

**Role of the CIO and Administration of Information Technology  
in Vermont State Government  
Report of the Vermont Business Roundtable  
February 25, 2002**

**Introduction**

The Vermont Business Roundtable has been concerned with the implementation of information technology in state government. To that end, over the past several months the Vermont Business Roundtable met with Kathleen C. Hoyt, Secretary of Administration, Catherine Benham, Principal Assistant, and Patricia Urban, Chief Information Officer (CIO), to discuss the role of the CIO and how best to administer state information technology. The discussions were informative and constructive in both understanding the current structure and implementation in state government and thinking about future directions.

This report outlines our findings and recommendations in three key areas:

- the organizational structure of the CIO and information technology in general
- recognition of current efforts
- identification of areas where further work is needed

**Organizational Structure**

The discussion around organizational structure covered several issues including:

1. the organization of state government and the best fit for the CIO
2. the role of the CIO as an operational or a policy position
3. management of information technology

In Vermont, the CIO reports to the Secretary of Administration. The Secretary of Administration is essentially the Chief Operating Officer and has the financial, budgetary and personnel departments also directly reporting to her. Given this organizational structure, it makes sense that the CIO should be in this peer group with other administrative operating officers in order to be most effective. Most states (27) have the CIO report directly to the Governor, but in many of these cases the other administrative operating officers also report to the Governor. In 22 other states, the CIO reports to a staff, legislative or cabinet officer. It is important to note the CIO's position in the hierarchy of state government does not necessarily indicate the breadth of the individual's authority.

***Finding 1:*** The CIO should continue to report to the Secretary of Administration. Given the current structure of state government with the Secretary of Administration acting as a chief operating officer, the CIO should have a place in the organization similar to other administrative officers. The CIO role must be appropriately positioned in the organization to provide leadership for the use of technology across all state agencies. The most significant benefits associated with technology investments will be a direct result of cross-agency communication and information sharing and from extending this capability to constituents. To ensure these benefits are achieved,

the CIO office must be positioned, funded and staffed to drive a cross-agency vision for the use of technology and the associated technology investments and business process change.

The Vermont Business Roundtable went on to review the operational and strategic responsibilities of the CIO and the appropriate balance between the two. Almost every CIO in the country has some if not total operational responsibility as well as strategic responsibility. Usually, the extent of the operational responsibility is linked to the organizational structure. In Vermont, the overall organizational structure for IT is decentralized; the IT staff reside in, are hired by and work for the agency which they support. Thus, our CIO has less direct hands-on operational responsibility than some other CIOs. Nonetheless she does have some operational responsibility (e.g., GOVNET), and especially in this decentralized environment, it is critical for the CIO to manage the infrastructure that ensures interoperability.

In terms of operational responsibility, the agencies are accountable to the CIO for the five-year plan and for review of RFPs and contracts for conformance to the five-year plan, and for adherence to state standards and policies. The CIO is often involved in contract negotiations and problem resolution with contractors to ensure compliance with state standards. The CIO also administers the independent review law for projects in excess of \$500,000.

In Vermont, the CIO also has responsibility for enterprise wide projects as well as projects that transcend agency boundaries. For example, the CIO has responsibility for infrastructure that supports all agencies, such as the state network, security, policies, standards, and the five-year plan. Special enterprise wide projects, such as the e-government project, are also the responsibility of the CIO. The Office also has a federally funded position which assumes responsibility for the coordination of the Integrated Criminal Justice Information System with participants from Courts, Public Safety, Corrections and States' Attorneys. This project will also serve as a pilot project for similar interagency activities.

The management of infrastructure by the CIO is critical to the successful management of security, data integrity and interoperability as well as enterprise wide applications such as the e-government project.

***Finding 2:*** The CIO must balance operational and strategic responsibilities. While it is important to create a vision for the future of IT in state government, the CIO also needs to maintain some operational responsibilities, even in a decentralized organization, in order to ensure interoperability.

The Vermont Business Roundtable then examined the current structure of the management of IT and various alternatives. IT was decentralized in the late 1980s because it didn't work in terms of agencies competing for strained resources. Furthermore, it is important for IT personnel to have knowledge of the department and its applications and to be available to the Secretary or Commissioner for prioritization of projects. For these reasons, the IT staff reside in, are hired by and work for the agency which they support.

