VERMONT

STATE OF VERMONT
Information Technology Strategic Plan

CHARTING THE COURSE TOWARD

VERMONT STATE GOVERNMENT'S

INFORMATION TECHNOLOGY FUTURE

FY 2009 - 2013
14th Edition -- January 2008

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Message from the Chief Information Officer (CIO)

This document is the 14th edition of the State of Vermont Information Technology Five-Year Plan which is prepared pursuant to 3 V.S.A. 2222(a)(9). This plan is published by the Office of the Chief Information Officer with information submitted by every agency and department in state government. The plan submitted in 2006 was a vast improvement over previous plans and included detailed descriptions of numerous current and upcoming projects. This plan continues on the solid work described in last year's plan as well as outlining new projects that have emerged. Three themes connect the projects listed in this plan, enterprise vision, security focused and project oversight.

> **Enterprise Vision:** As the state invests in technology projects we must move beyond the "silo" nature of past projects and leverage similar needs across state government. Projects like the Web Portal and Sharepoint are taking an enterprise approach.

> **Security Focused:** We must layer security and privacy into all of our systems, new and old, to protect our citizens' information. This is being accomplished with strict policies, sound system management and assessments to ensure that gaps do not exist.

> **Project Oversight:** The value of quality project management across state government is being fulfilled. Project Management ensures that projects are well designed, business requirements are well defined and that projects are delivered on-time and on-budget.

Across the nation, as states face the realities of an aging workforce and as budget pressures increase, states are looking to the promise of information technology to deliver services more efficiently to citizens. But the challenges presented by information security and protecting citizen's privacy limit our ability to deliver on these promises. As the Chief Information Officer for the State of Vermont it is my job to bring these two diverse concepts together and deliver systems that meet our citizens' needs and protect all sensitive information. Governor Douglas often uses the phrase, "it isn't an either-or debate, Vermonters want both", and we are committed to bringing his vision to the state through information technology.

This plan presents the vision, goals and strategies for the State of Vermont to move forward together with information technology through the remainder of this decade.

I would like to thank the many contributors who helped develop this very important document that lays the foundation for Vermont's technology future.

EXECUTIVE SUMMARY

A compass helps guide us from one destination to another. In the same way, the State of Vermont's Five-Year Information Technology plan serves as a compass, as state government heads into a technologically more advanced future.

Vision
This trip begins with a vision. State government will identify business processes to determine which services can best be delivered with the help of technology to provide Vermonters with the most efficient and cost-effective services possible.

A Singular Focus
When it comes to technology, state government will think and act as one. It will have one driver: business processes will drive technology solutions. Most important, Vermont citizens are the sole reason state government uses technology. We will enhance delivery of services to Vermonters with technology when appropriate.

Challenges
A renewed focus and increased reliance on technology must meet a few challenges in the near-term future. Like most states, Vermont must do more with limited financial resources. Complicating the challenge, a large percentage of state workers are eligible to retire during the next decade. In the past, technology decisions within state government were decentralized, leading to potential duplication and waste. Also, many agencies and departments continue to maintain aging and obsolete systems and software.

A Guide to the Future
Vermonters want or demand higher-quality and faster services, streamlined processes and a less costly government. For state employees, this will mean increased job satisfaction due to focused training, less administrative, paper-intensive processes and an improved ability to serve the public well into the future.

Current Projects

Enterprise Web Portal	A project to coordinate all state web sites to ensure a common look, a common approach, an easy way for Vermonters to navigate multiple state web sites, and an effective way to manage Web based information and services.
VT DRIVES	A project to replace the Agency of Transportation/Department of Motor Vehicle (DMV) legacy system, streamline business processes, improve timeliness of data and update technology without lengthening the customer service wait time.
Vermont Pension Administration System (VPAS)	To replace the Office of the State Treasurer's 25-year-old legacy retirement systems with more efficient business processes that are supported by newer information technology.
Vermont's Health Care Reform Plan	A project to implement the Catamount Health Premium Assistance Program and other healthcare reform initiatives (VITL).
Enterprise Project Management Office	The office was established to ensure that project management is recognized as a professional discipline worthy of attention by business leaders and IT professionals throughout the state enterprise.
Enterprise Network Security	A project to proactively manage risk, monitor compliance and identify and mitigate evolving security threats. This project is intended to benefit all state government branches and partners as well as the citizens of the state.

Enterprise Geographic Information Technology	A project to find a cost-efficient way for the Vermont Center for Geographic Information to collaborate with other entities statewide to provide this information in an enterprise approach.
Shared Technology to Provide Geographic Information and Mapping	Shared Technology to Provide Geographic Information and Mapping. A shared application to provide a web based solution to easily access edit and report spatial data.
Upgrade Email Services	A project to create an effective and efficient enterprise-wide email environment for use by all state employees.
Wide-Area Network "Backbone" Upgrade	The Department of Information and Innovation initiated an upgrade to the network "backbone" in 2006. This project will continue into 2008.
Integrated Tax System (ITS) Project	A project to move five discrete tax applications currently housed on the DII mainframe into an integrated tax system (ITS) with a relational database.
Enterprise Content Management (ECM) and SharePoint	A networked service that allows for the sharing of current information between staff in several locations.
Real ID	Implementation of the REAL ID Act of 2005/Enhanced Drivers License
Centrex/Voice over IP (VoIP)	During much of 2008 many of the state office locations already served by fiber owned by Level (3) will be able to use that fiber to deliver Centrex Telephone and Voicemail services. Level (3) has also committed to increase the number of locations that have fiber during the first year of the Centrex contract. There are two distinct advantages to building out the fiber backbone. First, it creates the opportunity to migrate to a Voice Over Internet Protocol platform in the future. And second, it enhances the ability to migrate more data circuits to an improved Wide Area Network backbone. VoIP Call Center deployments will continue through 2008 within existing departments and discussions for the ability for call center agents to have the flexibility to work from multiple different locations depending on need is attracting new departments to at least research the platform.
Unemployment Insurance	The Department of Labor implemented Internet-based tools that allow customers to calculate taxes and input information while drastically reducing the costs of redundancy for both the department and employers.

