*Brian Sandoval*
**Governor**

*Jeff Mohlenkamp*
**Director**
*David Gustafson*
**Chief Information Officer**

***STATE OF NEVADA***
***DEPARTMENT OF ADMINISTRATION***
***Enterprise I.T. Services Division***

# *Strategic Priorities*

## *For Enterprise IT Services*

***11/15/2010***
***Revised 1/12/2012***

*This document outlines a high level approach to some of the major strategic priorities for the Division of Enterprise IT Services for the biennium of FY14-15.*

## Table of Contents

## *Executive Summary*

*With the current economic environment, IT leaders must do more than just maintain the status quo. They must forge strategic partnerships and collaboration across State agencies. They must find new ways to improve efficiencies and maximize resource utilizations while aligning the business of IT with the business of government. Governments and businesses across the spectrum that view IT as a strategic business enabler are reducing their costs and increasing productivity in this economic environment through innovation and strategic IT investments. Under the leadership of CIO David Gustafson, the Division of Enterprise IT Services has worked with agencies, elected officials, and boards and commissions to streamline business processes, encourage collaboration and partnerships, consolidate and centralize enterprise IT services, and provided critical IT leadership and vision for the State government.*

*This document outlines some of the many strategic priorities for the Division of Enterprise IT Services in 2011 and establishes a context in which other State Executive branch agencies can develop their technology plans. It portrays a future vision where technology is a great business enabler and through consolidated resources, greater efficiencies are realized. Through public and private partnerships, more effective services to the public are achieved. And through well established standards, processes, and architectures an environment of increased IT accountability and improved cyber security is realized.*

## Reducing IT Expenditures

*Given the economic situation, it is understandable why many will look to reduce or even dismantle IT budgets in an effort to reduce overall State expenditures. While this may be justifiable in some instances, it would be shortsighted to take broad; sweeping cuts in IT related budgets. The Division of Enterprise IT Services is committed to identifying and reducing Statewide IT expenditures and is encouraged by legislation to do so.*

> **NRS 242.071 Legislative declaration; purposes of Division of Enterprise IT Services.**
>
> **1. The Legislature hereby determines and declares that the creation of the Division of Enterprise IT Services is necessary for 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.**

## Outsourcing Opportunities

*Periodically, the Division of Enterprise IT Services evaluates current service offerings against the private sector looking at opportunities for potential outsourcing. There are reasons for and against outsourcing specific service offerings, but most discussions begin with a cost advantage to the State. When the private sector has more competitive pricing over the internal service fund for the same or similar service offering, those potential opportunities should, and are evaluated. The Division of Enterprise IT Services is committed to providing cost effective enterprise solutions to State government.*

### Cloud Computing

*Recently, there has been much discussion about cloud computing and what it means to the State of Nevada. Cloud computing is loosely defined as internet based computing services sold on demand. These computing services are broken down into three categories: Software as a Service (SaaS), Infrastructure as a Service (IaaS), and Platform as a Service (PaaS). They are always managed by the provider and typically charge by the minute or hour, depending on the technology provider. Cloud computing is a relatively new technology concept that continues to mature. Opportunities for the State are currently remote, but as cloud technologies mature, real opportunities will emerge and should be considered.*

## Consolidation

*Over the past few years, the Division of Enterprise IT Services has been planning and investing in enterprise architectures to meet the IT needs of a consolidated State government. There are numerous opportunities for consolidation; some of the notable ones are listed below.*

### Datacenters & Server Rooms

*State agencies have planned and built over 20 separate and isolated datacenters and server rooms within the State government. They have largely gone unchallenged due to enabling economic prosperity of the times. However, with a new economic paradigm, there are great economies of scale that could be realized with centralizing and consolidating datacenters and server rooms. The State has made a substantial investment in the Division of Enterprise IT Services' datacenter resulting in the most secure, most available, and most scalable datacenter in the State government with ample capacity to consolidate many, if not all of agency level datacenters and server rooms.*

