State of Minnesota

Information and Telecommunications Technology Systems and Services

Master Plan

2007

Office of
Enterprise
Technology
State of Minnesota

Innovation. Change. Transformation.

Acknowledgements

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Innovation. Change. Transformation.

February 2007

To: Governor Tim Pawlenty and members of the Minnesota Legislature

From: Gopal Khanna, State Chief Information Officer

I am pleased to present the first installment of what will be an ongoing series of biannual master plans created in a comprehensive planning cycle. We will use this plan as the baseline for establishing priority and investment decisions, and as a guide to IT directions. Although its planning horizon is ten years, I expect that the plan will become a living document that adjusts to the changing technological, programmatic, and security landscape, our evolving information needs and capabilities, and the demands of a changing world.

Modernizing Minnesota's technology infrastructure is not an option; it's an imperative. Increased retirements in the workforce, the demands of our citizens and businesses, ever-increasing security threats, and the continuing pressure on governments at all levels to do more with less dictate that the State of Minnesota build a secure, effective, and up-to-date enterprise information technology platform for effective government-to-government, government-to-business and government-to-citizen service.

Minnesota is making dramatic progress in its effort to improve profoundly the way state government operates. Executive Order 05-04, Minnesota Statutes Chapter 16E.03, and a variety of *Drive to Excellence* projects have moved the state forward in how we manage information resources, thus making possible dramatic and vital transformation of our business processes and services to citizens in response to the demands of a new century.

In recent years, state leaders have recognized the importance of managing information and information technology as strategic resources, and of considering investments in these areas comprehensively, from the perspective of the entirety of state government. The evidence is compelling: to fully realize the benefits of enterprise information management, the state must restructure, streamline and update its IT practices, organization and infrastructure.

M.S.16E.03, Subd. 2, charges the State Chief Information Officer of Minnesota to, among other things, "design a master plan for information and telecommunications technology systems and services in the state and its political subdivisions and shall report on the plan to the governor and legislature at the beginning of each regular session."

It is my honor and privilege to work with a bi-partisan state leadership and all government stakeholders to implement the three underlying foundations of this master plan: re-engineering of the State's business processes, modernization of the State's agency-specific, mission-critical systems, and consolidation of the State's siloed infrastructure for purposes of efficiency, effectiveness, and security. The result will be a more nimble and effective government that meets the needs of the global citizens who are fortunate to call Minnesota "home."

State of Minnesota
Information and Telecommunications
Technology Systems and Services
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Executive Summary

By law, the State Chief Information Officer is required to "design a master plan for Information and telecommunications technology systems and services in the state and its political subdivisions and [to] report on the plan to the governor and legislature at the beginning of each regular session."

These strategies and the specific initiatives within each are the result of a year-long process of research, analysis, development and discussion involving key stakeholders. These strategies are listed in approximate order of urgency and value to the state.

1. Information Security

We will implement a comprehensive program of protection from and reaction to threats to data, infrastructure, systems and assets, and provide for continuation of operations in emergency situations.

2. Electronic Government Services

We will improve the delivery of services to citizens and business partners by expanding the use of technology to minimize constraints of time and place, to allow customers an active role in managing their relationships with government, and to support sharing of information and applications among agencies and across jurisdictions.

3. Consolidation of IT Services

We will improve the quality and efficiency of IT programs and the functions they support by consolidating IT services commonly used across the enterprise and by relying on shared services for provision of service offerings used by multiple agencies.

4. Systems and Business Process Modernization

We will utilize the enterprise planning and governance processes to identify and target existing legacy applications and business processes—both agency and enterprise—for modernization by means of business process redesign, deployment of new technologies, and integration of related functions.

5. IT Governance

We will provide coordinated strategic and operational management of information systems and the business processes these systems support by use of best practices in analysis, planning, implementation and performance measurement.

6. IT Architecture, Standards and Practices

We will establish and mandate use of enterprise tools to guide design, development and operation of IT systems.

7. Information Management

We will increase sharing of common information across programs and jurisdictions, ensure consistent and appropriate protection of personal information and promote understandability of information to reduce burdens on citizens and improve the efficiency of government operations.

8. Resource Management

We will promote effective stewardship of the state's primary resources—people and money.

Introduction

The purpose of this plan is to provide a strategic framework for enterprise information management. The goals are to:

▶ consolidate and improve systems, processes and services,

▶ improve the efficiency and functionality of common activities, and

▶ increase the security underlying the state's electronic capabilities.

The plan is meant to serve as a compass for the executive branch overall and for individual agencies. It should help guide investments; set consistent priorities, timetables and goals; and leverage new investments for greatest value. At this juncture, the Office of Enterprise Technology envisions a 10-year execution horizon. The plan will be updated every two years to reflect changing circumstances and priorities.

Although the primary focus is on the executive branch of state government, we expect that constitutional officers, the legislature and local government will also follow its lead in making investment and operational decisions.

