



North Dakota University System
Information Technology – Strategic Plan 2015-2017

(Report generally covers the period from January 1, 2015 to December 31, 2017)

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EXECUTIVE SUMMARY

The State Board of Higher Education (SBHE) Policy 1901.3 Information Technology Project Management states:

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

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

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

REFERENCE: N.D.C.C Section 15-10-44

At this time the North Dakota University System (NDUS) 2015-2020 Strategic Plan is being developed/refined; however, NDUS has identified the goals. The Strategic goals include:

1. *Deliver degrees that are best value in the nation.*
2. *Provide programs people want, where and when they need them.*
3. *Equip students for success.*
4. *Maximize the strengths of the unified system.*

This NDUS Information Technology (IT) Strategic Plan aligns with and supports the “Strategic Plan” brought forward by the Chancellor and approved by the State Board of Higher Education. For this two-year period, NDUS considers the IT strategic plan transitional as refinement of the overall NDUS Strategic Plan continues.

The North Dakota University System through its Core Technology Services (CTS) provides a wide portfolio of technology activities in support of the University System and institutions. The North Dakota University System will leverage its information technology resources to provide access to academic programs and services, allow for innovation in academic and administrative functions to achieve greater effectiveness and efficiencies, and help all units deliver excellence. The NDUS Information Technology Strategic Plan consists of:

- goals and their purpose
- strategic objectives to meet the goals
- initiatives/projects or tactical efforts/activities from institutions and CTS that align with strategic objectives
- a reflection on accomplishments during the previous two-year cycle

During the past two years, NDUS continued efforts to better align that portfolio with the goals of the Board along with the needs of the institutions and prepare the CTS organization to address future directions, opportunities and challenges. CTS created a strategic vision for the future, recognizing that services must be connected and integrated to meet the needs in an Internet-connected world.

The overarching goals within the NDUS Information Technology Strategic Plan are:

1. *Support System Infrastructure Needs (aligns with and supports the previous NDUS Strategic Plan Goal #1 – The North Dakota University System is accessible, a view held by all North Dakotans; and the new NDUS Strategic Plan Goal – Maximizing the strengths of a unified system).*
2. *Improve Information Technology-enabled Business Processes and Services while Providing and Managing Resources to Align with University System Strategic Goals (aligns with and supports the previous NDUS Strategic Plan Goal #2 – North Dakotans recognize that the North Dakota University System is affordable at a level that can be sustained; and the new NDUS Strategic Plan Goal – Deliver degrees that are best value in the nation).*
3. *Improve and Enhance Student Learning and Users’ Focus (aligns with and supports the previous NDUS Strategic Plan Goal #3 – The North Dakota University System increases the overall vitality of the state through exceptional education, research, training and service; and the new NDUS Strategic Plan Goal – Equip students for success).*
4. *Improve and Enhance Collaborative Efforts (aligns with and supports the previous NDUS Strategic Goal #4 – The eleven institutions comprising the North Dakota University System work together to achieve the vision effectively; and the new NDUS Strategic Plan Goal – Provide programs people want, where and when they need them).*

We will address each goal, their purpose, and strategy later in the document. Tactical efforts and activities are also included with each goal. While we have identified tactical efforts and activities, implementation is dependent on funding, other available resources, and other priorities that may supersede these at time of implementation.

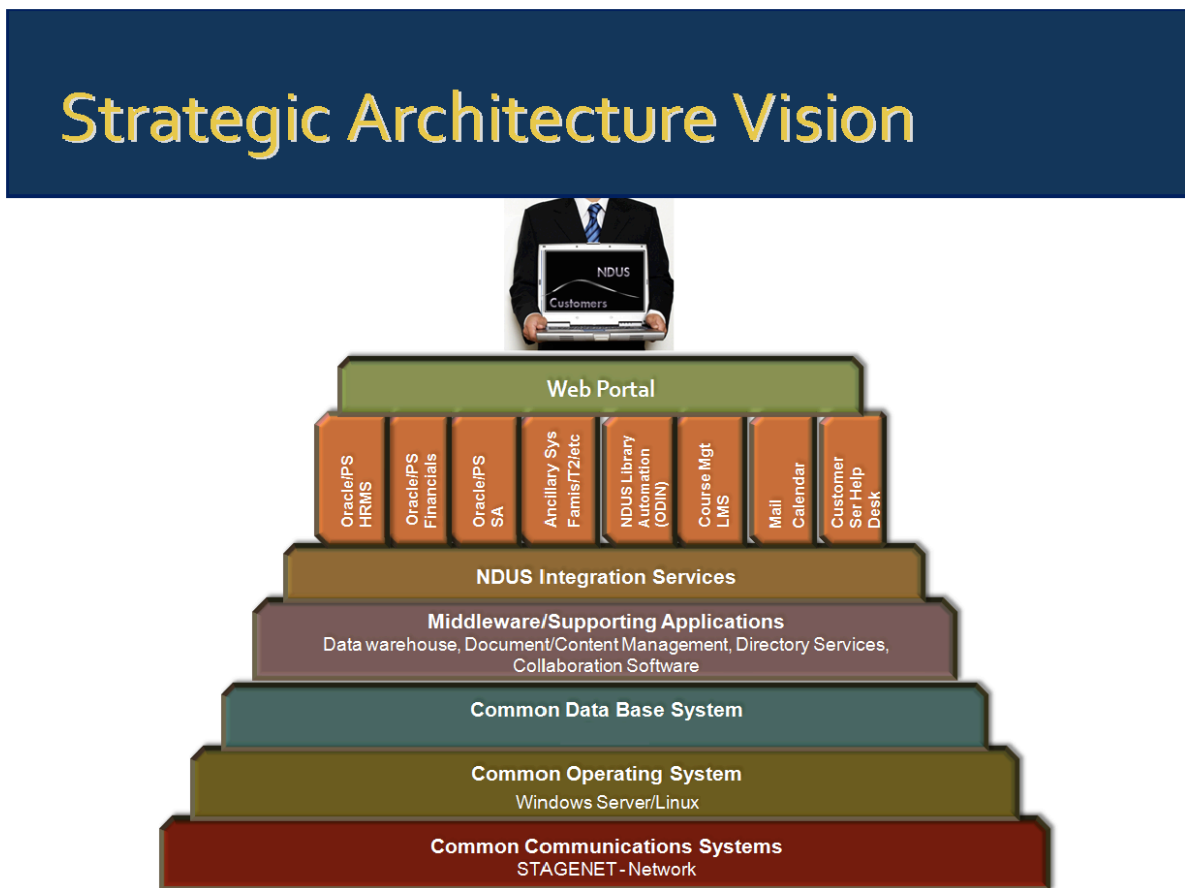
A random sample of initiatives/projects are included with the goals section; however, a complete summary listing can be found in the section titled “Matrix of Initiatives/Projects by Campus or Entity” at the end of this document.

Accomplishments related to a strategic plan cannot be attributed to a single year but require planning, prioritization, project management through implementation, and ongoing support. A sample of accomplishments, completed during the past biennium, is included in

this report with each goal and some may align with more than one goal. A more complete listing of accomplishments is available in the document titled [“North Dakota University System, Initiative Status Update, Information Technology – Strategic Plan 2013-2015.”](#)

Today’s world of Information Technology is complex and intertwined. It is no longer designated/standalone systems that process information but a number of systems, either integrated or interfaced with each other, operating as an enterprise management system. To be successful, IT organizations must implement and manage a strategic architecture. The Core Technology Services strategic architecture is best described as a visual, layered pyramid depicted as follows.

Strategic Architecture



Starting on the lowest layer, the “foundation” that all else is built on, is the Common Communication System based on the State’s STAGEnet network.

The second layer from the bottom is the Common Operating Systems such as Windows Server, Linux, etc. Operating systems are the “brains” of a computer and the software that instructs the computer how to perform basic tasks such as input from the keyboard, sending output information to the display screen, keeping track of files and directories on

disks, and controlling peripheral devices such as disk drives and printers. An operating system provides a software platform on top of which other programs/applications can run. It is the “traffic director” that makes sure different programs and users running at the same time do not interfere with each other. The operating system also has a responsibility for security to make sure that unauthorized users do not access the system.

