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Enterprise IT Strategy Plan Office of the CIO

FY16-18

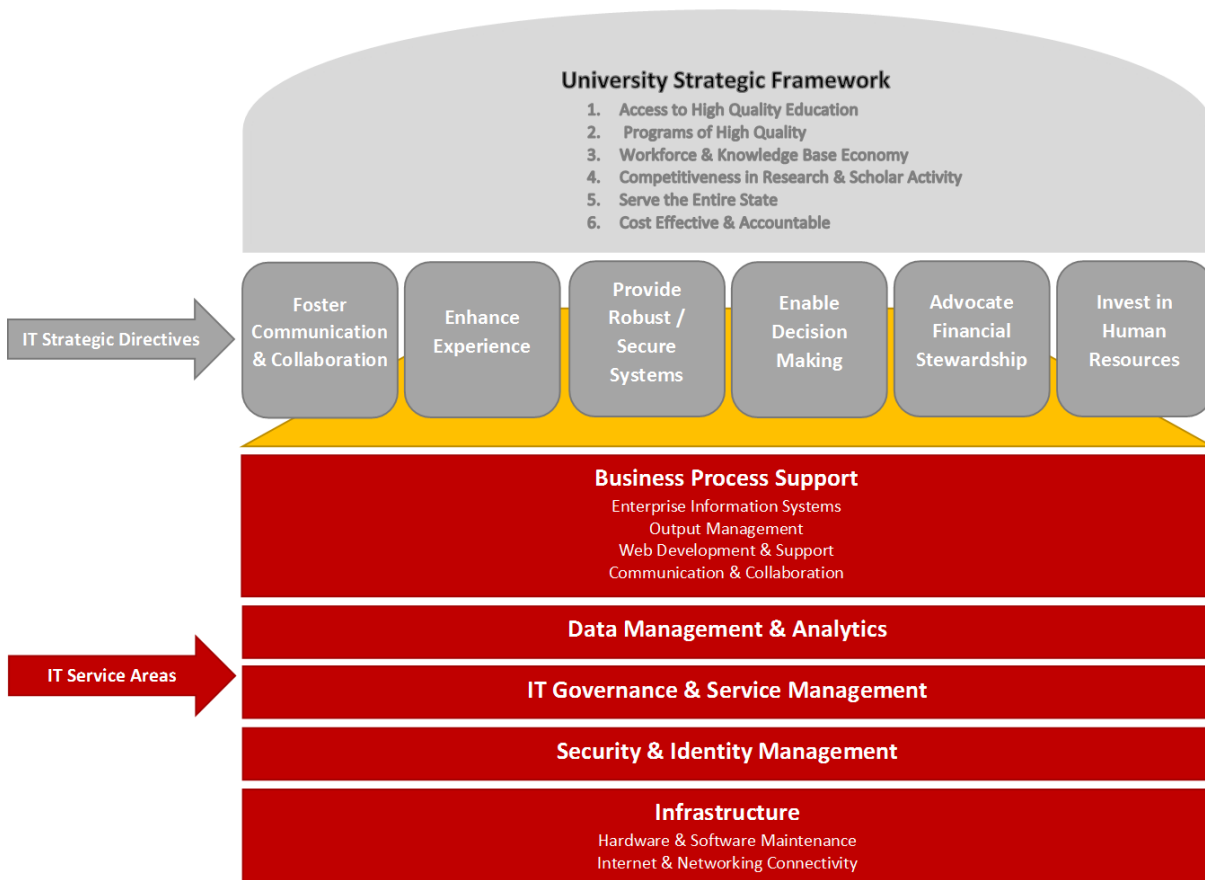
April 8, 2016

This document provides the enterprise wide information technology (IT) strategies through the biennium FY17-19. It aligns with President Bounds 'One University of Nebraska, four campuses' vision and goal, through collaboration and working collectively together for the NU system.

The strategic directives and goals of this plan are focused on six areas:

- Build and strengthen trusted partnerships and collaboration throughout the university
- Provide dependable and secure enterprise services and solutions
- Improve and enhance the end-user experiences for enterprise systems
- Improve decision making through the use of integrated data
- Improve the financial effectiveness and transparency of the services we provide
- Invest and grow our IT skills and expertise to maintain, support and enhance our enterprise systems and services.

