North Dakota University System

Initiative Status Update

Information Technology – Strategic Plan 2011 – 13

Presented By:

Randall Thursby
Chief Information Officer
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EXECUTIVE SUMMARY

This document is a follow up on initiatives listed in the NDUS IT Strategic Plan for 2011 – 2013. Each institution/responsible entity was contacted and asked to provide an update of their initiatives as to whether completed, in progress (along with estimated completion date), or whether the initiative had been cancelled. The status update follows each initiative.

While there were many accomplishments during these past two years from the System Information Technology Services (SITS) enterprise level, several key initiatives undertaken had an impact on all NDUS institutions, their user community, and the direction for the future. One of the primary IT initiatives was the creation of Active Directory (AD), the directory service at the NDUS level that gives faculty, staff, and students one userid and password credential to access systems pointed to the NDUS Active Directory for authentication. The NDUS System Office, System Information Technology Services, Bismarck State College, and Dickinson State University have all been transitioned to the NDUS directory service and the first major system to point at the NDUS AD was ConnectND. Work is in progress for transitioning other NDUS institutions to this same directory service.

During this past year, the State Board of Higher Education (SBHE) established several IT initiatives to be undertaken during this next IT planning cycle. Initiatives included are: a learning management system; lecture capture system; document image scanning system; expanded and enhanced human resources electronic management - including centralized payroll processing from one or more sites; a unified communications system that would integrate voicemail, e-mail, instant messaging, presence, phone, mobile devices and personal computers; and an integrated approach to delivering IT services. Planning and oversight of systemwide services delivered to some or all of the institutions is to be governed at the system level and should not be under the purview of any one institution. While each initiative has a workgroup assigned to develop a recommendation for the SBHE to act upon, the lecture capture initiative has already received approval. Implementation of Tegrity is expected by June 30, 2012. Other initiatives will begin implementation upon approval by the SBHE and if approved, will be implemented in the 2013-15 biennium.

A few other initiatives of note that have been completed or substantially completed include: first stage of the Tuition and Fee Estimator that allows students, parents or any other individual to easily view and determine estimated costs for attending NDUS institutions. The Fee Estimator can be found at http://fees.ndus.edu. Along with the fee estimator, a NDUS System-wide wireless implementation pilot project is underway; a five-digit dialing initiative; and, a mobile library application are also being implemented.

Once the System-wide wireless pilot project is completed with North Dakota State College of Science, Williston State College, and Dickinson State University (all of whom are involved in this project’s testing), a wireless network access called “NDUS-SystemWide” will be implemented across the NDUS. Faculty, staff, and students will then be able to use their NDUS AD credentials on every NDUS campus to access the wireless network and reach the services they need - regardless of which campus they are on.
Several institutions have implemented a telephone dial-plan that had been created several years ago but was not implemented across other NDUS institutions. The 5-digit dial plan allows institutions that implemented the plan to call each other using the STAGEnet Internet Protocol (IP) data network, avoiding the need to place a 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. The NDUS CIO has asked NDSU’s Telecommunications Department to take the lead on this initiative and they are working with Dakota College Bottineau, Minot State University, and Bismarck State College to add them into this functionality. Design engineering is underway. (Anticipated completion summer to end of year 2012).

The Online Dakota Information Network (ODIN) implemented a mobile library application that makes ODIN library services available most anytime and anywhere. Applications that can be used by mobile devices are in great demand across all NDUS provided IT services.

Following are a listing of NDUS System Information Technology Services goals and strategy objectives.

**GOALS AND STRATEGY OBJECTIVES**

The NDUS System Information Technology Services established the following goals and strategy objectives for the 2011-13 IT planning process. Institutions were asked to identify IT initiatives/projects they were planning that would align with these goals and objectives. The goals and objectives included:

<table>
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<tr>
<th>Goal #1</th>
<th>Strategy Objectives</th>
</tr>
</thead>
</table>
| 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). | 1. Offer reliable, cost-effective and appropriate NDUS network services.  
2. Provide middleware tools and data to help people more easily use networked resources and services while ensuring security and privacy of the information.  
3. Prepare the data network (IP) infrastructure for the convergence of voice, data, and video along with other collaboration tools on a single network.  
4. Enable libraries to provide easy access to licensed electronic information.  
5. Provide IT enterprise architecture and project management leadership.  
6. Provide linkage through STAGEnet, Internet2, and the Northern Tier Network to national and international research and development networks. |
| Goal #2 | Strategy Objectives |
| Improve North Dakota University System Information Technology-enabled business | 1. Work with state government to maintain critical core ConnectND functions and implement upgrades |
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).

and enhancements to the financial/human resources management and data warehouse systems.

2. Work to maintain critical core ConnectND functions and implement upgrades and enhancements to the student management, data warehouse, library, and academic technology systems.

3. Enhance the enterprise project management office, including enterprise architecture, to provide project management oversight, enterprise architecture administration, and IT planning in conjunction with the NDUS Chief Information Officer (CIO).

4. Enhance educational experiences with new or re-purposed resources that expand user services, technologies, and initiatives.

5. Use the enhanced communications capabilities made available with STAGEnet to improve services to students, faculty, staff, and the citizens of the state.

6. Implement a converged environment that supports voice, data, video, and collaboration systems.

7. Hire/train professional staff to meet the needs of NDUS services.

### Goal #3

**Strategy Objectives**

<table>
<thead>
<tr>
<th>Improve and Enhance North Dakota University System student learning and customer focus (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).</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create an environment for enhancing learning where opportunities and resources are explored, best practices collected, and deploying strategies are developed, implemented, and evaluated. Examples include distributed education, effective use of technology in the classroom, and library linkages.</td>
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<tr>
<td>2. Create the means for easy, efficient, and reliable access to learning resources anytime and anyplace, and for learning experiences that enable collaboration among learners.</td>
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<tr>
<td>3. Evaluate enhancements to the Online Dakota Information Network’s (ODIN) library systems and services to improve functionality that supports the evolving needs of students.</td>
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<td>4. Continually improve standards, policies, procedures, and services that facilitate seamless, integrated learning.</td>
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<td>5. Identify customer characteristics and respond to their expectations and needs.</td>
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<tr>
<td>Goal #4</td>
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| Improve and Enhance North Dakota University System collaborative efforts (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). | 1. Monitor NDUS help services so they are optimized within the NDUS community.  
2. Implement mechanisms to improve communications with all stakeholders of the NDUS System Information Technology Services (SITS).  
3. Collaborate with NDUS institutions, K-12, state and local governments, and libraries to identify appropriate learning and research support systems and converged services.  
4. Develop a common architecture that encompasses available educational resources and systems, and breaks down barriers between institutions, libraries, and other sources of learning.  
5. Work with the Online Dakota Information Network (ODIN) libraries to expand virtual and digital holdings.  
6. Promote Internet2 and research-level infrastructure.  
7. Foster efforts that lead to the integration and streamlining of video, audio, and data collaborations in cross-platform environments.  
8. Provide information to enhance accountability to stakeholders.  
9. Collaborate with business and industry to identify the need for IT workers, promote career opportunities, and provide needed education and training. |
STATUS UPDATE – MATRIX OF INITIATIVES/PROJECTS BY CAMPUS OR ENTITY

The following pages contain a summary of all the initiatives/projects that campuses and NDUS SITS had submitted for the 2011 – 2013 NDUS IT Plan. A status update is provided for each initiative per the response from the campus or responsible entity.
## NDUS IT PLANNING

11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

<table>
<thead>
<tr>
<th>NAME</th>
<th>INITIATIVE/PROJECT DESCRIPTION</th>
<th>GOAL. OBJECTIVE</th>
<th>WHO BENEFITS</th>
<th>HOW MEASURED</th>
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<tr>
<td>BSC</td>
<td>Replace Voice Telecommunications System – Existing PBX voice system is near end of life and must undergo a substantial upgrade or replacement. Initially, with the assistance from a consulting firm, BSC intends to explore three options. Each option has their own advantages and will fit with systems already deployed within the NDUS campuses. With Avaya acquiring Nortel (current system vendor) and with the announcement of Qwest being acquired by Century Tel, we risk the loss of voice communication services on our campus by not implementing this project.</td>
<td>1.2, 1.3 2.5, 2.6 3.4, 3.5 4.2, 4.4 4.7</td>
<td>Those realizing the greatest benefit will be BSC employees, students, our collaborative partners, and NDUS employees on the campus of BSC currently receiving voice services. Others benefiting are NDUS institutions that have or plan to implement a Unified Communications system.</td>
<td>Benefits can be measured by having casual conversations, formalized group discussions, conducting campus surveys and by soliciting feedback from our campus community. This would need to take place well after the project has been implemented to allow the campus community to become familiar with the new tools provided to them.</td>
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</table>

### Status Update: BSC is still in the investigative phase of this project. BSC wants to participate at an enterprise level regarding full Unified Communications services while minimizing investment and effort in transitioning to a new system. In short, when we transition to a new system, we want to maximize our investment to the greatest extent possible. We are exploring three possible options to achieve these results for voice services:

1. CenturyLink has approached BSC with a proposal to provide a cloud based voice service for BSC, which could also scale to the

### This project is still in the discovery phase with no one having benefitted at this time.

### When completed, benefits can be measured by having casual conversations, formalized group discussions, conducting campus surveys and by soliciting feedback from our campus community. This would...
enterprise level. This is a costly, but attractive option. However, this option has not been talked about at the NDUS level.

2. BSC met with the NDSU telecommunications department regarding NDSU’s ability for providing voice services for BSC. NDSU indicated they are interested in providing voice services to BSC. This is also a very attractive option and there have been informal conversations about NDSU and UND providing voice services.

3. The NDUS has partnered with Microsoft to provide e-mail and calendar services through BPOS. The next generation offering of Microsoft’s unified communications system (Office 365) includes voicemail, Office Web Apps, archive capabilities and other options. Also advertised by Microsoft, but not ready for enterprise use, are voice services (possible PBX services that work with Lync, but the PBX services may not be available for another year or longer). This option has good potential for providing enterprise level and full Unified Communication services, but additional information is needed from Microsoft and the NDUS. To accomplish this successfully, we need to know the full capabilities of the voice services that Microsoft will be offering and we need to have a stated direction that the NDUS is willing to pursue regarding Unified Communications.