The third layer is the Common Data Base System. A database is a collection of information organized in such a way that a computer program can quickly select the desired pieces of data. Think of it as an electronic filing system. You need a database management system to access information from a database. This is a collection of programs that enable one to enter, organize, and select data in a database.

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

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

Layer six is where the applications that users are familiar with and use are depicted. Among others, these include applications such as ConnectND, the third-party systems, Learning Management Systems (LMS), ODIN library services, e-mail and calendaring systems, and the NDUS Help Desk.

The Web Portal is the seventh layer. The portal is the window that is used to access applications.

Not depicted in either the above drawing or the following drawing are cloud services that CTS may have implemented or may implement in the future. These could be viewed as a parallel tower of services that might include; Infrastructure as a Service (IaaS), Software as a Service (SaaS), Storage as a Service (SaaS), Transport as a Service (TaaS), Data as a Service (DaaS), or “X” as a Service (*ssS).

Everything Is Connected

Many of the applications provided through/by CTS are interwoven. To depict this relationship, the following is provided as a visual (see next page).

Links to Learning and Services

Everything is Connected

Integrate Services



NDUS Core Technology Services

Because today's systems are complex and tightly integrated, it is difficult to think of one system without also taking into consideration how an action taken in that system will impact others. An upgrade or enhancement in one system may require an upgrade or change to another system before it will function properly. This tight integration of systems requires more planning before staff takes any action/change, and requires more effort in ongoing support and/or maintenance of these systems.

Efficiencies and effectiveness are keys to our success as the North Dakota University System. Opportunities for collaboration among the institutions that comprise the NDUS are extremely important and having funding available to take advantage of opportunities is a necessity. The NDUS and its institutions must continue to seek ways to enhance collaboration and to provide improved services using the most efficient means available whether done internally or externally through outside providers.

GOALS

This section of the document lists each goal, its purpose, and the strategy objectives. A sampling of 2015-17 IT initiatives/projects are listed here. There is a complete list later in this document. Also, included here is a sampling of 2013-15 IT initiative/project accomplishments. A comprehensive listing of accomplishments can be found in the companion IT planning update titled "[North Dakota University System, Initiative Status Update, Information Technology – Strategic Plan 2013 – 2015](#)" or can be obtained from the Office of the CIO by e-mailing a request to rich.lehn@ndus.edu.

GOAL ONE:

To support North Dakota University System infrastructure needs.

Purpose:

This goal is the foundation for Information Technology (IT) in support of NDUS business processes. Infrastructure holds information technology systems together and allows systems to communicate with each other over a network. It includes such things as security and access control for which guidelines must be developed and updated as needed. Enterprise Architecture provides a blueprint for establishing information technology policies, procedures, and guidelines to promote effective use of information technology.

Strategy Objectives:

1. Offer reliable, cost-effective and appropriate NDUS network services.
2. Provide tools and technologies to help people more easily use networked resources and services while ensuring security and privacy of the information.
3. Utilize the network infrastructure for the convergence of voice, data, and video along with other collaboration tools.
4. Enable libraries to provide easy access to licensed electronic information.
5. Provide leadership for IT enterprise architecture, project management, and service management.
6. Provide linkage through STAGEnet, Internet2, and other national and international research and development networks.

15-17 Biennium Initiatives:

- Bismarck State College plans to investigate and implement a solution to alert faculty, staff and administrators early on when a student is failing so they can take action to retain the student. Some other NDUS institutions have already implemented a system.
- North Dakota State University continues to explore, promote, and coordinate the use of applications enabled by advanced networks such as Internet2 and the Northern Tier Network (NTN) in research, learning, and outreach for the NDUS institutions, the North Dakota K12 community and North Dakota's Tribal campuses.
- NDUS Core Technology Services seeks to procure and implement an enterprise work management system (WMS) that will provide a single solution for all business units in CTS. WMS will handle all work done by CTS staff, will manage all projects,

and CTS will be able to generate the true cost of managing and maintaining systems using data from this work management system.

- NDUS Core Technology Services intends to expand the Lync Unified Communications proof of concept to a fully functional telephony capability for CTS, the System Office, and for other interested NDUS institutions. Unified Communications was one of the identified initiatives that had been included in the State Board of Higher Education's "Maximizing Results Through Efficiencies" plan approved at their January 19, 2012 meeting.

13-15 Biennium Accomplishments:

- Completed construction on a new Information Technologies office building located on the edge of the University of North Dakota campus. This approximate 40,000sf office building houses over 100 Core Technology Services staff that previously were located in seven different buildings on or near the University of North Dakota campus. The city issued a Certificate of Occupancy on October 15, 2013 and most CTS staff had moved into the facility by Thanksgiving.
- Completed renovation of space that is now the NDUS Data Center. NDUS built this facility to Tier 3 standards and consists of approximately 10,000sf of space with 5,000sf of the space dedicated to the raised floor machine room and the remaining 5,000sf of space dedicated to the network operation center and supporting electrical/mechanical equipment rooms. As a tier 3 data center, major electrical and mechanical systems are redundant and CTS can remove any of these components from service for any reason without the need to shut down datacenter systems. The city issued a Certificate of Occupancy on January 31, 2014 at which time the CTS staff could begin installation of data networking equipment into the facility. CTS had postponed the replacement of data hardware, where possible, so CTS could put new equipment in place in the new data center for production environment systems. CTS could then repurpose the old equipment to run non-production environment systems or retired it as appropriate, reducing the overall risk of moving the datacenter. CTS should complete this process by December 2014.
- A number of NDUS institutions have taken steps to increase efficiencies and/or performance of their campus network infrastructure by upgrading servers and other networking equipment, and expanded wireless coverage across their campus.
- NDUS Core Technology Services has implemented Microsoft's System Center Operations Manager (SCOM) and Microsoft's System Center Configuration Manager (SCCM) applications. NDUS uses SCOM to assist with server and network equipment in the data center. NDUS uses SCCM to deliver OS updates, antivirus, and software applications to all the desktop computers managed by CTS, including the System Office and CTS staff. CTS staff have also been working with several campuses to set up and configure their SCCM environment.
- For mobile users, NDUS implemented a Service Set Identification (SSID) called NDUS-Systemwide across the campuses. This allows State Board of Higher Education members and any faculty, staff, and student to authenticate to the local campus wireless network using their NDUS Active Directory account.
- UND purchased a dashboarding software called iDashboards in May 2013. In

collaboration with UND's Institutional Research, CTS created a number of dashboards for UND's consumption. CTS also automated some of the data feeds to the software. CTS/UND demonstrated the software to other NDUS institutions and these campuses have now made inquiries on the possibility of using the software for their needs as well.

GOAL TWO:

To improve North Dakota University System information technology-enabled business processes and services while providing and managing resources to align with NDUS strategic goals.

Purpose:

This goal is the core that supports business processes of the institutions and the North Dakota University System (NDUS). In order for institutions to remain competitive and offer information technology support for students, faculty and staff, including research and public service, the NDUS must provide and manage information technology resources aligned with NDUS strategic goals.

Strategy Objectives:

1. Maintain critical core functions and implement upgrades and enhancements to the student management, financial/human resources management, data warehouse, library, administrative, and academic technology systems.
2. Identify and integrate appropriate NDUS CTS systems to create operational effectiveness and efficiencies.
3. Provide enterprise project management, enterprise architecture administration, and enterprise IT planning.
4. Enhance educational experiences with new or re-purposed resources that expand user services, technologies, and initiatives.
5. Maximize IT infrastructure to improve services to students, faculty, staff, and the citizens of the state.
6. Hire, train, and retain highly competent professional staff to meet the needs of NDUS services.

