



Master Plan 2012

Information and Telecommunications

Technologies and Services

For the State of Minnesota



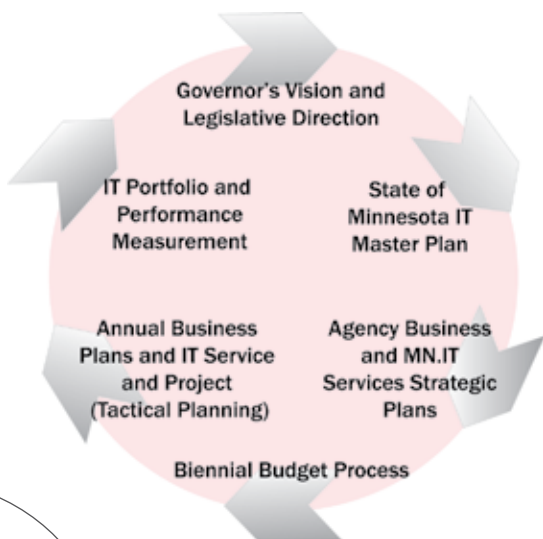
The Purpose

The purpose of this plan is to provide a strategic framework for enterprise information management in a manner that maximizes the State's effectiveness at delivering services and programs to Minnesota's residents. Information management consists of the tools and processes that collect information, communicate information, and process it to make quicker and better decisions. As developer and manager of the IT tools that underlie effective information management processes, MN.IT[®] Services sets priorities based on the information needs of the State's programs, and manages IT resources efficiently while maintaining the safety and integrity of the information in its care.

The Master Plan is meant to serve as a compass for the newly consolidated executive branch IT organization. It should help guide investments, set consistent priorities, timetables and goals, and help to leverage new investments for greatest value.

This Master Plan has been developed for a five-year execution horizon. The plan will be updated to reflect changing circumstances and priorities, and, as required by statute, reported to the Minnesota Legislature every two years.

Planning



The planning window for this Master Plan extended from December 2011 to March 2012 and involved information-gathering and input from a variety of stakeholders in executive branch information technology: state leadership, agency leadership and program areas, central and agency IT leadership, and state IT employees. Discussions and “listening sessions” were conducted in person and online during that three-month time period in order to gather and validate input.

In particular, the Master Plan was reviewed by the Technology Advisory Committee, a new governance body established in statute and representing agency leadership, as well as representation from the private sector, state labor and local government.

Planning is never static. The Master Plan fits into a continuum of cyclical planning activity that includes both long-term and short-term business and IT planning spread through the cycle of the State's biennial budgeting process.

About The Office of Enterprise Technology and MN.IT Services



The Office of Enterprise Technology (OET) was formally established as a cabinet-level agency in July of 2005. Since its inception, OET, led by the State Chief Information Officer, has had two primary responsibilities: set IT direction, standards and policies for the State and manage oversight and compliance of those standards; provide common (primarily infrastructure) IT services to executive branch and all levels of Minnesota government.

In 2011, OET's enabling statute was amended to consolidate the management of all information technology systems, budgets, services and resources under OET, significantly increasing the organization's responsibilities. As this report is being written, the expanded organization - which now encompasses over 2100 staff and a \$400 million+ budget - is in the process of reorganizing to meet its new scope and changing its identity—MN.IT Services—to reflect its new responsibilities.

Although the 2011 consolidation increases the organization's scope, the Master Plan has always been a responsibility of OET in its direction-setting capacity, and the scope of this document has always had an enterprise-wide horizon. The timing of the 2012 Master Plan is designed to define a long-range plan that accounts for and takes advantage of the opportunities afforded by consolidation, articulates the business needs of state leadership to ensure that IT remains grounded in the business of the State, and provides direction to the formation and redefinition of MN.IT Services, the new centralized IT organization.

Business Needs

that drive Information Technology strategies

Improve the state's business climate and quality of life through better government service...

Deploy technology in a manner that enables state government programs to meet their missions -- making Minnesota a more competitive business environment, and protecting, educating and keeping the public healthy through fast and efficient government service, effective data management and fast communications; help to manage state government in a manner that minimizes environmental impact and facilitate the State's ability to uphold the law and carry out statutory obligations.

Simplify the end-user's experience with government...

