# 2025-2027 NMSU IT Strategic Vision

**Introduction**

New Mexico State University is beginning a new and exciting chapter as a new President is installed; investments are made in strengthening the University system; and there is a new energy for funding and stabilizing information technology operations in support of the institutional transition to a more advanced Carnegie Classification.

It is clear that teaching, research, public service, campus life, and administrative operations require reliable and secure technology systems to function. The delivery of education services today has significantly increased reliance on technology for collaboration and learning; and brings attention to key technologies that need immediate action to sustain our mission and capture efficiencies. As NMSU realigns resources for the future, it is imperative that we continue to invest in strategic technology opportunities to remain relevant and competitive in higher education. The time is now for digital transformation and transformative internal collaboration at NMSU.

As stewards of the limited resources available to support technology initiatives, Information Technology (IT) has developed the following document to outline specific goals and initiatives for the next three years. These goals will move us in the direction of increased data security, strengthened teaching and scholarship, enhanced student experiences, and improved administrative efficiencies. This document was developed with input from faculty, staff, and students who are committed to seeing NMSU flourish, for many years to come. The collective “we” are committed to Being BOLD…as we Shape the Future.

**Drivers of Change**

The context for the delivery of technology services at the University is shaped by both the current and rapidly evolving significant drivers in the world around us. People expect to do their daily transactions from a mobile device or on the web. Virtual engagement and interaction for transactional business is efficient and sufficient. Artificial intelligence (AI) holds promise as a significant game changer, and possible threat, to administrative operations as we know them today.

Our faculty are better versed in navigating and using online teaching tools and their laptop computers. This has increased expectations, by faculty and students, of technology performance in classrooms and for scholarship moving forward.

Cloud computing services have become commodities for higher education systems, requiring that we rethink how we “do IT” on campuses such as ours. Within our University system we need to find ways to collaborate and share systems asking, “Why are we all trying to do it on our own?” Data for decision making must be a “push of a button” away and placed into the hands of those who are using the data.

NMSU is having to implement new, more efficient business models, while holding on to the fundamental tenets of relational and broad-based learning that are core to an excellent NMSU education. Professional learning, certification, and degree programs are increasingly offered online as non-traditional students require flexibility to balance school, work, and family obligations. Undergraduate students arrive on campus having experienced innovative and technology-rich teaching environments as K-12 schools issue laptops or tablets to each student, promote active learning, and foster creative engagement. These digital natives arrive at NMSU with multiple devices and experiences with diverse technology platforms, and many expect NMSU to deliver an even richer experience.

With growing regulatory requirements, the ever-changing threat landscape, and continual financial pressure, everyone at the University needs to work together to solve institutional problems and make decisions collaboratively and strategically so that resources are focused appropriately. Every academic decision has an impact on technology as class size impacts classroom technology needs; program changes have an impact on the underlying data structure of our systems; and satellite campus opportunities require careful attention to data security and underlying infrastructure needed to support the endeavor. Through technology governance and relationship building we can work collaboratively to achieve our goals while stewarding the resources we have available to us.

The funding model for technology at NMSU needs to be re-evaluated. As the underpinning of everything that is supporting the NMSU system operations, we need to develop a steady state funding model that covers ongoing software and hardware support expenses; provides regular capital funding to maintain the network and other core infrastructure; and allows for flexibility to rapidly identify and deploy new solutions that will have a significant positive impact on operations. Infrastructure and basic technology tools need to be centrally funded to reduce complexity within the technology ecosystem and provide a consistently reliable computing environment across the enterprise.

The University system recently expanded the role of the Chief Information Officer (CIO) to serve as the executive with broad oversight over the system’s technology ecosystem and strategies. By expanding the purview of the CIO, the institution will be able to better assign resource allocation in a way that more efficiently supports the institution’s strategic plans. The CIO has been tasked with identifying and advancing opportunities for technological advancement through dotted line reporting relationships and policy/process definition. To support the institutional goals, technology strategy and support decisions need to be coordinated through the Office of the CIO, in partnership with functional units.

**Responding to Drivers of Change**

These drivers impact the demand for technology services and the way they are provisioned across the University system. The overarching goal is to support the mission of the University by providing an excellent technology user experience while managing our budget in a fiscally responsible way. To do this, we need to develop and maintain an infrastructure that is secure, reliable, resilient, flexible, scalable, and innovative, where it is strategically advantageous.

We must prioritize the development and expansion of an effective IT Governance model. Once established, these groups will meet regularly to identify and advance priorities in a collaborative manner. The University will develop a list of Technology Guidelines to support sound decision making around technology issues.