15-17 Biennium Initiatives:

- Bismarck State College and Lake Region State College are both looking at the purchase and implementation of CourseLeaf Catalog software. That is a NDUS supported application currently used by Minot State University, North Dakota State University and University of North Dakota.
- A number of NDUS institutions are intending to use the NDUS implementation of ImageNow for document imaging. CTS has started that process and the planning for implementation and migration of documents for other NDUS institutions are underway. NDUS selected ImageNow as the centrally implemented software because five campuses were already using ImageNow and, by using it as the centrally implemented application, it allows CTS to streamline the migration process more efficiently.
- With the growing needs of online presence, Minot State University has submitted a

Procedure 1901.3 approval request. The NDUS CIO has approved the request. MiSU along with Blackboard Provisioning Service are proceeding with the migration planning to have Blackboard provide managed hosting of MiSU's Blackboard learning management system.

- NDUS plans to implement the Absence Management module within PeopleSoft. This is an automated solution to request employee leave and manage the approval process. Absence Management also provides an automated process for documenting when employees actually take the leave and feeds that information into the Payroll module in PeopleSoft in a timely manner.
- NDUS also plans to implement the Time & Labor module in PeopleSoft as an automated solution for obtaining hours worked by employees, an automated process approving hours worked, an automated process to feed that information into Payroll for North America in PeopleSoft in a timely manner, and an automated solution to replace Kronos time keeping application.

13-15 Biennium Accomplishments:

- The hiring of Dr. Lisa Feldner as NDUS's Vice-Chancellor for Information Technology and Institutional Research. Randall Thursby, who served as NDUS Chief Information Officer, retired and returned to his home state of Georgia. Lisa was the Chief Information Officer for the State of North Dakota for the past seven years and prior to that worked in K-12 as the technology director for Bismarck Public Schools.
- Hired Darin King as CTS Deputy Chief Information Officer. Darin was the Director of the North Dakota Educational Technology Council and prior to that was Director of Technology with the Grand Forks Public School District. Darin is responsible for the day-to-day operations of CTS.
- Information technology staffs that were part of the University of North Dakota's Information Technology Systems and Services (ITSS) division were merged with Core Technology Services. This gave CTS a greater depth of technology expertise, experience and ability to provide the best level of services to all of the NDUS as possible.
- With the hiring of new leadership, new IT facilities, and merging of the University of North Dakota Information Technology staff, CTS leadership felt the organization needed a name change. For the past several years the NDUS IT group was known as System Information Technology Services but with the changes to the organization, CTS leadership believes the new name of Core Technology Services better describes the systems and services that are provided to all of the NDUS.
- Minot State University along with CTS staff worked successfully to design, pilot, and implement synchronized userid and passwords across the systems. MiSU's CIO stated that this was a winner from the beginning and shows where technology works best by allowing two systems with similar functionality to share common data. With this initiative, MiSU's faculty, staff and students are able to use one password to authenticate to both NDUS and MiSU's services where three passwords were required previously.
- The State Board of Higher Education introduced a centralized document imaging initiative in 2012 as an approach to maximize information technology efficiencies

within the NDUS. Five of the NDUS institutions were using the product ImageNow for this purpose. UND's information will be the first to migrate over to the centralized system followed by campuses that had not been using a document imaging software. Once these have been set up, the remaining campuses that will move to the centralized environment will be scheduled. CTS expects the process of migrating all institutions to take two years to complete.

GOAL THREE:

To improve and enhance North Dakota University System student learning and users' focus.

Purpose:

Empower student learning and development through the use of technology by providing a near seamless environment for learning through boundless access to information, educational, and research resources both inside and outside the classroom for all types of students from undergraduates to life-long learners.

NDUS encourages and supports an operational environment in which characteristics of its users – student, faculty, staff, North Dakota residents, and affiliates worldwide – are identified, their needs are understood, relationships and expectations are effectively managed, and quality assurance is fostered for high-quality services and support.

Strategy Objectives:

1. Leverage the IT infrastructure to create an environment for enhancing learning.
2. Enable collaboration among learners by providing easy, efficient, and reliable access to learning resources anytime and anywhere.
3. Evaluate enhancements to the Online Dakota Information Network's (ODIN) library systems and services to improve functionality that supports the evolving needs of users.
4. Continually improve standards, policies, procedures, and services that facilitate seamless, integrated learning.
5. Identify users' characteristics and respond to their expectations and needs.
6. Develop and implement a system-wide customer relationship management system in support of users' needs.
7. Continue to gather feedback from the NDUS user community on services provided by NDUS CTS.

15-17 Biennium Initiatives:

- Bismarck State College intends to implement a student laptop initiative consisting of purchasing laptop computers and docking stations for each seat in the English and the Creative Arts classrooms. All students taking English classes in the new Communications and Creative Arts Center will be able to use technology during class time to work independently or in groups.
- Lake Region State College would like to integrate Campus Solutions data with dashboard software and provide needed data in graphical format. In addition to Campus Solutions data, LRSC would tie other data sources to this dashboard

software.

- The North Dakota State College of Science intends to implement an NDSCS Online Portal that will bring information for current students into a single interface providing links to existing resources. Once launched for NDSCS students, the campus will extend the portal for use by NDSCS employees.
- NDUS Core Technology Services is in the planning phase to migrate each of the campus student email tenants into the central NDUS staff/faculty tenant.

13-15 Biennium Accomplishments:

- Textbook cost is always a concern and the Bismarck State College Bookstore now offers approximately 250 eBook titles that a student may purchase using financial aid. Other campuses are looking at this too as a way to reduce costs for students.
- Classrooms are changing and no longer are there a one size fits all. Digital displays are replacing the traditional ceiling mounted projectors and drop down video projection screens. Mobile devices including iPads, etc. allow faculty to deliver content and engage with students in the classroom. Minot State University currently has five 'Hyflex' classrooms, primarily in the Colleges of Business and in Special Education that bring distant students into the live face-to-face classroom through use of the Internet and Blackboard Collaborate. This allows students, both near and far, to interact with their instructor and with each other.
- ODIN Library Services completed installation of Primo, a discovery tool that provides for integrated searching of library resources in a single search. This makes information searching easier for all of the owned/licensed library materials.
- NDUS purchased and implemented Tegrity, a lecture capture/recording solution. Lake Region State College (LRSC) implemented Tegrity into their Pearson Learning Studio (an online learning tool) application during the Fall 2012 semester and has built it into every online course and on-campus course that uses an online component. During the 2012-13 academic year LRSC had 800 recordings for a total of 144 hours. They were viewed 2,436 times for a total viewing time of 126 hours. During the 2013-14 academic year, there had been 630 recordings with 275-recorded hours. These were viewed 3,618 times with a total viewing time of 282 hours. This is an approximate 190% increase in recorded hours and 150% increase in student viewing.

GOAL FOUR:

To improve and enhance North Dakota University System collaborative efforts.

Purpose:

By working together with the State, K-12, and other constituents, the NDUS is able to bring new technologies to North Dakota and support existing ones.

Strategy Objectives:

1. Optimize helpdesk services within the NDUS community.
2. Continually improve communications with all stakeholders.

3. Collaborate with NDUS institutions, K-12, state/local governments, and libraries to identify appropriate administrative, learning, research support systems and converged services where appropriate.
4. Leverage educational resources and IT systems to minimize barriers between institutions, libraries, and other sources of learning.
5. Expand virtual and digital holdings available within the Online Dakota Information Network (ODIN) libraries.
6. Promote Internet2 and research-level infrastructure.
7. Continue the integration of video, audio, and data collaborations in cross-platform environments.
8. Collaborate with business and industry to identify opportunities for innovations that enhance NDUS CTS systems and services.

15-17 Biennium Initiatives:

- BSC is planning to provide their Lineworker Campus with a high-speed network connection directly to the main campus with equipment needed on the remote end (equipment on the main campus is already in place) via leased fiber.
- Lake Region State College intends to implement a business intelligence initiative for their Dakota Precision Agriculture Center. This requires storage and transfer of large data sets that students will need to access and faculty will be sharing with other researchers.

13-15 Biennium Accomplishments:

- All NDUS institutions are using the NDUS Help Desk ServiceNow management system. RightAnswers, a knowledge management tool, is integrated into ServiceNow.
- NDUS provided technologies are in position to support collaborative students. Four institutions are using a single instance of Moodle (learning management system.) Tied into Moodle are collaborative tools for lecture capture (Tegrity), web conferencing (Blackboard web conferencing), and instant messaging (Blackboard IM).