Provide a recognizable and intuitive "face" to state government that connects Minnesotans and other government customers to the services they need; help the State leverage technology to break down jurisdictional and bureaucratic silos that prevent holistic services and impede the sharing of information; facilitate collaboration between and among government entities/partners that have different roles and responsibilities but serve a single client – the people and businesses of Minnesota.

Foster interactive democracy...

Deploy and utilize interactive communications tools in a manner that improves trust through increased availability and access to reliable data that is up-to-date and accurate.

Information technology enables the effective management of the information essential to the State of Minnesota in meeting its business objectives. Without data, communications and transactions, the State cannot meet its mission. As technology becomes an increasingly ubiquitous part of government's day-to-day operations, the importance of matching information technology to the needs and priorities of the State grows ever stronger. Therefore, technology strategic planning must be based on the needs and goals (business drivers) of those that manage the programmatic priorities of the State.

The following business imperatives identify and inform the delivery of information technology to the State.

Promote “smart government”...	Partner with business leadership to increase state government's efficiency and effectiveness through data-driven decision-making, better processes, smarter investments and measurable results and outcomes; enhance data quality and integrity; and facilitate the effective sharing of data to improve government service and accountability.
Facilitate government reform...	Be an agent of change and help government transform by identifying next-generation technologies that can help state government be faster, more nimble, less bureaucratic and more responsive in the services it provides to citizens, and more able to measure and report on outcomes; and model reform in the reinvention of state IT.
Make the State of Minnesota an employer of choice...	Leverage technology to improve the effectiveness, productivity and satisfaction of individual state employees in order to attract (and keep) the next-generation workforce, and use tools to foster their individual innovation and professional growth.
Ensure that government and citizen data is protected and the business of government never stops...	Prioritize safe and secure IT environments, security tools and business continuity processes that protect critical data and minimize the risk of service interruptions that endanger Minnesota citizens or impede the business of the State; manage state-of-the-art security solutions that protect government services, particularly in times of crisis.

○ Guiding Principles

for Information Technology Management



Understand the needs of the businesses we support

Understand the business and objectives of the State and of our individual government clients; build strong partnerships with business leadership to marry their business know-how with our technical expertise.

Develop not just the tools that customers ask for, but help them find the tools that they need based on business analysis, research and technical innovation.

Manage effective governance, decision-making and communication, and practice strong customer relationship management.

Operate with a statewide vision

Provide a single view of information technology's operations, costs, value and priorities to improve state leadership's decision-making and investment.

Leverage opportunities afforded by consolidation to identify those services and functions that can be redesigned to achieve Governor Mark Dayton's vision of "best services at the lowest cost".

Balance the need for unique solutions with the opportunities and benefits of standardization; help identify that which is truly unique and that which is similar in "flavor" to other business lines within government and manage the IT solutions that achieve the "common good".

Be proactive in identifying opportunities for business to better integrate knowledge sharing and services across agencies and their partners.

While setting and executing strategies for information technology, IT leadership must conduct its business within a set of guiding principles that dictate the process and influence the outcomes. These are the principles by which our stakeholders and business partners want us to operate.

It will be the job of MN.IT Services, the new state IT organization, to combine the strategies and principles of this Master Plan into an organizational strategic plan that defines how we do our business at both the enterprise and the agency level.

The following guiding principles for information technology management and planning have been proposed to us by state leadership and by IT's core customers and business partners.

Be service driven and accountable	<p>Provide cost-competitive and value-add services, and highly reliable and secure systems; ensure wide adoption of technology solutions by managing costs.</p> <p>Leverage shared services and economies of scale to increase value, reduce redundancy and keep down costs; streamline and standardize processes to deliver reliable, available and on-time solutions.</p> <p>Define service levels and measure and report success.</p>
Think forward	<p>Develop technologies with an eye toward the future, technology that enables reform and anticipates change.</p> <p>Reward innovation and encourage informed and measured risk-taking.</p> <p>Build next-generation technology skills in state workforce.</p> <p>Plan solutions and services that can reach beyond the executive branch.</p>
Plan carefully but make demonstrable progress	<p>Ensure that changes are in the best interest of the state, the customer and the employee even as we set ambitious goals and timelines.</p> <p>Evaluate risks even and especially in the midst of change.</p> <p>Establish and promote “quick” wins to demonstrate success.</p>
Balance “open” and “secure”	<p>Maintain the appropriate balance between the need for privacy and security with the needs and requirements to practice open government.</p> <p>Develop technologies that manage appropriate access, and facilitate the sharing of public data.</p>

