue into the next fiscal year.
- Web-based Annual Budget (WBB) – Every year, the process for completing salary and expense budget recommendations is intense, almost always under tight time constraints (especially in legislative years where the time frame is even more compressed). Creating a web-based budget process will ease administrative burden, increase timeliness, and reduce risk of data entry errors. This project is being initiated and needs to be in place prior to March 2013.

This concludes the 2011-2012 NDUS System Information Technology Services Annual Report.