Information Technology Office

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Main points

In 2002, the Government responded to the Report of the Commission of Inquiry into the drinking water problems in North Battleford. The Government announced that it would develop a system to share water quality information among government agencies, as well as with the public. The system would be called Saskatchewan Water Information Management, or SWIM.

The Government directed the Information Technology Office (ITO) and other partners with water-related responsibilities to work together to develop SWIM. The ITO's role was to ensure that SWIM met the needs of the partners and provided public access to water quality information.

We wanted to examine whether the ITO had adequate processes to coordinate the development of cross-government information systems. We focused on the ITO's processes to coordinate the development of SWIM. We found that, with the exceptions set out in the recommendations below, the ITO used adequate processes to coordinate the development of the system.

We recommend that in coordinating the development of future information systems, the ITO:

1.   Communicate to its partners a single cohesive plan that describes partners' responsibilities and accountability, detailed expectations for development, and detailed benefits that include measurable targets.

2.   Work with its partners to establish and maintain a coordination structure for the duration of a project. The coordination structure should include senior-level oversight with representation and commitment from partners and a project manager dedicated to the project.

The ITO and its partners told us that the system—which is nearing completion—will allow public access to water quality information. They told us they have not yet achieved the goal of a fully-integrated system that meets the needs of all the partners.

Introduction

The Information Technology Office (ITO) is responsible for establishing and coordinating government policies and programs in the area of information technology. The ITO's role is to work with government agencies to enhance public access, strengthen the Government's ability to undertake electronic service delivery, and enable electronic commerce.[1]

During our audit, the ITO was part of the Department of Industry and Resources for the purposes of *The Financial Administration Act, 1993*. However, the ITO functions as an independent agency. The ITO has its own reporting structure: the Chief Information and Services Officer of the ITO reports to the Minister Responsible for Information Technology, not the Minister of Industry and Resources. At April 2003, the ITO does not have legislation that defines its status and role. The ITO told us that it is working on legislation.

In this chapter, we report the results of our audit of the ITO's processes to coordinate the development of a system to share water quality information.

Background

The Government in its report *Partnership for Prosperity* envisioned improved communication with its citizens through information technology (IT). The Information Technology Office (ITO) in its strategy *E-government in Saskatchewan* supported this vision and stated that IT and information management are key tools to improve the efficiency of government.

In January 2002, the ITO developed a framework for improving the management of IT in the Government. The framework highlighted the importance of information management and acknowledged that effective communication among departments is difficult. The framework stated the importance of developing systems that improve inter-departmental information sharing and corporate knowledge management.

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[1] Saskatchewan Economic and Cooperative Development, *2001-2002 Annual Report.*

In April 2002, the Government announced its decision to develop an integrated system to share water quality information among government agencies, as well as with the public. This decision provided an opportunity for the ITO to work with partners to develop a shared system using good information management practices.

The need for integrated water quality information

The Saskatchewan Water Information Management project (SWIM) is part of the Government's response to the Report of the Commission of Inquiry into the drinking water problems in North Battleford. The Report recommended that the Government proceed with an "integrated provincial water quality database."[2] The Government announced that it would begin implementing the new system—SWIM—in the fiscal year 2002-03.

SWIM is intended to allow more effective sharing of water quality information. Government agencies should be able to use the information for making decisions (e.g., regulatory decisions such as issuing permits for waterworks). Also, SWIM would enable the public to directly access information about the quality of their water.

SWIM involves government agencies with water-related responsibilities. In this chapter, we refer to these agencies as "partners." These partners include the Department of Environment, the Department of Health, and the Saskatchewan Watershed Authority. Other agencies are also involved, both within the Government of Saskatchewan (such as Saskatchewan Water Corporation, the Department of Government Relations and Aboriginal Affairs, and the Department of Agriculture, Food and Rural Revitalization) and at other levels of government (such as municipalities and the federal Department of Environment). The ITO plays a key coordination role.

The role of the Information Technology Office

The ITO is involved in SWIM because it is responsible for "…providing Government-wide policy development and coordination in the management of information and technology."[3] In coordinating the

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[2] Report of the Commission of Inquiry into matters relating to the safety of the public drinking water in the City of North Battleford, Saskatchewan. March 28, 2002. Recommendation 13.
[3] Government of Saskatchewan, *Estimates for the fiscal year ending March 31, 2003.*

development of SWIM, the ITO's role is to ensure that SWIM meets the needs of the partners and provides public access to water quality information.