MATRIX OF PROJECTS/INITIATIVES BY CAMPUS OR ENTITY

The following pages contain a summary of all the initiatives/projects that campuses and NDUS CTS have submitted for the 2015 - 2017 NDUS IT Plan. Detailed information regarding each initiative/project is on file with the Office of the CIO.

NDUS IT PLANNING

15-17 Biennium – Campus Initiatives/Projects Alignment with NDUS Goals and Strategy Objectives

<i>BSC</i>	INITIATIVES/PROJECT	Facilities Card Access – to be included as part of Campus One-Card System (Mystic Card) The plan is to implement a product called CS Access offered by CBORD. BSC plans to replace the systems currently in place within the five buildings, incorporate the new technology into the four buildings being brought online in August 2015 and extend the technology to the other buildings on campus as well as our two remote sites in Mandan.
	GOAL – OBJECTIVE(S)	1.2, 1.3, 2.5 and 3.5
	WHO BENEFITS	Students’ benefit by combining their dining card, Library card, ID card, debit card and building access tools all in one card. Housing personnel benefit, as they no longer need to track building keys issued to each student. Security benefits from notifications of a door being left open and will have an audit trail of who went through the door(s). Building and Grounds benefits, as they are responsible for assigning keys and access privileges.
	HOW MEASURED	Efficiencies gained by not being dependent on a locksmith and time saved not waiting for a key to be made. Custodial and maintenance employees can come directly to work without being concerned with unlocking or locking the building. Time saved in record keeping of who has what key(s) issued. Time saved by not having to walk to a building to lock or unlock doors as this can be done from a central or remote location instead.
<i>BSC</i>	INITIATIVES/PROJECT	Electronic Early Alert System for Student Retention Investigate and implement a solution that is comprehensive, efficient, effective early alert system to improve student success, retention, and completion. Currently BSC is reviewing two products; Starfish Retention Solutions Early Alert and Connect, and Hobsons Retain Early Alert CRM and AgileAdvisor.
	GOAL – OBJECTIVE(S)	1.2, 1.3, 1.4, 1.5, 2.3, and 4.4
	WHO BENEFITS	Students; the Advising, Counseling and Student Success staff; Faculty; the tutoring, Financial Aid, Disability Specialists, and Support offices; administration; and Information Technology staff.
	HOW MEASURED	Enrollment Data – Term-to-Term persistence rates; Year-to-Year retention rates. Student Outcomes – Course completion rates; grade point averages; graduation rates. Other Data – Service usage rates (tutoring, advising center, etc.); student with good academic standing;

		fewer students with financial aid disqualification; number of student contacts; student response to communication; and number of alerts generated and resolved.
<i>BSC</i>	INITIATIVES/PROJECT	Internet Protocol version 6 (IPv6) Deployment Deploy IPv6 in the campus network as BSC begins to fully utilize all available IPv4 addresses. This would be a transition as opposed to a complete cutover to IPv6.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 2.4, 2.5, 3.1, 3.2, 3.4, 3.5, and 4.4
	WHO BENEFITS	The campus network engineers benefit by making BSC's network efficient and more secure. Students and other customers benefit by being able to connect to campus networks with their proper credentials during peak times. Faculty will benefit by having a network address available to them when they enter the classroom. Presenters at conferences and events held on campus would benefit by being guaranteed an address (with proper credentials) to utilize their devices to project and by being able to connect to the campus network.
	HOW MEASURED	Increased efficiencies by users being able to connect to the campus network.
<i>BSC</i>	INITIATIVES/PROJECT	Campus Voice/Telecommunications System Replace the existing BSC outdated PBX with a telephone switch that is compatible with major switches at UND, NDSU or the State's Information Technology Department (ITD). This would be a phased approach with the first phase being installation of an Avaya switch followed by additional phases to change out phone sets and integrate Microsoft's Lync into the solution.
	GOAL - OBJECTIVE(S)	1.2, 1.3, 2.4, 2.5, 3.1, 3.2, 3.4, 3.5, 4.2, 4.3, 4.4, and 4.7
	WHO BENEFITS	BSC employees, students, our collaborative partners and NDUS employees on the campus of BSC who receive voice services. Additionally, NDUS campuses that have already implemented a Unified Communications system as well as campuses that plan to implement one.
	HOW MEASURED	Once the project has been implemented and the campus community has become familiar with the new tools provided to them we could measure benefits by having casual conversations with users, formalized group discussions, conducting campus surveys and by soliciting feedback from our campus community.
	INITIATIVES/PROJECT	Technology Life Cycle Management Currently BSC has no formalized method for managing the replacement of existing technology as well as

<i>BSC</i>		being able to accommodate new requests for technology or effectively determining and removing equipment that has reached an end-of-life designation by the supplying vendor. This initiative focuses on managing the replacement cycle of technology for BSC.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 1.5, 2.1, 2.2, 2.4, 2.5, 3.1, 3.2, 3.4, 3.5, and 4.4
	WHO BENEFITS	Students, faculty, and staff benefit by having a reliable and consistent connection to network resources.
	HOW MEASURED	Knowing in advance the funding amount allows us to better prepare for new fiscal year equipment purchases and be able to better prepare for and schedule annual projects.
<i>BSC</i>	INITIATIVES/PROJECT	Extend Main Campus Network to Lineworker Campus This project will provide the Lineworker Campus with a high-speed network connection directly to our main campus with equipment needed on the remote end (equipment on the main campus is already in place) via leased fiber.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 1.5, 1.6, 2.3, 2.4, 2.5, 3.1, 3.2, 3.4, 3.5, 4.2, 4.4, and 4.7
	WHO BENEFITS	Students and faculty will benefit at this remote campus. Additionally the network services and telecommunications staff will benefit, as they will have better control of network issues.
	HOW MEASURED	N/A
<i>BSC</i>	INITIATIVES/PROJECT	Installation/Replacement of Security Cameras This project will replace the inadequate storage offered by the DVRs with a high capacity server and storage solution, replace analog cameras with higher resolution IP cameras, allow storage for 30 days to conform with security department's policy on retention, and have a single management point through a console administered and controlled by security personnel.
	GOAL - OBJECTIVE(S)	1.2, 1.3, 2.5, and 3.5
	WHO BENEFITS	Students, faculty, staff and others including BSC security personnel, housing staff, and those who require the review of incidents on campus. This project is directly related to campus safety.
	HOW MEASURED	Ability to respond to incidents.
	INITIATIVES/PROJECT	HP EVA 4400 with HP 3PAR server and storage solution infrastructure

<i>BSC</i>		The project will include purchasing a HP 3PAR storage solution that will replace BSCs aging EVA 4400. The 3PAR solution will work with our existing c3000 blade infrastructure and tape backup solution. Consultants recommended this solution as the simplest upgrade path.
	GOAL - OBJECTIVE(S)	1.2, 1.3, 2.5, 3.5, and 4.7
	WHO BENEFITS	The employees (staff and faculty, full and part time employees) of BSC will benefit. The EVA currently houses and provides access to shared resources and services updated and used daily. Our Intranet, reporting services, fileserver and lab resources are all developed and maintained within this environment. By upgrading/replacing the current design with a new, more robust infrastructure, we will be able to continue providing access to these resources while also building in growth and availability with additional resources included.
	HOW MEASURED	N/A
<i>BSC</i>	INITIATIVES/PROJECT	<p>CourseLeaf Catalog Software</p> <p>Purchase and implement CourseLeaf Catalog software, a NDUS supported application currently being used by NDSU, UND and MiSU.</p>
	GOAL - OBJECTIVE(S)	1.2, 2.2, 2.4, 2.5, 4.2 and 4.3
	WHO BENEFITS	Faculty, staff and students.
	HOW MEASURED	Software users can increase accuracy by using the software's automated processes instead of manual entry of changes. They can increase efficiency by using the product's built-in workflow processes. The software also has the ability to provide an electronic version (with it being more up-to-date) along with a printed version. All these lead to greater student satisfaction by having timely information and in a media that they prefer.
<i>BSC</i>	INITIATIVES/PROJECT	<p>Use Microsoft Cloud based services for staff and faculty home drives (OneDrive) and faculty – student project collaboration.</p> <p>BSC would like to move employee's home directories to OneDrive (associated with their NDUS Office365 account) and create collaborative (to be used by students) sites in Azure. This initiative would allow for greater flexibility in accessing business data that is stored for individual or collaborative use. Employees can share information with colleagues and students at their discretion.</p>