About OET

The Office of Enterprise Technology (OET) was formally established in July of 2005. Led by Gopal Khanna, Minnesota's first cabinet-level Chief Information Officer, OET built on the combined resources of the former InterTechnologies Group and the Office of Technology.

While the enabling statute and executive order vested the state's CIO with considerable discretionary power, he made the decision to put in place a fully collaborative process that involves Minnesota's agency heads and, their chief information officers or directors of Information Technology in decisions affecting their agencies and agency customers. This cooperative approach and the commitment of agency commissioners to working with OET help assure the success of enterprise IT management.

Background

Information is one of the most critical components of modern government operations. It is collected, processed and used in making decisions that affect millions of Minnesotans individually and collectively. It is the output and outcome of every government business process; it produces actions, measures results, and documents accomplishments and activities. The costs for collecting, manipulating, storing, retrieving, using and distributing information account for nearly a half-billion dollars in public funds each year for state government.

Its impact on services to citizens is also tremendous. On the basis of information managed by the state, decisions are made daily about nearly every aspect of our lives: about benefits eligibility, education, natural resources, public safety, business and professional licenses, transportation, public health, taxation and all the other programs that are the true "business" of government.

The costs for collecting, manipulating, storing, retrieving, using and distributing information account for nearly a half-billion dollars each year

Our ability to carry out Minnesota's constitutional and legislative missions faces serious challenges:

Cyber security. Securing the safety of government services must be our first priority. In the post-9/11 environment, threats to infrastructure and to citizen data threaten the state's ability to provide the level of electronic services our citizens have come to expect.
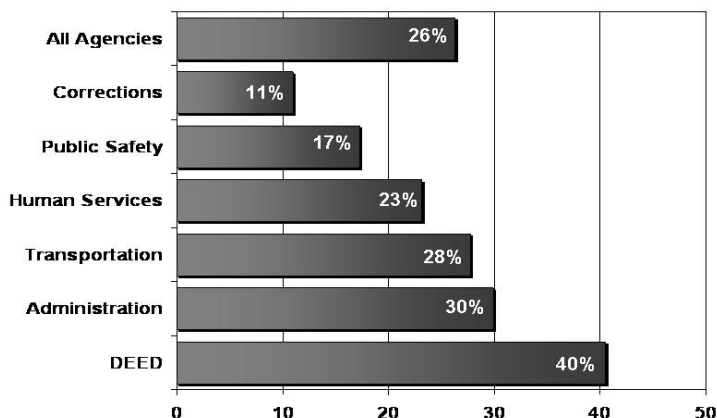
The growing demand for online services. Minnesotans are becoming more technologically sophisticated and expect electronic delivery of government programs. Businesses expect to do business electronically, and stakeholders demand the efficiencies made possible by contemporary technology. We have no choice but to support new ways of delivering services.

Manually intensive and outdated business processes and workflow. Many of the processes by which we manage government services are based on historic workforce levels and antiquated technologies, and are unsustainable in the demographic, economic and technological conditions we now face. Simply automating processes is not enough; we must streamline and coordinate workflows and information streams for greater efficiency.

Economic considerations. Citizens and their elected representatives demand greater accountability for delivering value for tax dollars, through greater productivity and/or improved efficiency. We cannot assume our current business processes and systems will continue to provide the best value.

Demographic changes. By 2015, 50 percent of the current state workforce will be at retirement age. With them will go the skills, program knowledge and institutional history. Even if we could duplicate their

Aging Employees:
Percentage of all state employees who will be at least 60 by 2010

Agency	Percentage
All Agencies	26%
Corrections	11%
Public Safety	17%
Human Services	23%
Transportation	28%
Administration	30%
DEED	40%

extraordinary know-how, demographics tell us that we cannot maintain current staffing levels. Similarly, Minnesota is now home to people with diverse backgrounds and needs, and government services must be redesigned to meet their expectations.

Our information infrastructure. Too many of our computer systems and networks are fragile, antiquated, cumbersome or insecure. Systems modernization will require both capital and human investments that focus on the future, not simply on re-automating past practices.

If we are bold enough to design for the future, these pressures can lead us to positive change. With vision and creativity, we can build on Minnesota's traditions of public sector excellence and use the power of contemporary technology to transform the enterprise that is government.

Planning Process

The Master Plan process began in November of 2005 with an environmental scan that reviewed developments in government services, trends in information management in the private sector, and technology market directions. The results of this process and of meetings with agency heads, legislators, and business leaders informed the design of the planning process itself. This commenced in January of 2006 with a series of brainstorming sessions involving OET and agency CIOs, with additional input from higher education, K-12 schools and local governments.

In a parallel process, discussions were being held with nationally recognized public and private sector state thought leaders in the area of IT management, and with state technology officials from around the country. Governor Pawlenty and legislative members and staff also were consulted to help planners understand better the customer expectations for technology.