Upcoming Large Projects:
Other information technology projects are in various stages of planning and implementation.

Coordinating Timekeeping and Payroll	A project to replace both a manually intensive paper process and an outdated payroll front-end system while ensuring the business continuity of related interfaces statewide.
Vermont Justice Information Sharing System	A project to choose an analysis tool to determine the information to be exchanged, design a system that will accommodate the requirements for justice information and create a mechanism for the monitoring, coordinating and approval of IT projects within Vermont's criminal justice agencies.

Charting a New Course
As Vermont faces numerous challenges over the next few years, it is our goal to make the promise of technology a reality. Technology solutions will result in greater security, privacy and convenience for Vermonters. Advanced technology and a highly trained State government workforce, when used with a common purpose and approach, will help provide Vermonters with world-class services in the most efficient way possible.

TABLE OF CONTENTS

INTRODUCTION

Charting Your Course Through this Strategic Plan

On the following pages, you will read about the State of Vermont's technology vision, its core principals regarding technology, its challenges and current and future projects.

We have written this plan in plain English, because understanding how technology can serve all Vermonters needn't be as complicated as technology itself. The world has changed, and technology is among the greatest drivers of this change.

It is our intent to show how continued deployment of technology, when used correctly, will help meet the state's needs today and well into the future. Around the world, technology has helped improve productivity, deliver services in a time-efficient manner and helped to save precious financial resources. We should expect no less from technology used by the State of Vermont.

The success of Vermont's information technology plan depends on many players. They include the Governor and the Legislature, who oversee technology's role in government and draft laws to ensure its proper use. They include agency and department executives, the state chief information officer, technology managers and the hard-working technology employees who must work together to help ensure success. And they include Vermonters – the ultimate customers – who will take advantage of advances made possible by technology. While each of these participants has different roles and responsibilities involving technology's future in the delivery of state services, collectively they are all responsible and ultimately accountable for the plan's success.

This document is not intended to provide a complete guide to technology developments in Vermont State Government. Instead this report provides detail of several projects that best represent the technology goals of the state. For further information about technology projects not detailed in this report please refer to the "Planned Information Technology Projects Detail (PlanIT)" report. You may find this online at:

dii.vermont.gov/Business_Users/Planning_and_Analysis/

VISION

Charting the Course for Technology's Future

The rapid pace of advancement in technology requires a well thought out vision for implementing technology. The State of Vermont's vision for this five year plan is as follows:

As technology continues to evolve, information technology staff throughout state government will remain aware of the latest developments in order to use technology to help serve all Vermonters. We will identify those business processes which can best be delivered with the help of technology. We will adopt a holistic "enterprise approach" to guide our IT planning. Based on an analysis of business processes, we will use technology to serve Vermonters in the most efficient and cost-effective way possible. We will work together across state government to implement technology that will help to improve delivery of services.

ONE!
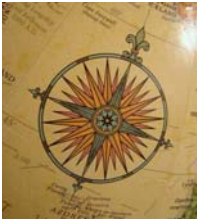
Charting the Course for Technology's Future

Our compass for tomorrow

A captain uses a compass to ensure that he remains on course. In the same way, we will use the following guiding principles to ensure that technology goals become reality.

❋ VERMONTERS ARE THE **ONE**. They are the citizen who renews a driver's license, the business owner who has questions about incorporation, the young mother who needs help to ensure her child's continued good health and the traveler who depends on fool-proof communications when a crisis occurs on our roads. They are our customers. They are Vermonters. Improving services for them is the reason why we use technology.

❋ WE WILL THINK AS **ONE**. By working collaboratively, agency executives and technology managers will work together to ensure that all technology solutions work as efficiently and effectively as possible for Vermonters both today and in the future.

❋ WE WILL ACT AS **ONE**. State government services are many and they are diverse. Regardless of service, the state's agencies and departments will work collaboratively and follow best practices - uniform technology practices and policies – to help ensure the quickest delivery of services in the most efficient and cost-effective way possible.

❋ WE WILL HAVE **ONE** DRIVER. Mission based business processes will drive technology issues, not vice-versa. We will employ technology solutions when appropriate. We will evaluate business processes and consider changes, when necessary, to take advantage of technological advances.

CHALLENGES

"The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy."
([Dr. Martin Luther King Jr.](#))

T he challenges we face involving technology may not be as daunting as those spoken about by Dr. King, but they remain challenges nevertheless. Today, the State of Vermont faces a number of challenges regarding technology:

✳ **Limited financial resources:** Like most states, Vermont must do more with limited financial resources. Technology is one way this can be accomplished by helping to provide improved services more efficiently.

✳ **Fewer human resources:** Efficiency will play a great role in the new future as a large percentage of state employees, including technology workers, are eligible for retirement within the next five to ten years. The state's readiness to adapt during the upcoming retirement bubble will rest squarely on its ability to use technology efficiently, while training employees – the state's most valuable resource – for potential cross-functional opportunities and higher level work.

✳ **Differing practices and policies:** To achieve the greatest efficiencies and cost-savings, state government must adopt a new mindset. In the past, technology decisions and purchases were decentralized. This created duplication and waste. By creating a uniform set of guidelines, policies and practices, we will eliminate duplication and waste while continuing to make decentralized decisions that are best for each agency and department.

✳ **Obsolete systems and software:** More than any other facet of business, technology becomes outmoded quickly. Although progress has been made in replacing obsolete technology, challenges remain. We will explore all solutions, including enhancements instead of outright replacements. New purchases will have built-in "scalability," meaning systems and software in one agency may be altered, or scaled, up or down to achieve similar technology goals in other departments, saving time and considerable dollars. As technology becomes dated, we have an opportunity to create an enterprise-wide architectural framework to ensure that all technology is the right size and fit for particular needs.