### Servers

*Recent advancements in server virtualization technologies have dramatically changed the approach of enterprise server infrastructures throughout the industry. The State has procured enterprise virtualization technologies that allow for many virtual servers to exist on a single piece of physical hardware; thus, reducing costs by lower power and cooling requirements and leveraging existing investments in enterprise network and server infrastructures. These virtual servers can then be centralized in a secure datacenter utilizing the investments in enterprise storage for the utmost availability and reliability. Additionally, by deploying enterprise virtualization tools, economies of scale are extended allowing for more servers to be managed per employee than a traditional server infrastructure – again reducing overall IT costs.*

*The Division of Enterprise IT Services will be offering an official virtual server rate beginning in FY12 for all agencies to realize the cost savings through virtual servers.*

### Enterprise Storage

*Enterprise storage, commonly referred to as a SAN (Storage Area Network), is the highest performing, most available, and most reliable disk storage system available. There are many benefits to deploying a centralized SAN environment with performance, shared storage, centralized management, and high availability to name a few. The Division of Enterprise IT Services has invested in an enterprise SAN environment that is shared by all mainframe users, countless agencies, and a few elected officials. However, over time there has been a proliferation of various SAN solutions among many agencies, boards and commissions, and elected officials throughout the State. There are greater economies of scale to be realized when the storage needs of many are pooled together and purchasing power is centralized with the Division of Enterprise IT Services.*

### Wide Area Networks

*One of the single greatest expenses of any IT organization is the cost of the network infrastructure. Enterprise network equipment is costly and typically requires trained personnel to manage and monitor. Over the past decade, the Division of Enterprise IT Services has planned, built, and deployed a wide area network called SilverNet which currently provides services to State, County, and Local governments. There are at least two other State agencies with competing wide area networks to SilverNet. The greatest economies of scale can be leveraged when all State agencies pool their resources together for a consolidated, centralized, enterprise wide area network.*

### Email

*The Nevada IT Investment Consolidation Committee (ITICC) prioritized its email consolidation[1] as one of its top organizational imperatives. With a clear alignment driven from the ITICC, this project answered the Governor's request for more efficient use of resources, met the demand for greater service levels, and moved Nevada further toward its goal of centralizing technology in its primary data centers.*

*The benefits from enterprise email consolidation include: the reuse of existing state infrastructures and resources, cost avoidance of future equipment replacement, efficiencies in software licensing contracts and server utilization, and improvements in records management. Additional benefits are enhanced regulation and control, statewide roll out of solution upgrades, strengthened security including encryption, antivirus, eDiscovery, single sign on and focused ability for agencies to provide citizen-centric services.*

### Telecommunications

*The Division of Enterprise IT Services has been asked by the Senate Finance Committee to provide a status report every six months on how the State can transition to a vendor independent telecommunication system. Our last report stated that a meeting with Cisco, Avaya, Nortel, and Mitel encouraged our plan of consolidation, centralization, and then potentially outsourcing. The major drivers were: cost containment, centralized server management, greater economies of scale, and improved scalability of administration staff. Requested in the FY12/13 budget is a decision unit that allows for an analysis of all current telecommunication installations statewide and the recommended path forward toward a vendor independent solution.*

### Green IT

*"Data center energy use will double at the national level, according to an EPA projection, in 2011, to 100 Billion KwH and $7.4 Billion, requiring the construction of 10 additional power plants nationwide[2]." States and organizations are facing this challenge by reducing the number of datacenters, optimizing*

[1] IT Investment Consolidation Committee (ITICC), 7/31/08, Server Hosting/Virtualization, Email, Website Presence
[2] http://i.techrepublic.com.com/downloads/GreenIT_r1.pdf

*resources (consolidation, virtualization, shared storage, thin provisioning), and refining their asset acquisition and management processes with a goal of energy efficiency and cost savings.*

