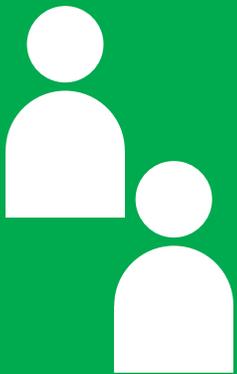
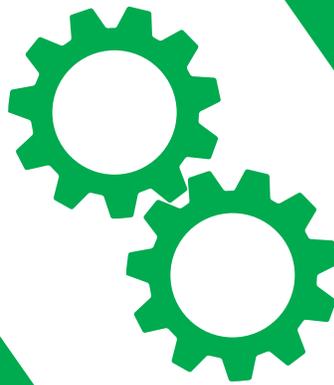


# ONE IT STRATEGIC PLAN

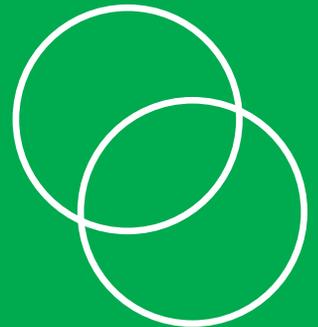
2018-2022



Customer  
Service



Innovation



Collaboration

**Purpose:** Provide technology excellence to advance UND's mission

**Vision:** Empower UND students, faculty, and staff to become Leaders in Action

Madhavi Marasinghe  
Chief Information Officer

## University Information Technology (UIT)

University Information Technology's (UIT) mission is to support our faculty, staff, and students by focusing on customer service, collaboration, and innovation. We strive to position UIT as a valued and trusted partner of the University that delivers reliable, efficient, innovative technology and solutions.

### UIT CORE VALUES

#### Customer Service

We strive to offer quality services by seeking out, listening, and responding to our users' needs.

#### Collaboration

We are committed to working together and building relationships with our colleagues at UIT and across the university to leverage and value each other's expertise and insights.

#### Innovation

We encourage and experiment with new ideas by continuously striving to improve how we work and deliver services by embracing new technologies and processes.

### GOALS

#### IT ORGANIZATION AND SERVICE EXCELLENCE

Goal 1: Create a culture of service excellence where the UND community seeks our services not because they have to, but because they want to

#### STUDENT EXPERIENCE

Goal 2: Provide an information technology environment that meets the current and future needs of the students

#### DATA-INFORMED DECISION SUPPORT SYSTEM

Goal 3: Support University Analytics and Planning to establish a Decision Support System

#### RESEARCH COMPUTING

Goal 4: Support VP for Research to position UND to achieve Carnegie R1 status

#### TEACHING AND LEARNING

Goal 5: Support TTaDA to deliver innovative and effective teaching and learning technology services

#### INFORMATION TECHNOLOGY INFRASTRUCTURE

Goal 6: Ensure current and future computing requirement are realized cost effectively

#### INFORMATION SECURITY AND RISK MANAGEMENT

Goal 7: Adopt Safeguarding UND initiative as a platform to protect information security resources using industry standards and best practices

# IT Organization and Service Excellence

**Goal 1:** Create a culture of service excellence where the UND community seeks our services not because they have to, but because they want to

