

IT Strategic Plan

Enterprise IT Services



2012-2017

Message from the CIO

Information technology (IT) is the lifeblood of state government. Every Nevada agency, resident, and business depends on information technology for the delivery of necessary and critical services. Technology, often taken for granted, impacts every interaction government has with its constituents. A deficit in technology causes an inconsistent provision of basic services resulting in public dissatisfaction.



Reduced state revenue over the past several budget cycles has had a significant impact on state information technology due to underinvestment in hardware replacement, software upgrades, and personnel training and recruitment.

Demands on the state IT systems have continued to increase as agencies seek to achieve greater productivity gains to offset their own shrinking budgets, and diminished personnel resources.

Federal funding resources are likely to decrease over the next several state budget cycles. As a consequence, if Nevada is to develop a sustainable future for citizen-government interactions, every dollar of spending devoted to information technology must go to its highest and best use. This requires a basic reassessment of how we do business.

The following are critical challenges over the next several budget cycles:

- Improving employee and agency productivity
- Measuring and improving infrastructure efficiencies
- Reducing expenses while increasing functionality and services
- Increasing accountability and security around critical datasets through improved governance and tools

We begin by setting the stage...

Governor Sandoval's Strategic Priorities

- *Sustainable and Growing Economy* – our short-term goal must be to get Nevada working again, while striving over the long-term to restructure and diversify our economic model.
- *Educated and Healthy Citizenry* – the Governor remains committed to education reform and to ensuring that the State provides a safety net for those most at-risk, protects the public health, and provides opportunities for all Nevadans to participate fully in all our state has to offer.
- *Safe and Livable Communities* – Nevada is a great place to live, work and play, and State Government must provide public safety services while protecting our natural and cultural resources.
- *Efficient and Responsive State Government* – quite simply, we are changing the way Nevada does business through support for initiatives that hold government accountable, ensure efficient use of resources, provide transparency, and support excellent customer service.

Mission

"To ensure the coordinated, orderly and economical processing of information in State Government, to ensure economical use of information systems and to prevent the unnecessary proliferation of equipment and personnel among the various state agencies." (NRS 242.071)

Vision

A state government in which the residents are fully served through effective information technology solutions, innovations, and efficient use of technology.

Guiding Information Technology Principles

- Promote open standards and IT best practices
- Make available enterprise class technologies to our customers
- Integrate IT more effectively with business planning
- Expand the protection zone around State data
- Develop a well-trained, responsive and agile IT workforce

Current State of IT

Information technology in the State of Nevada is largely decentralized with each principal agency assuming responsibility for its own information technology environment. Many agencies take advantage of enterprise services from the internal service fund, but, by policy and funding, they are not required to do so.

Enterprise IT Services (Enterprise IT) makes available to agencies the core enterprise infrastructure services: mainframe data processing, internet access, Wide Area Network connectivity, email, telephone, server hosting, website design and hosting.

Individual agencies implement and provide support for their specific business applications, their desktop users, their internal networking, their security for desktops and their internal networks.

Inter-agency collaboration is sparse with little regard to the duplication of collective or enterprise applications. The magnitude of inefficiencies caused by decentralization is apparent in the amount of IT spending.

The Enterprise IT budget of \$30 million accounts for only 1/6 of the total estimated State annual IT spend of \$180 million.

The total number of data centers, PCs, servers, networks, etc. cannot be easily obtained as agencies tend to procure systems independently, thereby obscuring assets from centralized view, making oversight and management difficult. This is a common and expected downside to a decentralized IT environment.

Duplication of IT systems and personnel was sustainable in an era of comparative fiscal plenty. However, the recent economic downturn and budget reductions show that this is unsustainable. Major IT systems are beginning to fail for lack of investment and are increasingly expensive for any single agency to maintain and support. Hardware and software packages are employed well beyond their serviceable life and are no longer supported by their manufacturers leaving systems vulnerable to security exploits and potential data loss¹. Systems and staff are finding the challenge of meeting federal and state requirements difficult with antiquated equipment and software. The State is falling behind in providing efficient and cost effective services to its residents. Other states have consolidated disparate IT teams and leveraged economies of scale across every aspect of information technology.