BSC has a representative on the NDUS Maximizing Results Through Efficiencies Unified Communication committee that is investigating the possibility of an enterprise Unified Communications system. It is our hope that the committee findings will result in a stated direction for Unified Communications for the NDUS as an enterprise.
NDUS IT PLANNING

11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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**DCB**

No initiatives/projects were being planned that were larger dollar amounts and impacted the state network or NDUS resources. We are planning for smaller projects but none at this level.

*Status Update:* Dakota College Bottineau had no initiatives/projects that were of a large dollar amount, impacted the state network, or impacted NDUS resources.
NDUS IT PLANNING

11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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<td>DSU</td>
<td>Administrative Infrastructure Goals - Calendaring software solution, upgrade designated staff computers every 3-4 years, continue the process of local ConnectND trainer training new employees and ongoing training for existing employees.</td>
<td>2.1 Institutional staff will benefit from a common calendar solution along with computers being upgraded on a 3 – 4 year cycle.</td>
<td>Staff satisfaction. Number of users with active calendars. Feedback from administrative offices on improvement of scheduling meetings. Ability to run applications without memory and GPF errors.</td>
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**Status Update:** Staff workstations and accounts were migrated to NDUS BPOS system that includes calendaring; completed around December 2010. Workstations are being upgraded on the 3-4 year cycle; generally purchases happen en masse twice a year in May and October.

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<td></td>
<td>Academic Infrastructure Goals - Upgrade faculty computers every 3-4 years along with student accessible computers in 10 primary instructional labs and 50 classroom instructional areas. Upgrade software on a schedule that provides latest technology on each of the above computers and collaborate with BSC on a software schedule that</td>
<td>Students and faculty will benefit most from this initiative; however, everyone will benefit from the expansion of LAN</td>
<td>Faculty satisfaction along with student’s satisfaction. Ability to run applications without memory and GPF</td>
<td></td>
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Number of accounts with calendar option. Number of calendars being shared. Users reporting less GPF errors and memory hangs.
satisfies DSU’s presence on their campus sharing computer lab and office space. Expand LAN wireless hotspots in key areas. Plan and support current LMS system of WebCT and Tegrity along with support and assist a migration of classes to NDUS supported Moodle and Wimba. Provide students with MS Live@edu e-mail accounts.

**Status Update:** Workstations are being upgraded on the 3-4 year cycle and generally, purchases happen en masse twice a year in May and October. Computer labs and classroom instructional areas are being replaced on this cycle as well as during December and March. Technology committee recommends software upgrades each year - implemented in December, March and July.

NDUS and DSU contracts with vendors allow departments and other units to upgrade software to latest version (occurs around October of each year). Coordinate software purchases and installs with BSC. DSU purchases the licenses and BSC installs them. This had been done in August 2010 and occurs annually.

Expanded wireless coverage in October 2010, June 2010, October 2011 and June 2011.

Migration of WebCT was done in August of 2011.

Tegrity continues to be used.

Student e-mail was migrated to MS Live@edu in September 2009.

wireless hotspots. Students gain additional storage for e-mail and data along with new functionality included with their MS Live@edu e-mail accounts.

Faculty and students have hardware that meets and exceeds requirements to run software. Software versions are consistent with what industry is using. Students have wireless coverage in more areas around campus.

Classes at BSC allow DSU faculty to teach online and to visit BSC and teach in the computer lab. LMS system is more consistent throughout NDUS institutions allowing students to see a common interface. Student e-mail is available when they arrive and is available after they leave. Provides a common directory to share information.

Faculty and students reporting less GPF errors and memory hangs. Software support from vendors is current and no EOL issues. Access point usage shows clients connecting as coverage expands. Many more IP numbers are in use.

Numbers of students from BSC who were enrolled for classes at DSU. All online classes are in Moodle and WebCT has been discontinued.
Active Directory Migration - Design, implement and maintain Microsoft Windows Active Directory – Set up File and Print services – Set up authentication of resources.

**Status Update:** Active Directory migration was completed in October 2011. File and Print services were completed in November 2011. Authentication in computer labs was completed in August 2011. Faculty and staff authentication was completed in December 2011.

Networking and Infrastructure - Upgrade network management systems, software, and core data switches every 4-5 years. Upgrade and add wireless access points. Replace and add UPS and battery backup appliances. Explore avenues for offering affordable and reliable Internet access for all DSU students, faculty and staff. Upgrade DSU web page to provide prospective and current students with up-to-date and useful information.

All users of network services and applications will benefit from this initiative/project. This also includes collaborative students and guests visiting the institution.

Students, faculty and staff have less account credentials to remember to access institution IT services. More services are available with consistent credentials. IT can support more services and resources of Microsoft Active Directory appear more readily and granular.

All users of the data network and applications will benefit from this initiative/project. This also includes collaborative students and guests visiting the institution.

Satisfaction expressed by the user community. Print management statistics. Security and logging for authentication in labs.

Number of accounts per user. Number of requests for forgotten passwords. Novell services were turned off in February of 2012.

While it is difficult to measure, as these are intangible benefits in many cases and part of the core functionality of the network, satisfaction expressed by the user community will be one means of measuring success. One tangible measurement is ability and speed to image computers for labs, staff and faculty. Upgrading wireless access points will allow for faster
**Status Update:** Purchased core switch in May 2012, will be installed in June 2012. Software upgrades of LAN switches is routinely checked and upgraded; last upgrade of software was in December 2011. Additional access points were installed October 2010, June 2010, October 2011, and June 2011. UPS and batteries were replaced and added in August and December 2011. Coordinated wireless access that was added in campus housing during August 2010 by an outside vendor. DSU webpage was last updated in December 2011.

All users benefit with core switch upgrade by faster network access and less traffic congestion. Students benefit with additional access points by having better coverage and more bandwidth. Students had opportunity to have wireless access in addition to wired access in campus housing. Webpage is more intuitive and has current information available.

Network statistics, speed tests. Number of clients attached to access points. Webpage hits.
**NDUS IT PLANNING**

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<td>LRSC</td>
<td>NDUS AD project – The NDUS Active Directory project is a phased migration to an active directory single forest/domain model. LRSC plans to install the NDUS AD servers and move users over to the NDUS AD.</td>
<td>1.2</td>
<td>Students (especially collaborative students), faculty and staff.</td>
<td>Number of users migrated.</td>
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<td><strong>Status Update:</strong> Met with the NDUS to develop a Statement of Work for LRSC in regards to the NDUS AD project. At this point it was recommended LRSC work toward password synchronization between the NDUS AD and the local Campus AD. The local campus AD has been updated and moved to new servers. LRSC has moved to the NDUS radius server and provides wireless access to clients who use their NDUS login credentials.</td>
<td></td>
<td>With password synchronization the students will benefit by ease of access to systems.</td>
<td>NDUS employees benefit from ease of access to the campus wireless network.</td>
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<td></td>
<td>Employee Communication Services (BPOS) – Microsoft Business Productivity Online Suite (BPOS) has been selected as the NDUS common platform for employee e-mail, calendar services, and other communication services. LRSC plans to migrate employee e-mail and calendar services to BPOS.</td>
<td>4.2</td>
<td>Employees of LRSC.</td>
<td>Percentage of employees migrated.</td>
</tr>
<tr>
<td></td>
<td><strong>Status Update:</strong> Employees were migrated to BPOS and utilized e-mail, instant messaging, and web conferencing. LRSC will be poised to migrate to Microsoft’s new e-mail platform, Office 365, in the fall of 2012.</td>
<td></td>
<td>Employees’ benefit from having increased options for communicating with colleagues in the NDUS and elsewhere.</td>
<td>This was measured by migrating 100% of our e-mail clients to BPOS.</td>
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</table>
Document Imaging – LRSC will be investigating and planning for implementation of a document imaging system that will interface with Campus Solutions. We are planning on installing ImageNow that is supported by the NDUS.

**Status Update:** LRSC participated in the project team assigned to investigate and make recommendations regarding the NDUS Document Imaging solution presented to the SBHE in response to “Maximizing Results Through Efficiencies.” Once contracts are put into place LRSC intends to work with the chosen vendor to implement a document imaging solution.

1.1 Students and staff. Developed Business Case and plans for implementation. This will benefit students and employees through improved efficiencies and effectiveness.
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11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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**MaSU**
Mayville State University does not have any formal projects planned for the 2011 – 13 timeframe to be included in this document; however, there are some smaller projects that are being planned.

*Status Update: MaSU had no formal projects underway.*
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11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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<tr>
<td>MiSU</td>
<td>Infrastructure/Security</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Extend Fiber Plant</td>
<td>1.4, 2.1, 2.3, 3.7</td>
<td>Administrators, faculty, staff, students and visitors.</td>
<td>Increased reliability, efficiency, uptime, and performance across the network; reduced costs and management, and increased mobility from convergence.</td>
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<td></td>
<td>Capital projects have expanded outside of the core campus fiber plant. To support this expansion, a pathway system will need to be created to air-blow fiber in and out of new construction areas and to replace existing fiber as needed. The proposed solution will allow for “fiber-on-demand” with significant cost savings and quick project turnaround times. There is flexibility in available bundles (2-24) and distances can reach up to 9,000 feet.</td>
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<tr>
<td></td>
<td>Data Center Relocation</td>
<td>2.1, 4.2</td>
<td>Administrators, faculty, staff, students, visitors.</td>
<td>Reduced inefficiencies and costs associated with maintaining multiple centers; enhanced security, and improved environmental controls.</td>
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<td>Improve efficiency and security by co-locating two existing data centers in one centralized Data Center with dedicated HVAC system and fully redundant power.</td>
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</table>
**Status Update:** Fiber rebuild and data center centralization were bid as a single project. Single-mode fiber will replace 18+ year-old multimode fiber plant while at the same time extending build out to support expanding capital projects targeted for north of the campus Dome. Electrical contractors have completed tunnel work to place fiber cabling. Trenching and boring operations will begin. This project is on target for completion August 15, 2012, at a bid cost of $325,000.

Final review of completed data center was done June 1, 2012. The cost of the two projects together was budgeted at $1,000,000. Total actual cost for both projects is $721,750, with $397,250 going toward data center costs. A direct impact for Minot State University with the flood of 2011 was the need to move critical servers and other data equipment from the existing location to available space in several other locations across campus. This was completed in June 2011 and all equipment has remained in those locations throughout the FY11-12 academic year. The timeframe to bring all data equipment into the new data center is June/July 2012.

**Instruction**

The current generation of learners needs collaborative and active learning. The goal through First Year Experience and beyond is to enhance learning and engagement through the integration of interactive technology. The Center for Engaged Teaching and Learning (CETL), through its mission, will provide opportunities and support for students, faculty, and staff. Student progress and performance outcomes are key components to increase student success.