CURRENT PROJECTS

Enterprise Web Portal

Vermont's Gateway to the future

In May of 2006 the legislature created the Vermont Web Portal Board and authorized a self-funded, e-government environment. 2007 was the year that this system became reality. In October 2006 the state signed a contract with Vermont Information Consortium (VIC) to overhaul the state's Web infrastructure. Historically efforts within the state to use the Internet to communicate have been uncoordinated resulting in wasted resources. The contract with VIC represents a sea change for the state from a fragmented approach using various incompatible tools to manage Web content, sometimes even within the same office, to a single, dependable, system that is common for all state and quasi-state entities.

The Web Portal Project consists of two main tracks. The first is a Content Management System (CMS) for managing Web pages. The second focuses on the development of online services (such as online vehicle registration renewal or tax filings) that allow Vermont citizens and businesses to more easily interact with their government. The CMS was launched in the fall of 2007. This tool is currently running the new Vermont.gov portal and several other state Web sites. Many additional sites are under development and will launch in 2008. There is no additional cost to state agencies for development and hosting sites in this system. The CMS is provided as a service to state organizations as a part of the comprehensive Web Portal Contract.

Web applications or "Online Services" are developed by VIC for state agencies to streamline their internal processes and make interaction with state government easier for constituents. Some examples of these services are the DMV Express Service, the Attorney Licensing Service, CourtPay (paying district and judicial branch violations online), and the Vermont Homestead and Property Tax Adjustment Service. Several additional services are either in development or are planned for the coming year. These services are developed without the need for an initial investment by the state.

Under the self-funded model all funding for the project comes from building online services which have a financial component, and collecting a portal share for each transaction performed using that service. VIC's parent company, NIC, has effectively deployed a similar model in 20 other states and is a time tested success. Under this system the more services the state builds, the more investment can be made into development resources and infrastructure allowing further services to be developed more rapidly. This has already been the case in Vermont. The original business plan called for a staff of five people in 2007 at VIC but due to faster than expected returns an additional resource was added in August.

VT Driver & Registration Information & Verification Enterprise System - VT DRIVES

The Problem:

The Department of Motor Vehicles computer systems are on several platforms, with the core business systems over 30 years old. Processes are redundant, programs inflexible, data updates are not timely and federal and state requirements continue to grow and change. Law enforcement throughout the state and country rely on this information that is often not updated for several days after a transaction has occurred. Many other state agencies and data sharing partners also rely on this information. The IT support staff is stretched thin in supporting multiple computer platforms, programming languages and data structures. Data sharing is also difficult among the various applications within the department.

The Challenge:

To streamline the business processes, improve timeliness of data and update the technology to allow faster response to change, without lengthening the customer service wait time.

The Solution:

In 2003 the department initiated a process with a consultant to document in detail the current business practices and flows, the support organization and the existing computer systems supporting them. This voluminous set of documentation served as the basis for a Request for Information asking consulting companies with experience in Motor Vehicle applications to propose solutions to replace the existing business process flows and computer applications.

The department designated a team of employees skilled in various aspects of the business to work with the contractor for the duration of the project. State technical and business project mangers have also been named to ensure that resources are available when needed, that the state responses are timely, and that the contractor produces desired results on time and budget.

At this point the project team has completed the requirements definition process. High level designs have been completed for all functional areas. Detail designs and code have been completed for several of the business areas (customer, registration, title and driver license). Work is continuing on the detailed designs and code for the remaining functional areas. The point of sale (POS) system was identified as a sub-system to be implemented early and was deployed in May of 2007.

The IT Team has installed the infrastructure hardware and is working on establishing the user acceptance training (UAT) environment. The training is scheduled to run from late April through the end of August with a pilot planned for the September-October period. At this point, the plan is to implement the entire system in one phase in late 2007.

The resulting system will provide a complete picture of a citizen's vehicle and licensing interactions and assets quickly. Conducting multiple transactions will be easier and there will be far fewer errors in the information stored. The new system is being developed using current technology, platform and tools. Real time edits and updates and a relational database eliminate redundancy in business processes, and data stored. The design will allow many of the legislative changes to be made by non-programmers. The development staff will have only one set of development tools to use in supporting the system ongoing.

Vermont Pension Administration System (VPAS)
Re-tooling to keep a promise

The Problem:

The number of retirees is increasing, straining the retirement systems' ability to deal with the increased workload, which is estimated to grow at a rate of 12 to 15 percent over the next several years. As of June 30, 2007, just over 44,000 active, vested, and retired teachers, state, and municipal employees have retirement information in three different systems.

The Challenge:

To replace the Office of the State Treasurer's 25-year-old legacy retirement systems with more efficient business processes that are supported by newer information technology.

The Solution:

In 2003, a management consultant was retained to review the Retirement Division's current operations. Many of their recommendations were implemented during 2004 and 2005. A strong project team was assembled to implement the changes. Stakeholders from five state organizations have been brought into the process.

Implementation of new technology is well underway. Approximately two million member documents – almost 80 filing cabinets – were converted into images in an interim document management system. A vendor was selected and the contract was signed in March, 2006.

VPAS will be a stable, state-of-the-industry, fully integrated pension administration solution, including a tightly integrated imaging and electronic workflow capability. Web-enabled features will provide our customers greater access to services. To avoid a "big bang" approach in which the entire solution is implemented at once, VPAS will be implemented in five major phases over three years.

Initiation: The initial phase, completed in August, 2006, established the foundation for the project and for the office and contractor to work as a team. The project's scope was validated, a work plan was built, and processes to be used during the project were documented.

Infrastructure: This phase, completed in September, 2006 reviewed the Office's existing hardware, software, and networking infrastructure and identified, ordered, and installed the new infrastructure. VPAS has been able to use many of the State's enterprise solutions such as security, emergency, and data backup and recovery facilities resulting in a stronger solution at a significant savings to the project.

Imaging: Over two million images were moved from the interim imaging system into the new VPAS imaging solution. This phase was completed in December, 2006.

Membership: This phase involves the activities relating to a member prior to retirement, which includes employer reporting, annual statements, estimates and retirement planning, and purchases of service credit. The anticipated implementation is Fall 2008.

Benefit Payment: This phase deals with the activities of members once retired and includes pension payments, tax withholdings, and insurance deductions. It also includes a component for Web self-service which would allow members to access personal retirement information via secure Web pages. The anticipated implementation for this phase is January, 2009.

