



North Dakota University System
Information Technology – Strategic Plan 2017-2019
(Report generally covers the period from January 1, 2017 to December 31, 2018)

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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) 2017-2020 Strategic Plan is being developed/refined; however, the NDUS strategic goals have been identified as the following:

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.

Core Technology Services (CTS) of the NDUS 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 to align that portfolio with the goals of the Board and the needs of institutions. Concurrently, CTS created a strategic vision for future directions, opportunities and challenges, 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 NDUS Strategic Plan Goal- Maximize the strengths of the 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 NDUS Strategic Plan Goal- Deliver degrees that are the best value in the nation).*
3. *Improve and Enhance Student Learning and Users' Focus (aligns with and supports the NDUS Strategic Plan Goal- Equip students for success).*
4. *Improve and Enhance Collaborative Efforts (aligns with and supports the NDUS Strategic Plan Goal- Provide programs people want, where and when they need them).*

Each goal, purpose, and strategy will be addressed later in the document. Tactical efforts and activities are also included with each goal, but 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.

It should be noted that all initiatives and projects described in this document could be superseded by the requirements of N.D.C.C 15-10-44.1 as enacted below.

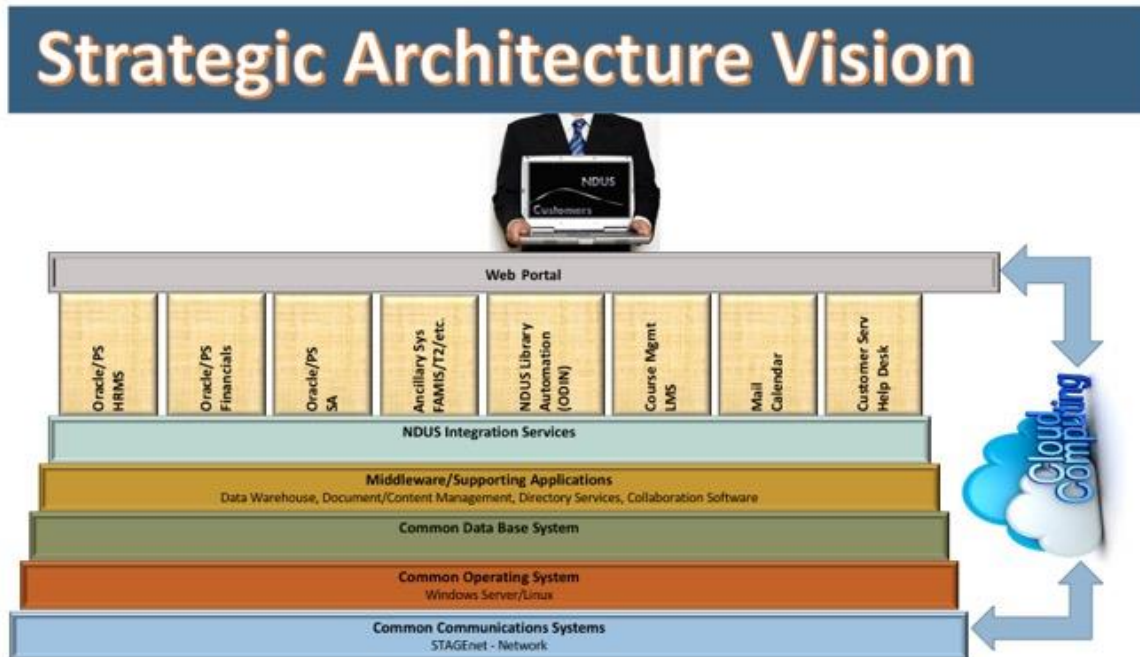
15-10-44.1. *Required use of electronic mail, file server administration, database administration, application server, and hosting services. Each institution and entity under the control of the state board of higher education shall obtain electronic mail, file server administration, database administration, research computing, storage, application server, and hosting services through a delivery system established by the board. The board shall establish policies and guidelines for the delivery of services, including the transition from existing systems to functional consolidation, with consideration given to the creation of efficiencies, cost-savings, and improved quality of service.*

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 2015-2017](#)".