	GOAL - OBJECTIVE(S)	1.2, 1.2, 1.3, 2.4, 2.5, 3.1, 3.2. 3.5, and 4.7
	WHO BENEFITS	Faculty, staff and students all benefit.
	HOW MEASURED	User satisfaction
<i>BSC</i>	INITIATIVES/PROJECT	<p>Student Laptop Initiative</p> <p>This project and solution would involve purchasing laptop computers and docking stations for each seat in the English and Creative Arts classrooms.</p>
	GOAL - OBJECTIVE(S)	1.2, 1.3, 1.4, 2.4, 2.5, 3.1, 3.2, 3.4, 3.5, and 4.4
	WHO BENEFITS	Students and faculty will benefit in the Communications and Creative Arts Center. All students taking English classes in the new Communications and Creative Arts Center will be able to use technology during class time to work independently or in groups. Internet access, software programs, eCompanion and Library resources will all be available during their classes.
	HOW MEASURED	Satisfaction with results.

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<i>DCB</i>	INITIATIVES/PROJECT	Dakota College at Bottineau does not have any formal projects planned for the 2015-17 timeframe to be included in this document; however, they are planning some smaller projects.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

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<i>DSU</i>	INITIATIVES/PROJECT	<p>Academic Infrastructure Goals</p> <p>Every 3-4 years, upgrade designated faculty computers and student accessible computers in 10 primary instructional labs and 50 classroom instructional areas with multimedia workstations. Upgrade software on a schedule that provides latest technology; expand the LAN offering more wireless coverage and faster speed in key areas. Plan and support the current LMS system of Moodle and Tegrity by providing supplemental infrastructure in the classrooms. Provide students with Upgraded Microsoft email accounts.</p>
	GOAL - OBJECTIVE(S)	Goals 1, 2, and 3
	WHO BENEFITS	Ensures consistent and reliability for services offered to students, faculty, staff, and community affiliates.
	HOW MEASURED	Increased speed at which reports and records can be retrieved for view, reduced application and OS startup times, and training being performed “just in time” when an employee is hired.
<i>DSU</i>	INITIATIVES/PROJECT	<p>Administrative Infrastructure Goals</p> <p>Plan, design and determine cost estimates for unified communication solutions including voice, video and data, Ensure accurate and timely access to student and administrative information for use by management. Upgrade designated staff computers on a 3-4 year basis. Continue the process of local ConnectND training new employees and ongoing training for existing employees.</p>
	GOAL - OBJECTIVE(S)	Primarily goals 1 and 2
	WHO BENEFITS	Employees will have better response time to run reports and queries. Communication between employees will be enhanced, all fostering more accurate results.
	HOW MEASURED	Efficiency of reports and queries being run. Efficiency of communications between employees.
<i>DSU</i>	INITIATIVES/PROJECT	<p>Networking Infrastructure Life Cycle Goals</p> <p>Plan and design secure solutions for PCI requirements. Upgrade switches, controllers, and appliances as required by needs and end of life. Plan a procedure and technology solution for identity management.</p>

GOAL - OBJECTIVE(S)	Impacts goals 1, 2, 3 and 4
WHO BENEFITS	While this will impact everyone, greatest benefit will be to students. They will experience better network response time to the learning management system (LMS) and other content rich academic resources. Students will have more options with PCI compliance for such things as book leasing and locations to pay.
HOW MEASURED	Satisfaction of students

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<i>LRSC</i>	INITIATIVES/PROJECT	Business Intelligence for Dakota Precision Agriculture Center This project requires storage and transfer of large data sets. Students will need to access large data sets so the Precision Agriculture Department needs to be able to store and transfer large data files, perhaps up to 20GB of data. Staff shares files with other universities and 30 or more faculty/scientists may read/manipulate these files.
	GOAL - OBJECTIVE(S)	3.1, 3.2, 4.2, 4.4, and 4.6
	WHO BENEFITS	LRSC students benefit from exposure to agribusiness data sets and real-world scenarios. Also Ag producers, crop consultants, field agronomists, analyses laboratories, agriculture engineering and business faculty at land grant universities, Ag business management media and Ag economists in both the public-sector and collegiate arenas.
	HOW MEASURED	Amount of data stored and then used in Ag analysis.
<i>LRSC</i>	INITIATIVES/PROJECT	CourseLeaf Software This project would be to purchase and implement CourseLeaf Catalog Software that is the NDUS supported application currently used by NDSU, UND, and MiSU.
	GOAL - OBJECTIVE(S)	2.2
	WHO BENEFITS	Parents and students will benefit from having the information they need in an easily accessible format. Staff will benefit by eliminating duplicate data entry, by having a workflow approval system, and by knowing the information is more accurate.
	HOW MEASURED	User satisfaction
<i>LRSC</i>	INITIATIVES/PROJECT	Business Intelligence – Dashboards Our objective would be to integrate Campus Solutions data with dashboard software and provide the needed data in graphical format. This would make it quick and easy for us to interpret and understand the data and emerging trends allowing us to make informed and smart strategic business decisions and manage our resources. LRSC would also tie these dashboards to other information, not just Campus

		Solutions.
	GOAL - OBJECTIVE(S)	2.2, 3.1, 3.4, 3.5, and 3.7
	WHO BENEFITS	Faculty, staff, students and affiliates benefit from having data integrity and timely access to information necessary to make decisions.
	HOW MEASURED	By the additional students we are able to serve.
<i>LRSC</i>	INITIATIVES/PROJECT	ImageNow Lake Region State College would like to use the NDUS implementation of ImageNow for document imaging.
	GOAL - OBJECTIVE(S)	Goals 2 and 3
	WHO BENEFITS	Students and employees
	HOW MEASURED	Students and staff's satisfaction with ability to have access to files electronically at their desk to help answer student's requests.
<i>LRSC</i>	INITIATIVES/PROJECT	Password Synchronization LRSC would like to implement the password synchronization solution that NDUS has as this would allow LRSC students to use their credentials for Campus Solutions to log into the campus computers.
	GOAL - OBJECTIVE(S)	2.2, 2.4, 2.5, 3.1, 3.2, 3.4, and 3.5
	WHO BENEFITS	Students will benefit with ease of access to computer resources. Help desk will benefit from fewer calls from students and faculty regarding password changes.
	HOW MEASURED	Student satisfaction; number of help desk calls requesting password changes.

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<i>MaSU</i>	INITIATIVES/PROJECT	Mayville State University does not have any formal projects planned for the 2015-17 timeframe to be included in this document; however, they are planning some smaller projects.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

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<i>MiSU</i>	INITIATIVES/PROJECT	Blackboard Managed Hosting In the spring of 2013 MiSU migrated from WebCT to Blackboard’s Learn learning management system (LMS) and recently purchased Community Engagement, Content Management and Mobile Learn modules. With the growing needs of online presence, Minot State University submitted a 1901.3 approval request that was approved and are in the process of migration planning with Blackboard Provisioning Services. A date to go live in the new managed hosting environment is spring 2015.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 2.3, 2.4, 2.5, 3.1, 3.2, and 3.5
	WHO BENEFITS	Student and faculty will benefit the most from the move with improved response times and resiliency from 24/7/365 server monitoring by dedicated Blackboard staff.
	HOW MEASURED	Student and faculty satisfaction.