The Treasurer will work with our key business partners to bring this system online over the next two years. This will help the Treasurer to deliver pensions, related benefits and services to our members while meeting a growing demand for faster simpler access to complete and accurate information.

Vermont's Health Care Reform Plan

Increase access to affordable health insurance for all Vermonters

In 2006, Vermont Governor James Douglas signed into law Acts 190 and 191 (Acts Relating to Health Care Affordability for Vermonters) that provide the foundation for Vermont's Health Care Reform Plan. Act 191 assigns responsibility to the Secretary of Administration for coordination of health care system reform across the enterprise. In 2007, Act 71 was passed into law, further advancing the Health Care Reform Plan in the state. There are more than thirty-five separate initiatives contained in the legislation. Part of the five-year implementation of these initiatives will be several IT related activities.

The Challenge:

Provide timely, effective, information technology solutions and guidance for successful implementation of Act 191 and Act 71.

The Solution:

The Catamount Health Premium Assistance Program and the Employer Sponsored Insurance (ESI) Premium Assistance Program will both require revising existing information technology systems to accommodate new program requirements. These were completed and launched in October of 2007.

The Comprehensive Outreach and Enrollment Strategy will develop tools to assist with outreach and enrollment, including new web-based, consumer friendly, screening and application tools. The enrollment initiative is well underway and tools will be added in 2008 to increase the enrollment further.

Vermont Information Technology Leaders (VITL), a public-private partnership, has developed a statewide, integrated infrastructure (www.VITL.net) for the sharing of health information. In 2008, VITL will be working to implement interfaces with hospitals, practices, laboratories and pharmacies to enable the secure exchange of data.

Ongoing efforts that will be driven by this project include continuing to expand VITL capacity to develop statewide infrastructure, assuring IT components of Blueprint, Office of Vermont Health Access (OVHA) Global Clinical Record, and other health care IT projects are incorporated into and comply with Statewide Health Information Technology Plan (VITL) & DII Initiatives.

The Multi-payer Data Collection Project will provide health care providers, hospitals, insurers and the state with a comprehensive health information system. Modeled after programs in Maine and New Hampshire, Vermont's Department of Banking, Insurance, Securities and Health Care Administration (BISHCA) will design the health insurance claims data collection program and begin program implementation.

Enterprise Project Management Office

Supporting collaborative, disciplined, and repeatable IT Project Management

The Problem:

State business leaders and information technology (IT) professionals often wear many hats as they participate in strategy development and service delivery. In today's environment of level or declining resources, we are challenged with evolving/growing needs, and our resources are invariably focused by the tyranny of the urgent. This makes it difficult at best to ensure sound IT project management methodology is defined and followed. If we expect business and IT personnel to function also as project managers and business analysts, when they are not trained and do not have adequate time to perform those roles, we will consistently produce less than satisfactory results. Symptoms of mediocre business analysis and IT project management include incomplete business case and user requirement documentation, little or poor communication of risks and issues, decision makers acting on poor or wrong information, the wrong projects getting funded, the right projects going unfunded, etc.

The Challenge:

As we increase awareness of business analysis and project management as professional disciplines in the state enterprise, we need to create and seize opportunities to prove their value. Some examples of our early successes are reflected throughout this document, and we can agree similar opportunities are all around us. In the simplest terms, we need to recognize opportunity by increasing our capability to analyze the way things are (the current state) and manage change to a future state; applying technology appropriately along the way. By appropriate technology, we mean technology that supports, to the extent possible, a validated business requirement. This infers technology is driven by business need not the other way around. Do business requirements change? Do leadership priorities change? Of course they do, and we must be nimble enough to respond to the resulting change in business needs by following proven business analysis and IT project management best practice.

The Solution:

The Enterprise Project Management Office (EPMO), in its current configuration, celebrated its 15 month birthday in January, 2008. We were created as part of the Department of Information and Innovation (DII) to help the Chief Information Officer (CIO) and state business units increase the likelihood of IT project success. Our goals included selecting and implementing a proven IT project management methodology. This methodology, trademarked "Ten Step", is exactly what the name implies, i.e. a ten-step approach to disciplined project management. Our project managers adhere to this process as they manage enterprise IT projects, and they also mentor business units who need and want our help. We are collaborating with the [Summit Center for State Employee Development](#) to bring this training to a broader audience of state employees in 2008, and we are very excited about the possibilities. Our goals for business analysis are similar to those for project management, including the mentoring relationships and our work with the Summit Center. The enterprise business analyst assigned to the EPMO is involved in every project we touch. We follow the principles outlined in the Business Analysis Body of Knowledge (BABOK), and we are developing an enterprise business framework. One of the key lessons of good business analysis is maintaining accurate business documentation, and we are working hard to encourage improvement across state government in this area.

Enterprise Network Security

Mitigating risk through policy and technology

The Problem:

Increased use of online technology in state government also means increased risk. A way to defend against this risk and provide a secure online environment is through a robust network security strategy known as a self-defending network.

The Challenge:

Networking environments with a mixture of different or aging technologies, growing security concerns related to access, data protection, centralized policy management and the cost of network maintenance/management and security enforcement. The ability to proactively manage risk, monitor compliance and identify and mitigate evolving security threats.

The Solution:

The Department of Information & Innovation's goal is to deploy a set(s) of security capabilities that together will create a self-defending network that identifies attacks as they occur, generates alerts and then automatically responds. DII's self-defending network tools will be strategically designed, deployed, configured and integrated into the network infrastructure to minimize costly disruptions and support increased demands from changing business dynamics and newly occurring threats. This project is intended to benefit all state government branches and partners as well as the citizens of the state.

One solution, the Intrusion Detection and Intrusion Prevention Systems are network-based programs that trigger intrusion alarms to counter the new generation of complex threats. The programs use signatures to identify attacks, perform traffic normalization, anomaly detection, protocol compliance and denial of service protection.

Additionally, network security policy and standards development tools will be the basis for evaluating and selecting other security technologies such as routers, switches and firewalls. Policy and standards will address design, implementation, deployment, and management as well as risk and risk mitigation strategies to successfully protect state government's assets and interests.