Strategic Architecture

Today's world of Information Technology is complex and intertwined. Today's world of Information Technology is complex and intertwined. A typical enterprise management system consists of diverse number of individual systems that are capable of integrating or interfacing with each other, to allow information and data to easily move across the entire

environment. To make it work successfully, 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.



The base of the foundation begins with a Common Communication System. This is the state's STAGenet network.

The second layer of the foundation is Common Operating Systems: Windows Server, Linux, etc. Common Operating Systems provide the foundational component between computers, software and users. Operating Systems instruct the computer how to perform basic tasks such as accepting 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 makes sure different programs and users do not interfere with each other. It also provides security to make sure that unauthorized users cannot 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. To access information from a database, you need a database management system. This collection of programs enables us to enter, organize, and select data in a database.

Layer 4 consists of Middleware/Supporting Applications. Middleware includes such things as security software, directory services, and applications. These tools assist in controlling other applications and may include software that allows applications to exchange data even when operating on two different operating systems. Middleware sits between an operating system and applications.

The next two levels consist of the integration and application layers. The integration layer is the area where CTS links the middleware/supporting applications with the NDUS

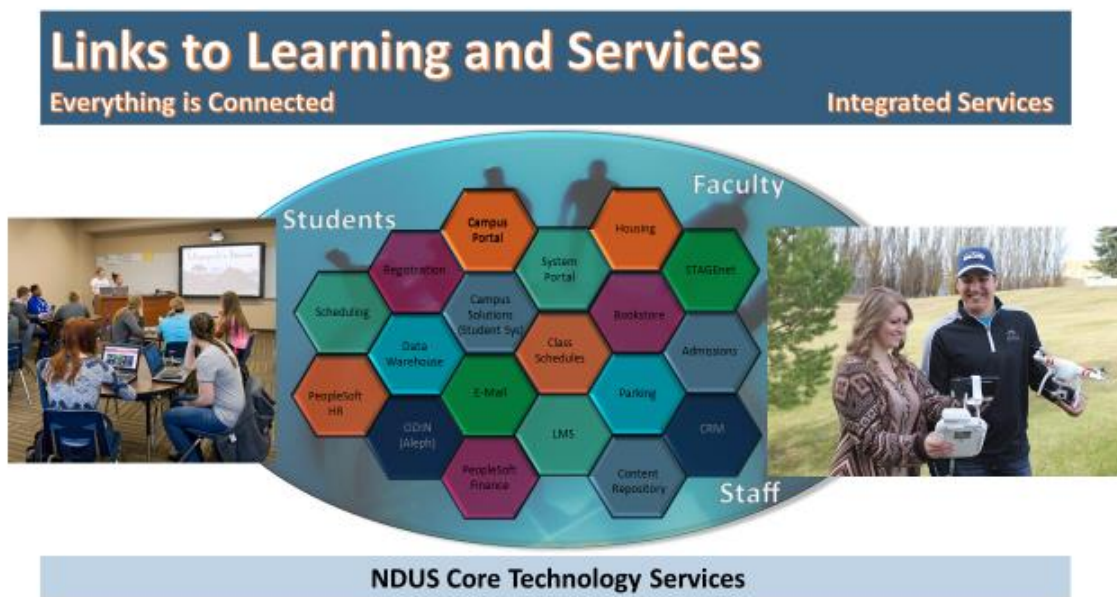
applications. The application layer consists of the NDUS software and systems that the user community accesses on a regular basis. They include applications such as ConnectND, third-party systems, Learning Management Systems (LMS), ODIN library services, e-mail/calendaring, and the NDUS Help Desk.

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

Today, more and more Enterprise level services are becoming cost-effective, secure, and available through the Cloud. The Cloud could be an internal Cloud located and managed by CTS or an external Cloud provided by a vendor. The Cloud could be any of the layers represented. These “X” as a service (XaaS) could consist of anything represented by the “X.” It may be Communications as a Service (CaaS), Desktop as a Service (DaaS), Disaster Recovery as a Service (DRaaS), Infrastructure as a Service (IaaS), Monitoring as a Service (MaaS), Platform as a Service (PaaS), Software as a Service (SaaS), and many others.

