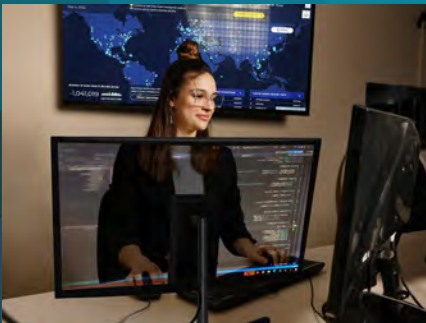




ACCESS. INNOVATION. EXCELLENCE.

# Information Technology Strategic Plan 2023 – 2025

Presented by  
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Vice Chancellor for Information Technology/CIO



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# Executive Summary



Core Technology Services (CTS) is the technical arm of the North Dakota University System (NDUS) and facilitates the development of the NDUS Information Technology Strategic Plan in collaboration with the information technology staff from NDUS institutions. This plan represents the strategic direction for all the institutions that make up the NDUS.

The CTS mission is *to provide trusted technical and professional services to support the strategic goals of the North Dakota State Board of higher Education*. In support of that mission, CTS worked together with the NDUS CIO Council to create a strategic plan ensuring that it supports the goals of the State Board of Higher Education and the institutions. The four strategic goals identified include infrastructure, digital transformation, user experience, and enhanced collaborative efforts.

At CTS, our vision is *to foster an organizational culture that delivers exceptional service, secure infrastructure, and access to information*. This vision is supported through the initiatives identified by the CIO Council which include academic services, information security, operational efficiency and effectiveness, IT service management, and infrastructure. These initiatives are focused on supporting the business of higher education at NDUS institutions by providing the best possible experience across the entire enterprise for students, faculty, and staff.

CTS is committed to continued collaboration with stakeholders and strategic partners as we move forward to execute initiatives that support our strategic direction and align with the goals of the North Dakota State Board of Higher Education.

A handwritten signature in black ink, appearing to read 'Darin King'.

Darin King

# SBHE GOALS

N.D.C.C. 15-10-44.c requires the State Board of Higher Education (SBHE) to manage and regulate information technology plans and services, including the integration of higher education information technology planning and reporting with the Board's strategic planning process. View more information about the current North Dakota SBHE's Strategic Plan at: <https://ndus.edu/strategic-plan>.

## The SBHE's strategic goals for 2021-2026 are as follows:

### **Goal 1 Financials**

Optimize student affordability while maintaining campus financial health

### **Goal 2 Responsive**

Provide access to programs people want, where and when they need them

### **Goal 3 Student Success**

Prepare students for success

### **Goal 4 Unified System**

Maximize the strengths of the unified system

### **Goal 5 Research**

Research Excellence and Innovation

### **Goal 6 Workforce**

Workforce Development



The NDUS Information Technology Strategic Plan aligns with and supports the SBHE Strategic Plan brought forward by the Chancellor and approved by the State Board of Higher Education.

The following section of the strategic plan identifies the four NDUS IT goals and their purpose, demonstrates alignment to the current SBHE Strategic Plan, and indicates the strategy objectives to meet each goal.

# 1

## **GOAL ONE: SUPPORT THE NORTH DAKOTA UNIVERSITY SYSTEM'S INFRASTRUCTURE NEEDS.**

### Purpose

This goal provides the foundation for Information Technology (IT) in support of NDUS's business processes. Infrastructure integrates and links information technology systems and allows those systems to communicate with each other over a network. Infrastructure 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.

#### Alignment with SBHE Strategic Plan

**Goal 1 - Financials:** Optimize student affordability while maintaining campus financial health

**Goal 2 - Responsive:** Provide access to programs people want, where and when they need them

**Goal 3 - Student Success:** Prepare students for success

**Goal 4 - Unified System:** Maximize the strengths of the unified system

**Goal 5 - Research:** Research Excellence and Innovation

**Goal 6 - Workforce:** Workforce Development

### Strategy Objectives

1. Offer reliable, cost-effective, and appropriate network services for NDUS's institutions.
2. Provide tools and technologies to help people more easily use networked resources and services while ensuring security and privacy of information.
3. Provide tools and technologies to enhance data and system security 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, organizational change 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 where efficiency and effectiveness can be maximized to meet the NDUS's institutional needs.



# 2

## GOAL TWO: FACILITATE DIGITAL TRANSFORMATION OF SYSTEMS AND SERVICES.

### Purpose

Digital transformation enables cost reduction and operational agility, resulting in improved productivity, customer service, governance, and compliance. To remain competitive, the NDUS will facilitate and provide opportunities for digital transformation.

