NORTH DAKOTA UNIVERSITY SYSTEM

ACCESS. INNOVATION. EXCELLENCE.

FY 2018 Performance & Accountability Report

Report covers the period from January 1, 2016 to June 30, 2018)

Presented By:

Darin King

Vice Chancellor for Information Technology/CIO

NORTH DAKOTA
UNIVERSITY SYSTEM
ACCESS. INNOVATION. EXCELLENCE.

Executive Summary

The purpose of this report is to meet statutory requirements found at N.D.C.C. 15-10-44.c regarding the annual performance and accountability. Previous versions of this document were called the NDUS Information Technology Strategic Plan – Status Update. This report is a transition between the older process and a new process that we believe better meets the statutory requirements and provides better, more insightful information on the work the institutions and Core Technology Services are doing to deliver technology solutions that align with the strategic plan of the North Dakota University System.

This report contains a list of accomplishments despite the budget situation facing the University System. The move to a single Software as a Service (SaaS) Blackboard Learning Management solution for all campuses has been a significant effort for everyone involved. Every campus, as well as Core Technology Services (CTS), has put in a lot of effort to make the transition. There were certainly bumps along the way, but the dedication of campus and CTS staff working together overcame the initial challenges. We wish to thank the faculty and students for their patience as we endeavor to provide a useful tool for providing top-tier education.

You will see how some of the campuses started the biennium without any planned IT projects, but ended up performing several. Many of the projects were IT solutions that either improved enrollment or retention, or provided efficiencies that drove cost savings. These emerging cooperative projects accommodated the dynamic challenges taking place at the campuses, many linked to reduced staffing levels. I wish to commend those staff for their dedication and efforts to keep the IT systems working, and taking on new projects or responsibilities.

IT Security was one area that received a great deal of attention through the collaborative efforts of CTS and the institutions. The Information Security Council reviewed and updated all security policies and procedures. Moreover, NDUS was the first in the nation to pilot a cybersecurity leadership table-top exercise in cooperation with the Department of Homeland Security and the Federal Emergency Management Agency. This half-day event focused on the roles and responsibilities of campus leadership in the event of a cybersecurity incident. It included participation from local, state, and federal officials, along with industry subject matter experts. Tailored case studies challenged participants with multi-faceted threat-based scenarios designed to test and strengthen the institutions' preparedness, response, and recovery capabilities in the event of a cyber incident. There are more details about security projects below.

In the past this was a biennial update. Moving forward, this will be an annual document highlighting the IT efforts for each year.
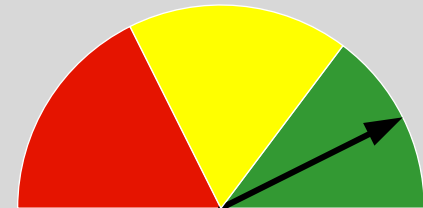
I hope you find this format helps you better understand the efforts of the NDUS IT organizations across the state to help our institutions deliver degrees that are the best value in the nation.

Sincerely,

Darin King

Vice Chancellor of Information Technology/CIO

2017-2019 IT Strategic Goals and Objectives

Goal #1	Strategy Objectives
Support North Dakota University System infrastructure needs.	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.
Goal #2	**Strategy Objectives**
Improve North Dakota University System information technology-enabled business processes and services while providing and managing resources to align with NDUS strategic goals.	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 re-purposed 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.

Goal #3	Strategy Objectives
Improve and enhance North Dakota University System student learning and user's focus.	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.
Goal #4	**Strategy Objectives**
Improve and enhance North Dakota University System collaborative efforts.	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, 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.

Matrix of Projects/Initiatives by Institution or Entity

The following pages contain a listing of all the initiatives/projects that campuses and NDUS CTS had submitted for the 2017 – 2019 NDUS IT Plan, as well as any other project the campus performed, or is performing, over the course of the report period (1/1/2017-6/30/2018). Each institution provide the status update/project data.

Bismarck State College

Extend Campus Network to Lineworker Campus

Students and Faculty at the remote campus would benefit. 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.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

This project did not receive funding necessary for implementation.

Facilities Card Access System

Students would benefit by combining various cards like: Dining, Library, Identification, Debit, and building access all into their Mystic Card.

This project aligns with the following NDUS strategic objectives: 1.2, 1.3, 2.5 and 3.5.

This project did not receive funding necessary for implementation.

IPv6 Deployment

This project will deploy internet protocol version 6 on the BSC network. This will make our network more efficient and more secure by better segmenting our network traffic due to the additional number of network addresses that would be made available,

Students and other customers would benefit by being able to connect to our campus networks, with proper credentials during peak times

Faculty would be 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 the classroom to teach.

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.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1, 1.2, 1.3, 2.4, 2.5, 3.1, 3.2, 3.4, 3.5 and 4.4

The deployment of IPv6 hasn't been started. BSC will follow the NDUS/CTS as they deploy this technology first. Funding will be necessary at that time.

Technology Refresh Cycle Management

This project is to establish a standard refresh cycle for technology equipment.