Everything Is Connected

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



Today’s IT ecosystem is a complex environment made up of a number of individual systems that are tightly integrated. A simple upgrade or enhancement to one system has the potential to impact and possibly break other things within the ecosystem. So prior to making any changes, detailed planning and analysis is required. Moreover, ongoing maintenance and support within this environment requires a high degree of expertise and attention to detail.

GOALS

This section of the document lists each goal, its purpose, and the strategy objectives. A sampling of 2017-19 IT initiatives/projects are listed here. There is a complete list later in this document. Also, included is a sampling of 2015-17 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 2015-2017](#)" or can be obtained from the Office of the CIO by e-mailing a request to Angela.Oleary@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. Provide tools and technology to enhance data and system security in order to reduce the impact of cyber threats.
4. Utilize the network infrastructure for the convergence of voice, data, and video along with other collaboration tools.
5. Enable libraries to provide easy access to licensed electronic information.
6. Provide leadership for IT enterprise architecture, IT planning, project management, and service management.
7. Provide linkage through STAGEnet, Internet2, and other national and international research and development networks.
8. Provide a centralized IT infrastructure with maximized efficiencies that meet NDUS institutional needs.

17-19 Biennium Initiatives:

- Bismarck State College would like to replace four different card systems (dining, Library, debit, identification and building access cards) with a single card system. They are looking to implement *CS Access* which is offered by CBORD and can be incorporated into their existing Mystic Card solution.
- The Functional Consolidation project, directed by N.D.C.C 15-10, kicked off this year with a visit to each campus. The visits were conducted to better understand each institution's IT environment, develop an inventory of IT infrastructure, and determine the best fit for the consolidation plan. The goal of the project is to provide

efficiencies and cost savings across the state while enhancing overall quality of services.

- CTS would like to evaluate the potential of Hyperconvergence for use as the framework of the NDUS IT infrastructure. This evaluation shall be both about functionality and cost-effectiveness. Functionality will be evaluated with regard to existing systems and services, short-term initiatives and long-term impacts.

15-17 Biennium Accomplishments:

- Bismarck State College's Installation/Replacement of Security Cameras replaced 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. This project was related to campus safety and benefits students, faculty and staff and others including BSC security personnel, housing staff and those who require the review of incidents on campus.
- North Dakota State University provided IT services for the NDSU Nursing program at Sanford Health campus in Bismarck. Services include provision of NDUS 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 services, and Tegrity equipment. This project benefits the students, faculty and staff at the Bismarck NDSU Nursing at Sanford Health campus.
- Dickinson State University made some changes to their Networking Infrastructure Life Cycle by planning and designing a secure solution for PCI requirements. They have updated credit card machines, target switches and hardware. In return the PCI audit was positive and the recommended changes were implemented. The LAN backbone speed and response increased and was best observed when imaging.

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 cybersecurity training and materials to faculty, staff and students to assist in the protection of critical systems and data.
4. Provide enterprise architecture administration, enterprise IT planning, procurement, and project management expertise.
5. Enhance educational experiences with new or repurposed resources that expand user services, technologies, and initiatives.
6. Maximize IT infrastructure to improve services to students, faculty, staff, and the citizens of the state.
7. Hire, train, and retain highly competent professional staff to meet the needs of NDUS services.
8. Provide centralized IT procurement services that allows multiple campuses to easily acquire software that meets their business needs.

17-19 Biennium Initiatives:

- CTS is considering the implementation of PeopleSoft's Travel & Expense Module, which allows the financials system to collect information on employee travel. The implementation of Travel & Expense will streamline and expedite travel reimbursements because of the online entry, the ability to attach electronic receipts to the online voucher, and the automation of moving travel requests through the approval process within the business unit. Consolidating travel information in the financials system will also enhance the ability to analyze travel spending and trends.
- CTS is considering development of My Institution @ your fingertips portal for faculty, staff and students. Students and employees currently are accessing many systems from HRMS, Student, Library, Learning Management systems etc. CTS is proposing a Web portal solution that will bring critical and current information into a single interface front and center to the student, faculty and staff.