Starting with the planning team reports and drawing in the feedback from all the other contributors, a smaller group of planners and writers began working with the State CIO in a process of organizing, considering and comparing all of the suggestions.

This is not a consensus document. It includes many points raised in the team reports and other stakeholder recommendations, but also some ideas individuals or teams did not include or did not support. It presents the State CIO's advice to the governor and state legislature on what directions the State of Minnesota should follow to see that information and technology are best managed to serve citizens in the years to come.
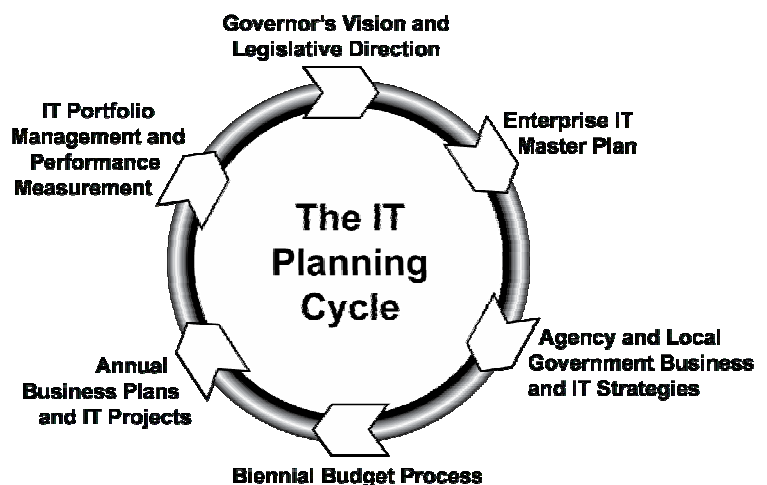
Strategy 1: Information Security

We will implement a comprehensive program of protection from and reaction to threats to data, infrastructure, systems and assets, and provide for continuation of operations in emergency situations.

Context

The growth of e-Government and electronic transactions demand secure networks and systems. In fact, the entire concept of electronic government services, shared use of information and related transformational activities is absolutely dependent on a secure and reliable information environment. As pointed out in the Office of the Legislative Auditor report in 2006, the state, its employees and its citizens risk financial or personal damage if data were to be lost, damaged, or otherwise compromised.

Citizens need to be assured of our careful stewardship of their data and of systems and information investments.

As we move toward greater integration and sharing of data, the risks and costs of carelessness or inattention grow in proportion. Citizens need to be assured of our careful stewardship of their data and of systems and information investments.

Good security starts with a comprehensive architecture, builds on thoughtful policies and procedures, and is realized in detailed security practices, including:

Building Blocks of Effective Security
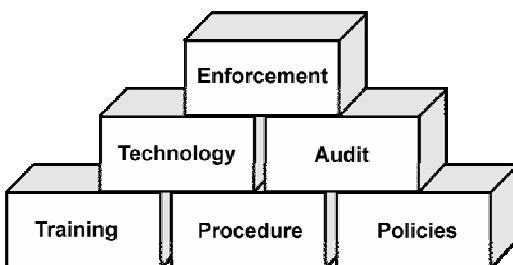
- ▶ Password design and administration
- ▶ Authentication and authorization
- ▶ Intrusion monitoring and response
- ▶ Testing and remedying commercial application security vulnerabilities
- ▶ Routine auditing of access rights
- ▶ Educating the workforce and citizens on the purpose and practices of security

Objectives

1. Develop a policy framework and a functional organizational structure for a comprehensive security program.

2. Develop clear security relationships and authority tied to both the business and IT communities in agencies.

3. Coordinate funding and deployment of security tools.

4. Educate employees and inform citizens regarding the importance of information security.

5. Move to two secure, load-sharing data centers remote from each other and the Capitol complex as part of the IT core function consolidation strategy.

Strategy 2: Electronic Government Services

We will improve the delivery of services to citizens and business partners by expanding the use of technology to minimize constraints of time and place, to allow customers an active role in managing their relationships with government, and to support sharing of information and applications among agencies and across jurisdictions.

Context

Internet-based services have long been envisioned as a tool for revolutionizing government-to-citizen, government-to-business and government-to-government relationships.

This strategy focuses on enterprise EGS initiatives, identifying obstacles and proposing solutions to achieve government transformation through technology, and highlighting the importance of establishing performance metrics to track outcomes and identify future opportunities.
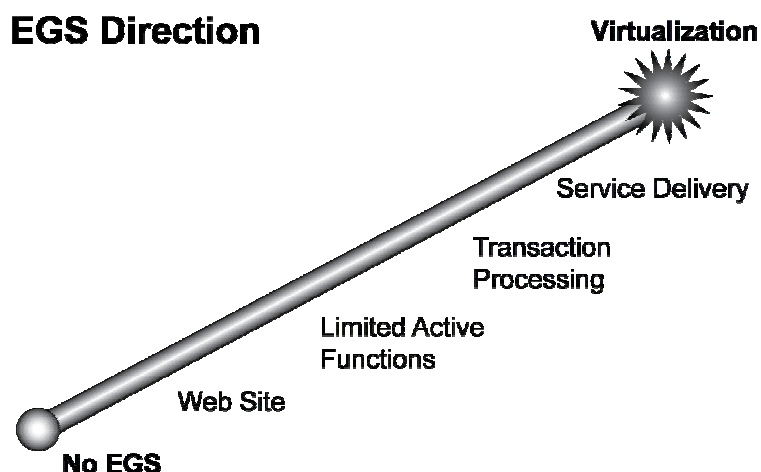
The benefits of web-enabled systems extend beyond direct service to citizens. New web applications that allow greater flexibility for workers can operate across a variety of workstations, platforms and networks.