The Government intends that SWIM replace the current arrangement where agencies collect data from each other and store that data within their own systems.[4] Because the data is in separate systems, the partners do not know what information the others possess. The separate management of the data can hinder efficient access to the information by the partners and by the public. It can also result in unnecessary cost.

In Chapter 2 of our 2001 Fall Report – Volume 2, we discussed the risks involved in electronic service delivery for the Government and described practices for managing those risks. The Chapter noted the particular challenges posed by cross-agency electronic service delivery projects. SWIM is such a project.

The objective of our audit

The objective of our audit was to assess whether the Government of Saskatchewan's Information Technology Office (ITO) had adequate processes to coordinate the development of a system to share water quality information.

It was not our intent to evaluate the effectiveness of the resulting system. Rather, our purpose was to evaluate the ITO's processes to coordinate the development of cross-government information systems. We focused on processes the ITO used to coordinate the development of SWIM during the year ended March 31, 2003.

We followed the Standards for Assurance Engagements established by The Canadian Institute of Chartered Accountants.

Expectations for coordinating development

Criteria describe our expectations, the main elements we look for in our audit. The audit criteria summarized in the Exhibit are based upon

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[4] ITO presentation: "Saskatchewan Water Information Management: Protecting the health of our citizens", October 8, 2002.

international literature and the reports of other auditors. We confirmed the criteria for this audit with the ITO.

Exhibit—Audit criteria

> To coordinate the development of a system to share water quality information, the ITO's processes should:
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> ♦   Establish a plan to coordinate the development of the system
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> ♦   Set out the planned benefits of the system
>
> ♦   Confirm the accountability of partners
>
> ♦   Approve the system's design
>
> ♦   Monitor and communicate progress in developing the system

Conclusion and recommendations

Working with multiple agencies to develop shared systems is a difficult task. Where partners must work together, accountability and responsibility can be uncertain. It takes time and resources to sort out the responsibilities of partners.

The ITO faced these challenges in coordinating the development of SWIM. Moreover, these challenges were compounded by the tight timeline to complete the project. Overall, the ITO used adequate processes to coordinate development of the system except for the recommendations set out below.

We recommend that in coordinating development of future information systems, the ITO:

1.   Communicate to its partners a single cohesive plan that describes:

- **partners' responsibilities and accountability;**
- **detailed expectations for development; and**
- **detailed benefits that include measurable targets.**

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2. **Work with its partners to establish and maintain a coordination structure for the duration of a project. The coordination structure should include:**
   - **senior-level oversight with representation and commitment from partners; and**
   - **a project manager dedicated to the project.**

The project is nearing completion. SWIM will be based on a system in use in Alberta and Manitoba. The ITO and its partners have told us that SWIM will allow public access to water quality information. It will also meet the information needs of some of the partners. They told us that it will not currently achieve the goal of a fully-integrated system that meets the needs of all partners.

The adequacy of processes to coordinate system development

In this section, we describe our expectations (in italics) and key findings from our audit under each criterion.

Establish a plan to coordinate the development of the system

Our expectation was that the ITO would establish a plan to coordinate the development of the system. The ITO would adequately describe the purpose of the system and communicate expectations for development. It would ensure that resources were available for development of the system. It would identify risks to the successful development of the system and take steps to reduce key risks.

Numerous documents adequately described the purpose of the system. Cabinet mandated the goals and objectives of the system. The ITO also set out clear objectives for its information management framework.

There was no single cohesive plan to achieve the goals and objectives. Such a plan would have set out clear expectations for development, including milestones and deliverables. While milestones and deliverables existed for certain parts of the project, they did not exist for the entire project except at the most general level. Such a plan would have also described the partners' responsibilities and accountability. Nor did we find

a single planning document that clearly outlined the financing of the project. The absence of a single cohesive plan contributed to the partners not working to achieve the same goals.

The ITO and its partners identified risks to the development of the system. They explicitly considered the key risks and challenges, and worked together to develop strategies to reduce them.