15-17 Biennium Accomplishments:

- Lake Region State College has implemented ImageNow for document imaging, and many departments, such as the Admission, Registrar and Financial Aid, are finding it beneficial. Staff have been very satisfied with the system and can easily access student records. The Grand Forks Air Force Base has also benefited from the new system and has access to records more easily.
- CTS completed the Data Inconsistencies project detailed in House Bill 1003 Section 42. The types of inconsistencies that this project focused on are: personal and demographic information, lack of standardized chart of accounts, absence of standard financial business processes, inconsistent methods of recording/tracking student data, inconsistencies in tuition related expenses, fees, etc., inconsistent account coding and naming, improper use of 'shadow account' systems, and varied 'student'

definitions. The project formed teams of Subject Matter Experts (SMEs) to help drive project goals with expected completion by December 2016.

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 lifelong learners.

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

Strategy Objectives:

1. Leverage the IT infrastructure to create an environment for enhancing learning.
2. Evaluate enhancements to the Online Dakota Information Network's (ODIN) library systems and services to improve functionality that supports the evolving needs of users.
3. Continually improve standards, policies, procedures, and services that facilitate seamless, integrated learning.
4. Collaborate with NDUS campuses to identify business needs and respond to their expectations in a timely manner.
5. Continue to gather feedback from the NDUS user community on services provided by NDUS CTS.

17-19 Biennium Initiatives:

- Bismarck State College is considering an upgrade for their IPv4 addresses to IPv6 because of the high demands for more addresses for network connected devices on the campus. Currently, BSC is expected to access the Internet to connect back to their client's home location, and to use the Internet to access both the needed resources for presentations, and messages (both voice and email) while away from their office.

15-17 Biennium Accomplishments:

- Predictive Analytics Reporting or PAR is one project that will have a tremendous impact on student success. PAR combines student data from a number of sources to create insights into student academic progress. In turn, institutions can use the information provided by PAR to make better informed decisions. A number of committees and councils have participated in PAR demonstrations, including the State Board of Higher Education, the Academic Affairs Council, joint (K-12/SBHE) boards, the CIO Council, the Chancellor's Cabinet, and the Legislative Higher Education Committee. PAR is scheduled to be fully operational across all 11

institutions by mid-January 2017.

- The implementation of Oracle's PeopleSoft Enterprise Student Administration Integration Package (SAIP) with Minot State University's Blackboard system is complete. MiSU went live this past summer and are using the SAIP data feeds. This allows for a more efficient means of transferring data between the two systems.

GOAL FOUR:

To improve and enhance North Dakota University System collaborative efforts.

Purpose:

Provide a seamless experience for students taking classes at multiple NDUS institutions. By working together and with the State, K-12, and other constituents, the NDUS is able to bring new technologies to North Dakota and find efficiencies in supporting 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 and deploy appropriate administrative, learning, and research support systems.
4. Identify where converged services are appropriate and work with the NDUS institutions to deploy the services to enhance collaboration.
5. Enable collaboration among learners by providing easy, efficient, and reliable access to learning resources anytime and anywhere.
6. Leverage educational resources and IT systems to minimize barriers between institutions, libraries, and other sources of learning.
7. Expand virtual and digital holdings available within the Online Dakota Information Network (ODIN) libraries.
8. Promote Internet2 and research-level infrastructure.
9. Continue the integration of video, audio, and data collaborations in cross-platform environments.
10. Collaborate with business and industry to identify opportunities for innovations that enhance NDUS CTS systems and services.

17-19 Biennium Initiatives:

- North Dakota State University is considering providing university software anywhere on campus or via the Internet. The software will use virtualization solutions to provide the application virtualization infrastructure. It will consist of a number of pilot tests and production services. The services may apply to a few applications or a larger set, and may utilize other virtualization methodologies. Providing this service allows faculty at any location to better prep for courses using the same environment they will teach with. Students can do individual and group project course work outside of the confines of lab schedules and not need to purchase a particular operating environment for a niche course.