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. 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. Other benefits include:

- Cash/budget management- budgeting will be consistent from one fiscal year to the next and will easily projected for future funding periods
- 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
- Consistency in upgrades with equipment should help mitigate security concerns
- Consistency with configuration, administration and implementation practices assist those responsible for the implementation due to their familiarity with the equipment
- Developing a positive relations with a vendor will result in better services from that vendor
- Annual project planning and time management will be simplified

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Technology equipment replacement is currently in progress. Computers, switches, WAP's have been ordered to replace end of life equipment. Critical equipment is being replaced but an established replacement cycle has not been possible due to the budget shortfall.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. BSC was one of the first schools to migrate to the central solution.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

As of May 2017, all courses have been deployed to the NDUS Blackboard instance. Specific Bb components are encouraged to be used by all on campus faculty (such as the gradebook). The migration of existing courses and development of new courses has been successful. Blackboard is being used exclusively for online course delivery.

Dakota College at Bottineau

Dakota College at Bottineau identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

Blackboard Learning Management System
The State Board of Higher Education chose to move to a single LMS solution across the state. DCB went live for Summer 2018.
This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.
Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.
All DCB users are enrolled and all courses are delivered via the NDUS Blackboard instance.

Dickinson State University

Dickinson State University identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

AppArmor Safe Campus

This project is to provide public safety and other related information via mobile devices for all DSU students, faculty and staff. This will allow DSU to improve emergency preparedness and dissemination of emergency and other campus information.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.8.

The forms have been designed and going through review. Data has been ported from the previous system of SchoolDude. The vendor has access to upload the apps in Google Play and AppleStore. The full implementation will be done by Fall 2018 to begin measurements.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. DSU began piloting courses in the new environment for Spring 2018.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

DSU is piloting the NDUS Blackboard instance in the Summer and Fall of 2018 with a full implementation for the Spring 2019 semester.

CSCI-101 SAM Integration

This project is to changing settings to maximize integration between SAM and DSU students.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1.

Settings were reviewed and tested noting no network changes were needed. Project closed as this appears to be a different issue.

Energy Tech Services HVAC Control

A new HVAC system is being installed in DSU's May Hall, which will provide control features for our facilities staff. Connectivity is needed to allow this control of various functions of the system. It will provide enhanced environmental experience in related buildings and reduced energy costs

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.8.

The IT project is 20 % complete. Unesco is ordering hardware and software to continue the project.

EAB SSC

EAB's Student Success Collaborative is a partnership to transform the student experience and help more students graduate. The Student Success Collaborative (SSC) is helping more than 450 members build student-centric universities that support, retain, and graduate more students. SSC's unique approach combines research, technology, and consulting in a custom way for each member institution, helping members see retention and graduation increases of 2-11%. The SSC partnership helps institutions transform the student experience and improve key outcomes through student success analytics, customized predictive models, communication and scheduling tools, comprehensive case management, direct-to-student mobile engagement, embedded accountability tools and unlimited access to up-to-date best practices and customized change management support.

The Dickinson State University Four-Year Financial Plan is dependent upon our enrollment headcount increasing to approximately 2,000 students during this period, up from the Fall 2016 enrollment headcount of 1,386. Our enrollment management partnership is designed to increase new student enrollment; while this EAB SSC project to vital to improving the retention and graduation rates of those students already enrolled at DSU.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1.

The application was live in April. Selected faculty have tested with positive feedback. NDSU is providing daily uploads to EAB for DSU data to remain current. Measurements will be more useful later in Fall semester.

Follet ConnectOnce

DSU Campus Store was previously self-operated by DSU staff, supplemented by MBS. Follett has been selected to manage the DSU Campus Store. Follett will be taking over operations at the bookstore by the end of October 2017. Follett contacted DSU ITS and is requesting this information. ConnectOne is included in the contractual arrangement between DSU and Follett.

Follett will manage and setup private network with own T1. Student account integration will consist of extract from PeopleSoft.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.6 and 3.1.

Migration from MBS is complete. Extracts and imports are implemented for transactions same as with MBS. New features to request and order books are in place and adjusting the faculty to new processes. ConnectOnce implementation is put on hold and will be reviewed and consistent with other campuses that may go in this direction.

Honeywell Door Access Control and Security Cameras

This is part of the DSU agreement with UNESCO; a list of projects focusing on deferred maintenance and life safety/life enhancement issues in coordination with the NDUS Facilities Office. This specific project will address access control issues to DSU facilities, as well as other 'one card' proximity uses.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.8.

The IT project is 20 % complete. Unesco is ordering hardware and software to continue the project.

Royall

The IT component of this project was removed.

eSports

This is an enhancement that DSU is currently exploring, and tentatively planning to implement. A dedicated room will be used to construct an 'arena' where several gaming stations will be installed with the required technology for enhanced gaming; a dedicated internet connection may be required.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 3.1.

This project is still in the conception stage.