Current and expandable adaptive learning technology-enabled strategies include:

- Digital audio/video capture classrooms/clinics
  - Teacher Education and Human Performance – provide
  - Faculty, students, general visitors, life-long learners, researchers, clinic visitors, learning challenged, health care providers.

Student satisfaction surveys, comprehension measurements, rate of course completion, retention and graduation rates, and student employment success statistics.
feedback and insight into various teaching and clinical modalities.

**Status Update:** Minot State University staff participated in the Lecture Capture Maximizing Results Through Efficiencies workgroup discussions and recommendation development. The Office of Instructional Technology purchased a number of “Tegrity” kits (laptop, microphone, cameras, etc.) to support mobile training of faculty interested in augmenting online/on-campus classes with asynchronous content captured from synchronous settings/activities. Campus administration and other key offices will work with faculty to develop a more extensive budget, deployment, and training plan for lecture capture.

Several “model” classrooms have been equipped with various technologies in an effort to identify best practices for improved teaching and learning for faculty and students.

In spring 2012, MiSU partnered with ECAR (Educause research arm) to gain information about student experiences with, and attitudes toward, technology and their academic experiences. This data will be used along with Educause Core Data information to understand how to use technology more effectively to benefit students. IT Planning FY2013-2015 will focus on governance to ensure the student voice is heard in decision-making matters relative to technology.

- Communication Disorders – oversee students working with actual clients in a clinic setting to assess hearing impairments and provide speech remediation.

**Status Update:** Minimal upgrades were made to the existing audio/video switching equipment serving
clinical rooms. An enterprise-level system, funded through grants, is currently in place in the Nursing Department. It is recommended that discussions begin for Communication Disorders to abandon the existing legacy A/V system and pursue a possible shared cost partnership with Nursing and the EMS Arcadia product (see below).

- Simulation
  - Department of Nursing uses a patient simulator (SimMan) for team training. Advanced care scenarios are played out in real time and captured for later review, evaluation, and lessons learned. A grant proposal has been submitted to add a SimBaby, an advanced infant patient simulator. With realistic anatomy and clinical functionality, SimBaby allows learners to practice and perfect their skills in a risk-free environment.

**Status Update:** – In April 2012, with backing from a $157,000 Bremer Foundation Grant, the MiSU Nursing Department implemented the EMS Arcadia **Total Skills Center™** solution. TSC leads the industry in management of clinical skills centers, data, and patient care. Implementation includes Web and client-based software application fully integrated with Total Digital Audio/Video. A current configuration includes three full-functional/recordable simulation rooms (adult male, adult female, baby), a single control room, and two debrief rooms for student follow, review, and remediation of techniques. Training for Nursing faculty, support staff, and IT staff was completed spring 2012.

- Clinical Research

**Status Update:** – Psychology and Addiction Studies received a grant to purchase a system of tools used to produce publication-quality EEG/ERP studies for research and clinical use.
• Collaboration/Interaction (Online and Face-to-Face)
  o Develop a framework for a new distance learning environment that will support the use of Wimba Live Classroom, a fully-featured, live virtual classroom that supports audio, video, application sharing, and content display. *(This initiative is dependent in part on the impact, if any, with Blackboard’s acquisition of Wimba and Elluminate).*

  **Status Update:** – The upgrade to Blackboard Collaborate web conferencing (formerly Elluminate Live! and Wimba Classroom) which, combined with Blackboard CE 8 Learning Management System, provides additional functionality including two-way audio, multi-point video, interactive whiteboard, application and desktop sharing, rich media, breakout rooms, and session recording has been completed. Educators and students can engage as if in a traditional classroom, with significantly improved outcomes.

• Distance Learning Platform
  o Evaluate campus Blackboard CE8 Learning Management System for online learning.
    ▪ Annual cost, course migration, and training implications with upgrade to Blackboard Learn Release 9 will need to be evaluated.
    ▪ Look at potential cost to additional Blackboard modules (i.e., transaction).

  **Status Update:** – Based on faculty and student satisfaction surveys after working in Moodle and Blackboard, the decision was made to proceed with the budgeted upgrade from Blackboard CE 8 to Blackboard Learn 9 (BB 9). Courses are currently being migrated to the new server and faculty training will begin fall 2012. All online courses will be hosted on BB 9 beginning spring 2013. A one-year NDUS-
collaboration license has been granted as opposed to three-year based on SBHE LMS Efficiency progress. Discussions initially were to stay at BB CE8 until an LMS efficiency recommendation has been made. However, CE8 is no longer supported after December 2012, so the decision was made to move courses to a supported platform and request a two-year license extension.

- Experiment with NDUS system-wide learning management system (Moodle) and other open-source platforms entering the market as an alternative to Blackboard.

**Status Update:** – Minot State University OIT/CEL staff and others are currently participating in the LMS Maximizing Results Through Efficiencies workgroup discussions and recommendation development. Deadline for final recommendation to SHBE Oversight Committee has been extended to November 2012, to provide additional time to obtain input from faculty and students.

### Institution

**Shoretel Call Management**

The final migration phase (III) to Voice over IP (VoIP)/Unified Communications will be completed fall semester 2010. All existing handsets are being replaced with basic Shoretel IP phones. Phase I involved the migration of all users to Exchange Unified Messaging with integrated voice, e-mail, calendaring. That phase was completed in December 2009. Phase II integrated Shoretel Director with Office Communications Server (OCS) for Unified Communications. The new version of OCS, referred to as Lync, will provide additional flexibility to support both IP and low-cost analog devices.

1.3, 1.4
1.5, 2.2
2.3, 2.4
3.2, 3.7

- Reduced overhead and costs associated with call management; easy management, SIP compliance to support low cost handsets, reduced annual maintenance costs.
Upgrade to Microsoft Exchange 2010 from 2007 has been completed. This platform provides more reliability and improved business continuity. Built into the upgrade is a retention policy framework to manage archiving of e-mail data. Enhancements to the Exchange-powered voicemail currently deployed across campus include speech-to-text previews of received voice messages, and flexibility for users to create customized voice mail menus and call handling rules. Additional time savers include inbox management and new integrated support for instant messaging and SMS text messaging in Outlook’s Web Application. Users have an even broader range of communications tools available: Outlook on the desktop, Outlook Web Application in a Web browser, and Exchange ActiveSync for mobile devices or smartphones including iPhones, Windows Mobile, or Blackberry.

**Status Update:** In late fall of 2011, MiSU upgraded MS Office Communications Server to Microsoft Lync Server, an enterprise real-time communications server that supports full unified communications functionality in addition to PSTN connectivity. All users have been migrated from OCS client to Lync client for IM, presence, voice and video calls, desktop sharing, file transfer and ad hoc conferences.

MiSU is working with IT staff at UND in a pilot project to federate between the two campuses locally hosted Lync servers. This collaboration is part of the State Board of Higher Education’s Unified Communications (UC) Maximizing Results Through Efficiencies project. The MiSU IT Director participates on the UC Efficiencies workgroup discussions and recommendation development.

Minot State University is currently migrating all devices on local 10.0.0 address space to the 10 space allocated for public access provided by ITD. Once that is completed, work will continue on the effort to connect MiSU’s Shoretel switch to the NDSU Avaya switch and 5-digit dialing service. Timeline for completion is June 2012.
ImageNow is the document management, workflow, and imaging suite deployed on campus and utilized extensively by Financial Aid, Business Office, Registrar, Center for Extended Learning (CEL), Admissions, Athletics, and Graduate School. Conversion of the database to SQL Server 2008 R2 began in early August 2010. This conversion provides a more robust and supportable database backend and supports *eForms* that will allow campus departments to post forms on external websites so students and other clients can fill out the form and submit the completed form directly into ImageNow workflow. This will greatly reduce security issues that may arise by using e-mail.

*Workflow Views* has been added to ensure that documents intended for a given individual land only on that individual’s desktop and that individual users work only on the specific set of documents intended for them without having to navigate through other unrelated and often sensitive documents.

The ImageNow *Document Control Suite*, as part of the upgrade, includes Version Control and Library Services, and Digital Signatures features that promote single-source collaboration, enhanced efficiency, and protected document integrity.

**Status Update:** – Minot State University IT staff participated in the *Document Imaging Maximizing Results Through Efficiencies* workgroup discussions and recommendation development. As the project progresses, MiSU will work with NDUS staff to complete the migration of all document data, forms, workflows, etc. to a centrally hosted model. It is anticipated there will be increased usage and functionality and lower costs associated with a system-wide support model.
Web Development/Collaboration

Extranet

Research open-source solution to allow non-technical users to create and edit Web content, as well as add custom features. Content management for the Web is important in a distributed model to ensure information is current and in compliance with state/federal regulations. The goal is to provide users of and visitors to the site with a dynamic and resourceful Web experience.

Status Update: Noel Levitz enrollment management strategic recommendations included Content Management System (CMS) as one of the top priorities for MiSU. Funding will need to be identified FY2013-15 (approximate cost $35,000). A Web (CMS) is used to create, manage, store, and deploy all content (text, graphics, photos, videos, and audio) on Web pages. Most importantly, it also catalogs or indexes content, selects or assembles content at runtime, and/or delivers content to specific visitors in a personalized way, such as in different languages. It is a significant add-on to the existing Web delivery mission that strives to meet the diverse needs of a broad constituency. It is also a pre-requisite to implementing a mobile outlet for marketing and requirement initiatives.

Intranet

Upgrade existing SharePoint accounts to SharePoint Server 2010. Campus administration and department personnel work easily and collaborate extensively within this environment. SharePoint Server 2010 offers even tighter integration with the Office 2010 suite of applications. It provides a familiar interface and minimal training for users to change content, add interaction, share documents, and publish collaborative Web sites.

Status Update: There are currently 24 active academic and administrative team workspaces on sharepoint2010.minotstateu.edu

Improved accountability and workflow, up-to-date information for internal and external users, quality control, enhanced search ability and visibility.
Sustainability

Provide Desktop Energy Management software for all faculty, staff, and students on campus and install energy efficient power strips to manage peripherals in an effort to reduce energy costs.

Work with IT vendors to move all recommended computer systems to EPEAT Gold that provides assurance that the systems are environmentally friendly.

Require all Requests for Proposals (RFPs) for copiers, printers, servers, and computers to include both Energy Star and recyclability requirements.

Create a “Work Anywhere” toolkit that will suggest computing equipment and audio, video, and online meeting software to enable the campus community to more easily conduct their daily activities from multiple locations, while traveling, or from home or other off-campus locations.