On the other hand, the downside to a decentralized system is that it is harder to maintain interoperability across agencies/departments and reap the associated efficiencies. In addition,

many IT personnel are hired by Agency Managers who themselves are not skilled to recruit the right IT person for the right IT job. While it appears that the CIO is able to ensure interoperability and efficiencies, state government might be better served if she were able to provide more support on these issues. For example, the CIO currently provides oversight of IT projects during the contracting process. Once the contract is signed, the CIO is less involved in these projects. She does work on them when there is an issue, but she has limited resources (herself and one other person) to provide to many projects. Ideally, the CIO would be able to provide more and longer oversight, and assistance in problem resolution during implementation and maintenance phases.

***Finding 3:*** The best approach is to find a balance between centralized and decentralized management of IT that maximizes the benefits of both while minimizing their costs. The Roundtable believes that while the current decentralized structure has many benefits, more centralized support from the CIO would provide some additional benefits.

***Recommendation 1:*** Find a balanced management system that allows individual agencies/departments the ability to get their IT work prioritized and completed while keeping statewide interoperability and efficiencies a priority. One model that might be a good compromise is the “specialized analyst model” where the CIO has a staff person assigned to each agency and department in order to be more fully engaged in the planning as well as the operational activities of the unit. This would require more resources, but could yield enormous benefits. A second model would be similar to the State Attorney’s Organizational Structure where all the IT personnel are accountable to the CIO but working in the Agencies to which they are assigned. In this scenario, the CIO has direct oversight to the hiring, development, and motivation for the State’s 217 IT professionals, and IT becomes a support organization dedicated to meeting the IT needs of the State Agencies. In either model, “Active” Agency level leadership is required to establish a business vision and to drive the business process change necessary to achieve the return on investment associated with new technology. A strong collaborative relationship needs to be established between the CIO’s Office and the Agency leadership. Maintaining the balance between centralized and decentralized control is critical in developing productive relationships. Agency resources should focus on leveraging of the technology for business gain while centralized resources provide the base technology capability and “best practices” for managing technology investment projects.

In summary, a CIO Office must be positioned to perform both strategic and operational functions. Strong enterprise-wide technology leadership is essential to providing both the underlying technology infrastructure and the overarching architecture and standards that will enable seamless integration across agencies. This central organization must be funded and staffed with skilled IT Professionals who have the expertise to plan, design, engineer and operate a complex technology environment. The appropriate staffing for this organization can be achieved with a mix of state employees and outside consultants but must provide a consistent level of expertise and service.

## **Current Efforts/Progress**

In our discussions, the Vermont Business Roundtable came to understand the progress that the CIO has made and many of the current efforts underway. We have listed some of these efforts below and grouped them into operational and strategic categories.

Operational:

- Administration and management of independent review law
- Oversight and signoff of RFPs and contracts for IT projects
- Work with Purchasing on IT Procurement
- Enforcement of statewide security policies
- Administration of wireless communication policies and procedures

Strategic:

- Central leadership for cohesive planning and oversight of IT
- Chair of Information Resource Management Advisory Council (IRMAC) for establishment of statewide policies and procedures such as those governing statewide security, interoperability, and disaster recovery
- Management of communications infrastructure
- Creation of the five-year plan (per statute) (This has its deficiencies but it has at least forced some project planning for expenditures related to software and hardware acquisition and has resulted in equipment replacement plans for most agencies and departments)
- Enforcement of five-year plan

## **Areas for Further Work**

The Roundtable and the CIO both found areas that need further work. For each of these the Roundtable has a recommendation.

1. Find a better way to balance benefits of decentralization and centralization of IT services. (see ***Recommendation 1*** above)

2. Business process reengineering – This would require an agency or department to analyze business methods and process prior to implementing a new system which sometimes “automates” an inefficient or outmoded way of doing business. The results of the business process reengineering evaluation would then become input to the RFP. It may or may not be appropriate to have responsibility for this function reporting to the CIO, but it is an essential component of modernizing state government.

***Recommendation 2:*** The administration should support a business process reengineering function that should report to the Secretary of Administration.