Not all services lend themselves to electronic delivery, and not all citizens want (or are able) to take advantage of electronic services. However, the point of critical mass for these systems has passed, and manual processes and personal visits are becoming the exception in government as in the private sector.

Sharing common data allows agencies to direct more resources to collecting and using the unique data they need, rather than replicating basic data collection costs.

Objectives

1. Review agency business processes to identify common transactions and customer services.

2. Create a common framework – architecture and platform - for Electronic Government Services.

3. Implement Electronic Government Systems based on reengineered business processes for state agencies and their customers.

EGS Direction

Virtualization

Service Delivery

Transaction Processing

Limited Active Functions

Web Site

No EGS

Strategy 3: Consolidation of IT Services

The state will improve the quality and efficiency of IT programs and the functions they support by consolidating IT services commonly used across the enterprise, and by relying on shared services for provision of service offerings used by multiple agencies.

Context

Government exists to provide services to or on behalf of citizens. Technology can increase speed, effectiveness, responsiveness, efficiency and impact of those services, and therefore increase their overall value.

Consolidation will reduce operating costs, streamline processes and, most importantly, allow agencies to focus on their business applications, not IT support.

Public and private sector experience shows that consolidation of common functions can both save money and improve the quality and service levels offered to customers. Only applications that are truly unique to a single entity should reside at the entity level, and all common IT functions should be shared. A general consensus exists among legislative stakeholders, agency commissioners and external experts that Minnesota's current IT silo model, addressing technology as a collection of independent enterprises, is not sustainable for the foreseeable future.

Minnesota's *Drive to Excellence* program identified the need to transform the IT components of state government, based on three primary factors:

► Citizens and businesses expect state government to deliver services faster, better, and more cost effectively in ways that are least burdensome to the customer.

► Ongoing budget challenges require consolidation of core IT functions so that proportionately more resources can be dedicated to customer-facing services and businesses.

► The demographics of both our customer base and our workforce demand that new ways of doing business be implemented to maintain the relevance and quality of services.

Sharing business functions through consolidation reduces operating costs, streamlines processes and, most importantly, allows agencies to focus on the business applications, not the underlying IT support structure by which they are delivered. Consolidation makes it possible to eliminate duplication, streamline workflow, improve information sharing and gain efficiency. When implemented, a greater proportion of the total IT funds will be available for program support instead of foundational or utility expenses.

Objectives

1. Build upon the *Drive to Excellence* and Master Plan work group findings to continue to create and sustain an overall supportive environment within Minnesota government through concentration of shared and utility services.

2. Move aggressively to central management of IT services in support of Minnesota government functions.

3. Establish shared service staffing to provide analysis and planning for implementing this strategy.

4. Take advantage of existing and planned shared services to benefit additional customers. The following opportunities were identified during the *Drive to Excellence* and other planning efforts:

   ▶ Development of a highly integrated suite of central administrative applications for budgeting, procurement, accounting and related services to complement and extend the existing human resources system.

   ▶ Integrated tax management system to service tax and revenue administration and collection needs of multiple agencies.

   ▶ A coordinated Geographic Information Systems data and services partnership to serve the data and analytical needs of many agencies and levels of government.

   ▶ Integrated business registration and support to meet the needs of new and changing businesses while reducing data collection burdens.

   ▶ Consolidated services for requesting and issuing professional, vehicular, organizational and recreational licenses.

   ▶ Consolidated operations for debt collection.

   ▶ Consolidated services for issuing payments and processing remittances.

5. Develop a strategic plan for integrated statewide telecommunication.

Minnesota's IT and Business Needs are Balanced Under a Federated Model

Agency-specific Services

Shared Services

Utility Services
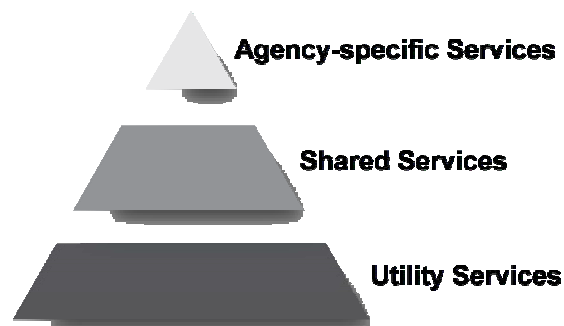
Strategy 4: Systems and Business Process Modernization

We will modernize existing legacy applications and business processes – both agency and enterprise – by means of business process redesign, deployment of new technologies and integration of related functions.