Achieve efficiency through a series of energy saving efforts proposed in the relocation of the campus primary datacenter, (i.e., outside air economizer, adjusting perforated tiles, etc.).

**Status Update:** Technology equipment purchased via state contract and Midwestern Higher Education Compact (MHEC) meets Energy Management and EPEAT standards. The trend nationally is to downsize large computer labs. MiSU has reduced the number of labs/lab computers by 2/60.

Significant energy savings initiatives went into the planning and
installation of the new campus data center scheduled for full operation fall 2012.

Minot State University participates in the Apple Education Recycling Program on an annual basis. In summer 2011, a total 16,000 pounds of unusable electronic equipment was e-wasted.

Server Virtualization

Central information technology offers virtual servers to departments on campus to reduce increasing volume of and support for server hardware. Virtual Servers use 90% less energy than traditional servers and reduce the amount of e-waste for disposal.

**Status Update:** – Approximately 85% of all operations, support, and application servers are virtualized.

Increased space utilization efficiency, reduced maintenance costs, expedited new server deployment, and application separation for better management.
NDUS IT PLANNING

11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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<th>GOAL. OBJECTIVE</th>
<th>WHO BENEFITS</th>
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<tr>
<td>NDSCS</td>
<td>Create an integrated technology plan and infrastructure to improve effectiveness and efficiency for students and staff.</td>
<td>2.6, 4.2, 4.3</td>
<td>The students and employees of the NDSCS.</td>
<td>College-wide Technology Plan is developed.</td>
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Status Update: *A mid-range plan was developed by the interim CIO in late 2011. Since the hiring of a permanent CIO in May 2012, a longer-term plan is in the works.*

| NDSCS | Update campus-wide networking and infrastructure in order to adequately support the learning and operational processes of the campus. This will include updates to the network core, switches, wireless access points, and replacement of a portion of in-building networking and underground infrastructure. Update process will continue through mid-2014. | Current and potential students, as well as any employees of the NDSCS. | Network Upgraded to industry standards. |

*Status Update: This project is currently underway but will continue into the next biennium.*
NDSCS and NDSU Collaboration on IT initiatives impacting the NDSCS campus. A number of sub-initiatives are part of this overall initiative and will be facilitated by NDSU’s Cloy Tobola who is contracted as acting NDSCS’ interim CIO. Sub-initiatives include:

- Query work initiated by the Query Audit subcommittee, including the development of long-term, full-time solution for ConnectND reporting needs.
- CRM work of the CRM subcommittee and Aspect, a Microsoft partner, to initiate a CRM pilot project on the NDSCS campus.
- Work of the Live@edu subcommittee through the migration of all student accounts.
- Work with NDUS personnel on the Active Directory project, including the facilitation of communications related to the change in ConnectND identifiers.
- Work with NDUS and NDSU personnel on the BPOS project.
- Continued betterment of NDSCS voice services through ongoing work with NDSU Telecommunications and Emergency Support Technologies.
- NDSCS IT infrastructure audit – work with NDSU Network Engineering and Operations staff, develop a cost estimate for an audit of NDSCS IT infrastructure, and move NDSCS’ IT department from Old Main to the Student Center.
- Facilitate with NDSCS as a pilot site, new initiatives made possible as a result of Active Directory, at both NDSCS and NDSU; including Unified Communications and Virtualization.
- Review of IT budget, job descriptions, and staffing levels to continually improve campus IT services.

**Status Update:** A variety of partnership projects between NDSCS and NDSU have been completed:

- Cloy Tobola, an NDSU employee who had been serving as interim CIO for NDSCS, was offered the full-time CIO position, which he accepted in May 2012.
- The CRM project to track industry partner communications was deployed in 2011 and is currently being tested.
- The migration of all students to Microsoft Live@edu occurred

2.6. 4.2 The students and employees of the NDSCS.

4.3 Campus community will benefit from more robust and better-utilized services.

IT partnership/sharing with NDSU is enhanced.

Educational programming continues to be more accessible through use of technology and non-traditional delivery methods.

Non-credit activity increases in the number of individuals and businesses served.

A departmental hierarchy will be developed with clear reporting relationships and areas of responsibility and expertise defined for all staff.
in 2010 for students and moved all employees to Microsoft’s BPOS in 2011. This provided each common calendar and e-mail services and this partner project was accomplished with assistance from NDSU.

- **NDSU’s Telecommunications & Emergency Support Technologies** has taken over operation of the NDSCS telephone system, and provides support through a customer support coordinator and technician, and billing through Bitek.

- **Infrastructure audit of NDSCS’ network** was completed by NDSU’s IT Division staff in 2011. This report became the basis for the network upgrade project currently in the works. Moving of the IT Department awaits funding from the N.D. Legislature.

- The migration of Active Directory is ongoing, and is currently being lead by NDSCS staff.

- **IT department reorganization continues. A business specialist was added in 2012 to better manage financial and material resources.**

- **NDSCS is currently planning to participate in the desktop virtualization pilot project being lead by UND.**
NDUS IT PLANNING

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<td>NDSU</td>
<td>1. Ensuring a stable budget for IT services, systems, and infrastructure is essential to NDSU’s success.</td>
<td>1.1, 1.3 1.5, 1.6</td>
<td>This portion of this initiative will benefit the students and employees of NDSU, related entities, including the NDUS Fargo offices and the state.</td>
<td>NDSU will measure its success with this initiative as it reviews its 2011-13 budget authorizations and allotments.</td>
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<tr>
<td></td>
<td>1a. During 2011-13, NDSU’s efforts will be focused on securing funding for upgrading the electrical and environmental controls of the IACC, which houses the IT Division. Although this project was included in the NDSU’s Master Plan and the 2011-13 Governor’s budget at $2 million, a subsequent building audit, finalized 8/12/10, estimates a total building upgrade cost of just over $4 million.</td>
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<td>1b. Additionally, while IT funding is limited and rapid changes in technology continue to drive spending, during the 2011-13 biennium NDSU will work to change base funding levels for voice, data, video, and emergency support technologies by requesting additional general fund support from the campus and by changing cost recovery mechanisms away from voice and toward data in an effort to better leverage voice-related general fund support. NDSU also plans to continue its efforts with NDSCS and UND in working with the NDUS to expand the telephone utility line to include the utilities of data, video and emergency support technologies.</td>
<td></td>
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<tr>
<td></td>
<td>1c. Continue growing infrastructure and technologies critical to providing centralized and integrated emergency support, to include the development of an emergency standard for provisioning door access and video surveillance to secure the external envelope of campus</td>
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facilities. The campus estimate for Phase I in support of this standard is $5.2 million. NDSU by proactively improving security. increased campus awareness and responsiveness.

Status Update:

1a. Phase I funding of $730,000 has been secured. State Board of Higher Education approval has been obtained. Expect construction, to include duplicated uninterruptable power supplies (UPS), to begin in September 2012. 1a. See above 1a. See above

1b. Nomenclature for voice charge has been changed to communications charge. Central IT has been communicating this change to the campus. We expect to transition from a per-phone funding model to a comprehensive per-FTE IT funding model, with planning occurring in FY13 and the change being implemented in FY14. 1b. See above 1b. See above

1c. NDSU has not received capital dollars to expand emergency support infrastructure to secure the envelope of the building. Centralized card access technologies, supported by a cost center structure, continue to grow. 1c. See above 1c. See above

2. Combined into one goal for 2011-13, Redefining the Role of Information Technology, are the three 2009-11 projects of: 2.5, 2.6 This initiative will benefit the students and employees of NDSU, related entities, and the state. NDSU will measure its success with this initiative by examining the feedback received from IT stakeholders and by developing more on-campus partnerships

- Redefining the Role of Information Technology.
- Customer Relationships.
- Developing an Understanding of Distributed IT
2a. With new mission and vision statements, as well as new guiding principles in place, the IT Division surveyed the campus asking the following questions:

- What IT items/services do you need?
- What IT items/services should/could be centralized?
- What IT items/services should/could be outsourced?
- What IT items/services should/could be decentralized?

2b. During 2011-13, NDSU’s IT Division will work with the campus focus groups to categorize its findings in a manner that continues to:

- Provide better communication to all customers.
- Attract and retain qualified staff.
- To enhance the IT experience using qualified IT staff.
- Realign the division to meet the changing IT needs of NDSU.
- Work with the NDUS to develop a university system-wide understanding of distributed IT staffing, services and infrastructure.
- Establish new methods of providing needed and innovative IT services for students via the student technology fee, the campus via IT enabled instructional and research services, and our related entities and the state via increased collaborations.

2c. Continue to leverage resources through collaboration and partnerships throughout the campus to enhance the IT experience for both NDSU’s students and employees.

**Status Update:**

2a. Campus-wide survey was released and information was presented to President’s Cabinet and IT council.

2b. Interim VPIT is in the process of completing campus departmental to work toward a clear definition of central IT services for students, faculty, researchers, and administrative staff.

2a. See above.

2b. See above.
visits regarding central IT services – results will be made available to campus deans on June 28

2c. NDSU IT continues to partner with NDUS and individual NDSCS departments to provide better IT experiences to customers.

2c. See above. 2c. See above.

3. NDSU Collaborative Information Technology (IT) Efforts within the NDUS

3a. Continue to explore opportunities for collaborative enterprise level telephony solutions through partnership with North Dakota University System institutions and State Government. Partnerships allow the ability to sustain, refresh, and enhance telecommunication equipment and systems globally, as well as move forward centrally with the next level of supported technologies. Utilizing the State network will allow transparent communications, including 5-digit dialing.

This portion of this initiative, approved by the NDUS CIO, will benefit the students and employees with enterprise-level transparency throughout the NDUS and will also provide a cost savings to participating campuses.

NDSU will measure its success with this initiative through enhanced technology availability to other campuses.

3b. Continue leveraging State and University System technology platforms to roll out Unified Communications features through integrated solutions.

This portion of this initiative will provide better service to NDSU’s students and employees.

NDSU will measure its success with this initiative through enhanced management of overall IT assets.

3c. Continue to explore communications technology management system solutions for centralized IT business operations within the Division of Information Technology.