*Through infrastructure optimization, capacity planning, and facility management techniques the Division of Enterprise IT Services' computer datacenter will continue to maximize the State's investment in a way that is "green", but also assures a level of availability, reliability, and security that smaller localized datacenters cannot offer.*

*IT optimization and "green" go hand in hand. Shared storage through the use of EITS's enterprise SAN and a reduction of physical servers through the virtual server hosting service are examples of where cost savings measures are also part of a "green" IT sustainability program that decreases greenhouse gas emissions and Nevada's carbon footprint in the future. Strategies such as this require analysis and planning, a well constructed model for the future, and a documented enterprise architecture. The Division of Enterprise IT Services continues to research and implement new cost effective ways of reducing the State government's environmental impact while maximizing the value of IT for Nevada taxpayers.*

### Mainframe

*The Division of Enterprise IT Services maintains and supports the enterprise mainframe computer system. The mainframe remains the most cost effective computing platform and supports major applications from Health and Human Services, DETR, and DMV. The mainframe is a great example of centralized, consolidated enterprise computing services where economies of scale are truly leveraged.*

## Improving IT Accountability

*Accountable IT efforts are those that can clearly show they have met their planned goals and business expectations. Requirements, expectations and benefits must be defined early in the IT investment lifecycle to allow for proper solution selection, project management and ultimately auditing once an effort has been completed. The Division of Enterprise IT Services, under the authority of NRS242, and within the context of Nevada's IT Governance committee structure assists state agencies in this effort, providing methods, tools, templates and training. This includes processes such as the Technology Investment Request (TIR) that helps an agency build a credible business case for a proposed IT project. The TIR assures that the business reason is clear, that requirements and expectations are well defined, and that the agency has a means of measuring and validating accomplishments once completed.*

### Direction & Methods

*Strategic Alignment (Agency IT Strategy Plans): Agencies must show how IT is a business enabler. IT solutions must fit the Governor's direction, support critical business functions, and tie to business planning and budgeting. An agency's IT strategy should identify how planned IT solutions best support business goals and satisfy customer needs in a way that fits with the State's enterprise IT direction.*

*Technology Information Request (TIR): Through the Division of Enterprise IT Services' TIR process, agencies develop business cases for proposed IT solutions which allow business leaders to prioritize and select the best solutions.*

*Outcome Orientated & Consumer Driven Technology (IT Metrics): IT projects require objectives, planned results, and measurable outcomes that relate to stakeholder needs. Projects must be business driven. End users, constituents, and consumers of services play a major role in defining results and metrics for evaluating the deliverables.*

*Measurable end results should guide IT efforts. Positive business impacts must be planned early and evaluated later. Just as a monitoring and reporting structure is needed to guide a project to completion, it is also needed to evaluate and insure the efficiency and quality of ongoing IT operations.*

*Achieving the desired level of accountability across all aspects of technology requires a defined enterprise architecture that portrays Nevada's future IT environment, provides guidance on how we get there, and documents a context for supporting agency business initiatives with appropriate technology.*

## Cyber Security

*Today's information systems exist in a world of constant threat of intrusion, corruption and the unauthorized use of critical State information. Disrupted service can result from misuse, as well as from covert attack. Attacks emanating from organized crime and nation states are considered the number one threat by the FBI. The Division of Enterprise IT Services' Office of Information Security (OIS) was established to protect Nevada State government from cyber security incidents that threaten the confidentiality, integrity and availability of the State's information and critical IT infrastructure. This is done through:*

- *Developing an enterprise data security capability,*
- *Establishing an enterprise identity management capability, and*
- *Assessing, correcting and advancing the security framework*

### Enterprise Data Security Capability

*Security measures only work if the right security framework is in place, understood by state employees, and implemented in a standardized fashion. OIS works in conjunction with the State's Information Security Committee to create both the policy foundation and guidance[3] for state agencies in the proper use and protection of information assets. Agencies are advised regarding the design of appropriate security architecture, choice of information security solutions and minimization of security risks and exposures. Help is also giving in the determination of security requirements for planned IT projects through the Technology Investment Request review process. Through these activities OIS enables a standardized level of security across all departments.*