Each of these directives are foundational, supporting the University Strategic Framework, and are integral to each of the CSN services. The goals and initiatives outlined for each CSN service area were developed to support each of these strategic directives.



These directives form an overarching vision that provides information technologies that will balance the need for collaborative, resilient, secure, informational, innovative and easy to use services and solutions. CSN supports the faculty, staff and students across the University of Nebraska system, Nebraska State College System, Network Nebraska (K-12 and Higher Education), as well as the State of Nebraska. The term "organization" is used throughout this document to denote all CSN customers and constituents.

CSN Mission:

Provide stakeholders with innovative, secure, reliable technology services and solutions through collaboration and partnership.

CSN Strategic Directives

Foster Communication and Collaboration

President Bounds 'One University, four campus' vision is based on a cohesive and interrelated communications and collaboration strategy within the university and with its partners. CSN's goal is to continually identify, recommend, implement and support technology tools and solutions that improve the ease and efficiency of communication and collaboration that can enable and foster this vision.

Enhance User Experience

CSN will provide a unified and innovative experience for students, faculty, staff of the University of Nebraska and other partners throughout the state for the services and systems we support. We will focus on increased customer satisfaction by providing high level service to our constituents with improved ease of use resulting in effective and secure operations.

Provide Robust and Secure IT Services and Solutions

CSN will take proactive steps to deliver dependable, scalable, secure IT services and systems with comprehensive support. We will improve the data and network security of our University systems so confidentiality, integrity, and availability is maintained to the highest standards as prescribed by law and regulation.

Enable Decision Making with Integrated Data

CSN strives to provide the best data management and reporting services to our communities for business reporting, transactional reporting, integrated analytical reporting, and overall management/support of the underlying databases and data.

Advocate Financial Stewardship

CSN will continually review, analyze, and improve the financial effectiveness and transparency of its services. We will proactively research and identify cost-effective ways to optimize stability, scalability, and security.

Invest in Human Resources

Information Technology professionals are our most valuable IT asset. CSN will strive to develop and build the needed skills and expertise to maintain, support and enhance our enterprise systems and services. We will provide staff with opportunities to grow professionally and develop within their areas of expertise based on changing and emerging technologies and IT solutions.

Business Process Support

CSN customers rely directly on the IT systems and services that support many of the core business processes, including finance, human resources, procurement, budget, student services, web development, output management, communications and collaboration. These systems support the university's mission and CSN support activities. It is critical that our investment in these systems improve the security, efficiency, and effectiveness of the customers we support.

Goals and Initiatives:

- Encourage the adoption of common business processes and solutions across the organization to reduce complexity and improve quality in the support of enterprise business systems. (University Goals 6)
 - Research and understand business drivers and needs.
 - Evaluate opportunities to replace 3rd party components with core system options.
- Evaluate/research emerging solutions and practices to determine applicability and future direction for improving service delivery, functionality, efficiency, and costs. (University Goals 6)
- Bring decision-makers together to identify customer needs. (University Goals 6)
- Enhance and integrate solutions to address customer needs. (University Goals 6)
- Utilize customer satisfaction surveys to identify areas of need/improvement. (University Goals 6)
- Collaborate with customers to improve the overall end-user experience within the supported enterprise business systems. (University Goals 6)
 - Improve end-user interfaces to streamline business processes.
 - Provide better information/data to users to enhance their interaction with the systems and tools.
 - Manage and reduce product portfolio to better maintain and serve the end-user community.
 - Ensure extendibility, accessibility and mobility by using standard technologies.
- Provide feature-rich communication tools that support collaboration throughout the organization. (University Goals 6)
 - Integrate and streamline new communication technologies, tools and best practices for improved communications.

Data Management & Analytics

Our enterprise information systems along with campus systems produce a tremendous amount of data and information on an ongoing basis. This data is the foundation for guiding decisions and assists in diagnosing, describing, prescribing and predicting the short term and long term direction of the organization. Information technology professionals must understand and fulfill data and information needs to support student and campus success.