### Alignment with SBHE Strategic Plan

**Goal 1 - Financials:** Optimize student affordability while maintaining campus financial health

**Goal 2 - Responsive:** Provide access to programs people want, where and when they need them

**Goal 3 - Student Success:** Prepare students for success

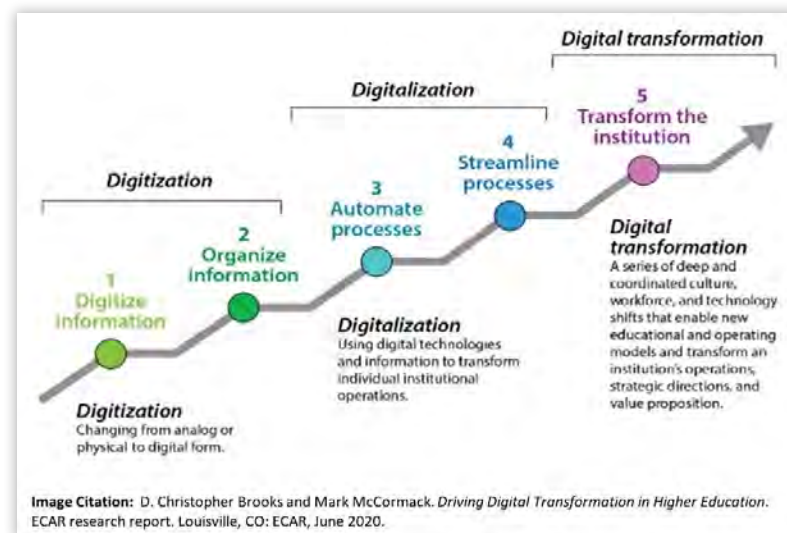
**Goal 4 - Unified System:** Maximize the strengths of the unified system

**Goal 5 - Research:** Research Excellence and Innovation

**Goal 6 - Workforce:** Workforce Development

### Strategy Objectives

1. Support efforts to organize and convert physical information into digital formats (digitization).
2. Encourage automation to streamline business processes (digitalization).
3. Enable more efficient education and operating models due to shifts in culture, workforce, and technology as a result of digitalization (digital transformation).
4. Enhance the ability to access systems anywhere, anytime, and from any device.
5. Promote systemwide data and analytics management and governance.
6. Assess the current state of the NDUS to identify opportunities for digital transformation.
7. Educate the NDUS community on the meaning of digital transformation.



8. Create a competitive advantage by leveraging efficiencies gained through digital transformation to support flexible learning and work environments.



## **GOAL THREE: PROVIDE A USER EXPERIENCE THAT IS RESPONSIVE TO CHANGING NEEDS AND EXPECTATIONS.**

### Purpose

In the rapidly evolving world, the needs and expectations of our users - students, faculty, staff, North Dakota residents, and affiliates worldwide - are continuously changing. The North Dakota University System must be responsive in recognizing and addressing those needs and expectations by providing modernized systems and services to enhance the user experience.

#### Alignment with SBHE Strategic Plan

**Goal 1 - Financials:** Optimize student affordability while maintaining campus financial health

**Goal 2 - Responsive:** Provide access to programs people want, where and when they need them

**Goal 3 - Student Success:** Prepare students for success

**Goal 4 - Unified System:** Maximize the strengths of the unified system

**Goal 5 - Research:** Research Excellence and Innovation

**Goal 6 - Workforce:** Workforce Development

### Strategy Objectives

1. Leverage systems and services that are available anytime, anywhere, on any device.
2. Take reasonable actions to enhance the NDUS's digital environment, making it accessible and inclusive for all individuals.
3. Continuously improve standards, policies, procedures, and services that facilitate seamless, integrated learning.
4. Solicit feedback from the NDUS user community to understand their experiences and expectations to improve systems and services.
5. Collaborate with NDUS institutions to identify, evaluate, and respond to business needs in a timely manner.
6. Provide effective, efficient, and highly available IT support services while extending self-help resources.



# 4

## **GOAL FOUR: IMPROVE AND ENHANCE THE NORTH DAKOTA UNIVERSITY SYSTEM'S COLLABORATIVE EFFORTS.**

### Purpose

By working together, and with the State, K-12, and other constituents, the NDUS is able to implement, integrate, and support systems and services that further the mission of each NDUS institution.