NDSU will measure its success with this initiative through enhanced technology availability to other campuses.
3d. Continue leveraging NDUS technology expertise across multiple campuses. For example: NDSU and NDSCS Collaboration on IT initiatives impacting the NDSCS campus. A number of sub-initiatives are part of this overall initiative and will be facilitated by NDSU personnel. Sub-initiatives include:

   A. Query work initiated by the Query Audit subcommittee; including the development of long-term, full-time solution for ConnectND reporting needs on the NDSCS campus.
   B. CRM work of the CRM subcommittee and Aspect, a Microsoft partner, to initiate two NDUS CRM pilot projects on the NDSCS campus: 1) Student Retention and 2) Industry Partnerships.
   C. E-mail work related to Live@edu migration of all student accounts and Outlook/BPOS migration of employee accounts.
   D. Continued betterment of NDSCS voice services through ongoing work with NDSU Telecommunications and Emergency Support Technologies.
   E. IT infrastructure audit – work with NDSU Network Engineering and Operations staff, audit NDSCS’ voice and data infrastructure.
   F. With NDSCS as a pilot site, facilitate new initiatives, made possible as a result of Active Directory, including Unified Communications and Virtualization.

   Status Update:

   3a. NDSU implemented 5-digit dialing to LRSC and VCSU. NDSU has begun the design phase with DCB and MiSU, as well as State Government to provision 5-digit dialing between higher education and state government.

   Extended Unified Communications enterprise telephony enhanced feature functionality and messaging solutions to NDSCS.

   3b. NDSU is participating in the University System’s Unified Communications Work Group for design and interoperability

   This portion of this initiative will benefit employees throughout the NDUS as solutions; both short- and long-term are developed to lend IT expertise to each other. Current contracts with NDSCS will continue to enable NDSU’s staff to develop additional expertise and contacts, as well as the ability to see across areas that might be “silied” at a larger campus. For example, at NDSCS, all campus-wide queries are conducted out of one office, giving that individual a unique perspective on how all the ConnectND modules are queried.

   NDSU has already benefited from these collaborative efforts with NDSCS as NDSU IT Division staff has an opportunity to extend themselves in service to another campus.
functionality.

3c. The Division of IT is in the final stages of consolidating billing. BITEK, the existing electronic billing system, will consolidate all IT business functions within our centralized business unit beginning FY2013.

3d.

A. Completed an engagement with query work and training for NDSCS that greatly improved productivity.

B. With the assistance of NDUS personnel guiding the efforts, a CRM pilot project for Industry partners was undertaken. This project has been launched and is currently in use and being evaluated.

C. Completed with the assistance of NDSU personnel guiding the efforts, NDSCS migrated all e-mail accounts.

D. Continues to expand Unified Communications enterprise telephony enhanced feature functionality and messaging solutions to NDSCS.

E. Completed an infrastructure audit for NDSCS in 2011.

F. With NDSCS acting as a pilot site, facilitation of new initiatives, made possible as a result of Active Directory, Unified Communications and Virtualization has been postponed.
## NDUS IT PLANNING

### 11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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<tr>
<td>UND</td>
<td><strong>Blackboard</strong> – Upgrade the Blackboard system to version 9.1 and content system. Integrate Blackboard with the campus SIS (PeopleSoft) using Snapshot for course creation and user population. Upgrade authentication for Blackboard using Active Directory.</td>
<td>3.1, 3.2, 3.4</td>
<td>Students, faculty, and staff benefit from a more robust Blackboard version with faster turnaround for student enrollment in courses/sites in the LMS. Serves students, faculty, staff, community, K-12 schools, organizations and alumni.</td>
<td>Measurement of usage is monitored with semester-based user surveys as well as with system usage monitoring tools, focus groups, seminars and forums to ask questions and share information.</td>
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**Status Update:** The Blackboard learning management system (LMS) was upgraded to version 9.1. NDUS Active Directory (AD) authentication was also enabled at this time. Content System enabled December 2010, including virtual file storage and ePortfolios. Mobile Learn and Mobile Central were implemented June 2011, for iPad, iPod, Android and Blackberry. To ensure that Blackboard is meeting the needs of UND’s academic community, weekly meetings are held between the CIO’s Enterprise Services unit and the Center for Instructional Learning & Technology.

In December 2011, Blackboard was upgraded to version 9.1 SP6, providing improvements in Grading tools, rubrics, assessments, SCORM integration and building blocks. A building block, Section Merge Tool (SMT), was purchased, configured, and implemented. The SMT allowed administrators to merge sections of courses into single...
sites for efficient management of large courses and collaboration among distance and on campus students in hybrid courses. Operating System and hardware upgrades were completed during FY12 to improve stability, performance, and back-up processes including redundant database and additional virtual web apps.

**Smart & Technology Enhanced Classrooms** – Install, upgrade and maintain smart, technology enhanced classrooms on campus following guidelines in the final report. Develop a tool (database) to track classroom equipment for maintenance and replacement.

**Status Update:** New classrooms in buildings include Gamble, Hyslop, Merrifield, O’Kelly and Starcher. Upgrades include Abbott, Armory, Gamble, Harrington, Montgomery, Leonard, Odegard, O’Kelly, Upson I, Upson II and Witmer. The maintenance for all rooms, new and existing, is an on-going effort. The Education building remodel and new addition was open for classes starting August 2011, and continued through the semester with classroom completion by January 2012.

Building of a new SCALE-UP (Student Centered Active Learning Environment for Undergraduate Programs) Classroom was approved for completion Fall 2012. The classroom (O’Kelly 6) was completed in time for classes starting August 20, 2012. It has seating for 180 students. Seven undergraduate Biology courses that include 1,300 students are using the classroom Fall 2012.

Inventory database system is being developed for use with barcode readers to track classroom equipment and department inventory.
**Lecture Capture** – Identify a lecture capture solution for campus that can be integrated with Blackboard and general purpose classrooms, and utilized by all faculty, staff and students.

**Status Update:** The Tegrity lecture capture application was first implemented at UND as a pilot in Spring 2010. It was expanded Fall 2010 and provided to all faculty and students across campus. The usage has grown over the past two years. Lecture capture is available in all campus Smart 2 level classrooms. July 2012, UND integrated its contract into the NDUS contract as a part of the SBHE’s Maximizing Results Through Efficiencies.

**Communications Systems/Remote Support** – Identify and implement a customer experience management/ticketing tool to provide common ticketing, tracking, reporting for coordinated support across campus.

**Status Update:** Adopt Remedy as the central ticketing system. Bomgar is currently the campus-wide solution for remote support. Serves students, faculty, staff, NDUS and community with Remedy, LivePerson, phone, e-mail and Bomgar to provide ticketing, chat, in-person, and remote desktop support.

Both tools include reporting tools. Reports can be run to show frequency of use, number of users supported, and different issues that are resolved. All systems include reporting tools. Reports are generated showing frequency of use, number of users supported, times of day, resolution time, customer satisfaction, different issues resolved, and categories of issues.
**Status Update:** Campus IT personnel now utilize the NDUS Help Desk (Ellucian) ticket tracking application. Bomgar remote support is available to all IT personnel. Added weekend phone support to existing chat and e-mail services November 2011: Saturday 9-4 and Sunday 3-10. UND Tech Support Service Desk opened August 2011, 3rd floor Memorial Union: Apple warranty, computer repair, software, e-mail and virus support. TheLink: is UND’s one-stop shop for questions, including registration, student accounts, financial aid and more.

**Training** – Identify, prioritize, develop and offer training for students, faculty, and staff. Training includes: face-to-face, online (provided by vendor and UND), open forums and seminars, and on-site vendors.

**Status Update:** UND provides a campus license for Atomic Learning including on-demand tutorials for hundreds of software applications and mobile devices. New tutorials are posted daily. A limited number of licenses are available, upon request, to access Lynda.com for tutorials and demos. Workshops, seminars, forums, webinars and consulting services are available through the Center for Instructional & Learning Technologies and University within a University (U2). Information can be found at http://training.und.edu.

**Adobe Connect/Presenter** – Upgrade the physical hardware for Adobe Connect (AC). Upgrade application to current version. Move content storage to Enterprise SANs. Route authentication through AD. Start the process of merging other AC instances (Med, CILT, and Aero) content to main server.

| 2.7, 3.1 | Serves students, faculty, staff, NDUS, and community. |
| 3.2 | Surveys, forums, usage reports (software-based and webpage hits). |
| 2.4, 2.6 | UND students, faculty and staff. |
| 3.1, 3.2 | System analytics and number of requests and users. |
| 3.4 | |
**Status Update:**

1. *Servers were upgraded with new hardware.*
2. *Upgraded application.*
3. *Moved content to SAN storage.*
4. *Added AD authentication.*
5. *Merged Med, CILT and DCE into one system (Aero opted out).*

Adobe Connect continues to be used as a virtual classroom for many online programs and for streaming special events. Adobe Presenter is used by students, faculty and staff to record lectures, presentations and tutorials.

**ImageNow** – Acquire and setup new hardware and ImageNow application to be used by campus community, including existing ImageNow and ApplicationXtender users.

2.6 UND students, faculty and staff. Info available in a timely manner, minimum system downtime, reduction of hard copy document storage.

**Status Update:** Added more virtual servers to the existing infrastructure to support additional agents such as eForms, Business Insight, and Mail Agent. Deployed accounts payable application across campus. Created and implemented document imaging policy and procedures.

**Uniform Computer Purchasing** – Provide a simple, single vendor, computer-ordering solution for campus.

1.5 University Reduction in support costs, amount of warranty work, and money reimbursement.
**Status Update:** Special Dell Discounts (UND and personal), on-campus warranty and repair for Dell and Mac computers.

**UniPrint** – Expand Uniprint to new departments around campus. Incorporate additional funding sources into CBORD or UniPrint.

**Status Update:** An RFP was awarded to one vendor to maintain all UniPrint printers for the campus. With the contract, printers were standardized with new ones provided following a five-year printer replacement cycle. Kiosks with touch screen displays and swipe card readers were designed and placed in high traffic areas. Students are able to send print jobs to the nearest UniPrint station or Kiosk wirelessly and pick it up within two hours. A total of 12 kiosks have been placed in buildings including Education, Starcher, Wellness Center, Memorial Union, Hyslop, and Gamble. UniPrint software updates have enabled increased security for access to student print files.

**Live@edu** – Migrate all students from U-mail to Live@edu.

**Status Update:** UND students were migrated to Microsoft’s Live@Edu offering in December 2011. This also provides our students with access to Microsoft’s SkyDrive – a cloud-based file storage and sharing application.

**Safe-Connect (NAC)** – Using approved policy and established guidelines, enable networks across campus to use Safe-Connect for

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Student surveys, number of pages printed, where pages are printed, usage by area.

Money saved by migrating students off enterprise server, standardized support, successful account creation & management.