Looking to a future IT strategy for state government, there are three possible paths:

1. **Decentralize IT functions, capabilities, and resources.** This strategy retains the IT planning, implementation and support for both enterprise and agency levels where each would define an IT strategy that fits its needs irrespective of the collective or enterprise.
2. **Full consolidation into a centralized entity focusing on reducing statewide IT expenditures and maximizing resource efficiencies.** A complete consolidation of all agency IT organizations over time with the ultimate goal of saving money. Many states have used this approach to save ten to twenty-five percent of their annual IT spend.
3. **Hybrid approach utilizing the best of both decentralized and centralized strategies.** This strategic direction would focus on maximizing economies of

¹ “The state’s core system for finance, human resources, and payroll is more than 12 years old and will soon need replacement. The cost of replacing the system could exceed \$20 million and will require a significant development effort.” State of Nevada Information Technology Board Opinion, 12 August, 2012, Attachment A.

scale to lower costs while consolidating only in areas that benefit both the agency and the enterprise as a collective.

Nevada must determine which of these three approaches is most likely to result in the achievement of key strategic objectives.

Strategic Goals

Implement and leverage enterprise class technologies to provide a more robust and available IT environment for business applications

Enterprise class technologies, when deployed in a collaborative manner, can be implemented at a lower cost while still allowing all participating agencies to benefit. Self-service portals, automated IT services, self-tuning databases, mobile toolsets, and continuous security scanning are examples of tools that are expensive for an individual agency to procure but, when agencies pool their resources and collaborate within the state "cloud", are all very possible.

- Upgrade the core telecommunication infrastructures and build capacity to consolidate disparate phone systems
- Expand services to include a mobile development platform
- Leverage private/public sector cloud technologies for email and other infrastructure services
- Expand functionality and capabilities in the state "cloud" infrastructure
- Implement a DevOps or similar suite of tools for application development and operations of enterprise applications
- Establish a Project Management Office to gain a prioritized portfolio view of consolidated resource capacities and business demand upon merger with DPS IT

Improve information security of enterprise infrastructures and state datasets²

Increase information security through common, centralized management of endpoint devices (e.g. desktop computers, servers, and increasingly, tablets and smart phones) for participating agencies minimizing the risk of resident data loss and malware. Centralized management of servers and encryption keys entails increased physical and electronic security as well as simplified execution of data recovery in the event of catastrophic system failure. Standardized purchasing decreases the risk of malware being introduced in the supply chain and lowers the Total Cost of Ownership (TCO) by leveraging economies of scale.

- Continue to segment the wide area network to increase security
- Begin implementing the public safety LTE network
- Implement a defined Information Security Management System (ISMS)
- Rebuild disaster recovery testing and capabilities for critical business systems
- Automate patch management and remediation for all endpoints
- Advance endpoint (server, desktop, laptop, smartphone) system logging
- Increase our capacity to continuously monitor critical infrastructures

Improve the customer agency and internal employee experience³

Improved customer agency and employee satisfaction can be achieved simultaneously. Consolidation of IT personnel provides increased overall bench strength and greater opportunity for employees to specialize in areas of personal interest. Greater assignment flexibility encourages new skill development, training opportunities, proper succession planning, and an environment that cultivates the next generation. The management of individual agencies can concentrate on their specialized agency missions, while IT services provisioned on common platforms,

² See, “Security”, State of Nevada Information Technology Board Opinion, 12 August, 2012, Attachment A.