Context

Technology is too often treated as an end rather than a means. Re-automation—simply upgrading or replacing software and hardware without adding substantial value—too often perpetuates outdated practices and fails to take advantage of potential improvements that new technologies make possible.

Technology is too often treated as an end rather than a means.

Business process redesign is a proven mechanism for organizational analysis and improvement. It is a complement to traditional continuous quality improvement methodology and extends the effective life cycle of systems by anticipating and providing for future needs.
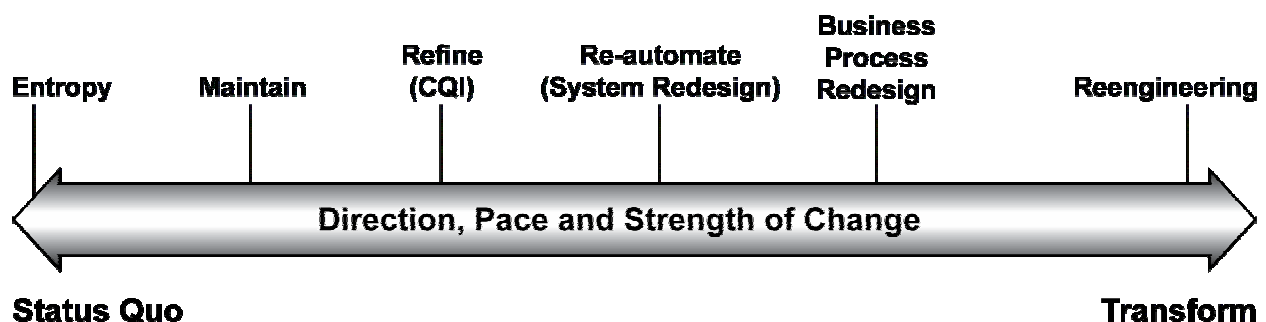
The methodology involves forgoing exhaustive documentation of current processes, focusing instead on where the organization wants to be in the future and how to get there. It requires the discipline of looking at the complete business process as the basis for design, not individual tasks; identifying non-value-adding work and systematically eliminating it; and looking at technology and business needs in concert to see what new approaches can be enabled by new technologies.

In applying this development regimen, the state must look across intra- and inter-agency boundaries and programs for opportunities to share common functions and data, for both the sake of the state and for its citizens.

Business Process Redesign involves changes to ALL these areas:

▶ Workflows, products and business processes
▶ Information technologies
▶ Management structure and systems

Change Strategies

Entropy	Maintain	Refine (CQI)	Re-automate (System Redesign)	Business Process Redesign	Reengineering

Direction, Pace and Strength of Change

Status Quo   Transform

- ▶ Work groups, skills and jobs
- ▶ Organizational values and norms

Systems Modernization involves two dimensions: hardware and software renewal, and continuous reexamination of systems assumptions.

The state must modernize its technologies on a regular basis. Crucial aspects, including interoperability, reliability, capacity and performance, demand a coordinated approach. Regular investment in upgrades, updates and replacement of hardware and software ensures that all elements of the information infrastructure—networks, platforms, servers and workstations—are compatible, reasonably contemporary and internally consistent.

Greater IT efficiency and integration also lead to better program outcomes.

The second involves making it a practice to use planning and portfolio management to identify artificial boundaries before making further investments in legacy processes and applications or creating new programs or systems. Greater IT efficiency and integration also lead to better program outcomes.

We can also benefit from nontraditional approaches to the how, when and where of work. Across the country, successful organizations have found that many technology-enabled tasks can be performed at times and in locations outside the traditional office setting—including customer sites, homes and other environments—using telecommunications capabilities.

Objectives

1. Develop a BPR resource center that will provide information, tools and other support to identify the elements needed for successful business process redesign.

2. Develop and mandate use of a formal business process redesign model for both continuing and new business process assessment and system design.

3. Create funding options that will provide incentives for agency and enterprise re-engineering initiatives and allow those initiatives to move forward as quickly as possible.

4. Modify Minnesota's budget and spending approval processes to require that requests for investments be accompanied by analyses of all affected business processes (both intra-and inter-agency), and how investments will be used to redesign, streamline or eliminate them.

5. Encourage telecommuting in the public and private sectors when appropriate to take advantage of its benefits on budget, space management, customer service, data security, staff development and the environment.

Strategy 5: IT Governance

We will provide coordinated strategic and operational management of information systems and the business processes these systems support by use of best practices in analysis, planning, implementation and performance measurement.

Context

The state has made huge investments in technology—hardware, software, data and staff—and has both an obligation and a need to treat these assets as state investments. That includes cataloging and understanding basic facts about these resources and managing them throughout their useful life.