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<i>NDSCS</i>	INITIATIVES/PROJECT	<p>NDSCS Online Portal</p> <p>The NDSCS Online Portal will bring information for current students into a single interface that will either provide deep links to existing resources, connectivity via Web services or APIs, or simply via Web links if necessary. Once launched for students, NDSCS will extend the portal for use by employees.</p>
	GOAL - OBJECTIVE(S)	2.4, 2.5, 3.1, 3.2, 3.3, 3.4, and 3.5
	WHO BENEFITS	Primarily students and front-line staff benefit. Having a single source for information to send students and parents to would improve their experiences, and would significantly increase efficiency of staff that is responsible for disseminating this information to students.
	HOW MEASURED	N/A

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<i>NDSU</i>	INITIATIVES/PROJECT	NDSU Collaborative Information Technology (IT) Efforts with the NDUS Continue to collaborate with the NDUS, through an SLA, for selected IT services support. These services provide a direct benefit to the NDSU staff, faculty and students that consume these services. This collaboration, and that with other campuses, is consistent with NDSU’s land grant mission.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.4, 3.5, 3.7, 4.1, 4.2, 4.3, 4.4, 4.6, 4.7 and 4.8
	WHO BENEFITS	All NDSU on-campus and off-campus constituents benefit from this collaboration.
	HOW MEASURED	Measured against the requirements of the Service Level Agreement.
<i>NDSU</i>	INITIATIVES/PROJECT	NDSU/NDUS ConnectND Financial (FIN) and Human Resource Management System (HRMS) Report Development Collaboration and FIN, HRMS, and Campus Solutions Training Collaboration. This initiative consists of two major components. Report Development Collaboration - <ol style="list-style-type: none"> 1. Using CTS programming practices and NDUS project management oversight, evaluate, prioritize, and categorize NDSU’s development requests (DRs). 2. Using CTS programming practices and NDUS project management oversight, develop ConnectND FIN and HRMS queries/reports for NDSU campus with the understanding these reports may be shared with other NDUS campuses, but will need to follow the standard CTS processes to be adopted by CTS. 3. Using CTS programming practices and NDUS project management oversight, NDSU personnel will develop a ServiceNow template to index the existing ConnectND FIN and HRMS queries/reports already supported by CTS with future queries/reports being indexed by CTS as they are developed. 4. An end-goal the first year of this project, NDSU will work with CTS to develop a system-wide proposal for expanding this project or for other future collaborations that support ConnectND customer needs system-wide.

		<p>FIN, HRMS, and Campus Solutions Training Collaboration.</p> <p>1. Using TrainND sites, NDSU personnel will coordinate with CTS and retired NDSU employee, Carol Tschakert, to ensure that training is available for each of the ConnectND FIN, HRMS, and Campus Solutions modules two times each year.</p>
	GOAL - OBJECTIVE(S)	2.5, 3.5, 3.7, 3.8, 4.2, 4.4, and 4.8
	WHO BENEFITS	<p>NDSU benefits because of improved customer service in the form of completed DRs, indexing of existing ConnectND FIN and HRMS queries, and training in FIN, HRMS and Campus Solutions for both its central offices and its individual users. NDSU also plans to target shadow systems/spreadsheets currently in use and reduce their numbers as these new tools are developed by this team and released by CTS.</p> <p>CTS benefits because of improved customer service in the form of completed DRs, indexing of existing ConnectND FIN and HRMS queries, and training for ConnectND users in FIN, HRMS and Campus Solutions. Additionally, as ticketing logs are reduced, CTS staff will be free to work on other projects.</p>
	HOW MEASURED	Successful completion of development requests, indexing of existing queries, completed ServiceNow template used for indexing, and completion of two training sessions in each ConnectND FIN, HRMS and ConnectND module.
<i>NDSU</i>	INITIATIVES/PROJECT	<p>Ensuring a Stable Budget for NDSU's IT Services, Systems and Infrastructure</p> <p>NDSU has identified several systems in this initiative that they will continue to develop, upgrade, expand, and scale to meet the growing needs of NDSU statewide.</p>
	GOAL - OBJECTIVE(S)	1.2, 1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4, 4.6, 4.7, and 4.8
	WHO BENEFITS	All NDSU on-campus and off-campus constituents, affiliates, other state and federal entities housed on the NDSU campus and other NDUS entities.
	HOW MEASURED	Users satisfaction with the services that have been identified by NDSU as being part of this initiative and outlined in their submitted business case.
<i>NDSU</i>	INITIATIVES/PROJECT	<p>Extended Learning Environment</p> <p>NDSU will provide all IT services in a seamless manner for the NDSU Nursing program at Sanford Health campus in Bismarck. Services include provision of NDSU network, Internet2, voice/telephone, security and asset management, help desk support, video conferencing, instructional services support, software licensing, Blackboard support, classroom support, desktop management, computer labs, Go-Print</p>

		services, and Tegrity equipment.
	GOAL - OBJECTIVE(S)	1.2 and 3.2
	WHO BENEFITS	Students, faculty and staff at the Bismarck NDSU Nursing at Sanford Health campus will benefit from the NDSU IT services and equipment provided and supported.
	HOW MEASURED	Satisfaction of users at this Bismarck campus.
<i>NDSU</i>	INITIATIVES/PROJECT	ND Research & Education Networks/Advanced Applications K20 Liaison Services Explore, promote, and coordinate the use of applications enabled by advanced networks such as Internet2 and Northern Tier Network (NTN) in research, learning, and outreach for the NDUS institutions, the North Dakota K12 community and North Dakota's Tribal campuses.
	GOAL - OBJECTIVE(S)	1.6 and 4.6
	WHO BENEFITS	Targeted audiences, including faculty, students, and staff at NDSU and NDUS institutions, North Dakota Tribal Colleges and the North Dakota K12 Community will benefit.
	HOW MEASURED	Successful outcomes may be measured by/against metrics that include items such as the number of total contacts with faculty and staff; number of events or collaborations coordinated or aided participant evaluation of specific events, and the general service. Measurable benefits include the improved connection speeds and data transport options indicated by trace routes via the R&E networks, a substantial increase in access to R&E network resources for teaching, learning and research, and the improved capacity to collaborate on shared coursework among institutions in the state and with peers across the country.

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<i>UND</i>	INITIATIVES/PROJECT	<p>UND Campus Network Upgrade</p> <p>This initiative seeks to completely redesign the UND core network from the ground up by provisioning a high speed, survivable and redundant network that will provide 1 Gb/s speed to end users and transport traffic on a 40Gb/s core that can easily grow over time to provide a 100Gb/s core when needed. This will include replacement/enhancement to the physical, data link, network, transport, and session layers. Included is provisioning new/expanded cabling infrastructure using additional fiber optics/category 6 cabling and new network equipment such as routers, switches and controllers.</p>
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.4, 2.5, 3.1, 3.2, 3.3, 3.5, 4.2, 4.4, 4.6, 4.7, and 4.8
	WHO BENEFITS	All stakeholders of the University of North Dakota will benefit from this initiative, including students, faculty, staff, and administrators.
	HOW MEASURED	Improved satisfaction with networking capabilities.

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<i>VCSU</i>	INITIATIVES/PROJECT	VCSU is looking into a number of initiatives/projects, but typically commit to projects within a 12-month time frame. No big projects have been committed to in the 2015-17 timeframe other than replacement of laptops and that is an operational item. VCSU will handle any projects committed to later through the submission of a Procedure 1901.3 approval request.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

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<i>WSC</i>	INITIATIVES/PROJECT	Williston State College does not have any formal projects planned for the 2015-17 timeframe to be included in this document; however, they are planning some smaller projects.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