Full compliance with U.S. Office of Civil
network access control and authentication.

**Status Update:** Safe*Connect is being deployed across campus for both wired & wireless connections. It is being used in conjunction with Active Directory. It is proactive in that it ensures certain information security protections are enabled. Also, it can be used to identify those users who may have violated the acceptable use policy.

**UND SAN Selection and Implementation** – Select a SAN solution to meet UND needs now and for the foreseeable future. Expansion upgrades may be needed.

**Status Update:** UND purchased a high-end IBM XIV SAN in 2011. This system provides storage to mission-critical, high-end applications. Also, in 2012, a 140TB storage system was purchased in order to provide centralized disk storage for all faculty, staff and students. Both systems are redundant and backed up.

**Microsoft Business Productivity Online Suite (BPOS)** – Utilize Microsoft’s BPOS in accordance with Unified Communications recommendation including Online Exchange, Online SharePoint, and Online OCS.

Rights, abilities to identify responsible parties in security related incidents.

Number of associated cost-savings, duplicate systems eliminated, response time in accommodating requests.

Ability of all faculty/staff to be on a single e-mail/calendar system, ability to interact with other NDUS staff and institutions, evaluate performance and cost-savings, successful creation and management of accounts.
**Status Update:** UND faculty and staff were migrated to the NDUS’ MS BPOS instance during the fall semester of 2011. Note: Expanded use of single campus login fall 2011 including Blackboard, Safe*Connect, CampusConnection, HRMS, various computer labs, Citrix, Adobe Connect, classrooms, and various employee workstations.

**User File Storage** – Migrate departments/entities to core technology data storage including policy development.

1.5, 2.4 University
3.1, 3.2
3.4, 3.5
4.2

**Status Update:** In early 2012, a large storage system (140TB) was purchased and made available to UND faculty, staff and students. Individuals have a private folder as well as shared storage that can be used during collaborative efforts. 1 GB for students (in addition to online storage) and up to 10 GB for faculty/staff.

Continuing to add departments, dissolving the master public and private folders into individual department. Netstorage is online now for web access to shared and private storage.

**OmniUpdate (CMS)** – Configure CMS to work with servers and systems on campus. Implement new design and Web site structure. Determine user access to CMS and train as needed.

1.5, 2.4 All Web site visitors—students, faculty, staff, university, and community
2.5, 2.6 will benefit from an
2.7, 3.1 updated and focused Web
3.2, 3.4 site. Faculty and staff can
3.5, 3.7 easily maintain their own
4.2, 4.3 Web site content.
4.4, 4.7
4.8

**Status Update:** Redesigned website for external audiences, provided a content management system (OmniUpdate) and server space for campus entities. OmniUpdate (OU) has been deployed on-campus and the migration of existing web sites continued. This system has

Traffic analytics, user surveys, faculty/staff forums.
simplified the updating of content and reduced duplicative efforts.

**Web/LAMP Servers** – Configure servers for OmniUpdate integration and other campus Web development needs.

**Status Update:** Web/LAMP servers are in the process of being integrated with OmniUpdate and/or upgraded in order to meet the current and future needs of UND personnel.

**Software Licensing Servers/Common Applications** – Consolidation planning with UND IT managers for computer labs. AD integration and virtualization. Licensing server shared for lab and virtualization: this also will identify the common applications to be purchased for all users of UND.

**Status Update:** Office 2010 was added January 2011. Common software was identified through the Core Technology process and funded, including: Ghost, Deepfreeze, Mac Campus Agreement, Math Placement, Mathematica, RefWorks, Teamspot and Qualtrics.

A LabStats application was implemented to provide webpage and mobile access to computer lab locations and is available for students, faculty and staff.

**Hobsons** – Develop a consistent approach to the two Hobson’s instances on campus. This includes integration into AD and IdM systems as well as workflow standards.

**Status Update:** At the present time, Hobson’s does not integrate with Active Directory or IdM. We shall continue to explore alternatives as
technologies advance.

**Collaborative Workspaces** – Assemble workstations with software and hardware that will allow students to collaborate wirelessly with their laptops for projects, using a large display, accessible in common areas on the UND campus.

2.4, 2.5  2.6, 3.1  3.2, 3.4  3.5, 3.7

Serves students, faculty, staff, and community.

Analytic reports generated by monitoring the computer usage, Tidebreak software usage and site coordinators.

**Status Update:** Locations: Union, Wellness Center, University Place, Honors, Chester Fritz Library, Upson II, Harrington, Robertson-Sayre, Web Café Wilkerson, Starcher Hall.
## NDUS IT PLANNING

### 11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

<table>
<thead>
<tr>
<th>NAME</th>
<th>INITIATIVE/ PROJECT DESCRIPTION</th>
<th>GOAL. OBJECTIVE</th>
<th>WHO BENEFITS</th>
<th>HOW MEASURED</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCSU</td>
<td>Active Directory (AD). Develop VCSU code and processes to better utilize NDUS Active Directory. Establish a trust between the VCSU AD and NDUS AD.</td>
<td>1.2, 4.3 4.4</td>
<td>All VCSU users and any NDUS guests on the VCSU campus.</td>
<td>VCSU AD and NDUS AD can share additions or changes to user credentials in real time.</td>
</tr>
<tr>
<td></td>
<td><strong>Status Update:</strong> VCSU has directed their Radius server to look at both the VCSU and NDUS ADs. This allows network connectivity on the VCSU campus using either credential. NDUS has committed to implementing IdM and VCSU will wait for this to complete the project.</td>
<td></td>
<td>NDUS guests can now use their NDUS credentials to connect to the VCSU network. VCSU users can continue to use their VCSU credentials for full access to networked servers.</td>
<td>This works now for network connectivity. Other services will require the implementation of IdM.</td>
</tr>
<tr>
<td></td>
<td>Recording Instruction. Evaluate the effectiveness of Panopto as both a classroom recording technology and as a multimedia production system for online classes. Consider alternatives, if warranted.</td>
<td>2.4, 3.1</td>
<td>All VCSU students.</td>
<td>A decision will be made to either continue use or we will secure and implement an alternative by July 2012.</td>
</tr>
<tr>
<td></td>
<td><strong>Status Update:</strong> Discussions with faculty revealed a need to change classroom-recording solutions. VCSU has committed to switching to the NDUS selected Tegrity Solution.</td>
<td></td>
<td>The new solution is in a test phase and has not yet been distributed to all faculty.</td>
<td>The solution will be implemented in July. Training will occur in August.</td>
</tr>
</tbody>
</table>
Physical Security and User Identification. Increase the number of surveillance cameras, implement alternative to keys for door access, and implement a new ID and access card management system with photo population to other systems such as Blackboard, Active Directory, and ConnectND. This is a modification of the “Viking Card” project that was investigated, but not implemented, in 2009.

**Status Update:** VCSU is currently engaged in a project rollout for Blackboard Transact. The project scope covers all of the items described above. The go live date is July 12th. Users will get ID cards thereafter. Use of the cards will be prevalent in the second half of August when faculty and students begin to use their cards.

Cloud Computing: Virtual Desktop Infrastructure. Replace existing desktop computers with a combination of Citrix XenDesktop and thin-client devices.

**Status Update:** See status below.

Cloud Computing: Software on Demand. Provide convenient access to software typically loaded on an end user computer via the internet. This is accomplished using Citrix XenApp, VCSU private cloud computing infrastructure, and possibly subscriptions to software provided via vendor cloud infrastructure.

**Status Update:** Citrix XenApp and XenDesktop are in place and functioning. The servers and the Citrix environment are being tuned this summer to improve performance for use by large, on-campus classes.

**Reference Project Plan for complete list of benefits:** Basically the project will provide improved security and convenience for users.

**Forthcoming a few months after project go live.**
NDUS IT PLANNING

11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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No initiatives/projects submitted for this planning period.

WSC  
*Status Update: Williston State College did not have significant sized initiatives/projects that were part of this planning period.*
## NDUS IT PLANNING

11-13 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

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<td>NDUS SITS</td>
<td>Incent institutions to work within the System Information Technology Strategic Architecture in the acquisition and implementation of hardware/software systems and services, reducing the cost of operations across the NDUS.</td>
<td>1.5, 4.4</td>
<td>All students, faculty, staff, and citizens of North Dakota.</td>
<td>Success to be measured by the number of systems and services deployed adhering to the SITS Strategic Architecture. One of many examples is the cost savings on products covered in the Microsoft Campus Agreement paid for through SITS.</td>
</tr>
</tbody>
</table>

**Status Update:** This is an ongoing process that includes required approval by the NDUS CIO for projects that are of specific interest and within the NDUS Strategic Architecture as defined in NDUS Procedure 1901.3. Additionally, NDUS institutions gain from contracts for purchased products and systems by SITS, or by products/services hosted by SITS. These contracts include the ability for any or all NDUS institutions to receive or purchase off of the contracts.

Continue with implementation of Integrated Services.

- Complete implementation of Active Directory allowing for the use of a single identifier for access to System services for all faculty, staff and students.
- Complete implementation of Microsoft BPOS or on-site Exchange services at all institutions.
- Establish direction for Unified Communications and Telephony and begin implementation of the Unified Communications direction. Planning will be in conjunction with the State ITD.

1.3 | All students, faculty, staff and constituents of the North Dakota University System. | Success to be measured by the number of institutions that implement or federate with the NDUS Integrated Services. |
Status Update:

- The NDUS Active Directory has been transitioned to operational status. NDUS System Office, NDUS SITS, Bismarck State College, and Dickinson State University have been using the NDUS AD successfully. UND’s Information Technology Systems and Services (ITSS) are currently working with individual campuses on Statements of Work to facilitate transition to the NDUS AD. Students and staff can logon to networked services using the same credential across the NDUS. (Transitions are expected to continue into 2013)

- All faculty and staff have been migrated to either Microsoft’s BPOS (cloud service) or on-site Exchange service at all institutions. This provides a common e-mail and calendar across the System. While students had been migrated to Microsoft’s Live@edu earlier, within the next year the NDUS plans to have students, faculty and staff all migrated to Microsoft’s new Office 365 cloud service or on-site Exchange where necessary.

- Unified communications is one of the State Board of Higher Education’s (SBHE) initiatives for maximizing results through efficiencies. A recommendation will be presented to the SBHE Oversight Committee at their June 29th meeting for action.

The information technology common directory and integrated services will drive efficiency and effectiveness across the System. The rapid adoption of the integrated services will lay the groundwork for implementation of other improved services to students, faculty and staff while containing the cost of operation.