Lake Region State College

Lake Region State College identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

Blackboard Learning

The State Board of Higher Education chose to move to a single LMS solution across the state. LRSC was one of the first schools to migrate to the central solution.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

Lake Region State College has moved all courses to the NDUS Blackboard instance. Specific Blackboard components are encouraged to be used by all faculty (such as the gradebook). The migration of existing courses and development of new courses has been successful.

Website Redesign and Hosting

Lake Region State College needs to give students and customers an enhanced experience via its website, which currently is hindered since the site is unresponsive. A responsive site, armed with navigation that better targets various audiences (prospective students, current students, faculty, parents, and the public) will allow us to serve those areas with more comprehensive site that has these needs in mind. The college also needs to improve its internet-based marketing and recruiting, a goal unattainable with our current unresponsive website. LRSC would like a responsive site that allows better targeting of primary and secondary audiences. In addition, the current LRSC website is not user-friendly for those working in the backend management system. Being a smaller college with limited staffing, it is imperative that we allow more individuals than our website developer/creative director to keep content current.

The main goal of the site is to serve as a gateway to market to future students, their parents, and other stakeholders who influence student decisions on where to attend college. Secondary markets include current students, faculty staff, and community. We want visitors to engage with us and LRSC wants to have better measures of marketing campaigns.

Main goals:

- Increase enrollment of full-time students in our programs by communicating and marketing to them with a responsive site.
- Enhance outreach to new markets outside of current borders by communicating and marketing to new prospects with a responsive site.
- Generate leads for both students and donor.
- Coordinate better communications and outreach with alumni and friends of LRSC.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.5, 2.6, and 4.2.

Lake Region State College web site redesign is moving along nicely, we are past the design phase and working on the content phase of the project. We are looking at a projected go live date later in August.

Mayville State University

Mayville State University identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. MaSU began piloting courses in the new environment for Summer 2018.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

MaSU is piloting the NDUS Blackboard instance in the Summer and Fall of 2018 with a full implementation for the Spring 2019 semester.

Residence Hall Network Upgrade

Network switches and wireless access points in residence halls were last installed in 2011. The new network equipment will better support the needs and expectations of today's students.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1 and 1.2.

This project is complete with all planned resident hall network equipment
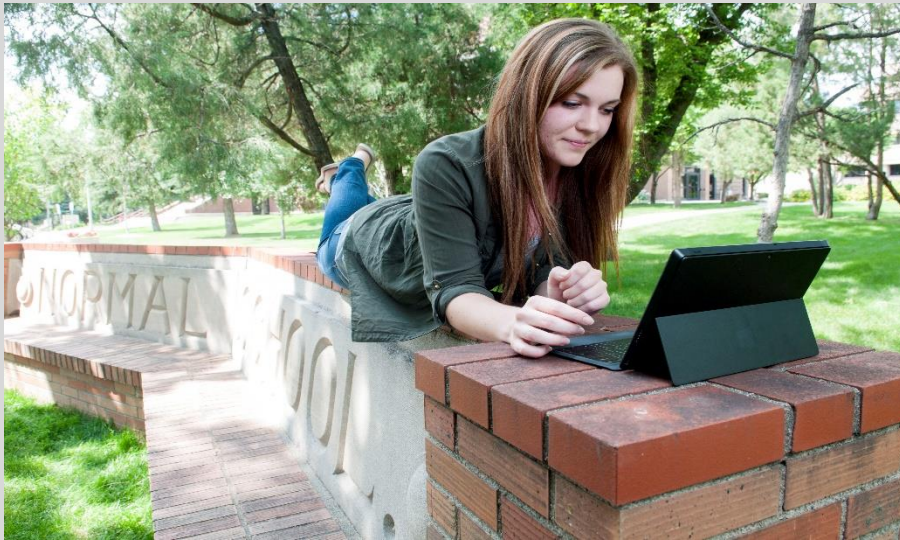
Minot State University

Minot State University identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

ANSYS Student Engineering Simulation Software

This project deployed electromagnetic field, circuit and system simulation software for the design of electromechanical devices.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.4, 2.5, and 2.6.

The project is complete. The software was utilized in classroom labs.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

MiSU is scheduled to pilot the NDUS Blackboard instance in Fall of 2018 with a full implementation for the Spring 2019 semester.

North Dakota State College of Science

North Dakota State College of Science identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. NDSCS was one of the first schools to migrate to the central solution.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

All LMS course content is now hosted in Blackboard. Pearson is no longer being used for any instructional purposes.

NDSCS

THE SCIENCE OF SUCCESS.

North Dakota State College of Science

North Dakota State University

Application Virtualization- Extending Learning Environment

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.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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

This initiative was not successful. The pilot revealed that technical difficulties with getting students to use virtualized applications from off campus more than offset the benefits. While the technology still shows promise, the effort to make it available in a way that is very easy for students is not worth it presently, especially given that approximately 95% of NDSU's students are on campus. The pilot ended and no new initiatives took its place.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

NDSU staff have been working to mitigate issues arising from having 11 different institutions in a single instance of Blackboard. Ability to mitigate has fallen short to date. The NDUS Blackboard does not offer any benefits in quality of service to faculty and students at this point and NDSU has requested to remain on its own instance.