15-17 Biennium Accomplishments:

- CTS's ODIN department created a reporting process to provide normalized library report data to be used by ODIN libraries for reporting to the state library. The goal was to create reports and establish a process to use those that will guide ODIN libraries in the reporting of uniform statistics required by the North Dakota State Library. The process has improved the uniformity across the libraries and reduced the work expended to do the reporting.
- Upon implementation of the Team Dynamix work management system a decision was made that it would be used to create the CTS IT Service Catalog. The Service Catalog is used to identify services provided by CTS, include level of expected service, current consumers of the services, and the metrics to evaluate success. The catalog is in operation and continues to be expanded so that services can be requested directly from the catalog whether the request is from internal CTS staff or from other NDUS staff.
- CTS has been collaborating with the Department of Public Instruction (DPI), and the State's Information Technology Department (ITD) to meet the demands of K-12 longitudinal reporting. Both teams worked to identify a collection of data for the postsecondary domain. The project is on track and reports are currently under development in the Data Warehouse environment using data from four Campus Solutions modules: Admission, Student Records, Financial Aid and Student Financials.

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 2017 - 2019 NDUS IT Plan. Detailed information regarding each initiative/project is on file with the Office of the CIO

NDUS and Campus Planning

<i>BSC</i>	INITIATIVES/PROJECT	Extend Campus Network to Lineworker Campus
	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 at the remote campus. This project will provide the Lineworker Campus with a high speed network connection directly to our main campus with the equipment needed on the remote end (equipment on the main campus end is already in place) via a leased fiber link similar to the connections we provide to the Mechanical Maintenance program located at another Mandan campus and the Allied Health campus located in downtown Bismarck. With the proposed fiber links we will be able to provide a far more robust bandwidth, which will also allow us to provide additional services such as VoIP services from our PBX, free voicemail services, remote computer support to the limited equipment at their location, add computers for students to use to research and access the Internet, installation of security cameras to monitor the inventory they have located outside, facilities card access into their building when we decide to move in that direction, and video conferencing when needed.
	HOW MEASURED	Increased number of active connections to the network/Internet Student's grades Increased student retention Theft investigations would be more successful based on footage captured on security video Remote lectures utilized where that capacity is currently not available Availability and usage of Library resources Computers can be added to the location to be used for searching resources
<i>BSC</i>	INITIATIVES/PROJECT	Facilities Card Access System
	GOAL - OBJECTIVE(S)	1.2,1.3,2.5 and 3.5
	WHO BENEFITS	Students- by combining various cards like: Dining, Library, Identification, Debit, and building access all into their Mystic Card.
	HOW MEASURED	Efficiencies gained by not being depended on a locksmith and the time saved by not waiting for a key to be duplicated Custodial and maintenance employees can come directly to work without being concerned about needing to walk through each building to ensure main external doors are unlocked well before employees start arriving at work Time saved in record keeping, especially at the beginning of the semester when students in campus housing receive their access keys for their buildings Time saved in record keeping, especially at the end of a semester or academic year when students move out of the housing units

NDUS and Campus Planning

			Time saved by locking and unlocking all doors or just select doors from a central or even a remote location opposed to walking through each building to lockup or unlocked doors
<i>BSC</i>		INITIATIVES/PROJECT	IPv6 Deployment
		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	<p>Campus Network Engineers- by making our network efficient and more secure by better segmenting our network traffic due to the additional number of network addresses that would be made available,</p> <p>Students and other customers- able to connect to our campus networks, with proper credentials during peak times</p> <p>Faculty- assured of receiving network address and not need to be concerned that they will not have a network address available to them when they enter into the classroom to teach.</p> <p>Presenters at conferences or events held on our campus would be guaranteed an address (with proper credentials) and would not need to be concerned about being able to connect to the network.</p>
		HOW MEASURED	
<i>BSC</i>		INITIATIVES/PROJECT	Technology Refresh Cycle Management
		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 will benefit by having a reliable and consistent connection to network resources. The departments responsible for acquisitions, administration and maintenance of the equipment and the accounting team will also benefit (see section on anticipated benefits). Knowing in advance the funding amount allows us to better prepare for new fiscal year equipment purchases and to be able to better prepare for and schedule our annual projects.
		HOW MEASURED	<p>Cash/budget management- budgeting will be consistent from one fiscal year to the next and will easily projected for future funding periods</p> <p>Vendor management- should be able to negotiate special pricing with vendors knowing we will be replacing equipment annually and also knowing approximately how much equipment will be replaced annually</p> <p>Consistency in upgrades with equipment should help mitigate security concerns</p> <p>Consistency with configuration, administration and implementation practices assist those responsible for the implementation due to their familiarity with the equipment</p> <p>Developing a positive relations with a vendor will result in better services from that vendor</p> <p>Annual project planning and time management will be simplified</p>