Managing this portfolio is a statewide responsibility, but past inconsistencies across agencies have left policymakers in doubt about whether money spent has been properly deployed, effectively managed and prudently maintained.

Governance structure

Governance is the system of planning, oversight and direction that provides leadership in information management and its enabling technologies for the executive branch. The federated decision-making process used in Minnesota is designed to include extensive consultation with government, business and technology leaders, and with private sector advisors. The governance process consists of two components: the formal governance structure itself, consisting of the State CIO and several advisory bodies, and the activities that provide information and analytical support.

Investments in new technologies will not be treated as ends in themselves, but as opportunities to redesign or replace outmoded business processes.

The advisory bodies help the state CIO set direction and priorities in such areas as defining the range and extent of utility services offerings, reviewing rates and allocations for central services, identifying and promoting shared service opportunities, identifying priorities for business process redesign across and within agencies, and reviewing requests for new investments for the enterprise.

The governance process can have a profound effect on both the efficiency and impact of state IT investments. Transformational advances, like business process redesign and EGS, require clear leadership and executive commitment, which again is a function of collaboration and agreement on goals.

Governance has two key supporting activities: Portfolio Management and Performance Measurement.

IT portfolio management

This is the process of collecting, analyzing and sharing essential data on the state's investments in technology, information and activities. It identifies opportunities for leveraging funds, streamlining and improving services and increasing efficiency.

The benefit of portfolio management is to ensure that projects are properly organized and that the fundamentals of project management best practices are incorporated into the project plan. This preparation, plus routine independent review of progress, helps to minimize the possibility of a project losing scope control or process integrity. It allows for mid-course correction rather than the drastic cancellation or project failure.

Portfolio management ensures that projects are properly organized and that best practices are incorporated into the project plan.

Portfolio management addresses these basic areas:

- ▶ Investments planned or proposed
- ▶ Project management
- ▶ Application and business process inventory
- ▶ Hardware and software inventory
- ▶ Employee skills and experience
- ▶ Compliance with enterprise architecture and standards

Performance measurement

Most agencies (and the state as a whole) struggle with defining, gathering and utilizing truly meaningful data on the effectiveness and efficiency—and added value—that IT brings to both operational assessment and decision-making.
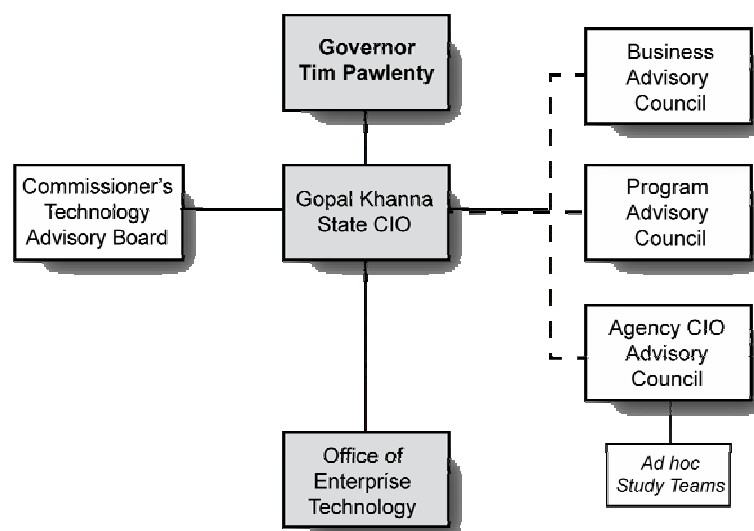
Good management demands that leaders define what is important, find good qualitative measures defining success, and apply what is learned to improve the quality of decisions. However, organizations are too often satisfied with data on inputs and activities. Measuring outputs and outcomes is more difficult because it requires clear definitions of success and impact, and answers to such questions as, "What difference did we make?" and "How well did we do?"

Enterprise Governance Structure

Agencies must go beyond discussions of how well technology is deployed and managed to explore how technology improved the fundamental business processes. Measures of customer satisfaction, accomplishment of policy objectives and changes in behavior are at least as important as response time, cost per unit of capacity and system availability.

Objectives:

1. Improve processes to define, manage, assess performance, and provide oversight/governance of the various portfolios.

2. Establish specific metrics and means of collecting data and providing analytical reports to support the governance process.

Strategy 6: IT Architecture, Standards and Practices

We will establish and mandate use of enterprise tools to guide design, development and operation of IT systems.

Context

As the state consolidates its IT assets and operations, it will need to identify and establish enterprise-wide standards in the critical areas of design, implementation and operation.

The benefits of common standards are significant:

- ▶ Improved service to citizens by common processes and presentation, improved access, shared information and streamlined and uniform approaches to customer service and self-service.
- ▶ Net savings after implementation due to standardization of hardware and software, volume purchasing and enterprise licensing, centralization of common resources, shared use of systems and data, and more efficient deployment of staff.
- ▶ Improved security based on implementation of uniform and enterprise-wide security processes and systems.
- ▶ Enhanced reliability and performance because of standardized systems components, thoughtful design and disciplined development.