#### Alignment with SBHE Strategic Plan

**Goal 1 - Financials:** Optimize student affordability while maintaining campus financial health

**Goal 2 - Responsive:** Provide access to programs people want, where and when they need them

**Goal 3 - Student Success:** Prepare students for success

**Goal 4 - Unified System:** Maximize the strengths of the unified system

**Goal 5 - Research:** Research Excellence and Innovation

**Goal 6 - Workforce:** Workforce Development

### Strategy Objectives:

1. Collaborate to maximize economies of scale in support of student affordability.
2. Continually improve communication and partnerships with all stakeholders.
3. Identify where converged services are appropriate and work with NDUS institutions to deploy services to enhance collaboration.
4. Enable collaboration among learners by providing easy, efficient, and reliable access to learning resources and systems anytime and anywhere.
5. Leverage educational resources and IT systems to minimize barriers between institutions, libraries, and other sources of learning.
6. Promote Internet2, InCommon, and research-level infrastructure.
7. Collaborate with business and industry to identify opportunities for innovations and workforce development.
8. Facilitate collaboration by enhancing digital identity.
9. Collaborate and partner with NDIT to ensure reliable, efficient, and seamless services.





## Strategic Plan

The North Dakota University System's Core Technology Services and CIO Council collaborated to identify five major areas that influence the quality of the student, faculty, and staff experience: Academic Services, Information Security, Operational Efficiency and Effectiveness, IT Services Management, and Infrastructure. These areas create a service framework comprised of several systemwide and campus initiatives benefitting NDUS stakeholders and, when applicable, will be at the forefront of a continued effort to comply with the State Board of Higher Education's (SBHE) digital accessibility policy. The following sections illustrate a handful of these initiatives, which will build upon NDUS's current service foundation and support the IT goals of the University System over the 2023-2025 biennium.



# Academic Services

Academic Services develops and provides technologies, learning spaces, classroom support, and services that enhance teaching, learning, and research within the North Dakota University System. The NDUS recognizes these services are critical in creating a positive learning and teaching experience for both students and faculty. As education has shifted to include more online learning and teaching opportunities, it is essential that the entire campus community is aware of the academic and administrative services that are available to support their needs.

The following initiatives align with:

**NDUS IT Goal #2** – *Facilitate Digital Transformation of systems and services.*

**NDUS IT Goal #3** – *Provide a user experience that is responsive to changing needs and expectations.*

- ◆ Increase the use of customizable communication and engagement methods, such as a scalable, secure desktop and mobile campus platform, to provide a unified, digital student experience. Through continuous improvement, expand functionality to include tailored experiences and communication for faculty, staff, and alumni.
- ◆ Leverage existing student data, captured in a comprehensive display, to provide campus service units with a holistic, 360-degree view of a student's academics, organizations, and activities to personalize the assistance and support given to each student.
- ◆ Create an augmented reality classroom test bed for faculty to experiment with interactive teaching and learning methods to modernize and enhance their teaching pedagogy.
- ◆ Explore additional features and functionality available in the existing learning management system to make academic content more accessible, including standardizing course templates, to become more learner-focused.
- ◆ Evaluate software and tools used by students throughout their entire education lifecycle to uncover actual university operational and maintenance costs associated with each product as compared to the value added to the student experience.



# Information Security

Information security is defined as a set of practices intended to keep data secure from unauthorized access or alterations during storage or transmission. These methods can include monitoring activities to identify system threats and vulnerabilities, in addition to evaluating and mitigating risks through prevention and response measures. The NDUS recognizes information security as being a top concern for every new project, upgrade, or enhancement, and continues to strengthen existing security infrastructure to stay ahead of potential risks that could affect systems utilized by the NDUS students, faculty, and staff.

The following initiatives align with:

**NDUS IT Goal #1** – *Support the North Dakota University System's infrastructure needs.*

**NDUS IT Goal #3** – *Provide a user experience that is responsive to changing needs and expectations.*

- ◆ Expand security awareness and phishing assessment programs to educate students, faculty, and staff on security risks, including safeguarding NDUS data and resources, as well as how to better protect themselves from possible threats.
- ◆ Enhance and strengthen current systems to provide intelligence for potential threats, facilitate quick responses, and offer analysis of the valuable log data generated by NDUS systems.
- ◆ Implement privileged access management for password management, privileged session management, and vendor privileged access management to improve controls for those who have broad access to applications and systems in the NDUS data center.
- ◆ Implement backup and recovery solutions for major enterprise systems to provide protection, management, control, and accessibility of critical data in the event of a cyber-attack, unrealized/accidental file deletion, or if otherwise unable to be recovered.
- ◆ Address increased security threats from email-based attacks through technology-based solutions.
- ◆ Review Data Classifications and ensure that encryption is in use on sensitive data systems.





# Operational Efficiency and Effectiveness

The NDUS supports a wide range of business applications and systems, ranging from Enterprise Resource Planning (ERP) to collaborative and communication technologies. As new needs arise and technological improvements emerge in the marketplace, the NDUS works collaboratively to manage growing requirements with effective solutions. The objective is to provide the best possible solution by assessing institutional functionality needs, capabilities of existing technologies, and/or solutions available in the market to enable more efficient and effective operations.