NDUS and Campus Planning

<i>DCB</i>	INITIATIVES/PROJECT	Dakota College of Bottineau has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine DCB services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>DSU</i>	INITIATIVES/PROJECT	Dickinson State University has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine DSU services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>LRSC</i>	INITIATIVES/PROJECT	Lake Region State College has no major IT projects planned for the 2017-19 timeframe but will be involved in the CTS consolidation project to determine LRSC services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>MaSU</i>	INITIATIVES/PROJECT	Mayville State University has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine MaSU services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>MiSU</i>	INITIATIVES/PROJECT	Minot State University does not have any formal projects planned for the 2017-2019 (January 1, 2017 thru December 31, 2018) timeframe to be included in this document but will be involved in the CTS consolidation project to determine MiSU services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>NDSCS</i>	INITIATIVES/PROJECT	NDSCS has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine NDSCS services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>NDSU</i>	INITIATIVES/PROJECT	Application Virtualization- Extending Learning Environment
	GOAL - OBJECTIVE(S)	1.2,1.3,1.4,1.6,1.8,2.4,2.5,2.6,3.1,3.3,4.5 and 4.9
	WHO BENEFITS	This service will directly benefit students and faculty, as well as staff. Assuming there is funding to reach a production stage in the project, the user base will routinely be solicited for feedback to verify that the service is providing the value intended and to find ways to continuously improve it.
	HOW MEASURED	Implementation of at least one pilot application, used for courses.
<i>NDSU</i>	INITIATIVES/PROJECT	Ensure Stability of NDSU's IT Services, Systems, Infrastructure and Budget
	GOAL - OBJECTIVE(S)	1.2,1.3,1.4,1.6,1.7,1.8,2.1,2.2,2.3,2.4,2.5,2.6,2.7,3.1,3.3,3.4,4.1,4.2,4.3,4.4,4.5,4.6,4.7,4.9 and 4.10
	WHO BENEFITS	All NDSU on-campus and off-campus constituents benefit from the IT services, systems and infrastructure outlined in the Business Case. NDSU's affiliated entities statewide (such as NDSU-Bismarck, our agricultural extension branches, our agricultural research centers and the NDSU Forest Service) benefit from the IT services, systems and infrastructure outlined above in the Business Case. Other state (e.g.: Northern Crops Institute, North Dakota Trade Commission, State Seed) and federal entities that are housed on the NDSU campus benefit from the IT services, systems and infrastructure outlined in the Business Case. Other NDUS entities (e.g.: North Dakota State College of Science and all NDUS campuses participating in 5-digit dialing) benefit from the IT services, systems and infrastructure outlined in the Business Case.
	HOW MEASURED	Business initiative progress and impact to the campus measured by sustainable operations and transparent business continuity.

NDUS and Campus Planning

<i>UND</i>	INITIATIVES/PROJECT	University of North Dakota has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine UND services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>VCSU</i>	INITIATIVES/PROJECT	Valley City State University has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine VCSU services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>WSC</i>	INITIATIVES/PROJECT	Williston State College has no major informational technology projects planned for 2017-2019 at this time but will be involved in the CTS consolidation project to determine WSC services to be consolidated.
	GOAL - OBJECTIVE(S)	
	WHO BENEFITS	
	HOW MEASURED	