Standardization may help the state reach the elusive goal of reusable software components and leveraged development across applications and organizations. More realistically, it ensures proper documentation, ease of maintenance and structured life cycle management from inception to retirement of systems.

The three controlling elements of standardization are architecture, standards and practices.

The Enterprise Architecture is a structured hierarchy of progressively more specific standards and requirements that governs information system design, development and operation across organizational and systems boundaries. A comprehensive architecture ensures the stability and interoperability of the components of the information management environment, including infrastructure, operating systems, databases, applications, interfaces and security. The enterprise architecture is comprised of the Business Architecture, the Information Architecture, the Technical Architecture, and the Solutions Architecture.

Adoption of commercial standards for software and hardware—an extension of the Technical Architecture—generates savings through volume purchasing, installation and reduced maintenance costs. Users can receive better support from IT because much of the complexity of hardware and software interaction can be controlled. The use of standards does not imply a "one size fits all" mandate, but rather a quest for common ground. The current IT Standards and Resource Management process has demonstrated

Business Architecture

Information Architecture

Policies

Technical Architecture

Solutions Architecture

Standards & Practices
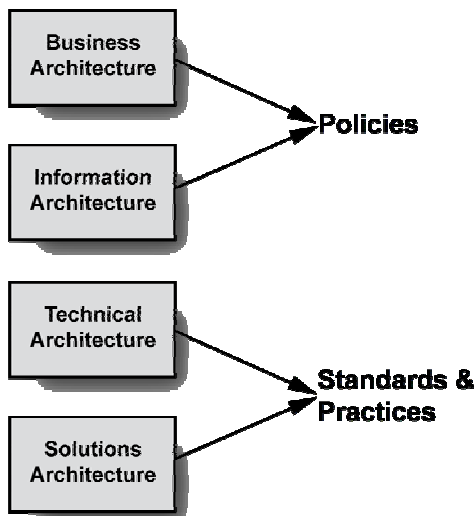
that well-defined standards can both accommodate the vast majority of need and provide for legitimate exceptions.

Accepted "best practices" in areas such as project management, software development, testing and documentation are the result of many years of experience across organizations. The state has identified approaches in many of these areas, but needs to update or adopt and adapt a specific set of practices and tools for general use, and then educate and support users across the enterprise to ensure that they are followed. These practices allow for better transitions to upgraded, expanded or replacement systems as well.

The use of standards does not imply a "one size fits all" mandate, but rather a quest for common ground.

Established standards and measurement criteria will establish a consistent discipline in IT project management throughout state government and lead to successful project completion and realization of benefits for Minnesotans. A comprehensive collection of templates and outlines will be regularly refreshed and maintained to support the project management methodology and core standards of practice.

Similarly, adoption of a common software development methodology, in conjunction with good project management practices, is the best insurance for successful projects. Requiring IT projects to follow a set of minimum core standards of practice will reduce the likelihood of state projects with runaway costs, unclear scope, schedule overruns and idiosyncratic designs.

As in the case of architecture and standards, the requirements in this area must allow for exceptions when it is in the best interests of the state and its citizens.

Objectives:

1. Develop and implement an Enterprise Architecture to guide both new IT development and investments in existing applications.

2. Establish and implement a plan for moving to the use of national open standards formats for data storage to ensure long-term availability and interoperability of data across organizations and programs.

3. Adopt and implement a standard software development methodology and set of approved tools and procedures for defining, modeling, designing, developing, testing and documenting new applications.

4. Maintain a documented Project Management Methodology for information technology projects, designed to meet the needs of the various state agencies and organizations and provide for required project oversight.

5. Require that all purchases of commodity hardware and software be centralized and conform to statewide hardware and software standards.

6. Implement an IT Architecture and Standards Review Board of business and IT leaders to continually review and refine state IT standards.

Strategy 7: Information Management

We will increase sharing of common information across programs and jurisdictions, ensure consistent and appropriate protection of personal information, and promote understandability of information to reduce burdens on citizens and improve the efficiency of government operations.

Context

Information is the raw material of decisions, the tool for accomplishing work, the product of business activities, a record of accomplishment and the means to achieving accountability in government. It is both a public asset and a very personal possession. Sound management of information demands a clear understanding of its purpose and underlying principles as well as supportive technology.

The information management strategy focuses on the following three areas:

> ▶ Availability of public information

Public confidence in government demands that information on government decisions, activities and performance be available, not only to directly affected parties but to all citizens, news media and organizations. It is equally important that the underlying data used by government to develop the information be shared, and the quality of that data be maintained.