The implementation of these components and an information technology contingency plan will support the high-performance, high-capacity interconnectivity and high-availability requirements of data center consolidation and application environments to support business continuity and security.

DII's network contingency plan will include a coordinated strategy involving plans, procedures and technical measures that will restore system access and operations if a disruption should occur. Potential remedial steps can include restoring IT operations at an alternate location, recovering IT operations using alternate equipment and performing some or all of the affected business processes manually over the short-term.

In addition DII's Enterprise Network Services unit is beginning implementation of a new remote connectivity solution that will enable secure access to the state's internal resources over the Internet. Virtual Private Network (VPN) is one component of the Department's long-term plan to improve access and increase security in this area.

Other security tools include filtering software, which assists with performance management by regulating Internet content available to state employees. Tools such as this help in keeping costly bandwidth abuse down, helps to protect users and IT systems in State Government from threats and keeps confidential information safe from cyber theft.

Shared Technology to Provide Geographic Information and Mapping

We are stronger as ONE

The Problem:

Geographic Information Systems are currently installed in many agencies that represent a considerable investment of resources. Each agency has specific data needs but have commonality in the base data.

The Challenge:

The goal is to enable agency access to common data and applications that could be shared with minimal duplication of effort. The solution would provide for displaying mapping information both internally and externally via web interface.

The Solution:

 Implement a shared application that would provide a web based solution for internal and external customers to easily access, edit and report spatial data. A collaborative approach was designed by three agencies and a pivotal piece of software was identified as a solution. Locate opportunities to share in hardware and software installations and to reduce duplicate software licensing.

History:

The Agency of Commerce and Community Development (ACCD) worked collaboratively with the Agency of Transportation (AOT) and Agency of Natural Resources (ANR) to identify an application and implement it to present information internally through specialized software and externally through the Geographic Information System web service. Sharing the information with other agencies is vital because the information assists agencies in making determinations for development, permitting and design and redesign state infrastructures. As a tool to access and report this information on the web, a team from ACCD, ANR, AOT and Vermont Center for Geographic Information (VCGI) selected GeoCortex by Latitude Geographics.

The four agencies shared in the investment, purchased the application, and took steps to make it possible for all state entities to use. The VCGI purchased the server platform for the application and the Department of Information and Innovation is hosting the server. There are a number of benefits that have been realized from this collaboration such as eliminating the purchase of individual licenses to access the GIS data, and simplifying the access to data for use in decision support systems.

One benefit to this collaboration has been the drive to create a master purchasing agreement with the state's main provider of GIS software tools which would allow GIS application licenses to be purchased at a reduced cost. In addition, there are benefits through this agreement that include reduced training and consulting costs for the state. All agencies and departments can take advantage of this centrally administered contract.

Enterprise Geographic Information Technology

Pursuing statewide collaboration in the use of geospatial technologies

The Problem:

How to optimize the state's geospatial information technology planning and resources through strategies that support the creative solutions of individual agencies and provide the best value for the citizens of Vermont.

The Challenge:

Establish and implement an enterprise geographic information technology strategic plan that can support the disparate geospatial technology needs of different agencies, their multiple business areas and their increasing service offerings.

The Solution:

Formally recognize the strategic and business planning efforts of the Enterprise GIS Task Force (EGT) and integrate those efforts into state policy channels. The EGT is composed of Information Technology managers and technicians from all of the state's major geospatial technology user agencies. Representatives from all agencies are invited to attend and participate. The EGT will be a resource for those state agencies and departments that will be implementing geospatial technologies in the future. The efforts of the EGT will be maintained through regular meetings and have its yearly responsibilities reviewed and updated by the Office of the CIO and the Board of Directors of the Vermont Center for Geographic Information (VCGI).

Utilize VCGI as the primary enabling organization for the creation of geospatial standards, data distribution, and many geospatial activities. VCGI was established to provide resources that could help enable broader and more comprehensive geospatial solutions in the state than those traditionally created by individual agencies. By virtue of the Center's requirement to focus solely on geospatial technology VCGI is uniquely positioned to provide critical geospatial-related resources and expertise to other state entities. Geospatial enterprise partners will maintain autonomy in decision making and budget application, and VCGI will be used as a supporting resource in geospatial resource development when possible.

Ensure that the vitality and success of the GIT Enterprise in Vermont is not dependent upon one organization, but rather the combined collaboration and creativity of all participating organizations. A networked environment of shared geospatial resources that may be utilized by all agencies will be established. The development of opportunities for shared data, resources and services for all partners is a fundamental priority. Advances in geospatial technology will be evaluated by the enterprise partners and considered within the context of the technology goals of the individual agencies as well as the enterprise.

Upgrade Email Services

The Problem:
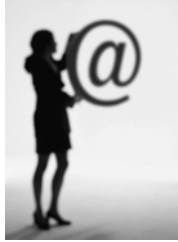
With the state well on the path to a single consolidated email platform the time has come to upgrade to the most recent version of software. For years, state agencies and departments had communicated electronically using different technical platforms supported by different architectures. Today all state offices utilize the same platform and within the next 24 months, we expect to have one single email system. The new system will provide needed features for privacy of our citizens and will have enhanced storage capacity. The Department of Information and Innovation (DII) has committed to manage a secure environment that offers value-added services to users. These services include document-management applications, Microsoft SharePoint, interactive messaging, and a statewide project management server.

The Challenge:

To create an effective and efficient enterprise-wide email environment for use by all state employees.

The Solution:

With this vision in mind, DII has started consolidating e-communication into one, common email platform.

"Project SEED", or the Single Enterprise Exchange Deployment project, kicked off in June of 2006. DII partnered with agencies and departments across the state in an effort to make this consolidation process successful. While some departments are yet to be finished, all have started their consolidation projects. We are anticipating all departments and agencies will be consolidated on one exchange environment by Spring of 2009.

Wide-Area Network "Backbone" Upgrade

The Problem:

While the Department of Information and Innovation (DII) works to assess network security needs, it also must enhance the physical components of the wide area network to ensure continued secure communications across state departments.