Goals and Initiatives:

- Support Data Governance initiative driven by Executive Vice President and Provost and Vice President of Business and Finance. (University Goals 6)
- Collaborate to develop a single authoritative source of information for the organization where all units access core integrated data. (University Goals 6)
 - Identify, integrate, store and make data from multiple sources together for improved decision-making and data access.
 - Identify system-wide and campus/unit level information needs and metrics.
 - Create a common definition of integrated data.
 - Develop models to enable strategic decision making.
- Develop data analytic skills and knowledge needed to support a single authoritative source of information. (University Goals 6)
 - Build, develop and maintain the technical, analytical and business skills to support and enhance the necessary analytical architecture and tools.
 - Research emerging technologies and solutions and determine applicability and future direction.
- Create an analytics and business intelligence center to support the long-term strategic decision making for the organization. (University Goals 6)
 - Propose and advocate for an overall business intelligence governance structure to guide the management and use of integrated data, and project priorities of a collaborative business intelligence center.
 - Build a collaborative partnership within IT, academic, and business communities to identify, build and utilize a common analytical architecture.
 - Develop a long-term plan and structure for funding and sustaining strategic data management and analytic initiatives.

IT Governance & Service Management

It is vital that IT investment choices be guided by customers, support enterprise strategies, and ensure the most important items receive the highest priority. It is imperative that the intelligent use of resources, provides a shared, rational, and transparent framework for the selection and prioritization of IT investments. Effective IT Governance and Service Management will help foster a positive and trusted partnership with the institution's customers to collaborate on achieving the institution's strategic plan through the use of IT resources.

Goals and Initiatives:

- Promote and support an IT governance organization and processes that empower and encourage accountability and transparency to better support the mission activities of the University. **(University Goals 6)**
 - Collaborate to create a comprehensive view of IT priorities.
 - Deploy Service Level Agreements and collect and report on key performance metrics.
 - Produce transparent annual/ongoing reporting regarding organization resources and assets.
- Ensure that priorities and investments are aligned with the University and campus goals. **(University Goals 6)**
 - Perform periodic assessments of the IT prioritization process.
 - Develop an annual strategic plan.
 - Develop decision-making practices that tie outcomes to organizational goals.
- Ensure that we have the right people to support and enhance enterprise systems based on the business needs and processes of the supported end-user community. **(University Goals 6)**
 - Engage all members of the organization, identify career paths and align staff development opportunities with the work needed to address succession, system requirements and growth.
 - Identify opportunities and provide training/professional development to boost our knowledge, skills and abilities.
 - Improve our ability to promote and compensate employees based on internal and external market relevance and staff engagement in the organization's objectives.
 - Need to specifically address collaborating with campuses to share skills and resources across the system.
- Strengthen business and IT relationships within the organization to leverage economies of scale and realize efficiencies. **(University Goals 5, 6)**
 - Establish IT procurement processes that leverage IT spend.
 - Collaborate to identify IT customer service process improvements and efficiencies.
 - Identify opportunities to exchange information, share tools, and work together on solutions.
 - Initiate networking opportunities on the campuses, throughout the organization, and in larger regional and national venues/groups.
- Develop a University-wide strategic Disaster Recovery and Business Continuity plans to provide improve availability of Enterprise systems to all campuses. **(University Goals 6)**
 - Collaborate with all campuses on their Disaster Recovery (DR) and Business Continuity Planning (BCP) efforts to ensure University-wide efforts are strategically aligned and meet business requirements.
 - Capture and verify business requirements for Enterprise Systems in a common application that is available across all campuses.

- Develop and exercise comprehensive DR plans that will test our ability to recover enterprise operations successfully and in the appropriate time frames.
- Review current processes and procedures for inclusion of Disaster Recovery criteria and expectations where applicable.
- Identify areas of opportunities to strength our critical systems and landscape to improve responsiveness to outages and disasters.

Security & Identity Access Management

A multi-layered security architecture is required to protect data, desktops and servers, and other electronic resources used to run the University. There is significant value associated with our intellectual assets, institutional data, and personal information that require substantial measures to protect. Safeguarding university information, systems, and constituents allows the staff to concentrate on more mission related activities and operations.