[3] http://infosec.intranet.nv.gov/Security_PSPs.htm

*Consolidated information assets are easier to manage, monitor, and assure that they are in compliance with standards. Centralization and consolidation allow for a more efficient application of security systems at an enterprise level, including: encryption and key management system, data loss prevention technology, network traffic monitoring , data classification system, web application firewalls, centralized event logging and analysis, e-discovery technology, enterprise authentication, network and application penetration testing technology, and administrative forensic analysis. The State computer facility is the proper environment for this higher level of 24 x 7 x 365 security.*

### Enterprise Identity Management Capability

*Having a well defined identity management capability is essential to effective enterprise security and is required as a core component to automating enterprise systems like portals and Service-oriented architecture (SOA). Without the capacity to uniquely identify users electronically, we cannot define if access to systems and data is appropriate or inappropriate. Additionally, identity management solution provide the cost benefits derived from: centralized inventory management, reduction of effort to provision and de-provision access to systems, improved accuracy, and greater accountability.*

### Assessment and Response

*The continual advancement of an Enterprise Data Security Capability requires ongoing assessment of our IT systems and information management processes in light of standards and best practices for security. Response to security incidents includes isolation, response and corrective action, as well as allowing for the further advancement of Nevada's security framework through lessons learned.*

## Leveraging IT as a Business Enabler

*The fundamental mission for all IT organizations is to support and enable their business. In fact, the very essence of information technology is to provide improved efficiencies for the business. This mission is not unique to the private sector or to government. It is the very fabric of information technology. Along with many other State agencies, the Division of Enterprise IT Services is actively pursuing any and all options that leverage IT as a business enabler for State government.*

### Desktop virtualization

*Over the years, organizations have learned that procuring desktop and laptop computers, installing and configuring software, training, and subsequently maintaining these systems is costly to the business. Desktop virtualization is an attempt to utilize technology to reduce both operating and support costs while shortening the provisioning time schedule.*

*This is accomplished by virtualizing the desktop operating system and applications to execute remotely in a server environment where enterprise technologies can be leveraged to maintain data integrity, availability, and reliability. Users connect to their remote virtualized desktop through any device capable of establishing a connection to the remote server with typical devices as: thin clients, personal computers, laptops, or smartphones. The Division of Enterprise IT Services recognizes the need for this technology*

*in the years to come and in preparation for this plan, budget requests have been submitted in FY12/13 to begin building the proper server infrastructure that is required for both desktop and server virtualization.*

## GIS

*Think about how many diverse things we manage, fund, regulate or track that are identified by name and address. A Geographic Information System (GIS) relates geographic data, in the form of digital maps, with text and statistical data and digital records about people, places, and things, to support operations and decision making.*

*State agency staff and management could have access to the same basic geographical data anywhere in the state. Transportation (i.e. roads, train lines, air routes), utilities, health care facilities, population health statistics, property tax parcels, schools, environmental information, facility regulation, public safety, maintenance, etc., would all be included. The data could be used interactively from any web browser for direct use or it could be downloaded via the web for more in depth use in a local computer environment. It will also develop the potential to link geographic data to many other databases maintained commercially or by other levels of government.*

*There are approximately nine enterprise GIS systems deployed throughout the Executive branch. The Division of Enterprise IT Services has realized there are unmet needs of the State government regarding geographical data and has reached out to major agencies for their support in centralizing and consolidating desperate systems into one enterprise system. Without exception, we are finding great interest and a strong willingness to work together to consolidate and reduce overall costs.*