○ Five-Year Strategies

for the State of Minnesota

Information is the primary product of state government. The data we collect, manage, create and distribute enables government to protect, educate and maintain the health of the people who live in, visit and do business with our state. It ensures good business, clean air and jobs, directly affecting the quality of life and financial health of the state. As a result, in this second decade of the 21st century, information technology is embedded into every single service that government delivers and it manages the daily output of every government worker. When a system goes awry or is compromised, government stops and services are undeliverable.

The ubiquitous nature of information technology in a state government that suffers from fiscal constraints and challenges requires stringent stewardship of and careful planning for this critical government function. The inherent dangers of possibly inadequate security, architecture, standards and/or good resource management in a cluttered and inefficient environment are counter balanced by the tremendous potential for consistently managed IT to enable government transformation through innovative technologies and shared services that can stretch the power and opportunities for change. Good planning is the key.

To realize the vision and leverage the opportunities, the Master Plan for information technology needs to be predicated on the business needs of the State – the drivers that dictate our service priorities and the goals for how we manage this precious resource for better outcomes.

Governor and Legislature's Priorities

All state planning begins with the Governor's priorities and the mandates of the State Legislature. Governor Mark Dayton has outlined his priorities for the State:

- Create jobs and improve Minnesota's competitiveness.
- Improve how state government works to deliver the best services at the best price.
- Make Minnesota's tax system more fair.

All three priorities are directly enabled by technology and important IT resources are currently dedicated to achieving these goals. However, the goal to "improve how state government works to deliver the best services at the best price" is a key and direct business driver in the strategies that follow.

In addition, Governor Dayton has reinforced his priorities through the Better Government for a Better Minnesota effort that seeks to "cultivate and support a culture where collaboration and continuous improvement are central," and is dedicated to "finding ways to save money, reduce waste, and make government work better for the people of Minnesota." Some of the reforms highlighted by the Better Government initiative include, "expediting business permitting, improving health care purchasing systems, creating innovative teacher and licensure approaches, modernizing tax systems, improving customer experience for individuals and businesses with government." The Master Plan is aimed at supporting these efforts and goals.

The 2011 State Legislature mandated that all information technology operations be consolidated for the purposes of efficiency and accountability. The mandate itself provides an operational means that dictates a change in the way state IT is managed – it is a means to an end. The goals of the legislation, however – efficiency and accountability – serve as direct business drivers to state IT planning, and are incorporated into the strategies below.

Strategies and Objectives



From the Governor's priorities and legislative mandates that direct programming decisions, individual state agencies develop business priorities and objectives for state government services. Those business priorities and objectives, in turn, set the stage for certain information technology requirements, described here as "business drivers" for information technology.

IT business drivers describe "what" the State of Minnesota needs from its IT organization. By analyzing the business needs that drive information technology, the State CIO sets the strategies and objectives for MN.IT Services resources and initiatives.

Improve the state's business climate and quality of life through better government service

Our goals are to deploy technology in a manner that enables state government programs to meet their missions -- making Minnesota a more competitive business environment, and protecting, educating and keeping the public healthy through fast and efficient government service, effective data management and fast communications; to help to manage state government in a manner that minimizes environmental impact; and to facilitate the State's ability to uphold the law and carry out statutory obligations.

The mission and business objectives of the State and its programs are not described in technology terms, yet they all require technology to meet their objectives. Therefore, MN.IT Services must understand its role in implementing state objectives and must work in partnership with state programs and business leadership in order to improve life for the residents of the state. Whether the objective is a competitive business environment or better schools, technology plays a role.



STRATEGIES AND OBJECTIVES

Strategy 1

We will maximize the use of web and self-service processes to efficiently transact with government, including faster, more efficient online business services such as licensing and permitting.

Objective 1. Reprioritize and accelerate the implementation of a shared e-licensing solution for state business licenses, focusing first on business process reengineering.

Objective 2. Facilitate and promote the development of mobile device "apps" that provide citizen services and government data via partnerships with private developers and easy access to state public data.