Goals and Initiatives:

- Collaborate within the organization on security initiatives. (University Goals 6)
 - Develop common security policies in conjunction with the University Security Council
 - Adopt common tools, processes, and best practices (e.g., incident response plan & ticketing, log management, threat assessment, denial of service)
- Security Operations Center (University Goals 5, 6)
 - Collaborative opportunity with State of Nebraska, University System, State Colleges
 - Create an interdisciplinary program that brings together faculty and experts from the technical, legal, business and medical areas of the University to collaborate on the growing importance of cyber security.
 - Develop strong partnerships with industry leaders to assist in supporting and growing the center.
- Utilize current security methods and solutions to protect information resources. (University Goals 6)
 - Identify improved methods to prevent installation, spread, and execution of malicious software on user and infrastructure platforms.
 - Enhance network monitoring apparatus to discover and alert upon potentially compromised accounts and systems.
 - Proactively detect exploitable vulnerabilities in infrastructure and computing systems.
 - Provide security training programs and certification opportunities to enhance the knowledge and skills of our staff.
- Partner with business representatives to develop a Data Governance Plan. (University Goals 6)
 - Identify rules and responsibilities around classifying and protecting data creates the ground rules to which the campuses can point their individual security plans.
- Utilize industry best practices/tools/mechanisms to protect information resources. (University Goals 6)
 - Prevent the unintended, unnecessary, and unauthorized flow of data from trusted computing systems and networks.
 - Identify and protect sensitive information stored within computing systems.
- Enhance identity and access management system and processes. (University Goals 6)
 - Replacement of the University of Nebraska Identity and Access Management infrastructure.
 - Deploy federation using InCommon framework to improve access.
 - Implement 2-factor authentication for enterprise systems (O365, NeSIS, SAP, Firefly).
 - Improve account management (to include provisioning and deprovisioning).
 - Focus on automated processes.

Infrastructure

The University and associated partners require a foundational infrastructure of reliable information technology resources on which other systems and services depend. These infrastructure services must maintain a superior level of performance and reliability to allow users to access needed resources and support the mission of the organization while being cost-effective, scalable, and accommodating to changing needs and technologies.

Goals and Initiatives:

- Utilize metrics to monitor performance and capacity trends, and to evaluate operational effectiveness and quality of service delivery towards a goal of enhancing decision making and improving services. (University Goals 6)
 - Identify, collect, summarize, and communicate Key Performance Indicators (KPIs).
- Favor technology solutions that reduce complexity of support while maintaining a stable, secure business computing environment. (University Goals 6)
 - Be mindful of opportunities to consolidate infrastructure, support, and/or process. Combine help desk and computer operations into a new IT Service Center to leverage and grow the talent in that organization.
 - Investigate opportunities for a common enterprise database solution across business systems. Broaden scope to include other campuses more directly when investigating enterprise wide solutions
 - Characterize workload into mode 1 (business critical) and mode 2 (patching, development, testing) to aid in the effective application of appropriate resource types. (Integrating this standard approach into documentation, into decision making choices, etc.)
 - Investigate opportunities for a common database solution across business systems.
 - Consult and collaborate with other campuses when researching IT products and processes to identify opportunities for more enterprise-wide solutions.
- Engage business support community to ensure infrastructure activities and business process growth are being effectively coordinated. (University Goals 6)
- Evaluate emerging technologies, products, and practices for opportunities to improve service delivery, implement new function, improve efficiency, and reduce costs. (University Goals 6)
 - Expand in-house capability for support of test/sandbox environments that can be used for maintenance or proof of concept activities.
 - Investigate 3rd party cloud infrastructure services for test/sandbox activities.
 - Evaluate cost and challenges of supporting legacy technology and applications against maturity and availability of alternatives and cost of replacement.
- Leverage the infrastructure to provide benefit to Nebraska education and reduce operational costs. (University Goals 6)
 - Allow educational entities (campuses, state colleges, other higher education institutions, and ESUs) to locate equipment racks in the conditioned, managed, and secure data center.
 - Partner with organizational units to address an aspect of disaster recovery and business continuity for those entities.
 - Provide a reliable, redundant and robust high speed data transport network capable of supporting existing services as well as future demands.
- Obtain funding for new data center construction, sufficient to address the imagined needs of all University campuses, state colleges, and the State of Nebraska, for the next 30 years. The design and resource capabilities should provide full redundancy of capability between the primary and backup data centers in order to achieve an active-active relationship between the two such that both physical

infrastructure maintenance, network maintenance, as well as critical business systems maintenance and upgrades can be completed without requiring application down-time. (University Goals 5, 6)