³ See, “Application Modernization/Life Cycle Management” and “Citizen Enablement/Mobility”, State of Nevada Information Technology Board Opinion, 12 August, 2012, Attachment A.

driven by clear IT visions, strategies, and statewide architectures, and supported by an established set of operational standards, will complement those agency management efforts, resulting in an overall improved customer experience.

- Expand programming and training capabilities to include modern languages such as HTML5, .NET, and Java for websites and applications
- Reestablish a project management lifecycle methodology as part of the State's IT investment and governance process
- Implement a centralized self-service IT provisioning portal
- Promote employee cross training opportunities

Simplify the IT ecosystem⁴

Simplification of the IT ecosystem will result in increased operational efficiencies and reduced costs. Many agencies have procured their own redundant IT data centers and other IT resources along with duplicative datasets that should be reviewed and considered for consolidation at the enterprise level reducing the burden of collecting and maintaining duplicative data. Leveraging enterprise class technologies not only simplifies the architectures, but maximizes the economies of scale resulting in reduced IT expenditures through collaborative enterprise service agreements (e.g. a single statewide license for desktop antivirus software), bulk purchases of common equipment, and multi-agency collaborative volume discount purchases. In Nevada, state needs can now be combined with those of other willing government agencies at county and municipal levels. This would greatly reduce software costs through increased purchasing power.

- Implement a 24x7 help desk support upon merger with DPS IT
- Implement tools that centrally manage the consolidated desktop support including endpoint protection

⁴ See, "Governance", State of Nevada Information Technology Board Opinion, 12 August, 2012, Attachment A.

What Choice? – Adopt a Hybrid Approach to Combine the Best of Both Centralized and Decentralized Models

In early 2012, the Division of Enterprise Technology developed a fully consolidated model. Feedback from the heads of major departments was unanimous: while some enterprise services, such as email, were ripe for consolidation, it would be a mistake to disassociate programmers necessary for the implementation of agency-specific applications from the agencies they support.

Based on this business customer feedback, Nevada should move toward a state cloud model of service provision. This position is supported by the IT Advisory Board, a statutorily established entity designed to offer strategic guidance. The model proposed here, accomplished in phases, ultimately results in:

- Consolidation of enterprise email, either in-house or outsourced to a secure national provider; appropriate funding for FY 14/15 is contained in the agency budget
- Transfer and virtualization of agency-managed servers to the central computer facility.
- Consolidation into a single state telephone system. A study supporting this endeavor was proposed during the 2011 Legislative session, adopted, and study results should be available on or about November 15, 2012.
- Reassignment of *non-programmer* IT personnel into a reformulated Enterprise IT system offering flexibility based on changing IT requirements in order to utilize individual skills and aptitudes to their highest and best use

Adaptability to agency needs will be a distinguishing feature of the Enterprise IT service model allowing the accommodation of unique agency business requirements. For instance, the Department of Public Safety (DPS) indicated a

willingness to consolidate *all* of its IT functions and personnel into Enterprise IT.⁵ As additional agencies consider IT consolidation, Enterprise IT management and agency management will tailor the extent of consolidation to meet the specific needs of that agency. Flexibility to service statewide agency needs is the key for successful, efficient IT consolidation.

Reduction of total IT expenditures will occur over time as systems duplication is eliminated, and as bulk purchases of common equipment and software entail greater vendor discounts. Teri Tekai, now the CIO for the Department of Defense, has said that in 2005 Michigan reduced its IT spend (when she was state CIO) about 25%, saving about \$100 million in that year alone through dramatic enterprise IT consolidation. However, given Nevada's underinvestment in IT hardware, software, and personnel over the past decade, no reduction in total IT expenditures is foreseeable. Rather, IT consolidation represents the most efficient use of IT expenditures, which need to increase in order to address the State's outdated and increasingly fragile IT systems.

⁵ IT is not a core competency of the Department of Public Safety although up-to-date technologies are necessary to provide effective law enforcement.

**Insert Advisory Opinion of ITAB into final PDF
version as Attachment A**

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