Strategy 2

We will facilitate the State's ability to uphold the law and carry out statutory obligations through effective and reliable tools.

Objective 1. Manage customer relations and business partnerships in a manner that ensures that business needs and requirements are built into IT systems and services.

Objective 2. Formalize and expand the MN.IT Services enterprise-wide architecture program and governance to ensure standard and stable systems that are highly available, responsive and reliable, and clarify business objectives and requirements through service level agreements.

Foster interactive democracy

Our goal is to deploy and utilize interactive communications tools in a manner that improves trust through increased availability and access to reliable data that is up-to-date and accurate.

Good information available fast makes government more apparent and accessible. Today's technology tools can help government mirror the rest of the "plugged in" world in terms of instant information to both general and segmented interest groups, and foster productive interactive communication between citizens and government officials at every level. Video conferencing, advanced web technologies, instant messaging, blogging, online publishing, "tweets" and FaceBook have become common tools in the arsenal of government communicators as polling and engaging citizens becomes an important aspect of an interactive democracy.

Yet state government struggles to know how to balance a variety of issues that inhibit early adoption of communications and publishing tools, including security, accessibility, appropriate use policies, the difficulty of picking "winners" vs. trend-setters to invest in, and defining a communications strategy appropriate to the tool. While all of these exciting tools can greatly increase a resident's access to government data and officials, the management of so many new tools and the public demand for high volume and "instant" response time can quickly overwhelm government resources and processes, compromising the quality of the information that is disseminated and thus eroding, rather than enhancing citizens' trust in government.



STRATEGIES AND OBJECTIVES

Strategy 3

We will help state government meet the expectations of its citizens for access to government officials through enhanced two-way communication channels and online publishing.

Objective 1. Make greater investments in state infrastructure and provide leadership in statewide broadband improvements in order to promote all Minnesotans' access to and ability to interact with state government.

Objective 2. Promote the adoption of interactive, public-facing communication tools by agency programs and communicators and provide adequate training for their strategic use.

Objective 3. Partner with communications leaders to develop statewide social media policies and best practice training that encourage appropriate adoption and management.

Objective 4. Promote accessibility standards for electronic documents and provide training to agency communicators in order to make government information available to all, regardless of disabilities and location.

Strategy 4

We will make government more transparent through readily available data and results-oriented measurements.

Objective 1. Develop shared capabilities and solutions that encourage and enable the publication and availability of public data by key government agencies and programs.

Objective 2. Operationalize and enhance the State's online Open Data site and functionality in a manner that improves accountability for state program outcomes and makes relevant, accurate and useful data available to the public, other government entities, and application developers.

Simplify the end-user's experience with government

Our goals are to provide a recognizable and intuitive “face” to state government that connects Minnesotans, visitors and businesses to the services they need; to help the State leverage technology to break down jurisdictional and bureaucratic silos that prevent holistic services and impede the sharing of information; and facilitate collaboration between and among government entities/partners that have different roles and responsibilities but serve a single client—the people of Minnesota.

Individuals transact with government on a variety of levels for many different kinds of services, depending on who they are and what they need, but for most of them, “government is government.” Yet the ability to navigate seamlessly between services and levels of government is stilted by the “siloes” approach to information management, data collection, and transactional functions within state government and beyond, even when different entities provide similar or complementary services. We often require an individual to consume information and services from government in a manner that reflects our organizational structure rather than one that is customized for the end-user. Without intimate knowledge of government roles and functions, the resident gets lost and the value of services – and the time it takes to render them – is diminished.

Silos also inhibit the ability for the State and its partners to collaborate on new and innovative service delivery models that leverage shared services, resources and information. Health care and law enforcement, in particular, rely on collaboration and coordination that is made possible only by integrated systems and interactive tools.



STRATEGIES AND OBJECTIVES

Strategy 5

We will provide next generation web tools, branding and policies for the state that organize web-based information logically for residents and businesses, and make it easier to find.

Objective 1. Invest in and improve the state web portal to synthesize and present dynamic content for all state government, allowing end-users to more easily find and connect the services and information they need to the agency or local government that provides it.

Objective 2. Provide common dynamic web tools and statewide branding across all state websites to improve user experiences and clarify the relationship between the State, its agencies and its residents.

Strategy 6

We will provide technologies that enable collaboration among the government entities that serve the same clients and address the same issues.