NDUS and Campus Planning

<i>CTS</i>	INITIATIVES/PROJECT	HRMS 9.1 to 9.2 Upgrade
	GOAL - OBJECTIVE(S)	2.1
	WHO BENEFITS	This project will benefit all campuses in that this critical business application will remain supported by the vendor
	HOW MEASURED	Compliance with PeopleSoft/Oracle's level of considered "current" software they will support. Upgrade needs to be completed prior to September 2017.
<i>CTS</i>	INITIATIVES/PROJECT	Implement Oracle's PeopleSoft Expense module
	GOAL - OBJECTIVE(S)	2.1, 2.2 Oracle's PeopleSoft expense module streamlines and automates travel spend management and establishes policy-driven controls for expense reimbursement. With PeopleSoft travel and expense management, the amount of time and effort required to submit, approve, process and pay expenses is reduced.
	WHO BENEFITS	This project will benefit any employee who travels on behalf of any of the University System campuses or organizations. It will also benefit central accounting offices in that the need to audit every single travel expense is reduced because travel rules are configured in the software.
	HOW MEASURED	Deploy the module on all NDUS campuses.
<i>CTS</i>	INITIATIVES/PROJECT	Assist two research campuses (NDSU and UND) in the implementation of pre-award and post-award research software.
	GOAL - OBJECTIVE(S)	2.2 Provide approved integrations between PeopleSoft Financials/HRMS and Novelution.
	WHO BENEFITS	Principle Investigators, grants and contracts staff, and research offices on the research campuses, as the software will ease the proposal process
	HOW MEASURED	Integrations flowing smoothly upon campus' implementation of software.

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<i>CTS</i>	INITIATIVES/PROJECT	Implement Oracle/PeopleSoft's eProcurement module.
	GOAL - OBJECTIVE(S)	2.1 eProcurement is designed to help end users requisition items online, and gaining approvals through workflow. Using the software helps reduce out-of-system purchasing, enforce contract purchasing and capture spending information for future analysis. This module integrates with Accounts Payable, Asset Management, Project Costing and General Ledger, which will streamline business processes and reduce data entry.
	WHO BENEFITS	Users with purchasing authority on each campus. Each campus in that easing procedures to purchase on contracts will reduce costs.
	HOW MEASURED	Module going live on every campus.
<i>CTS</i>	INITIATIVES/PROJECT	Implement Oracle/PeopleSoft's ePerformance module.
	GOAL - OBJECTIVE(S)	2.1,2.2,2.6 ePerformance streamlines and automates the employee review process. Within the application, once can general document
	WHO BENEFITS	Employees, Supervisors and HR staff
	HOW MEASURED	Module going live on every campus.
<i>CTS</i>	INITIATIVES/PROJECT	Enterprise Unified Communications
	GOAL - OBJECTIVE(S)	1.1, 1.4 and 1.6
	WHO BENEFITS	All of the NDUS employees will benefit from using Skype for Business as it will allow them to serve customers from any location. No need for employees to feel they are tied to their workspace by requiring access to their phone. Having the ability to make and receive phone calls from any location will allow employees to work from anywhere.
	HOW MEASURED	Replacing legacy phone services with Skype for Business phone numbers - starting with CTS staff and eventually rolling out to other NDUS institutions, as an options for legacy phone system near end of life.

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<i>CTS</i>	INITIATIVES/PROJECT	Document-Imaging-Operational
	GOAL - OBJECTIVE(S)	1.2, 1.3, 1.6, 1.8,2.1,2.2,2.3,2.4,2.5,2.6,2.7,2.8,3.1,3.3,3.4,3.5,4.1,4.2,4.3,4.4,4.5 and 4.6
	WHO BENEFITS	All stakeholders (students, staff, and faculty) of the NDUS system benefit by the increased efficiency of daily workflow processes. The documents are readily available in a single system for authorized personnel to access at anytime from anywhere. The system benefits by centralizing the enterprise solution instead of having separate instances for each institution by reducing the cost of managing and maintaining such a large critical system.
	HOW MEASURED	With the centralization of document imaging system, we currently have 1380 faculty and staff users in the system with over 25 applications including complex workflows.
<i>CTS</i>	INITIATIVES/PROJECT	Exploring the Feasibility of Implementing the Next Generation Data Center
	GOAL - OBJECTIVE(S)	1.1 thru 4.10
	WHO BENEFITS	Staff by minimizing the reliance upon other personnel, and by increasing the ability to focus on new initiatives/projects.
	HOW MEASURED	The number of systems/applications that can be deployed until expansion is required. Measure and track utilization percentages of new infrastructure and comparing utilization to existing/non-resources.