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<i>CTS</i>	INITIATIVES/PROJECT	Work Management System (WMS) This project seeks to procure and implement an enterprise work management system that will provide a single solution for all business units in CTS.
	GOAL - OBJECTIVE(S)	1.1, 1.3, 1.5, 2.1, 2.2 and 2.3
	WHO BENEFITS	The entire CTS organization and the people we serve.
	HOW MEASURED	100% of the staff will use the system. WMS will handle all requests for work done by CTS staff. CTS will manage all projects through the WMS and will be able to generate the true cost of managing and maintaining systems using data from the WMS.
<i>CTS</i>	INITIATIVES/PROJECT	Office365 Tenant Consolidation This project's scope is to migrate seven of the campus student email tenants into the central NDUS staff/faculty tenant. Once completed, review with remaining NDUS institutions will take place.
	GOAL - OBJECTIVE(S)	2.4, 2.5, 3.1, 3.2, 3.4, and 4.4
	WHO BENEFITS	Students, faculty and staff benefit by being on the same email system.
	HOW MEASURED	Number of campuses migrated to the NDUS faculty/staff tenant.
<i>CTS</i>	INITIATIVES/PROJECT	Data Center Outsource The NDUS is migrating two smaller data centers into a single Tier 3 facility and desire to have a vendor provide management services for the physical plant and monitoring of the IT hardware infrastructure. Our goal is to merge our existing practices with industry standard methodology employed by professional data centers to ensure we are operating the new data center as efficiently and effectively as possible.
	GOAL - OBJECTIVE(S)	2.5, and 2.6
	WHO BENEFITS	All of the NDUS benefits by merging existing practices with industry standard methodology and by having data center staff working directly with a vendor who operates a Tier 3 level data center as a

		primary business function. This will afford NDUS data center staff the ability to learn best practices in the operations; management and monitoring of the center through knowledge transfer working with the vendor awarded a contract.
	HOW MEASURED	Measured through the updating of standard operating procedures; identifying and fixing gaps in physical plant setup and maintenance; and the introduction of a single enterprise class data center management, monitoring and reporting tool that allows “global to granular” visibility into all of the systems within the data center.
<i>CTS</i>	INITIATIVES/PROJECT	Information Technology Security (InfoSec) This initiative seeks to investigate and implement solutions that meet the organizational, training, data, infrastructure and end point security needs of the NDUS. The objectives would include: the creation of a NDUS Information Technology Security team that would report directly to the CIO/Deputy CIO; the implementation of consistent and appropriate training programs to inform administration, faculty, staff and students about the importance of information security and their role in assuring security; the implementation of intrusion detection and prevention systems on the higher education network to provide proactive response to security threats; the implementation of multi-factor authentication on systems that contain sensitive or private information as a means to limit the threat of stolen credentials; and, the implementation of end point security tools that will help NDUS better protect data and infrastructure from cyber attack and data exposure.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, and 3.3
	WHO BENEFITS	All users of NDUS systems and resources will benefit from the implementation of these security initiatives. NDUS systems obtain, use and store sensitive and private information on all stakeholders and enhanced security will better protect them in the event of a security incident.
	HOW MEASURED	By the ability to proactively address security issues from a systemic perspective by organizational and operational enhancements, and by a reduction in the attack surface presented by NDUS systems and services.
<i>CTS</i>	INITIATIVES/PROJECT	Unified Communications – Lync This project will expand the Lync proof of concept to a fully functional telephony capability for CTS, the System Office, and for other interested NDUS institutions. Unified Communications is one of the identified initiatives that had been included in the State Board of Higher Education’s “Maximizing Results Through Efficiencies” plan approved at their January 19, 2012 meeting.

	GOAL - OBJECTIVE(S)	1.1, 1.3, and 1.5
	WHO BENEFITS	All NDUS users who have been migrated to Lync with enterprise telephony will have full unified communications capability and able to communicate in multiple formats with anyone whether within the NDUS or anywhere across the globe.
	HOW MEASURED	Initial user community will be the CTS staff so as to build a user community to extensively test Lync Unified Communications and allow time to build the staff support expertise. CTS will measure success for this project by how many users are migrated to Lync as a replacement to legacy telephone services.
<i>CTS</i>	INITIATIVES/PROJECT	System-wide Implementation of Document Imaging System This is a continuation of the initiative that NDUS implemented last year, 2013. NDUS selected ImageNow as the software to implement centrally because it was currently in use by five of the NDUS institutions. Using the same software allows CTS to streamline the migration process more efficiently.
	GOAL - OBJECTIVE(S)	1.2, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 4.2, 4.3, 4.7, and 4.8
	WHO BENEFITS	All stakeholders (students, staff and faculty) of the NDUS system will benefit by the increased efficiency of daily workflow processes. The NDUS benefits by centralizing the enterprise solution instead of having separate instances for each institution thereby reducing the cost of managing and maintaining such a large critical system.
	HOW MEASURED	Successful migration to or implementation of ImageNow at each of the NDUS institutions.
<i>CTS</i>	INITIATIVES/PROJECT	Identity Management System (IdM) This initiative seeks to develop a deep understanding of the IdM needs of the system by developing comprehensive documentation of current practices and a detailed vision of the intended future state of IdM in the NDUS. This will ultimately lead to the development of an RFP that defines specific requirements that will lead to the procurement and implementation of a new IdM solution. A fully implemented identity management solution would help reduce complexity, increase productivity and ultimately make the end user experience more consistent and reliable.
	GOAL - OBJECTIVE(S)	1.1, 1.2, 1.3, 1.5, 2.1, 2.2, 2.4, and 2.5
	WHO BENEFITS	All users of the NDUS systems and resources will benefit from the IdM system. IdM is the center of accessing and using all NDUS resources.

	HOW MEASURED	All employees and students will use the credentials created to access Campus Solutions, Financials, and HRMS services.
<i>CTS</i>	INITIATIVES/PROJECT	Bomgar for University System Use The University of North Dakota has Bomgar deployed and is very enthusiastic and supportive of its functionality/flexibility. This would expand the usage of Bomgar to the remaining ten NDUS institutions that want to use the product. Bomgar is an application that allows user support staff the ability to take control of a user's computer and see what the user sees on their computer screen.
	GOAL - OBJECTIVE(S)	2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, and 3.7
	WHO BENEFITS	We as a University System, across all offices and NDUS institutions, the support staff and more importantly the students attending our institutions.
	HOW MEASURED	Current statistical usage and ratios can be provided from UND as can detailed testimony of increased efficiencies from Functional users at the UND help desk.
<i>CTS</i>	INITIATIVES/PROJECT	Migration from FAMIS xi2 to FAMIS Cloud (V4) The vendor, Accruent, will be devoting all their resources towards the "Cloud V4". They will continue to support the older product we have for some time; however, their intent is very clear in moving everyone to the cloud. FAMIS is the facilities management system NDUS is using and includes use by BSC, NDSCS, NDSU, UND, and VCSU. Other NDUS institutions could utilize the software if they wanted.
	GOAL - OBJECTIVE(S)	Goals 2 and 3
	WHO BENEFITS	All users of the FAMIS software at all campuses will benefit.
	HOW MEASURED	The software is currently not ready for distribution and is in development. Investing in this initiative is needed to support awareness of this change and it is anticipated the "cloud" version would be ready for NDUS January 1, 2016 with a potential go-live date of September 2016.
<i>CTS</i>	INITIATIVES/PROJECT	Absence Management This project is to implement the Absence Management module in PeopleSoft as an automated solution for obtaining management approval to take employee leave, providing an automated process for documenting when leave is actually taken and provide that information to PeopleSoft's payroll module.