Objective 1. Partner with business to develop comprehensive data sharing, knowledge management and business integration strategies that facilitate holistic services for the citizen.

Objective 2. Deploy a single identity management system for all public-facing state government applications so that end-users can easily access state services with a single password and identity.

Objective 3. Promote the technical integration of existing systems in order to improve the delivery of cross-function services.

Objective 4. Cluster IT “lines of business” for better collaboration opportunities, including other branches of government in strategic deployment of shared tools.

Promote “smart government”

Our goal is to partner with state business leadership to increase state government’s efficiency and effectiveness through data-driven decision-making, better processes, smarter investments and measurable results and outcomes, enhance data quality and integrity, and facilitate the effective sharing of data to improve government service and accountability.

“There has been a literal explosion in the amount of electronic data created, communicated and stored around the world. Experts have termed this the “data tsunami” or the “data deluge.” A recent IDC study reported that the world’s output of digital data is more than doubling every two years. It’s estimated that 2011 saw the creation of 1.8 zettabytes (ZB).”¹

In spite of the preponderance and sophistication of information technology systems that collect and manipulate government data and manage transactions, state business leaders express frustration that they are “data rich and information poor.” The ability to manage, sort and analyze data – and to share it among those that collectively serve a population or perform similar functions - is a high priority not only for the State of Minnesota but for its local and national partners. Health care, human services and public safety are prime service areas that cannot deliver effective or innovative services to the end customer without the ability to quickly analyze data and share it with their partners. Using data to serve citizens better and to improve decision-making at every level requires standardization, collaboration and the integration of tools that make government smarter and more responsive.



STRATEGIES AND OBJECTIVES

Strategy 7

We will foster and enable data-driven decision-making; be proactive in identifying opportunities for the state to improve knowledge sharing and integrated services between business lines and across boundaries.

Objective 1. Develop technologies and policies that enable the effective use of information such as data analytics, data mashing and data mining.

Objective 2. Establish policy and architecture that help ensure greater data integrity.

Objective 3. Revise MN.IT Services project approval processes to include analysis of system business cases for data-sharing, integration opportunities.

¹ Center for Digital Government strategy paper, “Economic Game Changer: Powering the Next Generation Government,” 2012.

Make the State of Minnesota an employer of choice

Our goal is to leverage technology to improve the effectiveness, productivity and satisfaction of individual state employees in order to attract (and keep) the next-generation workforce, and use tools to foster their individual innovation and professional growth.

Within the timeframe of this plan, significant skills and institutional knowledge for state programs and functions will walk out the door as the State of Minnesota loses to retirement up to 50% of its workforce by 2015. How will we attract and train a next generation of government workers that will share the same passion for service? Much has been published on the characteristics of the new workforce. To remain competitive, the State must ensure that our collective working environment is one that inspires, attracts and keeps talent that is interested in making government a career, not just a job.

This is not just a “feel good” goal. And it is not just about attracting workers. It is also about providing a productive work environment within the budget constraints that are part of our foreseeable future. There is an expectation that as the current workforce retires and process reform is underway, much of the “leaning” of government will occur through attrition. It is imperative, therefore, that the workforce that enters this new environment must have the tools and policies that will allow them to truly “do more with less” through the employment of appropriate tools, and through the institution of efficient processes and effective policies. The workforce of tomorrow must not only be subject matter experts. They must also be flexible, inventive, knowledgeable about social media and cyber security, skilled at collaboration and partnership, and equipped to work anywhere/anytime.



STRATEGIES AND OBJECTIVES

Strategy 8

We will enable the state workforce to conduct business “anytime anywhere” through effective technologies and policies.

Objective 1. Prioritize policies and technologies that enable a mobile workforce, and are both attractive to next-generation workers and cost-effective and productive for the State.

Objective 2. Partner with business leadership to establish pilot results only work environments (ROWE) that evaluate output and promote flexible and mobile work structures that meet the needs of the State and the people they serve.

Objective 3. Appropriately provision a field-based workforce with portable tools that increase productivity, decrease time to collect and process field data, and allow case workers and field workers to access real time data.

Strategy 9

We will provide appropriate training tools that assist the State’s efforts to enhance and improve leadership skills in the state workforce.