3. Once a project is completed, it is always useful to assess whether the outcome/deliverables were as specified in the contract and if the cost benefit analysis was correct. Currently there is little work done at the completion of a project to see if it developed as anticipated. This is an important step to take in any organization; the lessons learned can be applied to future projects.

**Recommendation 3:** Do more outcomes related work to assess whether IT projects delivered as specified in the contract and as evaluated in the cost benefit analysis. Provide the assessment to affected departments and project leaders.

4. Strategic Planning - Vermont has a format for a five-year IT plan which is defined in 3 VSA section 2222. This is clearly a project plan and not a strategic plan. It has served the state well, however, in requiring agencies to plan equipment and software acquisitions and replacements on a cyclical basis such that most office computer equipment and software is less than three years old. Larger systems are on a ten-year cost benefit cycle. A strategic IT plan would be beneficial and would need to be linked to a strategic business plan for the department, the agency and the state as a whole.

Statutory language that is less restrictive and more constructive might be needed to encourage legislation to change the Five-Year Plan from just a project planning exercise to a strategic planning exercise.

**Recommendation 4:** The development of a Strategic IT Plan for the State of Vermont as an enterprise should be led by the CIO and be the result of a process that involves the active participation from Agency leadership. The planning process should be viewed as an instrument to develop a common understanding of enterprise-wide business opportunities, priorities, technology requirements and interdependencies. One option would be to change the statutory language for the Five-Year Plan as outlined below.

3 V.S.A § 2222 (a)(9): **(as it currently stands)**

Submit to the general assembly concurrent with the governor's annual budget request required under 32 V.S.A. § 306, a strategic plan for information technology which outlines the significant deviations from the previous year's information technology plan, and which details the plans for information technology activities of state government for the following fiscal year as well as the administration's financing recommendations for these activities. All such plans shall be reviewed and approved by the chief information officer prior to being included in the governor's annual budget request. The plan shall identify the proposed sources of funds for each project identified. The plan shall include, for any proposed new computer system or system upgrade with a cost in excess of \$150,000.00:...

**The Vermont Business Roundtable recommends that this section of the statute be changed to read as follows:**

3 V.S.A § 2222 (a)(9):

Submit to the general assembly concurrent with the governor's annual budget request required under 32 V.S.A. § 306, a strategic plan for information technology. ***This strategic plan shall include a vision for state government use of IT and a strategic plan for reaching those goals, a description of relevant information including developments within the state and general IT trends, and lay out the steps that need to be taken to implement this plan. This plan shall also outline the significant deviations from the previous year's information technology plan, and detail the plans for information technology activities*** of state government for the following fiscal year as well as the administration's financing recommendations for these activities. All such plans shall be reviewed and approved by the chief information officer prior to being included in the governor's annual budget request. The plan shall identify the proposed sources of funds for each project identified. The plan shall include, for any proposed new computer system or system upgrade with a cost in excess of \$150,000:...

5. As a policy person, the CIO needs to develop a vision and share it both within state government and with the rest of the population. People and businesses interact with state government on a daily basis and have a strong interest in understanding how government works. In addition, it is clear that Vermont state government has taken many more positive steps in IT than the Roundtable first thought. Clearly it would benefit everyone to understand projects undertaken, goals reached and the overall vision. Therefore, sharing of the vision and how every effort fits into that vision should be a priority.

***Recommendation 5:*** Provide more external communication about the state government IT vision, strategic plan and specific actions taken to business groups and other sectors as well as the general public.

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**CIO Sub-Committee of the Vermont Business Roundtable's Information Convergence Task Force: *Sub-Committee Chairman:*** Lawrence E. Sudbay, SymQuest Group, Inc.; ***Sub-Committee Members:*** Maxine N. Brandenburg, Vermont Business Roundtable; Carolyn Edwards, Competitive Computing; Paul LeBlanc, Marlboro College; Peter Martin, Mt. Mansfield Television Company, Inc.; V. Louise McCarren, Verizon – Vermont; William H. Schubart, Resolution, Inc.; Dawn Terrill, Hill Associates, Inc.

*The Vermont Business Roundtable is a non-profit, non-partisan organization of 110 chief executive officers representing geographic diversity and all major sectors of the Vermont economy. The Roundtable is committed to sustaining a sound economy and preserving Vermont's unique quality of life by studying and making recommendations on statewide public policy issues.*