	GOAL - OBJECTIVE(S)	2.1
	WHO BENEFITS	This project will benefit all leave-earning employees and their supervisors (approximately 6,000 employees), and central HR/Payroll offices by freeing up time resources in managing these functions manually.
	HOW MEASURED	The outcome is having leave balances adjusted prior to payroll confirmation and that puts more control of timing of post-payroll business processes back in campus hands, because campuses will no longer be waiting for the payroll for <i>every</i> campus to be confirmed.
<i>CTS</i>	INITIATIVES/PROJECT	Time and Labor This initiative is to implement the Time & Labor module in PeopleSoft as an automated solution for obtaining hours worked by employees, an automated process approving hours worked, an automated process to feed that information into Payroll for North America in PeopleSoft in a timely manner, and an automated solution to replace Kronos time keeping application.
	GOAL - OBJECTIVE(S)	2.1
	WHO BENEFITS	This project will benefit all hourly and salaried non-exempt employees and their supervisors (approximately 14,000 employees). They benefit by time resources being freed up, and by having hours worked tracked accurately and in a timely manner.
	HOW MEASURED	NDUS will measure this by the time savings required by the current manual process vs the automated process. CTS expects that the project would pay for itself within two years of implementation.
<i>CTS</i>	INITIATIVES/PROJECT	Financials 9.0 to 9.2 Upgrade Provide a supported Financials system by upgrading to Version 9.2.
	GOAL - OBJECTIVE(S)	2.1, and 2.5
	WHO BENEFITS	This project will benefit all campuses in that this critical business application will remain supported by the vendor.
	HOW MEASURED	Compliance with Oracle/PeopleSoft's level of considered "current" software they will support.
	INITIATIVES/PROJECT	Campus Solutions Upgrade 9.0 to Cloud or Version 9.2 Evaluation This project is to provide a vendor supported upgrade path for Campus Solutions. This is an evaluation

<i>CTS</i>		initiative to determine whether or not, when and to which Campus Solutions upgrade path to take; Version 9.2 or the Cloud.
	GOAL - OBJECTIVE(S)	2.1, and 2.5
	WHO BENEFITS	All campuses will benefit from maintaining the Campus Solutions system at the vendor's "current" level of supported software.
	HOW MEASURED	Compliance with Oracle/PeopleSoft's level of considered "current" software they will support.
<i>CTS</i>	INITIATIVES/PROJECT	SharePoint - inside.NDUS This initiative consists of the NDUS configuring and implementing a SharePoint-based intranet environment for the NDUS System Office and Core Technology Services (CTS) while establishing an infrastructure to be robust enough to accommodate all eleven NDUS institutions.
	GOAL - OBJECTIVE(S)	2.2, and 4.2
	WHO BENEFITS	NDUS employees by having a consolidated document sharing, calendar, forms, documents, policy, project management, etc. enabling employees with access to internal resources and tools with which they can do their work. It will also enhance workflow efficiencies with standardized online technology.
	HOW MEASURED	Configuring inside.NDUS to provide 100% access to System Office and CTS personnel to internal resources and tools.
<i>CTS</i>	INITIATIVES/PROJECT	Electronic Research Grant Administration and Compliance This initiative's goal is to reduce the amount of manual processing and management of the grant and turn this into an electronic process where appropriate. The initiative contains a number of solutions within the grant administration process. Included are items such as expanding the application Visual Compliance to all of the NDUS and would allow universities to perform required background checks for staff and visitors involved in the research. NDSU and UND currently have limited licensing and one project in this initiative would be for an enterprise/System license. Also included is looking for programs that would automate pre and post award processes.
	GOAL - OBJECTIVE(S)	2.2 and 4.3
	WHO BENEFITS	Grants administration/management staff and research grantees. For the research grantees, more efficient processing and quicker response for changes and updates.

	HOW MEASURED	This will be measured by the number of processes that can be automated based upon completion of current process analysis. As processes are identified and automated, additional benefits and how they will be measured will be updated.
<i>CTS</i>	INITIATIVES/PROJECT	ALEPH 500 Library Management System Version 22 Upgrade This project will upgrade the existing Aleph 500 Library Management System software from version 20 to version 22. The vendor supports the last two versions of the software. It is typical for ODIN to maintain a current version of the software to benefit from new module enhancements and to assure continued support of the product from the vendor.
	GOAL - OBJECTIVE(S)	2.1, 3.1, 3.2, 3.3, and 4.3
	WHO BENEFITS	The functional improvements will apply to all campuses using the system. There are improvements in all areas of system functionality. These functional areas include Cataloging, Circulation, Inter Library Loan, Serials Control, Acquisitions, Public Access and other background functionality. There are improvements for all library system users.
	HOW MEASURED	This initiative is more of a maintaining vendor support on the Aleph 500 Library Management system rather than a measurement of user satisfaction.
<i>CTS</i>	INITIATIVES/PROJECT	System-wide Implementation of Dashboard Software In June 2013, UND purchased iDashboard dashboard software for their institutional needs and produced many dashboards related to Key Performance Indicators such as applicants, enrollment, retention, graduation and finance. For this project CTS will leverage the use of standard queries and integrate with other CTS supported software such as PeopleSoft. This would be more efficient and consistent. Once standard queries are created, they can be shared by other institutions and filtered for their needs. Having a single software also allows to build the expertise and share the knowledge among institutional user base. Because of increased usage, two instances of iDashboard software is recommended to be purchased with one for two-year colleges and the other for the remaining institutions.
	GOAL - OBJECTIVE(S)	1.2, 1.5, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.5, 4.2, 4.3, 4.7, and 4.8
	WHO BENEFITS	Depending on the purpose of the dashboard, some dashboards may be shared with the public and others with only the decision makers of the institutions and/or legislature, State Board of Higher Education, and System Office. Dashboards can be customized to the specific needs of other decision makers at the

		department level as well.
	HOW MEASURED	Satisfaction with the information that is being presented.
<i>CTS</i>	INITIATIVES/PROJECT	SLDS Post-Secondary Initiative The purpose of this initiative is to define a central location using grant money to incorporate Post-secondary data into the Statewide Longitudinal Data System.
	GOAL - OBJECTIVE(S)	2.2, 2.5, 3.5, 4.2, 4.3, and 4.8
	WHO BENEFITS	Every area of the Student lifecycle will be positively impacted with this initiative.
	HOW MEASURED	Numerous measurements have been identified and include: <ul style="list-style-type: none"> - Define and operationalize the collection of data for the postsecondary domain aligned with CEDS - Employment patterns of postsecondary students through certificate or degree obtainment - Postsecondary graduate follow up on industry employment, and retention of graduates in state - Average wages of postsecondary graduates by occupational degrees - Reports for secondary and postsecondary on preparation and outcomes of their students - Reliable and repeatable exchange of information between postsecondary education and workforce - What percentage of 9th graders enters college four years later? - What percentage of high school graduates take remediation in postsecondary education? - In what content areas do students require remediation? - What are the retention and degree completion rates of students who are placed in remedial course work? - What high school achievement level indicates a student is college-ready? - What course taking patterns indicate college readiness? - What high schools have successful course-taking patterns? - What students were academically prepared to enter college and complete their program or degree in a timely manner? - Were the degrees of the students who were academically prepared to enter college and complete their program or degree in a timely manner in demand in ND? - What is the relationship of a student's performance on the NDSA, postsecondary performance, and graduation? - How do dual-enrollment and advanced placement programs in high school affect college student's success?

		<ul style="list-style-type: none"> - How much do ND high school and college graduates earn in the workforce over time? - How much do ND high school and college dropouts earn in the workforce over time? - What percentage of ND college graduate continue to work and live in ND? - Which industries employ the majority of ND high school and college graduates? - How many of ND high school and college students are employed while they are in school and what kind of an impact does it have on their academic success?
<i>CTS</i>	INITIATIVES/PROJECT	<p>NDUS IT Service Catalog</p> <p>One of the recommendations from the Vantage consultants was that the NDUS should “Identify the services provided by NDUS, to whom, and how successfully.” The end goal of this initiative is to develop an IT Service Catalog that will identify the services provided by CTS, include level of expected service, current consumers of the services, and metrics to evaluate success. The Service Catalog will be developed using the ServiceNow IT Service management tool, which will contain a Service Catalog module after it is upgraded in late December 2014 (current timeline provided by vendor).</p> <p>Additionally, NDUS Procedure 1901.3 Information Technology Approval Process, Subsection 7 states; “Annually, all CIO Council representatives and Core Technology Services should review and update the list of IT products and solutions used by their institution, to be shared with the CIO Council to help promote IT support and licensing efficiencies systemwide.” The Service Catalog could be the tool used in meeting this requirement.</p>
	GOAL - OBJECTIVE(S)	1.5, 2.5, 3.5, 3.7, 4.1, and 4.2
	WHO BENEFITS	NDUS students, faculty, staff, IT service providers, researchers, and citizens will all benefit from the implementation of the service catalog.
	HOW MEASURED	Time savings and satisfaction levels achieved by students, faculty, staff and other IT service providers in querying and requesting services, and tracking/processing service requests. An IT Service Catalog will increase the overall visibility and business value of CTS services.