Objective 1. Promote online learning tools and video capabilities to improve state training for the re-tooling of new and existing employees and for the leadership training common to all agencies and staff.

Facilitate government reform

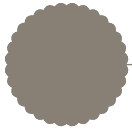
Our goals are to be an agent of change and help government reinvent itself by identifying next-generation technologies that can help state government be faster, more nimble, less bureaucratic and more responsive in the services it provides to citizens, and more able to measure and report on outcomes; and to model reform in the reinvention of state IT.

Much of the value of and impetus for government reform lies in fundamental rethinking at the program level to - as Governor Mark Dayton describes it - “improve how state government works to deliver the best services at the best price.” It is a huge undertaking and a high priority for not only the Governor but for a bi-partisan Legislature. It is also a strong motivator for most state employees who know that they could do a better job, “if only...”

Outdated processes abound in state government, locked in place by old and outdated tools, intractable processes, and silo-orientation / traditional jurisdictional boundaries.

Technology is a key enabler of reform and MN.IT Services can play a role in providing the research, business analysis and know-how to help business owners “think outside the box,” to build the IT solutions that enable and short-cut real change. However, reform is most successful when it is a true partnership between program leaders and technologists, and when process reform precedes the technical solution. Our joint strategy must be a combination of cleaning up old processes, replacing old systems well past their lifetime, and investing in the technologies of the future that will help government do business more effectively and efficiently.

In addition to partnering to address overall government reform through better tools, MN.IT Services – particularly in light of the recent consolidation – is challenging itself to prioritize and model reform in the way in which it manages information technology. By reforming processes and systems within the IT world, MN.IT Services can establish the path to even greater transformation. A recent survey² of state and local government IT professionals, for example, indicated that respondents saw between a 134 percent and 269 percent return on investment in server virtualization, enough to fund their investments in other key technology improvements. This is only one of many examples of how greater efficiencies in IT can be leveraged to focus dollars on the systems that move government programs forward.



Strategy 10

We will provide technology solutions for back-office and business process improvements that result in delivering government services to citizens faster and more effectively.

Objective 1. Partner with program leadership on a process improvement program to identify the highest priority and most rewarding improvement opportunities; build a process review stage into the business case for all new IT system development and partner with state business leadership to evaluate opportunities for process reform before systems get built.

Objective 2. Provide workflow automation tools that enable the elimination of antiquated and/or unnecessary business processes.

Objective 3. Accelerate enterprise-wide virtualization to enable improved business processes and facilitate shared services; incorporate virtualization in a shared data center strategy.

Objective 4. Promote single IT solutions that can be shared by executive branch agencies and their partners for managing common processes and functions such as grants management, licensing, case management, etc.

Objective 5. Inventory, prioritize and replace critical legacy systems that are old, inefficient and insecure, and that inhibit innovation and reform.

Strategy 12

We will provide tools and develop processes that speed up and reduce the complexity of IT purchasing.

Objective 1. Leverage consolidation to centralize and improve IT purchasing processes that result in faster and more advantageous contracts; negotiate broad enterprise agreements for key IT tools and licenses; expand contract scopes to include non-executive branch government.

Strategy 11

We will manage technology investments in a manner that minimizes costs and generates savings dollars for investments in the future. We will prioritize IT initiatives based on best results and highest impact and develop a sustainable funding model for the services we provide.

Objective 1. Improve service value by strategically sourcing IT services based on service quality, price, and the best use of state human resources and unique skills; accounting for costs based on total cost of ownership (TCO); defining, measuring and reporting on service key performance indicators (KPIs); developing a service structure for small “have not” agencies.

Objective 2. Simplify the State’s IT environment through increased standards and accelerate the executive branch’s shared service strategy and market with non-executive branch government; formalize the state IT enterprise-wide architecture program and governance.

Objective 3. Invest in next-generation technologies and promote a culture of innovation in IT and throughout state government by creating incentives to stimulate technology and process innovation, dedicating resources to “innovative” solutions and research and development, and leveraging the State’s “private cloud” (MNET) as a foundational asset for new service development and delivery.

Objective 4. Embed appropriate energy-saving, green technology in architecture and purchasing standards.

Ensure that government and citizen data is protected and the business of government never stops.