## Social Media

*Without a doubt, social media is one of the fastest growing areas of communication in the consumer market. Such services include: Facebook, Twitter, MySpace, WordPress, Wiki's, YouTube, and epinions.com, to name a few. Services like these are not typically employed by State government, but social media is changing the way all business is conducted and the State needs a strategy on how to capitalize on this new medium. Social media has the potential to open many new doors of communication and engagement with the citizens, business partners, and employees. The Division of Enterprise IT Services embraces the idea of social media for an open, transparent, and collaborative State government with appropriate policies and security controls.*

## Unified Communications

*Unified Communications (UC) is an evolutionary step for a traditional telecommunication system. UC provides an efficient approach to communicating that changes how business is conducted at the same time improving productivity, increasing performance, and reducing overall telecommunication costs. It does this by combining many IT capabilities and solutions. Examples include: speech recognition voicemail, single number reach, presence status, collaboration tools, instant messaging, video conferencing, and soft phones on your desktop computer – all fostering faster, more available, and more effective methods of communication.*

*The Division of Enterprise IT Services has begun laying the foundation for all Unified Communications by planning, designing, and implementing a voice over internet protocol (VOIP) telecommunications infrastructure. Next steps include the consolidation of over 119 agency level desperate phone systems into the Division of Enterprise IT Services' State phone system. A recent engagement with the Department of Transportation and the major telecommunication vendors praised the approach of consolidation and evaluating potential outsourcing, thereafter.*

### Enterprise Mobility

*An efficient and responsive government requires great mobility through proper use of cell phones, smartphones (BlackBerry, Android, iPhone), wireless broadband cards, and other wireless data services used for mobile computing and communications. Through the use of applications, the smartphone has limitless possibilities that can be used to foster improved communications to the public, provide government services via mobile device, and streamline the business of government for the citizens of Nevada.*

*"Through mobile technologies, companies have the potential to catalyze changes ranging from incremental productivity improvements to a radical redefinition of business processes. Some specific coverage areas include mobile policy and strategy definition; mobile application architectures; laptops, notebooks, and handheld computers; wireless email; mobile operating systems; wireless LANs (WLANs); and third-generation (3G) wireless services". (Forrester Research, March 2006)*

*The Division of Enterprise IT Services recognizes the need for Enterprise Mobility and has begun developing a plan for a mobility strategy that will provide agencies with a platform for them to accomplish their core mission. This strategy will address: security, data integrity, and management of smartphones and other data devices.*

### Self-Service IT

*Self-service IT streamlines and automates the business of IT driving efficiencies, reducing costs, and increasing the availability of business resources. Some examples of self-service IT include: provisioning a virtual server through a website, wizard driven password resets, online creation of help desk tickets, running ad hoc reports from a web page, and adding yourself to an email distribution or listserv.*

*Technologies exist today that allow agency level IT staff to provision their own virtual servers, add or delete enterprise storage, and create, modify, and delete IT services from a web page automatically through a centralized portal. Such a portal would reduce IT costs, reduce deployment times for IT assets, increase the scalability of infrastructure, and provide agencies with the necessary IT tools for them to accomplish their missions from a centralized and consolidated environment.*

## Developing Collaboration and Partnerships

*The Division of Enterprise IT Services strongly believes in building collaboration and developing partnerships with State, County, and Local governments. Partnerships and collaborative efforts facilitate*

*the sharing of information resources; provide opportunities for economies of scale, and greater efficiency. They leverage inter-organizational expertise while optimizing the use of Nevada tax dollars.*

*Several organizations establish venues for cross-government and public private collaboration. The following working organizations embrace best practices and a common understanding of the benefits resulting from shared enterprise services. Our mutual efforts, including the building of public/private partnerships[4], are designed to increase the benefit of working in together towards shared goals.*

### ITEAC

*The IT Enterprise Architecture Committee is among the Nevada IT Governance Committees functioning in the IT and serves to support the technology needs of the state. The Division of Enterprise IT Services sponsors and chairs this committee.*