Status Update: As mentioned above, all faculty and staff have been migrated to either Microsoft’s BPOS (cloud service) or on-site Exchange service at all institutions. This provides a common e-mail and calendar across the System. While students had been migrated to Microsoft’s Live@edu earlier, within the next year the NDUS plans to
have students, faculty and staff all migrated to Microsoft’s new Office 365 cloud service or on-site Exchange where necessary.

Seek funding in the legislative session for a shared IT Facility that includes a data center and staff space for NDUS and UND IT operations in Grand Forks.

**Status Update:** The 62nd Legislative Assembly approved funding for a shared IT Facility in Grand Forks. A request was made for $17.5M based on preliminary architectural/engineering estimates. Funding approved was an appropriation of $12.5M with an additional approval of up to $5M to be found through efficiencies. Upon examination of possible efficiencies, the SBHE approved $3M for a total building budget of $15.5M.

It was determined and approved that to meet the needs for IT, the data center would be separate from a new office building and the data center would be located within an existing warehouse space renovated to meet the data center needs. Both buildings will be located on UND property with ground breaking of the new office building June 2012 and construction to take 14 months. Data center will follow a similar timeframe.

Once completed, the data center will be a tier three facility consisting of 5,000sf of machine room floor space and the new office building will be a two story (plus roof mechanical room for air handler equipment) and approximately 39,600sf that will house all NDUS SITS staff in Grand Forks along with most UND Information Technology Systems and Services staff. Office occupancy planned for September 2013.

All students, faculty, staff, and constituents of the North Dakota University System. Also all citizens of the state using library services or any services hosted through the North Dakota University System.

Legislative approval of the facility and funds at the level necessary to construct the facility.

All of the NDUS will benefit as the data center houses “System or Enterprise” applications and systems that are used by all eleven NDUS institutions, the System Office, and many external entities.
Provide for continued operation costs for the Northern Tier Network in support of the research missions of UND and NDSU.

1.6 UND and NDSU. In addition, all NDUS institutions benefit from Northern Tier, as it represents the NDUS link to Internet2 and the nation’s research and education network.

Success will be measured by network availability (uptime) and by meeting targeted operational goals, including the pending ND/SD interconnect, successful deployment of a multi-state data link stretching from Seattle to Chicago, and the deployment of Internet2’s UCAN network.

Status Update: Revenue for the Northern Tier Network was comprised 70% from appropriation and 21% from reimbursements. Expenditures in FY12 were in line with budget projections. No money was used to fund staff at ITD, UND or NDSU during this time period. Expenditures occurred in five main categories; equipment, fiber, Network Operations Center, Internet2 and other operating costs consisting mostly of travel for meetings.

Northern Tier Network-North Dakota is fiscally healthy. Existing operating monies are sufficient to carry it through at least 2013-15 without any inflationary or other increase.

Implement an Identity Management System (IdM) to help streamline the process of provisioning services, managing individual’s identities and managing access to services and resources.

Status Update: Moved to using the PeopleSoft Extract 188/27 and implemented rapid provisioning. Migrated the test environment from a Sun Solaris environment to a Windows Intel environment. Upgraded the database and performed an assessment of the IdM system with

1.1, 1.2 All NDUS faculty, staff
1.3 students, especially new students.

Implementation and success of the NDUS IdM Project.
AmerIndia consultants. For 2012-13 the intention is to migrate the production environment to new hardware, upgrade Oracle’s Waveset from version 8.1 to 8.1.1, upgrade the gateway services, and populate Office 365 using the Identity Management System.

Standardize wireless access across the university system, to allow authenticated access to institution networks by all NDUS faculty, staff, and students.

**Status Update:** Pilot implementations will have been completed at North Dakota State College of Science, Williston State College and Dickinson State University by June 2012. After the testing is completed a wireless network access called “NDUS-SystemWide” will be implemented across the NDUS. Staff and students will be able to use their NDUS AD credentials on every NDUS campus and will be able to reach the services needed regardless of campus. (Anticipated implementation at all NDUS campuses early 2013)

Work with the State ITD to improve data communications services across the state backbone for the benefit of all users. Leverage the new backbone services to provide increased bandwidth to institutions at lowest possible cost.

**Status Update:** Continue to work with ITD in ensuring the state backbone network (STAGEnet) has sufficient bandwidth so as to not restrict institution’s needs for access to applications, Internet, Internet2 and other research networks.

Enhance the NDUS data analysis capability while transitioning the non-NDUS related activities associated with FINDET to a new entity under the SLDS Committee.

1.1, 1.2 All NDUS faculty, staff, and students. Institutional adoption of NDUS recommendation.

2.5 All NDUS and state network users, as well as budget. Increased bandwidth and cost per megabit.

4.2 Primarily the System Office and external entities. Institutions, indirectly by not having to provide the information. Faster response to System Office and external entity requests; campuses have fewer requests for information by the System Office
**Status Update:** A Data Validation Team was created to ensure data was consistent and repeatable. We continue to look at best tools for reporting needs. The non-NDUS related activities that had been managed by the NDUS have been moved into the SLDS.

Identify and prepare for implementing a consistent system for use by TrainND that will be linked to ConnectND for improved data capture, reporting and analysis of workforce training activity.

**Status Update:** The NDUS negotiated a contract with Augusoft that allows NDUS campuses to purchase Lumens at discounted pricing. Lumens is a web-hosted non-credit enrollment management system 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, while complementing PeopleSoft. 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)

Move to a consistent document imaging system for all institutions that can be integrated with ConnectND and other systems with adequate security and personal information safeguards.

Both, businesses and organizations needing training by using consistent registration and documented past data. Internally, better collection of training data. Streamlined reporting of training data. Reduced data entry and ability to maintain training data captured previously.

Reduced cost of licenses, storage and servers. Efficiency in having this service centralized either within the NDUS SITS or
Status Update: Document Imaging is a State Board of Higher Education initiative for maximizing results through efficiencies. A recommendation has been presented to the SBHE Oversight Committee for action, and an ultimate action by the full State Board of Higher Education at a subsequent meeting.

Investigate feasibility to have either a single or shared hosted service by NDSU/UND for the NDUS. Possible services may include:

- Identity Management
- Blackboard LMS
- ImageNow Document Imaging
- Application Virtualization
- PCI Compliance
- CBORD Security
- Unified Communications

Status Update: Several items above are included as IT initiatives within the State Board of Higher Education’s “Maximizing Results Through Efficiencies” initiative dated January 5, 2012. With the retirement of Chancellor Goetz and the hiring of Chancellor Hamid A. Shirvani, most of the identified initiatives above have been placed on hold for the review by Chancellor Shirvani. ImageNow document imaging was one of the projects that had been approved by the Board and is in the process of moving forward with an ImageNow implementation hosted at the NDUS data center.

ARLT Prepare for future transition to Internet Protocol Version 6 (IPv6), including working with ITD to implement on STAGEnet. 1.1, 1.3 All NDUS and state network users

Successful implementation of IPv6 on the STAGEnet backbone, number of NDUS institutions

2.5, 4.3 All NDUS institutions who take advantage of these hosted services

Measured by the number of institutions that take advantage of the hosted services. This will increase efficiencies and effectiveness through this consolidated process.
**Status Update:** 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 IPv4 protocol. The State’s Information Technology Department (ITD) plans to support IPv6 on the State’s data network (STAGEnet) this summer. IPv6 will be available to the NDUS institutions when they are ready to use it. (Anticipated implementation of IPv6 may continue for several years)

**ITD IPv6 Training** – ITD is allowing the NDUS to attend IPv6 training sessions they are offering in June. The training is available in two sessions of 3 days each and held in Bismarck.

**Cisco IPv6 training** – Cisco will be providing a 3-4 hour training class via IVN on May 30th.

Continue to move toward virtualizing NDUS systems, consolidating or reducing hardware costs while optimizing staff workloads.  

**Status Update:** Most NDUS systems were virtualized prior to July 1st, 2011; however, previously virtualized servers were replaced with new virtual servers for ancillary systems and are in the process of replacing one physical server with a virtualized server (Ad Astra database). One additional system for SITS is not virtualized as the operating system isn’t supported by the virtualization software being used.
Support staff and faculty training content and tracking using the System supported learning management system in conjunction with ConnectND HRMS. For example, it was used for fraud prevention training as a test in the summer of 2010 and these efforts will be expanded in conjunction with the Human Resources Council. In the 2011-13 biennium it should be the primary method for delivery of most such training to faculty and staff.

2.7 All NDUS employees will benefit from this initiative because all the various training requirements will be housed on a single platform, accessible on any campus, from WSC to NDSCS.

Those responsible from ensuring the delivery of the requirements and documenting the completion will benefit as well, because all enrollment and completion information will be archived within the LMS.

Status Update: The fraud and code of training program within the NDUS LMS has been enhanced and solidified since it was first offered in 2010. All NDUS faculty and staff are able to access this training environment with their NDUS account credentials. Completion of the training is documented and reporting is also readily provided by the system.

Since this initial rollout, NDUS help desk training curriculum has been added to the System LMS. And more recently, the NDUS Data Privacy training has been relocated to the System LMS.

ODIN will be expanding the use of Web based and video based training using WIMBA and other tools to reduce travel costs, increase the training available and overcome timing and distance issues. Using lecture capture software this training can be available on demand to 2.7, 3.3 Primary audience is NDUS and other statewide library staff. A limited number of video training sessions will

2.7, 3.3 Specific training programs will be identified via the LMS and enrollments/completion of requirements will be provided.

Number of training programs identified and number of staff trained.
Status Update: Thirty-seven documents and recorded sessions were posted to the training website. These included 9 “Did you know” video segments, 3 online video training sessions, and 37 documents.

Thirty-five phone and online training (single library) sessions were held covering topics including circulation, tables, services, inventory, cataloging, serials, acquisitions, library loan, and Ufind.

Additionally, twenty-one library visits were made and ODIN put together a one-day conference consisting of 18 session presentations.

Provide on-line tutorial/writing services in support of on-line and in-class courses to help improve student performance, persistence and retention.

Status Update: TutorND is a free service available to NDUS students as part of an initiative with the North Dakota State Library. TutorND offers live, one-on-one tutoring sessions and access to vast array of training resources. Subjects range from English to math, science to social studies, and more. Live tutors are available to assist students Sunday through Thursday, from 6-10pm. The online tutors will help students with homework, studying, exam preparation, projects, essays, and standardized tests. Appointments are not necessary.