Our goal is to prioritize safe and secure IT environments, security tools and business continuity processes that protect critical data and minimize the risk of service interruptions that endanger Minnesota citizens or impede the business of the state and to manage state-of-the-art security solutions that protect government services, particularly in times of crisis.

All levels of government face an increasing challenge to maintain the security of the data in their care as conflicting conditions and drivers work against each other: The “data tsunami” referenced on page 14 continually increases the demand for storage and the challenges of data management; the preponderance of online and mobile tools makes government data more readily available but ever more vulnerable; the ever-increasing reliance on data to run government increases the risk that a major (or even minor) disaster affecting the State’s physical storage facilities can bring government service to a halt; and the need for government to maintain and provide public data as a basic tenet of democracy increase its attractiveness to cyber security threats from those that either want to hijack information or bring down government systems and operations.

Effective security policy is about managing risk. The State of Minnesota – or any other public or private organization – can never afford or create a completely risk-free IT environment, particularly as new technologies proliferate and cyber threats mushroom. Protecting our digital infrastructure at a reasonable level of risk must be the goal, one that we can only reach through prudent investments, shared resources and effective management.

Presently, the State faces a high level of risk due to lax security controls and an inadequate historical investment in tools, people and processes. At its current funding level, the State’s investment in security stands at 2 percent of its total IT budget, compared to an industry standard of 5.4 percent–6.2 percent. The result is a litany of Legislative Audit reports that highlight our vulnerability:

“The State of Minnesota does not have adequate continuity of operations plans to ensure the timely recovery of critical services and operations in the event of a disruption.”³

“Small agencies in Minnesota state government generally do not have adequate security controls over their computer systems, which creates an unacceptable risk of unauthorized access to not public data and disruption to state functions.”⁴

A recent study of state data centers also indicated serious risk levels and inefficiencies in the highly distributed data center environment.

The challenge is to outline the best route to bringing Minnesota’s investment in security closer to the norm and our risks to a more acceptable level. In the process, we aim to equitably share the costs of ensuring that our physical and digital resources are protected, government services remain operative, and we maintain the trust of Minnesota’s citizens, whose data and lives we hold in trust.

³ State of Minnesota Continuity of Operations Plans Report 08-07, March 2008

⁴ Small Agencies’ Information Security Controls Report 09-16, April 2009



Strategy 13

We will continue development of core Enterprise Security Program functions that will help proactively manage information security risk.

Objective 1. Continue movement towards an enterprise security model that coordinates all planning, oversight, and response activities through a single program.

Objective 2. Adopt processes to design appropriate security controls in new systems or systems that are undergoing substantial redesign.

Objective 3. Provide employees at all levels with relevant security information and training to lessen the number of security incidents.

Objective 4. Build a compliance program to validate that information security controls are functioning as intended.

Objective 5. Improve boundary defenses by installing a zoned security model that separates and controls access to different networks with different threat levels.

Objective 6. Adopt a hardened security defense model for computers that routinely interact with untrusted devices on the internet or may be prone to loss or theft.

Objective 7. Develop central processes and tools to manage physical and logical access to state computer systems and data more efficiently and effectively.

Strategy 16

We will minimize risk and maximize redundancy in major systems and facilities.

Objective 1. Reset and accelerate data center virtualization and consolidation to achieve an acceptable risk level for the data and systems that manage state operations; partner with other Minnesota government entities to develop and leverage shared data center strategies.

Objective 2. Encourage adoption of the State's high-security network, communications and collaboration tools among all branches of state and local government to increase security inter-government communications and interoperability.

Strategy 14

We will continue development of enterprise-wide information security processes and tools to improve situational awareness.

Objective 1. Gain better situational awareness through continuous monitoring of networks and other IT assets for signs of attack, anomalies, and inappropriate activities.

Objective 2. Continuously identify and remediate vulnerabilities in state computer systems before they can be exploited.

Objective 3. Serve as a central security collaboration point to encourage resource and information sharing among all branches of state and local government and the federal government.

Strategy 15

We will continue development of shared processes to minimize the impact of adverse security events.

Objective 1. Increase emphasis on business continuity planning and disaster recovery testing across all agencies and all systems.

Objective 2. Provide centralized security incident response and forensic investigation services to determine the cause, scope, and impact of incidents and limit damage.