The Office of Information Technology (IT) is fully committed to supporting the institution in meeting its strategic, operational, and educational objectives through leadership, scholarship, and support of appropriate information technology solutions and services. This will be accomplished by:

* Establishing priorities through an integrated planning process;
* Aligning and stewarding resources to effectively support University priorities and objectives;
* Investing in the development of close, transparent, and collaborative relationships with faculty, students, staff, and other community members to best serve the campus' existing and future needs;
* Encouraging and supporting innovation in solutions;
* Developing our human resources to ensure we are reflecting diversity and leading in understanding;
* Deploying and supporting current and future solutions to support the University’s mission;
* Partnering internally and with other educational institutions and external organizations with similar objectives to efficiently leverage resources.

Existing organizational functions within the Office of IT are being redefined to improve our ability to deliver services. This adjustment will require that deployed technologies be reliable, align with established industry standards, and not require extensive professional troubleshooting to be operational. We continue to search for solutions on platforms we already use/own and to reduce or eliminate redundancies. IT is committed to identifying the best value solution and always looking for ways to save money, without being “pennywise, pound foolish”.

As a system we need to understand that NMSU information data policies and processes are not designed to be in conflict with academic freedom. The American Association of University Professors (AAUP) provides a helpful tool to explain that academic freedom refers to the rights of teachers, researchers, and students to pursue knowledge and express ideas without fear of censorship or retaliation[[1]](#footnote-2). To provide a safe and secure computing environment that can be effectively supported within the institution’s IT resource allocations will require that we correctly align those things that are truly an issue of academic freedom versus technology preferences. Work is needed with the Office of the Provost and Faculty Governance to develop a better understanding of the issues and remedies needed to support the institution’s data security and efficiency goals with an appropriate understanding of academic freedom.

As we change our technologies, the skill sets of our people, and our processes for interacting, we will need to maintain a team spirit across all divisions to solve the very difficult and expensive technology challenges we are facing. The load of everyday responsibilities to keep the organization running competes with the time and resources required to be transformational.

The initiatives in this document continue to be ambitious. It will take the combined efforts of all campus stakeholders to accomplish our goals.

**Priorities**

The following are our key priorities, organized by functional area:

Academics and Scholarship

* To provide a reliable experience for our students, faculty, and staff we must better coordinate the teaching and meeting spaces across campus and consider a centrally managed model. By centrally coordinating and managing teaching and meeting spaces, NMSU will have the opportunity to develop standards and a predictable technology replacement funding model to support ease of use and reliability. We will put the appropriate level of technology into each space without over-building.
* We must identify adequate ongoing annual funding to replace the technology in classrooms and learning spaces every three to five years[[2]](#footnote-3). We must refrain from building new spaces that require technology without first identifying the ongoing funding for replacement.
* Working with faculty, we will assess and establish technology standards for small, medium, and large teaching spaces. These standards will support easy-to-use self-operation, flexible learning, video connectivity, and be streamlined to support today’s education objectives.
* Creating and supporting efficient methodologies that enable online education while also providing equivalent access to campus resources is key to ensuring the success of the program. Being able to leverage existing campus technologies and developing support structures that are repeatable will create a scalable learning infrastructure.
* Expanding the use of virtual software computer labs will reduce the expense and need for proprietary computer labs on campus and facilitate greater student flexibility by encouraging the use of each student’s own computer.
* We will install a One-Button Studio to enable students to self-operate a green-screen video recording session with visual aids that can be used in a course or as a class project. This provides a professional video environment, superior to what can be done on one’s own, convenient for users, without requiring professional staff assistance.
* Computer-generated imagery, digitally enhanced, virtual, and augmented reality, are gaining traction in academia. IT will continue to work with faculty to find pedagogically appropriate applications for these emerging technologies across the system.
* Faculty scholarship requiring computational analysis of data, and the need to provide students with hands-on learning environments, requires that NMSU identify solutions to provide a stable and reliable high-performance computing (HPC) environment. This includes a substantial investment in the underlying electrical and data infrastructures. We therefore need to find ways to partner across campus to fund the ongoing need and find creative ways to meet that need, including leveraging cloud resources, especially as the existing HPC facility approaches end of life.