Ensure Stability of NDSU's IT Services, Systems, Infrastructure and Budget

All NDSU on-campus and off-campus constituents benefit from the IT services, systems and infrastructure.

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.

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.

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.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

In an effort to stabilize the budget in the face of a 20% reduction in state funding, the IT Division lost nearly 10 positions. Appropriated funds were added to the base budget to assist with overall deficits. NDSU and UND received an unexpected $1.2M cut to Northern Tier (NTN-ND) funds. This has not yet been addressed.

University of North Dakota

The University of North Dakota identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the past year.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. UND went live in the Fall of 2017.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

As of August 2017, all users and courses have been migrated to the NDUS Blackboard instance.

EERC Email

As part of the EERC email migration to O365, EERC is requesting to keep their current domain name undeerc.org as the default send address, SMTP, for their employees, Student works can continue to use und.edu.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1, 1.2, and 1.8.

Discussions are underway to allow EERC to have its own tenant.

Degree Planning

The University of North Dakota's (UND) Provost has challenged UND staff to have all incoming freshman acknowledge a four-year plan to graduation by the end of their first semester.

This plan will lay out a class schedule for each student to provide a roadmap to graduation. By utilizing a degree planning solution, the student can see what classes will need to be taken and when to take them in order to graduate with their respective major in four years. Additionally, in order to align with the Model for Incentive-based Resource Allocation (MIRA), staff and faculty will utilize the data on student registration intentions for academic planning (e.g., faculty staffing, classroom allocation).

Currently, UND does not have an effective method of ensuring that students are able to adequately plan their course schedule over their undergraduate career. Subsequently, students are not able to properly map their course schedule, which could hinder their ability to graduate on time. Additionally, UND is not able to plan for the adequate number of professors and classrooms until the beginning of an academic semester. UND lacks the data needed to properly align course supply with student intentions. A degree planning software would allow academic advisors to focus more of their time and resources on other priorities.

UND should seek to improve on the current degree planning process; several software programs are available to assist institutions like UND in this goal. Campus-wide implementation of a degree planning software would assist in improving graduation rates by helping students appropriately plan their path to their degree. This would also increase the efficiency of classroom utilization, which would help to avoid "bottleneck" courses and an abundance of open classroom seats. Integration of the software would range from six months to eighteenth. After implementation, UND would immediately benefit from the ability to project future demand for courses and assist academic advisers. Graduation rates would begin to see changes over a longer time horizon as students begin to utilize the software. These changes would align with UND's goals as outlined in the Strategic Plan.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.2, 2.5, 3.1, 3.4, 4.4, 4.5, and 4.9.

Testing underway. Expected to be in production by fall 2018

Online Program Management

The rate of online enrollment in higher education continues to grow. Recent data from the Integrated Postsecondary Education Data System (IPEDS) points to an 11% increase in online enrollment between 2012 and 2015, while on-campus enrollment for the same period decreased by 3.2%. Several dynamics are fueling this trend including a rise in the number of non-traditional learners who demand convenient access to education and flexible pacing of academic programs. Here in North Dakota, Governor Doug Burgum has recognized this trend and has indicated all state agencies – particularly higher education – are to embrace technology while educating and building the workforce of the 21st century.

Responding to this direction, UND is seeking to collaborate with an Online Program Management (OPM) vendor so that it can increase access to in-demand degree and certificate programs essential to the region's and the nation's workforce, and improve both the student success and overall quality of its online program offerings.

UND has been providing online learning since 2002 and currently offers a solid suite of 50 online programs that range from certificates to graduate degrees (and 9 PhD programs). Growth in these programs has slowed and in some cases stopped. This is due to fierce online competition within the industry, limited capacity of UND resources, and limited access to the high-demand and specialized skillset essential to achieving a highly ranked regional and national program as outlined in the UND Strategic Plan. Through expert services provided by an Online Program Management partner that involves market intelligence, marketing and promotion, student recruitment, course development and student success services, UND will focus its offering to improve the quality of its online programs, increase online student success and grow the number of students enrolled in online learning. To achieve these outcomes, an exchange of information between UND support systems and the OPM's record keeping system is required. This document summarizes the need for an OPM and the nature of information exchange required to support UND's strategic goal of growing online enrollment. It also recommends an immediate initiation of the procurement process so more is learned about the nature of the information to be exchanged between UND and an OPM provider.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 3.3.

UND will offer 2 certificate courses, cybersecurity and analytics, in Fall 2018 through OPM.

Video PaaS

The University of North Dakota (UND) does not currently have a Video Platform as a Services (VPaaS) nor any other appropriate server for storing and streaming multi-formatted video and audio files. Many Blackboard courses include video and audio files by uploading them directly into Blackboard. Blackboard is not a streaming server and the videos do not open and play for all devices being used by students and faculty. Accessibility is also an issue with more captioning being done to meet ADA compliance. Blackboard, as a platform, is not intended to store video files, which can become very large in size, thus causing slowness to the system with and outside of courses. The streaming server will provide a much more user-friendly environment for all the video content, whether the user is on a mobile device or computer.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 3.1 and 4.5.