The following initiatives align with:

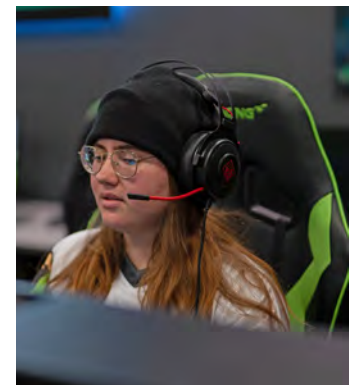
**NDUS IT Goal #1** – *Support the North Dakota University System's infrastructure needs.*

**NDUS IT Goal #2** – *Facilitate digital transformation of systems and services.*

**NDUS IT Goal #3** – *Provide a user experience that is responsive to changing needs and expectations.*

**NDUS IT Goal #4** – *Improve and enhance the North Dakota University System's collaborative efforts.*

- ◆ Enable additional functionality of current systems and/or implement integrated complementary systems to maximize process efficiencies, data integrity and security, and user experience.
- ◆ Compare existing operational tools and systems with newer, updated technologies; make informed purchasing decisions that will result in improved, cost-effective solutions and modern services to support all stakeholders.
- ◆ Improve digital accessibility by working to remove barriers that can hinder access to or navigation of systems.



# IT Service Management

Providing a supportive, service-oriented environment can have significant impacts on the success and overall user experience for NDUS students, faculty, and staff. Customer satisfaction can be increased through focused education and training, active collaboration, positive interaction, timely delivery, and by enhancing service offerings. It is important for the NDUS to regularly communicate with stakeholders to better understand their needs and challenges and to respond by making continuous improvements to the services we offer.

The following initiative aligns with:

**NDUS IT Goal #2** – *Facilitate digital transformation of systems and services.*

**NDUS IT Goal #3** – *Provide a user experience that is responsive to changing needs and expectations.*

**NDUS IT Goal #4** – *Improve and enhance the North Dakota University System's collaborative efforts.*

- ◆ Expand enterprise service management systems to provide a more cohesive experience to NDUS constituents.





# Infrastructure

The NDUS's technology infrastructure serves as the core in delivering a positive learning and teaching experience for our students and faculty; continuous improvements are key in supporting up-to-date, secure educational environments. Staying current with infrastructure allows for students to learn or faculty to teach from any location, providing the opportunity for flexibility, availability, collaboration, and access. The expansion of security measures to further monitor and control network traffic, as well as detect and deter malicious activity, can keep the work of our students, faculty, and staff better protected.

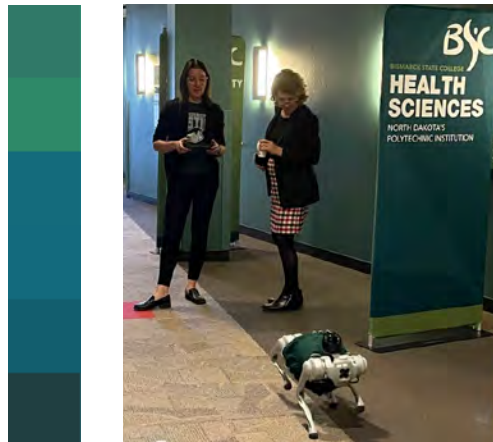
The following initiatives align with:

**NDUS IT Goal #1** – *Support the North Dakota University System's infrastructure needs.*

**NDUS IT Goal #3** – *Provide a user experience that is responsive to changing needs and expectations.*

**NDUS IT Goal #4** – *Improve and enhance the North Dakota University System's collaborative efforts.*

- ◆ Update campus wireless to meet the demands of increased usage of personal computing and mobile devices.
- ◆ Upgrade campus core and building networks to ensure bandwidth and resiliency meets the campus stakeholder's needs.
- ◆ Support Wide Area Network (WAN) services to campuses, in collaboration with North Dakota Information Technology (NDIT), ensuring that campus demand is met and diverse paths to campuses are available.
- ◆ Implement modern communication services to meet the needs of the community while managing costs.







2023-2025



## Summary

This plan outlines a series of strategic goals and initiatives that will drive the NDUS IT roadmap throughout the next biennium. The focus on Academic Services, Information Security, Operational Efficiency and Effectiveness, IT Service Management, and Infrastructure is designed to support students, faculty, staff, and stakeholders, while aligning with and supporting the strategic goals approved by the North Dakota State Board of Higher Education.

Core Technology Services and the CIOs of NDUS's eleven institutions plan to achieve these goals through outstanding teamwork, excellent customer service, collaboration, dedicated leadership, inspiration, and growth opportunities.



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