Infrastructure and Security

* The University’s online data and other resources should be available, easy to use, and appropriately secured with risk mitigation mechanisms in place. In response to an increasing threat landscape, we know security policies, education, and engagement are critical for success. The current distributed IT support environment with few policies and procedure requirements can create a significant risk to institutional data. We will continue to provide services that make “doing the right thing the easiest thing to do” as a necessary element for an effective strategy.
* Fortifying data security across campus is a top priority. The institutional goal of a Zero Trust Architecture (ZTA) will require a campus-wide commitment to change how we have been thinking about access to our networks, devices, and systems. To establish a baseline of NMSU’s current state, we need to complete a security risk assessment. From this we can establish a roadmap towards achieving ZTA.
* Areas of focus include reducing risk associated with unpatched computing devices and applications; improving user security training; implementing network standards and controls across all NMSU system networks; and enhancing controls around data access by role and individual (see Identity and Access Management in the Enterprise Application Section of this document).
* The campus wired and wireless network is vital to the functioning of the University. Students, faculty, and staff continue to add devices to the network requiring NMSU to invest in scalable network bandwidth, redundancy, and re- engineering to meet evolving technological needs. To properly maintain the environment a portion of the aged networking equipment, both wired and wireless, needs to be replaced each year. Upgrading technology to support new protocols and expanding our Internet service to keep up with bandwidth demands is an annual investment.
* An integrated communication platform enables the University community to more fluidly communicate and collaborate whether at their desk, at home, or on the road. Employees should have the option of removing the desk phone and using the Cisco or Teams software client for calling instead. As the Cisco phone system nears its end of life, we will explore options to enable integrated voice, video, and chat conferencing.
* Increasingly, technology service providers are offering end-to-end solutions, frequently referred to as “in the cloud.” Cloud services allow a vendor to maximize economies of scale across their customer base while investing significantly in ensuring data and platform security. The security level provided by these vendors frequently surpasses the capabilities of NMSU. We will place concerted effort toward acquiring new services that are hosted in the cloud and moving existing services to the cloud, as appropriate, which could also allow for the elimination of the Milton Data Center.
* NMSU applications and systems can be a significant target of hackers or other nefarious people. We must continue to prepare to respond and recover in the event of an emergency. This should include expanding cloud backups, retiring tapes, and enhancing Disaster Recovery as a Service (DRaaS).
* IT plays a crucial role in partnership with campus stakeholders in complying with the growing regulatory and legal requirements for properly securing information and technology resources. With assistance from many campus stakeholders, the institution must continue to invest in meeting compliance regulations.

Enterprise Applications

* Enterprise and administrative applications at NMSU will continue to subscribe to the following design principles:1) cloud-based preferred; 2) user- centric interfaces; 3) NMSU authentication; 4) accessible to all users; 5) web-based; 6) support self-service modalities; and 7) an architecture that values analytics, agility, and service focus. Departments must review business problems and possible solutions with IT before beginning a new solution investigation. IT is then able to consult on possible existing solutions, within NMSU, that can be leveraged to meet the need or to assist with
* Our enterprise applications must facilitate the core mission of the University, provide appropriately secure access to services and information when they are needed, and be as frictionless and adaptable as possible (easy to find, use, develop, and support.)
* A commercial Identity and Access Management system needs to be implemented to securely manage NMSU system role based access and identities. Single sign-on (SSO) functionality is needed to improve the user experience to easily go between the many systems that support the enterprise. The goal is to facilitate appropriate access through SSO, across all NMSU systems.
* The University’s Ellucian Banner Enterprise Resource Planning (ERP) system was launched over 20 years ago. We need to invest in reviewing and updating our business processes, and in some cases reimplement portions of the system (removing customizations according to best practices) to realize significant resource efficiencies and improved functionality. This Banner Revitalization project will require time and commitment from IT staff as well as functional stakeholders. Partnering with an experienced Banner consulting firm will expedite the project.
* Our Human Resources business processes would benefit from a coordinated strategy and investment to automate onboarding, talent management, and benefits management. Two existing NMSU solutions, PageUp and Cornerstone, should be further evaluated to determine if NMSU should simplify by consolidating HR processes on one of these platforms or pursue a new consolidated solution to support future business processes.
* Many of our systems that support business operations are old homegrown systems that are at the end of their lifecycles. We need to prioritize identifying vendor provided solutions that reduce complexity and better utilize today’s technologies. Examples of this include the Inventory/Asset Tracking System; Network Account Creation Form; and Tuition Waiver Form.
* Data is collected across the many systems that are managed by the University. We must continue to evolve a strategy for warehousing the available data and providing access to reporting tools that make it easy for administrators to analyze performance, predict outcomes, and plan accordingly. The most powerful reporting tool is one that can gather data from multiple sources thus enabling reporting managers to create and run their own reports that are most helpful to their needs. The current Operational Data Store by Ellucian is nearing the end of life. Cognos, the enterprise reporting tool, is complex. Other reporting tools are growing in popularity across the University system. A Data Assessment is underway with defined future strategies as deliverables.
* The NMSU Door Access Control system has aged and needs to be replaced.
* The University has a commitment to reducing paper administrative processes that are error-prone and highly inefficient. Work is required to identify a singular solution for electronic form processing that will integrate with Ellucian solutions and other NMSU systems.
* The NMSU system is committed to supporting diversity through the facilitation of providing preferred names from the Banner ERP system to ancillary systems that are compatible. This effort requires a review of possible system integrations and the development of a work plan that is stewarded by system stakeholders.
* Each business area benefits from having a Functional Technologist/Analyst assigned to work collaboratively with IT to identify business process and system improvement opportunities, to successfully launch new functionality, and to collaborate with institutional data management and reporting efforts. IT technical staff will focus on the technical aspects of the systems while functional analysts focus on the end-user experience, configurations, and reporting needs within their areas.
* Mobile phones are like mobile computers, used to access work-related and social media applications on a regular basis. To stay relevant, NMSU must develop systems and applications with a “Mobile First” mindset. This includes responsive web applications and, as appropriate, the development/launch of mobile apps to access institutional tools.
* Campus community access to “the tools they need to do their jobs”, in a web and mobile responsive environment will be provided with the launch of My.NMSU2.0 (powered by Ellucian Experience). The student experience will be additionally enhanced with the launch of StarRez for housing and dining management.
* Block chain technology is emerging to facilitate just-in-time official access of earned credentials from a personal mobile device. As students gain valuable credentials from NMSU, we need to monitor and investigate evolving technologies, such as this, in support of facilitating life-long learner credentials.