The contract with Yuja was signed in May, 2018. The software has been integrated with Blackboard. It is expected to be in production by fall 2018.

Private Data Analytics Cloud

Project to deploy a 120 Teraflop Data Analytics Cloud in the NDUS Data Center on behalf of UND OVPRED, and improve power infrastructure in the Merrifield telecom room in support of Advanced Computing data backup services. This project will also add a 2nd QNAP backup cluster, and some additional storage to the existing GPFS storage appliance. The UND Advanced Cyberinfrastructure Manager has been working closely with NDUS CTS, and Michelle Rakoczy's team to design plan to deploy the private cloud infrastructure, and the network infrastructure between the Data Center and Merrifield Hall.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 4.7.

Procurement for hardware is underway.

Follet ConnectOnce

Effort to collaborate with DSU's 1901.3 to implement online bookstore integrated with Blackboard and Campus Solution. The solution would greatly benefit the students to view the books required for their classes in a shopping cart format and order online seamlessly.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.6 and 3.1.

The project is on hold for discussion till June 2019 due to CTS not having adequate resources as they focus on implementing Campus Solution 9.2 upgrade.

Enrollment Consulting

The University seeks a Consultant to help connect the institution's mission, current state, and changing environment to long-term enrollment and fiscal health, resulting in a highly customized three- to five-year written plan of action. Over 9-12 months, the Consultant will provide guidance in producing a written plan with tactics and action items that will put the plan immediately into motion. The resulting enrollment plan must have a long-range success strategy, data informed, comprehensive and integrated, student focused, and continuously improved over time.

In the Scope of Work Request under Service II, the University requires regular consultation and support from an enrollment management expert with preference for an individual(s) with prior experience serving as an enrollment management leader at a college or university. The Consultant must regularly come to campus to facilitate broad University community support and buy-in for the process and, ultimately, the strategic enrollment plan. The Consultant will work side-by-side with University staff to create a plan that connects data, campus readiness, and ROI projections. Written reports must be provided regularly to the University to detail plan progress.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 3.1 and 3.2.

Consulting engagement is underway.

Online Orientation

The need for orienting new students to the university has grown to include various student populations such as online students, international students, veteran students, as well as pre-orientation information for students that attend the on campus orientation programs. Currently UND does not have a software system built for such a purpose.

Currently UND has built an orientation-type course in Blackboard. However, this is not conducive to the purpose and need due to the system not providing the ease of use or technical detail needed for an appropriate online orientation program. It is not the welcoming look or user friendly first impression the institution needs to give to new and prospective students (students are still prospective at the time they are completing an online orientation).

The purchasing and development of an online orientation program software aligns with the ND SBHE 2020 strategic plan by specifically focusing on "equipping students for success" and "providing programs people want, where and when they need them".

UND will focus on "equipping students for success" by providing the necessary information to new students as they begin their integration to the university. This information will include the responsibilities of being a student on campus, academic program information, advisement and registration instructions, and many more topics that will make their transition to our campus a smooth one.

The goal to "providing programs people want, where and when they need them" is accomplished through the students' access to the online orientation program regardless of their location and when it is convenient for them.

Goal 3 of UND's strategic planning process is to "deliver more educational opportunity online and on-campus. By providing an online orientation to students both coming to campus and across the country and world, UND will be providing all students with the necessary information needed to begin their first semester regardless of their location. At this time students at a distance do not receive the same service as those students that are able to attend the on-campus program meant specifically for on campus students. Online and distance students would now have the opportunity to receive the same orientation information and have it specified to their student population.

Goal 5 of UND's strategic planning process is to "foster a welcoming, safe and inclusive campus climate". Having the ability to tailor a variety of new student orientations online would provide each student population (i.e. online students, international students, veteran and nontraditional students, etc.) with the necessary information for them

This project aligns with the following NDUS IT Strategic Goals/Objectives: 3.1.

RFP has been submitted.

Online Proctoring

The University of North Dakota (UND) is currently using ProctorU as an online proctoring service for distance and online students. The current agreement with ProctorU is a Student Pay agreement. UND would like to review other potential solutions to proctor medium to high stakes assessments/exams in an online format. UND is looking to make a change from a student pay model to a UND paid service. UND's current model also includes a home-grown proctoring database that tracks all proctoring designations for online credit courses. This database functions to allow designation of local proctors or ProctorU. The database includes information for the instructor of the course, designated proctor, and UND administrators. This includes confirming proctor selection, exam rules, password and other information necessary for the proctor.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 3.1, 3,3, 3.5, 4.2, 4.3, 4.4, 4.6, and 4.10.

The RFP is being developed.

Valley City State University

Valley City State University identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the biennium.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. VCSU was in the 2nd wave of schools to migrate to the central solution.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

As of August 2017, all VCSU users are enrolled and all courses are delivered via the NDUS Blackboard instance.

Cloud Backup

VCSU has engaged a cloud hosting service vendor to replicate the VCSU VMware virtual server infrastructure.