Set out planned benefits of the system

Our expectation was that the ITO would set out the planned benefits of the system. The ITO would also describe how it would measure whether the planned benefits were achieved. We expected that the ITO would obtain the agreement of its partners on benefits and targets.

The ITO and its partners set out planned benefits for the system. For example, the planned benefits included improved consistency and accuracy of information and additional benefits, such as "inter-provincial data standards" for water quality, to enable joint water studies and processes.

The planned benefits did not include measurable targets except to have public information on water quality available by March 31, 2003. Nor did the ITO and its partners have processes to measure the achievement of intended benefits.

The benefits and targets were general in nature and arose from Cabinet's direction. We did not find evidence that the ITO took additional steps to obtain the agreement of its partners on more specific benefits and targets. More specific benefits and targets would have assisted the partners in ensuring their information sharing objectives were met.

Confirm accountability of partners

We expected that the ITO would confirm the accountability of the partners. To do this, the ITO would describe the partners' responsibilities and negotiate realistic performance expectations. The ITO would establish a coordination structure and communication network. It would secure a commitment for action by documenting the partners' acceptance

of responsibilities and by obtaining the support of related ministers and senior officials.

The ITO and its partners received overall direction from Cabinet to proceed with the project. While the ITO was to coordinate the development of SWIM, its partners were to take the lead in implementing the system.

The ITO faced challenges in coordinating the development of the system. When agencies work together, it must be clear who is responsible for what. However, accountability and responsibility were uncertain because of the general nature of the mandate. The tight timeline meant that the ITO and its partners did not have much time to sort out their respective responsibilities.

The ITO and its partners defined their respective responsibilities for some parts of the project, but not for others. Clearer accountability and responsibility, set out in an overall plan, would have aided the ITO in securing commitment for action by partners.

The coordination structure for the project was changing and intermittent. No one person filled the role of project manager. For a considerable period, there was no senior-level oversight committee. In addition, the primary steering committee for the project stopped meeting, although some working groups continued. The partners communicated through these working groups and through separate meetings with each other and with ITO.

Without clearer accountability and responsibility, and absent senior-level oversight, there was no effective way to settle differences and achieve a system that meets the needs of all partners.

Approve the system's design

We expected that the ITO would define the approval process for SWIM. The ITO would review the design and verify that the design would deliver expected performance. It would ensure that the results of the review were brought to the attention of all concerned.

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The ITO and its partners used varying approval processes at different points during the project. This was not the result of a formal plan, but rather because approval processes evolved as the project progressed.

The ITO, with its partners, defined approval processes for key parts of the project. For example, working groups that were made up of representatives of partners had some specific approval responsibilities. For other parts of the project, approval processes were not defined, but were informal.

There was no single review of the design of the system coordinated by the ITO and then communicated to its partners. Rather, informal reviews took place at various stages. These were communicated through e-mails, voicemails, and working group or committee notes.

The ITO was not able to use these reviews to verify that the selected design would deliver the expected performance—an integrated system that would meet the needs of all the partners and permit public access. As noted, the coordination structure and oversight were intermittent. A more consistent coordination structure and increased oversight could have provided better information and enabled the partners to discuss and settle differences. This would have helped the ITO to ensure that the system would meet the needs of all partners.

Monitor and communicate progress in developing the system

Our expectation was that the ITO would monitor and communicate progress in developing the system. It would assign responsibility for monitoring and communicating progress to ensure this was done. We expected that the ITO would use the information it gathered to evaluate the performance it had achieved with its partners in developing the system. It would then both report that performance and use the information to adjust its processes.

The ITO and its partners reviewed their performance in developing the system. This was done informally and not in response to any explicit assignment of responsibility. The ITO and its partners analyzed their performance, paying particular attention to achievement of their overall goal within a tight time frame.

The ITO and its partners used informal means to share information about the extent of progress they had achieved. They used this information to adjust their plan.

As noted, there was no senior group with oversight responsibility during important stages in the development of the system. Nor did the primary steering committee function throughout. Reporting did not take place in any coordinated way for a significant period of time. Effective oversight, made possible by consistent reporting of progress, could have assisted the ITO and its partners to make changes necessary to meet their plan.

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