In Conclusion

Challenges

TOP PRIORITIES OF STATE CIOs

- Roles and governance
- Legislative affairs and advocacy
- Financial management, funding and budget
- Collaboration
- Consolidation and shared services
- Sourcing strategies and IT workforce
- Health care
- Business intelligence and business analytics (BI/BA)
- Mobility
- Vision and excellence

In an October 2011 survey of state chief information officers⁵, the National Association of CIOs (NASCIO) outlined a C4 agenda for the world of state government today: Change, Collaboration, Clout and Consolidation. Specifically, the report identified the top ten priorities of the state CIO community (shown at left).

All of these national priorities resonate for the State of Minnesota and are reflected in preceding pages. Each represents both opportunities and challenges for the five years ahead.

As MN.IT Services reorganizes to perform its new role and collects a better enterprise view of the current state, additional challenges will undoubtedly arise. These “risk factors” were presaged in OET’s recent report to the 2012 Legislature on consolidation progress.

Cost of IT consolidation and ability to capture savings: In order to successfully manage the costs of consolidation (both the planning for and execution of management changes, and the later costs of investments in consolidation of equipment, systems and functions), the ability to capture early savings for future investment is essential. This need was recognized in the consolidation statute, and a mechanism is being put into place by Minnesota Management and Budget.

Human resources: The State must address key human resource issues that complicate the transfer of all IT employees into a single organization. These issues include consistent functional definitions and reporting relationships, standardized work and classifications, adequate training for new and transferred employees, and resolution of inequities in compensation. An expected increase in retirements among highly proficient technical specialists and managers in agencies make these changes particularly difficult and important, as we strive to build an agile and equitable workforce environment that attracts talented workers and builds strong information technology careers.

Prior investment in IT: In order to realize the goals set out in this Master Plan, the State must address the reality of “have” and “have not” agencies that experienced, over time, very different levels of IT investment. The shared service and collaboration strategies outlined in this plan will require a more level playing field and may necessitate investments in “have not” IT environments. In addition, the State must address the large number of “legacy systems” – important applications that have far exceeded a normal lifetime – throughout the executive branch. An alarming amount of State IT equipment has completed normal lifecycles and carries security and business continuity risks to operate. These assets need to be refreshed in order to maintain effectiveness and provide further efficiencies for state government.

Investment in IT can never stop. As systems reach the end of life or as new technologies that can improve government service become cost effective, the State will always need to refresh and reinvest. It is our expectation that the consolidation of IT will allow the State to better track and evaluate the necessary investments on an enterprise level. However, it is our fear that in the next few years, the cost of “catching” up on investments will take a significant toll (and create a certain “sticker shock”) on limited state IT resources.

Security and risk: Consolidation of IT services will significantly improve the security profile of the State and make the achievement of an appropriate level of risk more affordable. However, even with consolidation, information security is one area where the State will need to invest significantly more. Preservation of OET’s remaining General Fund base will be vital, particularly as the organization works to build out and advance the capabilities of the new Enterprise Security Program. In addition, leaders across the executive branch will need to be prepared to pay more for necessary cyber security services, such as advanced security monitoring of state systems and networks.

Procurement: As the state IT community begins the process of self-analysis, and as contracts and funding come under a single view, opportunities are evident for additional savings in the procurement of IT hardware and software, above and beyond the current standards program that has been in effect for several years. OET and the Department of Administration are close partners in IT procurement activities and will be looking at these activities in an entirely new light. With consolidation, the opportunity is there for the State to collapse hardware and software purchases and licensing in a manner that may well bring down the total cost of IT. It will be important to maximize procurement processes and avoid barriers in order to realize significant savings and cost avoidance in this area.

Conclusion

The new statewide enterprise IT organization is a “work in progress.” What lies ahead of us are exciting challenges and great opportunities to lay the foundation – through the tools and services that IT delivers - for greater government reform and reinvention. The better we articulate goals, prioritize initiatives and leverage resources, the more successful we will perform our pivotal role in improving government outcomes for the people of Minnesota.

Our success relies on a strong partnership and trust between the business and program leadership of state government and the information technology leadership within MN.IT Services.

This Master Plan will play a pivotal role in shaping the structure and functioning of the new consolidated environment, and inform the major information technology initiatives for the State of Minnesota in the coming years.



This document is published by:

The State of Minnesota
Office of Enterprise Technology

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Phone: 651-296-8888

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