This project developed as a budget reduction strategy and VCSU has already committed to implementing this strategy based partly on your initial indication of support of the concept and partly on the estimated savings. Essentially, replication of VCSU virtual servers will be moved to a cloud service, thereby reducing the physical infrastructure upgrade needs of the VCSU secondary data center. The budget savings will come from avoiding electrical, environmental control, and data storage infrastructure upgrades.

VCSU has a vendor that provides Veeam Cloud Connect to create further efficiencies in staff labor. Backups will be stored in the USA. There will be no interfaces to NDUS enterprise systems and we do not need NDUS staffing support. This new approach will utilize significant network bandwidth, but that bandwidth need can be secondary to other applications on the network.

This aligns with NDUS IT Strategic Goals/Objectives: 1.1 and 1.2

This project contributed net savings of $38,400 to the 2017-19 biennial budget. This was a permanent budget reduction. With the success of the project, we believe the annual savings of $19,200 is sustainable into the future.

Williston State College

Williston State College identified no major informational technology projects for the 2017-2019 biennium. The following projects occurred over the course of the biennium.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. WSC was in the 2nd wave of schools to migrate to the central solution.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

All LMS courses are now in Blackboard. Moodle is no longer being used for any instructional purposes.

Bookstore System Replacement

Procure a modern and technically sound bookstore inventory control, text management, point of sale and e-commerce system to be utilized by college personnel.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1.

Students will benefit by having the ability to purchase books and supplies and the bookstore will be able to better manage resources and supplies.

The implementation of this project is currently in progress. The project is in the second of three phases for implementation.

Wireless Network Upgrade

Williston State College is looking to either upgrade or replace its current wireless access points depending on the recommendation of NDUS. We have two different wireless networks using Meraki and Aruba wireless access points. Currently the license for the Meraki system is set to expire on May 2017. The Meraki access points were installed around August of 2012 and the Aruba access points were installed in January of 2014.

With the increasing amount wireless enabled personal devices driving more demand on the wireless network, we would like to meet the current and future needs of the campus by upgrading our campus wireless access points.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 2.1, 2.2, 2.4, 2.5, 2.6, 3.1, 3.3, 3.5, 4.1, 4.5, 4.6, 4.9, and 4.10.

The project is complete. There are no Meraki AP's still being used.

Core Technology Services

HRMS 9.1 to 9.2 Upgrade

This project updates the NDUS instance of the PeopleSoft Human Resource system.

This project aligns with the following NDUS IT Strategic Goals/Objective: 2.1.

This project will benefit all campuses in that this critical business application will remain supported by the vendor.

The project was delayed due to extended timeline on the TLAB project. Completion in October 2018 is expected.

Implement Oracle's PeopleSoft Expense module

Oracle's PeopleSoft expense module streamlines and automates travel spending 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

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.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.1 and 2.2.

This project is complete. Prior to the expense module, travel reimbursements would average 10-14 days to complete. Following the implementation, the majority of travel reimbursements are completed within 3 days.

Blackboard Learning Management System

The State Board of Higher Education chose to move to a single LMS solution across the state. CTS provides project management and support for the deployment and on-going operations.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.7, 1.8, 2.1, 2.2, 2.5, 2.6, 3.1, 4.3, 4.4, 4.5, 4.6, and 4.10.

Students and faculty will benefit by having a seamless and consistent user experience in the LMS. Collaborative students (taking classes at more than one NDUS institution) and faculty teaching at multiple institutions will have one login and one system to see all of their classes.

Currently we have 7 campuses (BSC, DCB,LRSC, NDSCS, WSC, VCSU and UND) fully online with Bb SaaS. Two campuses (DSU, and MaSU) are doing a soft rollout of the summer term with plans to go fully live in Spring 2019. One campus (MISU) will do a soft rollout over the Fall 2018 term, with a full live deployment in Spring 2019. One campus (NDSU) is scheduled for Sumer 2019. The project is under Large Project Oversight so the SBHE and Legislative IT Committee receive quarterly updates on the progress of the project.

Enterprise Unified Communications

This is a project to replace legacy phone services with Skype for Business phone numbers - starting with CTS staff, and eventually rolling out to other NDUS institutions, as an option for legacy phone system near end-of-life. All NDUS employees will benefit from using Skype for Business, as it will allow them to serve customers from any location. There will be 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.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1, 1.4 and 1.6.

This project did not receive funding necessary for implementation.

Implement Oracle/PeopleSoft's eProcurement module

eProcurement is designed to help end-users requisition items online, and gain approvals through workflow. Using the software helps reduce out-of-system purchasing, enforces contract purchasing and captures 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. This supports users with purchasing authority on each campus. It also helps each campus ease procedures to purchase on contracts and reduces costs.

This project aligns with the following NDUS IT Strategic Goals/Objective: 2.1.

This module did not receive funding necessary for implementation.

Next Generation Data Center

This is a project to explore the feasibility of implementing the next-generation data center.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1 through 4.10.