### SNETA[5]

*Southern Nevada Entities Technology Alliance (SNETA) - A group consisting of the Chief Information Officers from all levels of governmental and quasi-governmental agencies throughout the state.*

### NSITS

*The purpose of Nevada Shared Information Technology Services (NSITS) is a collaborative effort by the Nevada state and local government agencies designed to increase the ability to continue operating vital computer systems in the event of an emergency[6]. This coalition of Nevada State government entities was formed to facilitate the sharing of information resources between governmental entities to support disaster recovery, public safety and continuity of operations initiatives as well as to provide opportunities of economies, efficiency and scalability for all participating entities by leveraging inter-organizational expertise while optimizing the use of tax dollars[7].*

*The identified goals by NSITS include a healthier and more reliable disaster recovery and business continuity planning; the alignment of data resources for the overall good of the combined constituency; an Increase efficiency and effectiveness by economies of scale; Improve the enterprise maturity and inter-system view of all IT personnel; and evaluate and identify products and vendors of mutual benefit to NSITS members. Collaboration and partnerships are already underway, providing cross-jurisdictional benefits. Below are a few notable strategic partnerships and collaborative efforts.*

## Nevada Business Portal, Secretary of State's Office

*NRS 75.100[8] authorized the Secretary of State to develop a Nevada Business Portal that provides a one-stop-shopping business functionality for online business transactions in Nevada[9]. Supported by Service*

[4] http://www.nascio.org/publications/documents/NASCIO-Keys%20to%20Collaboration.pdf
[5] http://sneta.org/SitePages/Home.aspx
[6] State of Nevada Office of the Governor Press Release, April 3, 2006
[7] Nevada Shared Information Technology Services Declaration, July 31, 2007
[8] https://www.leg.state.nv.us/NRS/NRS-075.html

*Oriented Architecture, businesses will be able to transparently access services of different government offices. EITS has participated in the planning, vendor acquisition and will be hosting the portal which will enable current and new businesses coming to Nevada to realize the benefits of a single point of access to doing business with the State.*

*Ongoing collaboration will continue as the portal expands to other state, county and local governmental participants.*

### Health Information Exchange [HIX]

*Nevada has ARRA funding to develop, finalize and implement HIX for the purpose of expanding capabilities to healthcare providers across the state and achieving a critical mass of users. EITS is collaborating with health and human services agencies to plan a data communication and exchange infrastructure that takes advantage of broadband technology opportunities in order to better sustain a statewide health information network in coordination with key stakeholders and facilitate statewide electronic capability in support of health information.*

*EITS's Office of Information Security is taking an active part to assure compliance with NRS 603A[10] for the protection of personal information through encrypted electronic data transmissions.*

### Nevada LIVE, Department of Motor Vehicles

*Nevada Liability Insurance Validation Electronically (Nevada LIVE) is the Nevada Department of Motor Vehicles' (DMV) enhanced insurance validation program to modernize the system to verify motor vehicle liability insurance coverage. The program follows the guidelines outlined in the "IICMVA Model User Guide for Implementing Web Services v3 Final 5-16-08".[11] This is a collaborative effort with The Insurance Industry, which has requested this service. DMV and EITS have worked in collaboration to implement Nevada LIVE for this larger group of stakeholders.*

### eDiscovery

*The Federal approach of describing "electronically stored information" (sometimes referred to as "ESI")[12] as a category of discoverable material distinct from "documents" or "tangible things" is under review for compliance by more than one area within Nevada. EITS supports the many stakeholders including the agency business functions for a centralized eDiscovery solution for State government. A budget request has been made for FY12/13 that would allow for the discovery of all email users on the State email system.*

[9] http://nvsos.gov/Modules/ShowDocument.aspx?documentid=1280
[10] http://www.leg.state.nv.us/nrs/nrs-603a.html
[11] http://www.iicmva.com/
[12] Federal Rules of Civil Procedure governing electronically stored information (ESI)