**Champion:** University Information Technology

## Action Items:

1. Establish an IT Advisory Council to provide timely input on IT planning, policies, and project portfolio
  - a. Identify council members from senior leadership, staff and university councils, and student groups
  - b. Establish communication plan to President's Cabinet and university community on initiatives and progress of projects
2. Improve UIT employee engagement with the community
  - a. Build relationships and establish two-way communication to better understand community needs
  - b. Implement self-help capabilities by expanding knowledgebase for common technology issues such as password resets
  - c. Implement a service catalog that identifies technology services provided to streamline help requests
3. Optimize IT services and resource management through consolidations, cost reductions, process efficiencies, and revenue generation
  - a. Develop a process to ensure that all IT procurements are coordinated to assess need, align with the UND Strategic Plan, minimize duplication, facilitate a secure environment, and are cost efficient
  - b. Evaluate which IT services should be centralized and which services should be provided by distributed IT or through cloud services
  - c. Strengthen relationships with distributed IT and leverage the strengths and experience to streamline IT services provided to the campus community collaboratively
4. Provide services that exceeds the expectations of the customer
  - a. Resource UIT to ensure adequate staffing and expertise are in place to support the needs of a research institution
  - b. Develop Service Level Agreements to define services provided and expected levels of service
  - c. Utilize metrics and analytics to assess and evaluate effectiveness of IT services
  - d. Develop, maintain, and communicate change management process
5. Establish continuous professional development for technology staff to be current with emerging technology and industry trends
  - a. Invest in training and growth of IT staff
  - b. Track staff progress and accomplishments to ensure skills needed in the future are met
  - c. Improve recognition and advancement programs to boost staff morale and appreciate their dedication to serve the UND community

# Student Experience

**Goal 2:** Provide an information technology environment that meets the current and future needs of the students

**Champion:** University Information Technology

## Action Items:

1. Provide a technology platform to increase student inquiries and applications of prospective students.
  - a. Collaborate with Enrollment Management to identify and procure a Customer Relations Management (CRM) software
  - b. Implement a CRM integrated with the Common Application
2. Provide technology and best practices to communicate and interact with students
  - a. Collaborate with students, faculty and staff to identify student communication needs
  - b. Assess current communication channels and conduct a gap analysis to identify opportunities to improve communication with students
  - c. Implement a plan to improve communication with students
3. Provide universal access to computing resources regardless of physical location to enhance the student learning experience
  - a. Expand mobile experience by implementing software that has a mobile presence to make it easier for students to access applications anywhere any time
  - b. Implement a student portal that allows single sign on with multi factor authentication to a variety of applications student use on a daily basis.
4. Engage with our students regularly to understand their needs and identify opportunities for collaboration
  - a. Support and help Student Government to establish an IT sub-committee represented with undergraduate and graduate/professional students
  - c. Include Student Governance representation in the IT Advisory Committee
  - d. Participate in Student Government meetings regularly to listen, provide feedback, and identify IT support needs
  - e. Survey students to gain broader feedback to identify IT support needs

# Data-Informed Decision Support System

**Goal 3:** Support University Analytics and Planning to establish a Decision Support System

**Champion:** Office of University Analytics and Planning

## Action Items:

1. Create a data-informed institutional culture
  - a. Identify common sets of questions that internal and external clients need answered on a regular basis
  - b. Communicate to the campus community the importance of using data analytics
  - c. Cultivate partnerships beyond the boundaries of data analytics and strategic planning and central IT units
  - d. Develop trust relationships with university leaders and understand their needs
  - e. Inform decision makers about issues impacting the success of their units and the larger university
2. Build organizational capacity to support the development and use of analytics across the university
  - a. Inventory and review analysis tools and standardized reports
  - b. Identify skill gaps, develop skills, and build capacity as needed
  - c. Invest and develop a data repository that is secured, structured, and streamlined to support data and decision making needs
  - d. Develop continuous learning tools and training that support internal and external clients
  - e. Identify data point opportunities across the institution to support business needs
3. Make analytics accessible, understandable, and actionable
  - a. Establish data definitions to ensure common currency and data integrity
  - b. Incorporate quality control systems along with audit and compliance tools and training
  - c. Create dashboards and auditing reports that continuously monitor metrics that reflect the ongoing quality and productivity of academic, research, and service functions of the University.
  - d. Incorporate storytelling visual systems that infuse analytics across the institution
4. Drive innovation
  - a. Identify and monitor external trends that may impact the ability of the University to be effective in meeting it's academic, research, and service mission
  - b. Explore innovative processes/initiatives to inform strategic decision making to address potential threats.
  - c. Encourage a culture of data-informed innovation by bringing in internal and external experts to address new and potential threats and opportunities that the University's data-informed planning and decision making processes/capacities can help to address
  - d. Create and test new ways to transform current processes and programs (academic and administrative)