> ▶ Protection of private information

Government collects or produces a great deal of personal and sensitive information. Agencies and employees have a legal and ethical responsibility to secure this information and control the uses to which it is put. Achieving a balance between the public's right to know and the need to protect private data is not a new challenge, but current technology adds complications.

> ▶ Understandability of all communications and public documents

As our society grows ever more diverse, so must our efforts increase to ensure clear, effective communication between government and citizens. Cultural differences, language proficiency, education level and mental and physical circumstances need to be taken into consideration.

Balancing the interplay of these three aspects requires skill, thought and understanding of the laws and best practices around information management. All government employees and citizens need to have better understanding of basic requirements for data practices, records retention and effective communications. This understanding is fundamental to improved compliance with the laws and greater efficiency of operations.

Information is the raw material of decisions, the tool for accomplishing work, the product of business activities, a record of accomplishment and the means to achieving accountability in government.

Objectives

1. Invest in improved training and communication about data practices laws and policies.

2. Review and clarify information management policies to reflect current circumstances.

3. Provide practical guidance to agencies for addressing data practices questions.

4. Advance effective communications and design practices to address the diversity in customers.

5. Require information sharing across applications and agencies to be managed as part of any business process design, systems development or program initiation.

6. Improve coordination between data practices and information security policy and operations in the areas of authentication, access and authorization.

Strategy 8: Resource Management

We will promote effective stewardship of the state's primary resources—people and money.

Context

Building and maintaining a stable and secure computing environment requires commitment of both large amounts of money and of significant numbers of highly skilled workers—and the obligation to obtain maximum value from the tax dollars provided by citizens.

Managing resources requires a thoughtful approach to identifying the outcomes to be achieved by the business process and the value that can be added by enabling technology. Instead of spending on technology, stakeholders should invest in key business processes supporting the agency mission.

The two resource areas affect this relationship in distinctly different ways.

Funding

A coherent, realistic funding process for IT life-cycle expenditure must provide for planning, acquisition, operational cost containment, reinvestment and replacement/migration. These elements comprise the Total Cost of Ownership (TCO).

Nearly two dozen states—Minnesota among them—have identified various strategies for tracking and creatively managing the full funding cycle for systems. Approaches include software lease-purchase, performance-based contracting, bonding, outsourcing, and benefits funding (paying suppliers out of BPR-caused savings, contingent on actually realizing those savings). No single approach is ideal for all situations, but together they represent a valuable range of options for systems modernization funding, and these options should be explored.

Workforce

State employees are the state's most valuable—and expensive—information assets. A generational handoff is coming as large numbers of key employees reach retirement age. These employees take with them a wealth of institutional history and practical experience that will be difficult to replace. Simply recruiting new employees will be difficult enough because of the financial challenges facing government and the competition for talent from the private sector.

The state must invest in staff to help them keep their skills current and their work challenging. Beyond skill identification, the state must improve its support for employee development, for recognizing and rewarding high-demand skills, if it is to compete with other areas of the public and private sector. Specialties like project management, reengineering, information security and emerging technologies are in high demand, and the state should

expand its efforts to attract, develop and retain employees, and to deploy them to greatest effect across agencies.

Initiatives

State employees are the state's most valuable— and expensive— information assets.

1. Expand and mandate the use of standards-based purchasing to keep procurement costs to a minimum and reduce life-cycle costs through cost-effective maintenance programs.

2. Provide adequate funding to modernize all state hardware and infrastructure.

3. Develop new approaches for funding to provide for life-cycle total cost of ownership for software development with a significant projected life span.

4. Expand the existing enterprise technology fund to provide initial seed capital.

5. Institute a program for ongoing, rigorous analysis of investments, values and business processes for both existing applications and for proposals for new development.

6. Create partnerships with educational institutions to pilot new technologies.

7. Reflect market conditions affecting competition for specialized skills in reengineering, security, project management and emerging technology.

8. Develop a "virtual consultation center" to enable knowledge gained through one agency's experience to be captured and shared across the enterprise.

Conclusion and next steps

The success of a strategic plan is best judged by its influence on operational decisions. Its purpose is to assist executive branch leaders and agency heads in setting priorities and defining future directions for technology, and to provide legislators with an anchor point for their deliberations.

This document captures the essence of the governor's direction, of the OET legislation and of the Transformation Roadmap outlined in the *Drive to Excellence* program.

On a daily basis, this plan will be used routinely in a number of ways:

▶ It will be a compass that the executive branch will follow in formulating agency business systems plans.

▶ It will be a guide to IT investment decisions in new systems development and procurement.

▶ It will guide governance and architectural decisions.

▶ It will be a reference point for evaluating and prioritizing legislative IT change requests.

▶ It will be a standard against which policy recommendations will be measured.

▶ It will be a tool to ensure alignment between business plans and planning for enabling technologies.

In years to come, this plan will be updated to reflect changing realities—technology developments, new business directions and changes in the roles and relationships of government and its customers. This will be an evolutionary process, though, and not a dramatic shift in direction or priorities.

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