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CTS	INITIATIVES/PROJECT	Functional Consolidation for HB 1003 Section 8
	GOAL - OBJECTIVE(S)	1.1,1.2,1.3,1.4,1.6,1.7,1.8,4.1,4.2,4.4,4.5,4.9 and 4.10
	WHO BENEFITS	Meet legislative bill 1003 Section 8
	HOW MEASURED	<p>Policy addresses all required services noted in HB 1003 Section 8</p> <p>Policy identifies that there will be a defined process for a specific product to be exempted from consolidation services</p> <p>NDUS procedure reviewed and approved by CIO Council</p> <p>NDUS procedure reviewed and approved by NDUS Chancellor's cabinet</p> <p>NDUS procedure contains categories, definitions and an exemption process</p> <p>There will be one document that includes an executive summary, a by-category summary, then a list of each campus with every system listed including end result</p> <p>There will be two prioritized list of systems, biggest value to consolidate and project schedule</p> <p>There will be a consolidation project plan and schedule for actions that can take place up to the need for additional funding</p> <p>There will be a business case for additional funding needed to complete the consolidation effort. The document will use the recommended template for form and format.</p>
CTS	INITIATIVES/PROJECT	myInstitution Portal
	GOAL - OBJECTIVE(S)	1.2,1.3,1.6,1.8,2.2,2.5,2.6,3.1,3.3,3.4,3.5,4.2,4.3,4.5,4.6,4.9 and 4.10
	WHO BENEFITS	<p>The benefits for the student is multifold. The portal will be the virtual one-stop site for the student. The dynamic Web pages based on the student role will enhance the effectiveness of the site by focusing on what is important to the student. The responsive design with user friendly interfaces will allow the student to access the site anywhere anytime in any device.</p> <p>Similar to the students, faculty and staff will also see the benefits of a portal by displaying frequently used functionality such as email, tasks, alerts, etc. in one location and providing shortcuts to other applications</p>
	HOW MEASURED	Increase in satisfaction of students and efficiencies of employees

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<i>CTS</i>	INITIATIVES/PROJECT	NDUS 0365 Migration
	GOAL - OBJECTIVE(S)	2.2,2.4 and 2.6
	WHO BENEFITS	Students, Faculty, Staff and Legislatures
	HOW MEASURED	All four campuses: MaSU, MiSU, NDSU and VCSU will have all mailboxes, calendars, contacts and other integrated services migrated to the NDUS tenant.
<i>CTS</i>	INITIATIVES/PROJECT	Information Security (InfoSec)
	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 end users
	HOW MEASURED	Increased ability to proactively address security issues from a systemic perspective by organizational and operational enhancements. All users will have a higher awareness of cyber security and develop more secure personal practices. Increased layers of security to mitigate threats to resources at the network, data and end point level. Reduction in the attack surface presented by NDUS systems and services.
<i>CTS</i>	INITIATIVES/PROJECT	STAGEnet Upgrade
	GOAL - OBJECTIVE(S)	1.1,1.2,1.3,1.4,1.5,1.6 and 1.7
	WHO BENEFITS	All of NDUS campuses
	HOW MEASURED	Lower purchasing/procurement costs Improved efficiency and consistency across NDUS, K12 and State Government Improve and/or additional security capabilities at institutions
<i>CTS</i>	INITIATIVES/PROJECT	System wide Automation of Transcript Processing
	GOAL - OBJECTIVE(S)	1.2,1.3,1.6,1.8,2.1,2.2,2.3,2.4,2.5,2.6,2.7,2.8,3.3,3.4,3.5,4.3,4.4,4.5,4.6 and 4.10
	WHO BENEFITS	All stakeholders (prospective students, transferring students, staff, and faculty) of the NDUS system benefit by the increased efficiency in transcript processing.
	HOW MEASURED	The institutions will be able to make decisions faster and admit quality students. The university system will be able to attract and retain students due to efficient and quality service provided from the inception of student and parent interaction with the institutions. This will directly correlate to increased enrollment and revenue.