The Challenge:

Vermont has several unique challenges pertaining to geographic characteristics, rural diversity and limited service providers. Building a common network to service diverse department and agency missions where resources vary is itself a challenge. These challenges are quickly dissolving in efforts to create efficiencies in consolidation and collaboration. The migration from the old to the new design touches every branch, agency, and department in the state and a smooth migration is of utmost importance.

The Solution:

 To design and construct the wide area network (WAN) to support new enterprise wide applications such as hone solutions like Voice/Video over IP (VOIP). This new design also provides a level of redundancy and capability for business continuity never seen before in the state.

Rebuilding what can be described as the foundation under the house where you live while you keep the lights on is quite a task. All of this has to be accomplished in a secure environment Primary benefits of this design are that multiple agencies can share the connections (with data segregation) and share the switches, reducing overall capital expenditures, at the same time creating firewall security that uses existing hardware, which reduces the need for firewall purchases across the state.

In 2008 a centralized management system to begin combining all state wireless systems will be put into service. By the end of 2008 we are looking to support about a dozen wireless networks.   This process aims to resolve several issues that are commonly seen in wireless deployments: Lack of proper design leading to poor quality of service, improperly configured systems leading to huge security holes, and leveraging a single shared resource to properly manage a critical component of the State's network.

By the end of 2013 the WAN / LAN will likely include work supportive features like video to the desk, voice to the desk, intrusion detection/ prevention and security intertwined throughout all state agencies, bandwidth levels ten times faster to support enterprise applications and multiple fully redundant State data centers. DII is well on the way to ensuring we are in front of any operational needs curve in this next five year window.

Vermont Department of Tax (VDT) Integrated Tax System (ITS) Project

The Problem:

The Vermont Department of Taxes (VDT) is working to replace aging mainframe software applications with more modern, functionally-rich software.

The Challenge:

To move five discrete tax applications currently housed on the DII mainframe into an integrated tax system (ITS) with a relational database.

The Solution:

In 2006, VDT worked with a vendor, AdvanTech, to develop a strategy to implement an ITS. This system could be expanded in the future for enterprise wide use. This would allow VDT to eventually consolidate processing on the new application by migrating remaining processing from the mainframe, Advantage Revenue, and CACS applications.

In March of 2007 the Department issued an RFP to move five tax types – corporate income, business income, property transfer tax, fuel gross receipts and individual use – into a new ITS. Two vendors responded. The Department spent late spring and early summer reviewing the responses and viewing on-site demonstrations from the vendors. The Department selected a vendor – CGI, Inc. The project went through a successful independent review, and, in mid-December, 2007, a contract was signed and work has begun. The project is scheduled for completion in early 2009. Successful completion of this project will result in increased efficiency inputting and retrieving data and implementation of industry best-practice for business continuity capabilities. The ITS will give the VDT the opportunity to implement the Federal/State modernized e-file program for corporate and business income taxes and will alleviate some of the concerns resulting from the retirement of key mainframe developers. Of even more importance, it provides a future repository for the Department's other large tax types which currently reside on a ten-year old system. Department personnel will begin planning the scope and schedule for that transition.

Enterprise Content Management (ECM) and SharePoint

Technology helping Technology

The Problem:

Agencies and Departments across state government engage in different types of service delivery, but we are facing common communication and information sharing challenges. Legacy systems and processes often inhibit our ability to do the most effective work possible for the citizens of Vermont. These systems and the information contained in them are sometimes manual and paper-based, but today are likely to be digitally based and growing. [Unstructured data](), e.g. email, web pages, some word processed documents, etc. are proliferating across the State enterprise, and aggressive management and control of this growth is fundamental to our efficiency.

The Challenge:

Industry experts in this area, including Gartner and Accenture, tell us unstructured data accounts for 80% to 90% of a company's total data and is increasing exponentially. State government is not immune. We store our digital documentation in shared drives or on our local hard drives, and the organization of these drives range from poor to okay. Controlling versions of documents, minimizing duplication, and ensuring visibility of the right information, by the right people at the right time are goals of ECM. Sharing of current, accurate information across agencies and departments and with Vermont business and citizens is often difficult, yet extremely important. When it doesn't happen, negative effects range from mere inefficiency to hostility to safety and security issues.

The Solution:

These common issues can be significantly mitigated, when a sound records management program is supported by intelligent application of technologies such as Microsoft Office SharePoint Server (MOSS). Consequently, our efforts are two-fold. One, insure we maintain an adequate level of records management knowledge and resources so we have the best chance of using technology effectively, and two, implement the right combination of technologies. To that end, we have created a records task force, and a MOSS project team. We hope to be actively using MOSS by the fall of 2008. The MOSS suite of tools is integrated with the familiar MS Office suite and is designed to stabilize and enhance work flow around business documents. MOSS is advertised to add consistency to how people interact with electronic content, processes, and business data. Electronic content is defined as digital documents, including emails, generated and used during the course of our work. Well managed electronic content will boost employee productivity and customer satisfaction.

Real ID

The Department of Homeland Security (DHS) is establishing minimum standards for state-issued drivers' licenses and identification cards that federal agencies would accept for official purposes, in accordance with the REAL ID Act of 2005.

Effective May 11, 2008, federal agencies cannot accept drivers' licenses or identification cards for official purposes from states that have not been determined by DHS to be in compliance with the REAL ID Act unless a state has requested and obtained an extension of the compliance date from DHS. Effective December 31, 2009, any initial extension will terminate unless a state submits to DHS a request for an additional extension and certification that the state has achieved the benchmarks set forth. Effective May 11, 2011, drivers' licenses and identification cards will not be accepted from states that are not in full compliance with the provisions of REAL ID. Vermont has requested the initial extension.

A few key points:
- Photo licenses will be required; photos must be taken and stored for all applicants even if no license is issued.

- Verification of all source documents used to prove one's identity, including birth certificates, social security cards or any immigration-related document used to prove legal presence in the United States.

- Redesign of the driver's license document itself, to include the possible need to offer multiple license options – Real ID compliant, Non Real ID compliant and Enhanced Driver License (EDL).