A feasibility study was completed and as a result, hyperconverged infrastructure was implemented in the NDUS Grand Forks Data Center to reduce the cost of computer and storage provided to NDUS.

NORTH DAKOTA UNIVERSITY SYSTEM
CORE TECHNOLOGY SERVICES

Document-Imaging-Operational

This project was the deployment of an enterprise document imaging system.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

The project is complete, and the system is fully operational. The following are statuses on some of the work in progress.

Records, Admission and Financial Aid Workflow

- Completed workflow for VCSU, MaSU, MiSU, WSC
- In Progress for DSU, DCB, LRSC

Historical Financial Document Storage

- Added storage of historical financial documents for BSC, DCB, DSU, MaSU, MiSU, NDSCS, VCSU, WSC
- In Progress: LRSC

Cross Campus Document Sharing

- Developed a system wide Collaborative Student electronic form
- Developing a workflow process to allow for transferring of Collaborative Student documents between campuses within Document Imaging (Perceptive Content).

Electronic Form Usage (Transform)

- System wide forms
- Completed: FERPA, Major Minor Advisor
- In Progress: Collaborative Agreement and Registration, Legal Name Change Request, Residency Application
- 103 forms have been developed and are in production. This is up from 26 forms in production in FY17.
- 31,200 total form submissions in FY18

Hobsons Apply Yourself

- Transfer of Hobsons' applications to Document Image Workflow and Storage

Retention Module

- Implementation in progress at a by campus by department.

myInstitution Portal

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.

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

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Foundational work has been completed that will allow for federated identity management across the applications managed by NDUS. This work needed to be completed prior to the development of a dynamic web portal with single sign on capabilities. Work will continue on the portal into FY19.

Functional Consolidation for HB 1003 Section 8

This project performed activities to meet mandated legislation on consolidation of IT services. It included the following: Creating a policy that addresses all required services, a defined process for a specific product to be exempted from consolidation of services, a procedure that supports the policy, and a report on the results of the project.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

The policy and procedure are in place and a final report was provided to the SBHE and Legislature. Budget cuts have limited the amount of consolidation completed.

STAGEnet Upgrade

This is a project was to upgrade the statewide network and connectivity to each campus.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6 and 1.7.

Accomplished this year were:

- Installed intrusion prevention/detection systems at each campus
- ITD has negotiated a new contract which will provide a minimum of 1Gbps connectivity to each campus, offer redundant paths and result in a 100Gbps backbone between the 4 quadrants of the NDUS
- Implemented DDOS protection

Implement Oracle's PeopleSoft Time and Labor module

This is a project added the time and labor modules to the NDUS PeopleSoft HR applications. This included replacing the time clock system at the campuses. All campus departments and employees benefit from an automated time and attendance & absence management system in a web-based interface for employee entry and manager approval.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.1 and 2.2.

Project is complete. Campuses report efficiencies moving from a paper system to employee and manager self-service in PeopleSoft.

NDUS O365 Migration

This project was the final stage to get all campus students, faculty and staff migrated to a single O365 email tenant.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.2, 2.4 and 2.6.

Project completed. VCSU was the final campus to move to the NDUS tenant on June 4, 2018.

NORTH DAKOTA UNIVERSITY SYSTEM
CORE TECHNOLOGY SERVICES

System wide Automation of Transcript Processing

This project improves transcript processing capabilities for campuses. Benefits include institutions making decisions faster and admitting quality students; the university system attracting and retaining students due to efficient and quality service; and providing improved student and parent interaction with institutions. This will directly correlate to increased enrollment and revenue.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Two projects were spun out of this effort. The first is to provide any NDUS campus the ability to access to any other NDUS campus transcripts. This System-wide transcript work is impacted by other projects and remains a work in progress.

The other project is E-Transcripts provided out of the ND SLDS system. This is also under development, and awaiting feedback and file structures from ITD. Once complete, this system should be available.

Implementation of new secure file transfer system

This project implements a new secure file transfer system (MoveIT Transfer.) This includes:

- Moving away from local accounts to IdM username and passwords, as well as adding multifactor authentication for all users.
- New supported protocols for easier accessibility
- Fully replace old Sophie system
- Better automation and data verification/validation

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

Currently, we have moved about 85% of the directories from Sophie system to MoveIT Transfer. The hard deadline is to fully deprecate the Sophie system by end of July 2018. There is an internal (soft) timeline of June 30, 2018.

FAMIS Upgrade

NDUS has been using the on-premises version of Accruent's FAMIS application since 2005. It is currently used by five campuses (and available to all eleven), and is hosted within the NDUS Data Center, as one of the Ancillary systems of ConnectND.

Since its implementation, Accruent has adapted and changed its product to fit the North Dakota University System (NDUS). The move to a SaaS product will allow NDUS to avoid costly updates, up to potentially $300,000 of Oracle licensing, and eliminate internal hosting costs.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.1, 2.2, 2.8.

The implementation is proceeding on schedule, and campuses are currently in the data review and configuration discovery phase. The project is scheduled to be completed during fall/winter 2018-2019.