**Support & Service**

* Students, faculty, and staff are looking for easy to find, reliable IT support resources that can be accessed quickly when needed. Developing a consistent and responsive support model is a top priority at NMSU. Effective technology organizations develop service strategies (referred to as IT Service Management) that align with the overarching mission of the institution.
* We will document repeatable processes and leverage artificial intelligence tools to increase service reliability and access to self-service support information at the IT Help/Service Desk and in the classroom, resulting in improved customer satisfaction.
* Processes supported by an IT Service Management System (TDX) will advance coordinated efforts within IT and across the NMSU distributed IT community. Adoption and implementation of effective project review, prioritization, and management will assist the University in managing resources effectively.
* To reduce support complexity and provide a common experience for our faculty, staff, and students, we will standardize on the M365 (Microsoft) platform for email, document sharing/storage (OneDrive), team collaboration, chat, and video conferencing (Teams). This will also involve transitioning internal email lists from Mailman to M365 and investigating the transition of our alumni accounts to M365 as an email forwarding service, to reduce the security events that are created by the current alumni system.
* Technology standards for end-point devices ensure that faculty and staff can consistently and reliably access services provided by the institution. Typically, enterprise applications are developed primarily for Windows operating systems. Funding models need to be developed to encourage standardization and consider the ever-changing device landscape. Partnering with NMSU Purchasing we will make it easier to identify and purchase devices that align with IT standards. We will improve access to information regarding available software and look for site licensing opportunities that make sense financially.
* Virtual applications and desktops facilitate access to University technical resources from anywhere or any type of machine (Mac or PC). They can also make cost-prohibitive software available to students who only need it for a short period of time. We will seek to create a strategy to virtualize applications and desktops that will create value for the campus community.
* Technology support is a shared responsibility across campus. Developing a technically curious community across all departments and leveraging social media will create new communication pathways that enhance understanding and promote effectiveness in the use of technology.
* We will look for opportunities to leverage existing tools and resources to support incidents and requests which occur outside of IT. These resources could include a unified ticketing system, integrated support phone system, and centralized IT support.
* When a new employee arrives, many events happen in a short time as they begin work. We will continue to enhance the employee onboarding process with improved computer deployment, technology training, and a recurring reminder regarding resource availability to assist with questions.
* Digital signage across campus is used to provide important information to students. The current system is end life and will be replaced with Carousel, a cloud based solution.
* Campus technology resources abound though there is minimal training available. An investment in LinkedIn Learning will provide access to “just in time” training resources for technology tools, soft skills, and business operational best practices for all students, faculty, and staff throughout the NMSU system. A team of platform evangelists will work together to highlight best practice videos and build awareness of the LinkedIn Learning platform.

**Conclusion**

The priorities outlined in this document may be ambitious, but, when achieved, will begin to align the institution’s technology ecosystem with best practices on which NMSU can continue to grow. These plans will be reviewed annually and adjusted as needed to remain relevant.

1. [Academic Freedom 2021 webinar](https://www.aaup.org/sites/default/files/Webinar-Slides_Academic-Freedom-Basics.pdf) [↑](#footnote-ref-2)
2. Industry best practice is to replace classroom technology every 3-5 years. Extending the time results in newer mobile devices not being able to connect to the displays. [↑](#footnote-ref-3)