- The capability to capture, store and electronically transfer the digital images of source documents.

- The ability to ensure the physical security of all locations where licenses and ID's are produced.

Implementation of these provisions will require a sizeable investment by the states, since the Act itself was passed without federal funding attached. Additionally, the verification procedures required will take not only money to develop the necessary systems, but will also affect the service provided to DMV's customers. In many cases individuals seeking a driver license or ID may not be able to complete that service on their initial trip to a Department of Motor Vehicle office.

The federal rules specifying all the details necessary to carry out the provisions of this Act have yet to be finalized. However, based on a preliminary review of the Act's general provisions, the Department has forecast a total cost in excess of $2 million to implement the new rules.

The final rules that will govern Real ID have just been published by the Department of Homeland Security (DHS) and we are still in the process of reviewing them. As a result the state, as yet, has no firm basis from which to begin work on a system to support the law.

Centrex/Voice over IP (VoIP)

A new way to communicate

As a result of a bid process for the State of Vermont's Centrex (voice telephone) and Voicemail services, DII has awarded the contract to Level (3). Along with some significant overall cost savings, the Level (3) contract provides for a significant investment by that company in the fiber network servicing State offices. Many state office locations already have fiber owned by Level (3) installed and we will be able to use the existing and new fiber to deliver Centrex voice services. At least in the near term, some state office locations will continue to be serviced without installation of fiber due to their geographic locations in relationship to existing fiber networks and limited number of Centrex lines. Over time, the goal is to have as many state office locations serviced by fiber optics as is practical and cost effective.
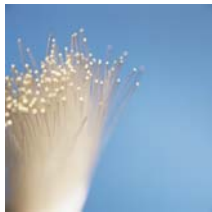
 There are two distinct advantages to building out the fiber backbone. First, it creates the opportunity to migrate to a Voice over Internet Protocol (VoIP) and Video over Internet Protocol platform in the future. It also enhances the ability to migrate more data circuits to an improved Wide Area Network. The delivery of a reliable VoIP phone service and Video over IP requires a wide area network equipped with Quality of Service (QoS) from endpoint to endpoint

and the equipment which delivers Power over Ethernet (PoE). QoS is essential because it allows for time-sensitive voice/video packets to be prioritized for delivery over the network. PoE allows the network switches to deliver the electrical requirements to VoIP telephones, even in the case of loss of street power to the building.

The state continues to proceed cautiously to ensure that we maintain current service levels without creating financial strain in equipment replacement and network requirements. In 2007, a new Enterprise Automatic Call Distribution (ACD) system used by SOV call centers was successfully deployed with the Departments of Motor Vehicles, Taxes and Labor. This system supports both voice and data needs and improves the ability of those departments to provide services to their various constituents. In 2008, additional departments plan to utilize the VoIP platform including Department of Information and Innovation, the Tax Department IT Help Desk and Treasurer's Office. Discussions with the Agency of Human Services to use this system to enable individuals with a disability to work from home are on the horizon. All of these projects are building the expertise needed within state government to support this technology in future years.

Unemployment Insurance

Reducing complexity for employers

The Problem:

The department of labor's unemployment insurance program has been in existence for over 70 years, and the way some tasks were performed- by paper entry- had not changed during that time.

The Challenge:

To find a way to reduce some time-intensive and costly tasks through the use of technology.

The Solution:

The department implemented internet-based tools that allow businesses to calculate taxes and input information while drastically reducing the cost of redundancy for both businesses and the department.

During the first quarter of 2007 the department launched its Internet Wage and Tax System. The system was designed specifically for employers with less than 250 employees. Federal and state law requires businesses to report employees and their wages to the department each quarter. Previously Vermont's 22,000 employers would send in paper reports containing information on 350,000 workers each quarter.

Employers can now establish an on-line account, simply modify the inputs of the previous quarter, and the system will calculate the required unemployment and health care contribution. The system has proven to provide more accurate information and has saved time and money for both the department and business. The new system combined with the electronic reporting of larger businesses means that 67 percent of employers now report electronically.

The department's goal is to move toward 100 percent electronic reporting. Currently, it is modifying the system to enable third party reporters, such as payroll services and banks, to fill reports for multiply accounts.

UPCOMING PROJECTS

The following section provides information about the most recent information technology initiatives. These projects all of which are based on the "Enterprise Approach" are typically in the planning or start-up phase of implementation, and are necessary for technology to contribute to the state's success in delivering services.

Coordinating Timekeeping and Payroll

Saving time and effort through technology

The Problem:

A need to replace both a manually intensive paper process and an outdated payroll front-end system while ensuring the business continuity of related interfaces statewide.

The Challenge:

As with any successful software deployment, the challenge is to install a solution that meets business requirements with minimal impact to the user community and its processes. Implementation without first understanding all systems effected statewide can have a significant impact on the project downstream. The initial scope analysis has thus far identified such challenges as:

- Replacement of all functions performed by the current payroll front end system, including time reporting and expense reimbursements.
- Alternative means of time entry for state employees not currently utilizing computers in their jobs.
- Accommodation for departments using time clocks and resource scheduling tools.
- Synchronizing two accounting structures that should be aligned in the overall enterprise resource planning (ERP) system.

The replacement of the State Transportation Accounting and Reporting System (STARS) with the PeopleSoft Project module. The STARS system manages accounting and billing of capital projects for the Agency of Transportation.

The Solution:

To develop and implement a thoroughly engineered plan that utilizes the right blend of PeopleSoft modules to meet the States objectives. The PeopleSoft Time and Labor module has been selected to replace the outdated payroll front-end system known as Paradox. The advantages of using this new software include, decrease in paper flow by eliminating or reducing paper timesheets, giving employees the ability to enter their own time, allowing configuration of rules, providing edits to reduce data entry errors, validating available leave accrual, and providing an additional level of miscellaneous reimbursement functionality.

To architect such a plan, a detailed Needs Assessment was conducted during the spring and summer months of 2007. The resulting report provided clear recommendations regarding which software should be added and/or upgraded to meet the States objectives. Using the Needs Assessment as a blueprint, the project team is developing an implementation plan and developing a final RFP to select a vender to implement the solution.