# Research Computing

**Goal 4:** Support VP for Research to position UND to achieve Carnegie R1 status

**Champion:** VP for Research and Economic Development

## Action Items:

1. Expand High Performance Computing (HPC) and Advanced Cyberinfrastructure (ACI) Capabilities
  - a. Provide flexible research computing environments and research web services through the UND Talon private cloud.
  - b. Expand high-performance network for hardware addition to UND Talon private cloud.
  - c. Continue acquisition of hardware and software to create a base level of computational capabilities sufficient to enable recruiting of research-intensive faculty.
  - d. Increase ACI resource funding by working with campus IT departments, UND Grants & Contracts, and other ACI stakeholders to document ACI/HPC usage (user statistics and enabled publications/proposals) for inclusion as needs-justification in future institutional, state, foundation, and federal funding proposals.
2. Increase accessibility and usage of centralized research computing.
  - a. Enable distributed Talon on-boarding services through the formation of ACI Support Committee (ASC) chaired by UND Computational Research Center (UNDCRC) ACI Manager.
  - b. Expand UNDCRC staff to include a benefitted Sr. ACI Education Facilitator position.
  - c. Expand number of undergraduate and graduate student facilitator positions.
  - d. Expand training materials and create 2-day user on-boarding workshops.
3. Improve faculty awareness of HPC and ACI Capabilities
  - a. Facilitate on-going needs assessment through the formation of ACI Faculty Advisory Committee (AFAC) chaired by UNDCRC ACI Manager and comprised of tenured and non-tenured research faculty.
  - b. Establish ACI User Community comprised of early-career faculty willing to serve as a college ACI Research Champion (ARC) and host quarterly user-meeting and lightning talk series organized by ARCs.
4. Increase research funding utilizing HPC and ACI capabilities
  - a. Make deans and chairs aware that central computational capabilities are valuable recruiting tools and can reduce start-up costs.
  - b. Encourage deans and chairs to recruit faculty with strong computational research interests.

# Teaching and Learning

**Goal 5:** Support TTaDA to deliver innovative and effective teaching and learning technology services

**Champion:** Teaching Transformation & Development Academy

## Action Items:

1. Explore, develop and adopt technologies supporting evidence-based instructional design strategies.
  - a. Provide faculty and staff programming using strategies to support learning outcomes
  - b. Increase the support and use of mobile technologies for teaching and learning
  - c. Establish services and resources to strengthen innovative teaching and learning practices through the use of technology and proven instructional design methodologies
  - d. Provide support for the development and implementation of the UND Online Teaching Certificate program
  - e. Foster and develop talented, skilled and responsive staff supporting faculty and students
2. Standardize teaching facilities to support most up-to-date instructional technologies.
  - a. Implement a learning space searchable repository including specifications, 360 degree classroom photos and instructions on how to use the equipment
  - b. Create a learning space standards report including a robust technological baseline to align with UND master planning
  - c. Develop a plan to identify and transform formal and informal learning spaces to support evidence-based pedagogical strategies
  - d. Solicit faculty and student input on learning space design and development
  - e. Develop plan to design and implement innovative learning spaces to use as prototypes for faculty and students to experience
3. Optimize learning outcomes informed by data
  - a. Facilitate assessment of learning at the course, program, and college levels; and leverage the use of data tools to assist faculty and departments in collecting this data
  - b. Support the advanced use and integration of analytic tools including Blackboard, Starfish, and others
  - c. Identify tools that can be used in collecting data to provide insights into student success and risk factors
4. Champion the innovative use of instructional technologies supporting teaching outcomes and student success.
  - a. Showcase creative and innovative uses of instructional technologies fostering opportunities for faculty, students and staff to collaborate across the campus
  - b. Develop opportunities and resources to pilot and experiment with emerging technologies and to assess how their use impacts student learning, motivation, retention, and related outcomes