TutorND is available to University System students though most campus libraries or it can be reached via the ODIN website, www.odin.nodak.edu.

3.1, 3.5 Residential as well as distance students will benefit from having access to tutorial services. These services will support and enhance existing services.

Student outcomes from supported courses will be compared with outcomes from prior terms to determine effectiveness.
Expand on-line capabilities to deliver courses and programs to rural communities and adult place-bound learners. Working with the Vice Chancellor for Academic and Student Affairs candidate programs will be identified and support provided for delivery of collaborative programs offered by two or more institutions. This will lower cost of development and support of the candidate programs.

3.2 Shared development of programs across institutions will benefit students who will have a more diverse faculty base and resources for their program. Institutions will benefit by expanding their program offerings and from reduced costs through collaborative development and delivery.

Status Update: Advanced Learning Technologies (ALT) is working with the Dakota Nursing Program to establish and rollout the delivery of this collaborative program shared by BSC, DCB, LRSC, and WSC.

Using the System provided LMS called Moodle, students will be able to enroll in the DNP at their local institution and maintain their institutional identity, yet they will concurrently become part of the Dakota Nursing Program community within the system-provided LMS.

Faculty will be able to develop content and teach to students across the four institutions. The communication tools of web conferencing and instant messaging will also be embedded in the technology capabilities.

Overall, the Dakota Nursing will have its own identity and branded environment within the NDUS LMS platform.

Support development of collaborative general education on-line courses. These courses developed once by faculty representing multiple institutions could be taught by any institution and accepted by any institution, lowering the cost of development and support of quality courses.

3.2, 4.3 Students taking online courses will benefit from having access to courses that embody the pedagogical experience of multiple faculty members. Institutions will benefit by

Success of the initiative will be measured in the number of programs either developed or transformed through the collaborative process.
**Status Update: The SBHE’s Maximizing Results through Efficiencies initiative is positioning the NDUS with a single, consistent Learning Management System for use in the North Dakota University System. Once developed, this LMS solution will provide the basis for the development of collaborative course material.**

Unified Discovery Project - Work with libraries to acquire a shared purchase pricing advantage for federated search software for ODIN libraries. ODIN is also investigating open source federated search software. (Federated searching will make possible searching library catalogs and licensed databases in a single search.)

**Status Update: Unified Discovery Tool (Primo) – This is an enhanced library searching function for students, faculty and other users of the library system. It provides significant improvement in library services for all NDUS libraries and their users. This project is underway and will be completed in 2012. (Anticipated Completion December 2012)**

**SFX Link Resolver Implementation – This project is another that will have an anticipated completion later in 2012; however, it is underway at this time and ties into the Primo initiative above. This will add improved access to licensed articles supporting research to all NDUS and other ODIN libraries for all users of library resources. (Anticipated completion December 2012)**

Upgrade ODIN’s Authgate user authentication system. Using Ezproxy or some similar software to replace the scripting process for 2.2, 2.4 All library users who use

| All library users will benefit. Searching multiple data sources at one time will save the user time and will bring to their attention more material. Database search counts will be monitored. A significant increase in transactions can be expected. | 3.3, 4.5 | Number of additional databases to which |
authenticating library users to licensed database supplies.

**Status Update:** Online Dakota Information Network (ODIN) Library EZProxy Services – A pilot project had been completed earlier and this initiative builds on it for the “production” environment. It will provide automated access and linking to all NDUS and other ODIN libraries benefiting students, faculty and staff using library services. (Anticipated completion August 2012)

Provide for mobile device access by student and faculty to NDUS services.

- Electronic Notification for Library Users – Alert library users regarding the status of library materials reducing the amount of paper mail sent by libraries.
- Mobile access to ODIN Library information.

**Status Update:** ODIN completed the implementation of a mobile library application in June 2012 making ODIN library services available most anytime.

Integrate Moodle LMS with ConnectND to provide near real-time data flow between the two systems.

**Status Update:**

- Users of the Moodle LMS will benefit, because the integration process will streamline the transfer of enrollment information between ConnectND and Moodle. So when a student adds a Moodle course, his/ her enrollment will be updated automatically in Moodle, allowing the student to begin studies without
- We will be able to demonstrably measure a significant reduction in support calls, because enrollment changes are currently being handled manually, on a case-by-case basis.
Status Update: Uploading of files into the Test environment of Moodle is underway; however, near real-time has not moved forward at this time.

Upgrade video scheduling software so that the class scheduling process can be streamlined. Also, integrate video scheduling software with Outlook/BPOS to streamline the process for scheduling meetings.

Status Update: Reviewed and configured TC Reliance (Video scheduling software). What specifically occurred: We moved our class scheduling process from a homegrown class scheduling system to our TC Reliance scheduling software. This major move involved intense training and support, as the IVN coordinators needed to completely adjust their business processes associated with IVN class scheduling. Compounding the project’s issues was the fact that our IVN coordinators schedule only three times per year (once per semester), so extended time was required for the repetition of the new processes to take hold. In addition to the transition of the class scheduling process, we also added a module to the Microsoft, Business Productivity Online Services (BPOS), Exchange environment that will provide for IVN scheduling via Microsoft’s Outlook calendar. We have not moved too fast on implementing this feature because the BPOS Exchange environment limits some functionality of this server. (Completion November 2011)

4.7 The completion of this initiative will benefit IVN users and IVN campus coordinators.

This process will also benefit ALT staff, because it will reduce the requirement to manually transfer data between different applications.

The existing scheduling application will be turned off, once users are moved over to the new process.

In addition, the improved automation will mean a reduction in ALT scheduling errors.
Consolidate the several SITS help and customer services so there is a single point of contact for a system-wide service desk and knowledge base accessible by all NDUS faculty, staff, and students.

Successful consolidation of SITS help and customer services to a single point of contact for client-related and supported technology issues, along with metrics for average speed to answer, help desk incident management tool availability, and customer survey to measure customer satisfaction.

**Status Update:** The NDUS entered into a hosted Help Desk service solution from SunGard HE that now makes these services available to all NDUS students, faculty and staff 24x7/365. Initially implemented for ConnectND help desk support, it has been expanded to include other NDUS provided services.

Track progress of Internet2 collaborative efforts in research and learning, led by NDSU and UND, in support of the Internet2 Sponsored Education Group Participants (SEGP) utilizing R&E network resources. Examples include national/international collaborative learning projects, Virtual Classroom initiatives, and other theme-based projects as available.

Number of event participants, along with documenting continued and expanded use of regional and international networks to support and access collaborative research and education activities.
Status Update:

Work started and continues with ND EPSCOR, under a 2-year NSF award, and four ND Tribal Colleges to improve network connectivity and provide access to the ND Sponsored Educational Group Participants (SEGP). (Although this grant involved four of the five Tribal Colleges, all five Tribal Colleges continue to participate in discussions regarding the SEGP process).

Will help improve tribal college’s networking; serve faculty, staff, students and the surrounding community; elevate opportunities for economic, intellectual and workforce development opportunities.

Nov 2011, invitation accepted to become Internet2 SEGP members under NDSU/UND’s Internet2 membership; Jan 2012, met with Tribal College’s IT leadership to review next steps. Upon completion of network upgrade, the process to add ND’s tribal colleges to the state SEGP membership will be implemented.

Highlight resources available via newly completed Northern Tier Network.

NDUS students, faculty, researchers, Tribal colleges, K-12 schools, high school science and social studies educators. Number of workshops and conference participants and resulting use of targeted content and global resources.

Status Update: Facilitated a National Parks Service (NPS) Remote Wireless Demonstration at the Fall 2012 Internet2 Member meeting showcasing use of wireless “backpacks” developed by a group of NPS sites across the country to expand their outreach and education to include remote areas of the parks system. In ND, the Knife River Historic Indian Villages site completed and upgraded its local wireless network, enabling outreach programs to originate from remote areas of the park. The Theodore Roosevelt Center, located at DSU, is among several presidential libraries across the US collaborating with NPS to develop a year-long K12 collaborative project for participating
classrooms.

NDSU and UND collaborated to facilitate a seminar targeting K-12 educators and technology coordinators in ND schools, introduced new resources aligned to the science, math and social sciences curricula, and highlighted new resources in the STEM and digital humanities disciplines. 133 technology coordinators, educators and administrators from ND K-12 schools participated.

Through the ND SEGP, the ND K-12 community continues to participate in a variety of curriculum-based content programs and collaborative learning projects enabled by videoconferencing. (33 school districts; 2,108 student participants; 33 total events; a total of 15% of the research and education network connections were made to North Dakota sites).

Participated in the reestablished Worldwide Megaconference. Approximately 50 sites from around the world joined the event.

CND

Expand scope of the data warehouse and its reporting and dashboard capabilities. Also provide for the NDUS programs and process to support the higher education data mart of the state longitudinal data system, providing better information for improved decision-making.

2.2, 3.7 Executives and management levels of institutions and the System Office along with the State as a whole with identified information that is specific to the State’s LDS system.

User satisfaction measured by a survey to determine reduced time to receive information and increased consistency of information.

Ability to track stored snapshot information over time.

Status Update: We continue to work on better ways to consistently and repeatedly provide reports for a variety of uses, including dashboards. Due to resource constraints, this has not happened as quickly as we would have liked. The NDUS (through DPI) was the recipient of a federal SLDS grant in 2012, which will develop the higher education data mart within the SLDS. Work is underway on that project.
Implement a master data hub for coordination of biographical and demographical information between and among systems. Eliminates the need for many bi-directional linkage programs between systems providing for more efficient operations and lower support costs.

2.1 Directly by NDUS SITS staffs who would have reduced number of interfaces to develop and maintain.

Indirectly, users of any SITS systems by having a common, near real-time connection for data exchanges between systems.

Increased timeliness of data flow between systems.

**Status Update:** We have chosen not to implement a master data hub, due to software and licensing costs. However, we have a project underway to sync data between our PeopleSoft systems (primarily the student and HR systems) to achieve the consistency of biographic and demographic data that we would expect from a data hub.

Provide for mobile device access by students, faculty and staff, supporting anytime, anywhere access to information.

2.4, 2.5 NDUS students, faculty, and staff.

3.1, 3.2

3.5, 4.7

Success to be measured by percentage gained on NDUS applications of mobile platform usage.

**Status Update:** We have implemented mobile device access to both the student and HR PeopleSoft systems, and expect to continue to deliver additional functionality over the next couple of years, to meet the needs of our students, faculty, and staff who are using these devices as their primary computing devices.