Novelution

Assist two research campuses (NDSU and UND) in the implementation of pre-award and post-award research software. It supports principle Investigators, grants and contracts staff, and research offices on the research campuses, by easing the proposal process. This includes approved integrations between PeopleSoft Financials/HRMS and Novelution.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 2.2.

Project delayed. The initial module is taking longer than anticipated due to a number of reasons, including resource constraints, unexpected priority projects and change requests. The first module is anticipated to be deployed in late October and is currently on track to meet that timeline. The project is under Large Project Oversight so the SBHE and Legislative IT Committee receive quarterly updates on the progress of the project.

Information Security

This was a series of projects designed to increase our ability to proactively address security issues from a systemic perspective by organizational and operational enhancements. It includes training to provide users with a higher awareness of cyber security and help them develop more secure personal practices. We want to increase the layers of security to mitigate threats to resources at the network, data and end-point level. We also want to reduce the attack surface presented by NDUS systems and services.

This project aligns with the following NDUS IT Strategic Goals/Objectives: 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.

- Completed three security polices and six security standards.
- Implemented a system-wide vulnerability management system to mitigate threats and reduce the attack surface to systems and services.
- Implemented a system-wide endpoint security product to reduce security risks on NDUS computers and servers.
- Implemented a system-wide multi-factor authentication system to protect accounts from compromise and protect critical systems and information.
- Created a task force to identify and address threats posed by phishing attacks against faculty, staff, and students.
- Implemented a centralized logging system for NDUS datacenter to proactively identify and address security issues.

Actual Measurements:

- 10,000+ NDUS assets across 11 Universities and CTS have seen reduced risk through scanning and remediation using the vulnerability management system.
- 6,700+ computers protected by endpoint security software.
- 42 business critical applications and 23.6K user accounts protected with multi-factor authentication, and 0 compromises to PeopleSoft accounts since integration was completed.
- Log data from 10+ critical systems and applications and 25+GB/day being sent to centralized logging system.

Enterprise Services

NDUS provides a number of enterprise applications and services that help support all campuses in achieving their missions.

Campus Payment
$1,484,572
10%

Special Funds
$3,035,614
20%

CTS/SO
Payment
$10,872,846
70%
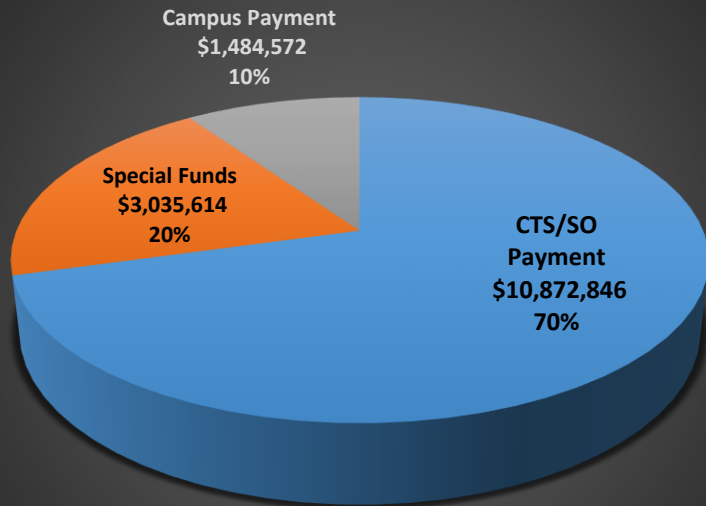
NDUS Support for System Services

NDUS System Services Spend- per Student per Year

$378.42

NDUS System Services Spend by Campus (Student FTE)

	BSC	DCB	DSU	LRSC	MaSU	MiSU	NDSCS	NDSU	UND	VCSU
	$995,254	$201,952	$412,356	$381,703	$295,675	$925,877	$807,178	$4,779,997	$4,409,394	$405,418

Cost by System Service (Over $100,000)

System Service	Cost
PEOPLESOFT - ENTERPRISE FINANCIAL & HR SYSTEMS	$3,799,144
STAGENET	$2,211,066
PEOPLESOFT - STUDENT INFORMATION SYSTEM	$1,901,918
ENTERPRISE LEARNING MANAGEMENT SYSTEM	$1,737,080
NDUS HELP DESK & TICKETING SYSTEM (SNOW)	$815,760
STUDENT RETENTION APPLICATIONS	$763,528
CREDIT CARD PROCESSING	$529,000
MICROSOFT OFFICE 365 & WINDOWS SERVER	$414,561
DOCUMENT IMAGING SOLUTION	$382,881
CAMPUS APPLICATION SYSTEM AND CUSTOMER RELATIONS MANAGEMENT SYSTEM	$382,000
ONLINE RESOURCE DATABASES	$283,780
LECTURE CAPTURE SYSTEM	$279,990
FACILITIES SYSTEM	$244,773
SECURITY: VULNERABILITY MANAGEMENT	$228,720
INTEGRATED LIBRARY SYSTEM & HOSTING	$215,303
PARKING SYSTEM	$196,892
IDENTITY MANAGEMENT SYSTEM	$156,965
OTHERS	$849,672