# Information Technology Infrastructure

**Goal 6:** Enhance university-wide technology to ensure future computing needs are realized

**Champion:** University Information Technology

## Action Items:

1. Ensure base funding and resources are available for critical information technology infrastructure for maintenance and upgrades
  - a. Identify future infrastructure needs and develop a long term plan to meet the needs of the campus community
  - b. Identify base funding sources for operating, upgrades and improvement of University's critical infrastructure
2. Adopt new technologies and standards that lead to improved services and higher efficiencies
  - a. Adopt a cloud-first strategy where all new technologies are assessed for safety and security in a cloud computing environment before making an investment
  - b. Optimize mix of on premise, hosted, and cloud services
  - c. Adopt and enforce best practices, standards, and procedures to ensure services provided are secure, scalable, dependable, and flexible
  - d. Evaluate current technologies and software applications to identify opportunities to reduce and alleviate technical debt
3. Standardize network infrastructure across the University
  - a. Complete the wireless upgrade to standardize baseline wireless services
  - b. Complete the network upgrade to standardize hard wired network services
  - c. Leverage 100Gbps Science DMZ upgrade to NDUS Data Center to provide improved, low-latency data transfer between some ACI-enabled labs and off-campus systems
  - d. Develop a plan to accommodate demand on bandwidth and security from increased use of Internet of Things (IoT)
  - e. Assess the feasibility of engaging an Internet Service Provider for campus Residence Halls
  - f. Expand security features on the network registration system used to identify users of the UND network
4. Consolidate data and storage to improve collaboration, accessibility, reliability, and security
  - a. Conduct data and storage assessment to determine storage needs considering retention policies.
  - b. Consolidate active directories across the university to one UND active directory and develop a structure that can adapt to organizational changes with minimal effort
  - c. Consolidate data and storage solutions
5. Continue to implement functional consolidation policy as mandated by the State Board of Higher Education
  - a. Inventory servers and storage infrastructure dispersed across the University to assess the need and find solutions to consolidate
  - b. Request exemptions as needed ensuring security measures, policies and procedures are met accordingly

# Information Security and Risk Management

**Goal 7:** Adopt Safeguarding UND initiative as a platform to protect information security resources using industry standards and best practices

**Champion:** University Information Technology and University Public Safety

## Action Items:

1. Establish Data Governance to develop a common understanding of data and controls used to secure and manage data
  - a. Establish restricted data area based on the needs of faculty, researchers, and data owners
  - b. Establish data governance and policy to support data needs of the university in a secure manner
  - c. Establish data definitions and control standards for confidentiality, integrity, and availability
2. Integrate security practices to protect confidentiality, integrity, and availability of information assets
  - a. Integrate security assessment into software and data service procurement process
  - b. Cultivate environment where security governance is fully integrated with university business practices
3. Adopt and implement industry best standards and practices to detect, mitigate, and prevent cybersecurity threats
  - a. Develop and expand Security Awareness initiatives to help faculty, staff, and students better protect themselves and UND data and resources.
  - b. Identify systems and software in use at UND and actively manage to keep them up-to-date using Systems & Software Management
  - c. Develop Data Loss Prevention capabilities to protect and avoid loss of sensitive data wherever it is stored or transmitted
  - d. Implement Endpoint Security software and controls to protect devices accessing our systems and networks from malware, exploits, ransomware, and other threats that may compromise our data and systems.
  - e. Improve Vulnerability Management capabilities to identify, classify, prioritize, and remediate vulnerabilities in IT systems and software.
  - f. Implement tools and capabilities to conduct Penetration Testing to periodically test our defenses to identify gaps in security and assess our readiness to respond to attackers
  - g. Implement Centralized Logging to facilitate quick response to analyze security incidents.
  - h. Use Network Intrusion Prevention Systems (NIPS) and Firewalls to monitor networks and systems, prevent malicious activity, and limit unauthorized access.
  - i. Continually improve and expand Identity & Access Management Systems to control access to critical systems and prevent compromise due to misused credentials.
  - j. Acquire and develop the capabilities to respond to daily cybersecurity threats through Security Operations.