Vermont Justice Information Sharing System

Sharing justice information throughout the justice system

The Problem:

Vermont currently lacks the ability to electronically *query, push, pull, subscribe or publish* information between law enforcement, state's attorneys, courts, corrections, the office of the defender general and other justice agencies such as the Department of Motor Vehicles. A few segments of the justice system can electronically query information, but for the most part the justice system is paper driven. This manual system is inherently time consuming and prone to human error as the information is passed from agency to agency and system to system.

The Challenges:

- Developing and utilizing an analysis tool that will identify the points of information that need to be exchanged throughout the justice system.
- Developing a technological platform that will be scalable to accommodate the different functional (*query, push, pull, subscribe and publish*) requirements for the sharing of criminal justice information.
- Creating a mechanism for the monitoring, coordinating and approval of information technology projects within Vermont's criminal justice agencies.
- Sustaining funding for the development of and implementation of all components of the information sharing system.

The Solution:

With the help of the Vermont Justice Information Sharing System's (VJISS) steering committee a strategic plan needs to be development. There are two projects that need to be monitored and embraced as part of the bigger VJISS initiative. These began in 2007 and will continue in 2008 and are: the justice information exchange model analysis (JIEM) which identifies and describes the exchanges of information between Vermont justice agencies and the law enforcement data sharing initiative (LEDSI) provides for the querying of information between the disparate law enforcement computer aided dispatch and records management systems (CAD/RMS).

Other initiatives that need to be completed or monitored include, but are not limited to:

- The development of a comprehensive strategic plan laying out a path for the implementation of other VJISS functional requirements.
- Completion of the JIEM Analysis for the entire Criminal Justice System.
- Ensure that all projects meet the standards set out in the national Global Justice XML Data Model (GJXDM
- The new Court Case Management System (CMS).
- The upgrade of the electronic Vermont Criminal History Record System.
- Implementation of the VJISS Phase 2.

Once VJISS is implemented the vision of providing accurate, timely and complete information to the right justice professional, at the right time for the right reasons will be realized. Through an integrated justice system, that shares real time information, the safety, security and quality of life in Vermont will be enhanced.

APPENDIX

Statistical Information

Telecommunications and Information Technology Expenditures
Fiscal Year 2006 and 2007 Expenditures

Agency/Department	FY 2006	FY 2007
Agency of Transportation	$3,981,732	$10,173,490
Information & Innovation	$7,979,835	$8,440,071
Health Department	$1,489,250	$3,546,018
Public Safety	$2,588,061	$3,103,504
Children and Family Services	$1,370,644	$2,443,124
Enhanced 911 Board	$1,821,569	$1,995,743
Buildings & General Services	$1,428,961	$1,588,017
VT Department of Labor	$1,493,086	$1,467,648
Tax Department	$786,914	$1,341,722
Finance & Management	$1,777,960	$1,223,501
State Treasurer	$112,460	$924,718
Environmental Conservation	$504,074	$802,012
Legislative Council	$432,631	$517,493
Corrections	$608,113	$513,016
Human Resources	$277,321	$459,711
Judiciary	$337,364	$422,958
Human Services Central Office	$115,598	$416,318
Aging and Independent Living	$503,806	$357,444
Education	$458,297	$339,464
Natural Resources Central Office	$238,393	$254,000
Fish & Wildlife	$246,379	$245,811
Forest, Parks & Recreation	$258,817	$230,086
Office of VT Health Access	$420,019	$228,940
Economic Development	$139,633	$204,939
Criminal Justice Training Council	$43,131	$204,675
Banking Ins Sec Health Care Admin	$174,126	$177,030
Secretary of State	$414,859	$173,978
Military Department	$74,280	$169,162
State's Attorneys and Sheriffs	$263,910	$165,197
Office of the Attorney General	$121,119	$119,641
Liquor Control	$102,988	$113,547
Housing & Community Affairs	$34,885	$111,287
Libraries	$269,980	$105,114
Vermont Veterans' Home	$135,389	$81,331
Agriculture, Food & Markets	$244,238	$75,874
Office of the Defender General	$160,717	$62,054
VT Offender Work Program	$57,811	$53,160
Vermont Life	$25,937	$47,616
Natural Resources Board	$31,774	$46,865
Public Service Department	$290,778	$41,358
Commerce & Community Dev Admin	$32,966	$41,097
Tourism & Marketing	$43,140	$26,758
Vermont Lottery Commission	$37,319	$26,449
Center of Crime Victims' Services	$29,606	$26,150
Public Service Board	$25,395	$21,907

Agency/Department	FY 2006	FY 2007
Executive Office	$15,674	$17,636
Agency of Admin Secretary's Office	$6,028	$12,552
Auditor of Accounts	$28,468	$8,649
Joint Fiscal Office	$48,187	$8,061
Sergeant at Arms	$10,204	$6,780
Governor's Commission on Women	$5,386	$5,330
Lieutenant Governor	$4,195	$4,739
Human Rights Commission	-$5,235	$2,957
State Labor Relations Board	$4,871	$2,346
VOSHA Review Board	$725	$682
Vermont Racing Commission	$112	
Grand Total	$32,103,878	$43,199,732

Acknowledgement

The content of this information technology strategic plan is a credit to all of the dedicated and talented individuals who are focused on bringing e-government services to our fellow Vermonters. We would like to acknowledge the vision and leadership provided by the Governor through his Strategic Enterprise Initiative. We thank our executive leadership for joining us on this journey to identify technology opportunities that will benefit our citizens and help the state achieve its business objectives. We acknowledge our legislators who support and understand the need for building a strong technology base. Finally, we thank and acknowledge the many dedicated employees throughout state government who will work together to make our technology vision a reality.

Questions, Comments or Additional Copies

Should you have any questions or comments regarding this plan, or desire additional copies, or you would like a copy of the Planned Information Technology Project Detail Report (PlanIT Report).

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These reports may be found at the website listed below:
Website: dii.vermont.gov/Business_Users/Planning_and_Analysis/