



. Introduction

1.1 General

The Government of Canada has two major initiatives: Government On-line and Services Improvement that require departments and agencies to implement change.

Services Improvement Initiative wants organizations to become dynamic, flexible and forward looking and to prepare for the next new economy. By doing this Canada would become the world's best place to live and work because Canadians would create and use knowledge skillfully to improve all aspects of their life and work. NSERC has established its related goal through excellence in the natural sciences and engineering: by supporting excellence in research; by developing highly qualified people; by promoting research-based innovation; and, investing in people, discovery, and innovation through peer-reviewed competitions in appropriate programs.

The goal of Government Online is for Canada "to be known around the world as the government most connected to its citizens with Canadians able to access all government information and services on-line at the time and place of their choosing". This initiative is one of the core GOC agenda items for management change and to improve access to convenient and seamless service. Departments and agencies are to establish projects to: improve service to the client from a client perspective (more convenient or a measurable cost or time savings); to ensure or enhance the health, security and economic well being of Canadians; provide additional benefits, such as opportunities for potential integration with other services and partners and for re-use of applied technologies or business practices; and contribute to more cost effective and information and services delivery.

NSERC has been involved in eBusiness for the past three years. The focus was mostly on the use of common forms and their availability on the web site for use by researchers/students and peer reviewers. In December 1999 NSERC and SSHRC attempted to develop a joint project, with the specific goals of moving from eForms to eBusiness. In a Statement of Work dated December 15, 1999 the mandate of the project was "to improve how they meet corporate goals and objectives through the provision of electronic tools." The eBusiness project was to help develop and deliver such tools. The project was under the leadership of a project director and three project managers and under the governance of a joint SSHRC/NSERC/CASD Steering Committee. In October 2000 the two Councils re-organized the management of the project to provide more independence to each Council. During the ten months of joint project work NSERC continued to develop web tools for its community. With the establishment of its own eBusiness Project, the move from eForms to eBusiness started to materialize. This audit report relates specifically to that project.

1.2 NSERC eBusiness Project

NSERC provides funds to support research initiatives in natural science and technology that generate and use new knowledge to the benefit of Canadians and the Canadian economy. At the present time it is recognized that there is a need for quality research. NSERC plays a major role in making strategic investments in Canada's capability in natural science and technology research. NSERC has developed processes, to assist researchers in applying for funds, to conduct peer reviews of candidates and their applications, to make funding decisions, and to administer the post award activities. In order to ensure the research community focuses its efforts on research, NSERC wants to ensure its processes are as efficient and effective as possible and to minimize their impact on the community.

At a special Management Committee Meeting on November 6, 2000, an eBusiness strategy was endorsed that was intended to position the Council as a leader in the use of such tools, to bring innovative solutions in the delivery of its services, and to meet the federal Government On-line objectives.

The goals defined by NSERC Management targeted primary clients: researchers, students, university administrative offices, industry; public, and NSERC staff. The e-Business Project was to focus on these objectives:

1. Simplifying and improving the application, progress monitoring and reporting processes through the provision of flexible, easy-to-use, reliable, accessible tools to help in the



preparation of funding applications, their evaluation, in providing feedback to applicants, and in monitoring and reporting progress and results;

2. Streamlining the administration of awards through the provision of simple and secure tools to grantees and university offices, in order to exchange information with the Council;
3. Increasing the visibility and promotion of NSERC-sponsored research by strengthening communication activities and performance analysis; and
4. Improving internal operations through the review of current processes and the provision of electronic program-related administrative tools such as data capture, process automation, information management solutions, etc.

To ensure success, the Management Committee requested the investigation of similar systems/projects developed by similar organizations (e.g. NSF and FCAR) and the feasibility of developing partnerships with them. The strategy was to be implemented using a project-by-project approach including pilots. In addition the E-business solutions was take into account and balance the following factors:

Flexibility:	to accommodate the diverse and changing nature of NSERC's business and operational requirements as well as information needs of the community;
Simplicity:	to maximize ease of use, maintenance and improvements to the system;
Data integrity:	to improve operational efficiency and data sharing, and preserve accountability;
Data retrieval functionality:	to facilitate reporting and support decision-making at both operational and executive levels.

During the remainder of fiscal year 2000/01 the eBusiness Project was given the responsibility to propose a direction for future e-business activities that flowed from the mandate, strategic goals and objectives defined by NSERC Management. A private sector firm with experience in developing eBusiness strategies in similar organizations was hired to help develop: a confirmed NSERC eService delivery vision, eBusiness delivery model, eInfrastructure architecture, migration strategy, and eBusiness strategy plan. The final eBusiness Strategy Plan was to be generated in April and was to include costs, risk assessment, and a high level implementation plan.

2. Objectives and Scope

The objective of the audit was to identify factors that could affect the successful delivery of eBusiness solutions, on time, within budget, and that meet user requirements. The audit methodology used a risk framework to conduct the review. It is composed of four risk categories: Governance Risk, Business Risk, Project Risk, and, Technology Risk. Appendix A provides a detailed analysis and conclusions of the audit in a matrix format based on the risk categories.

The audit scope included a review of project activities as of April 15, 2001. It included a review of major project documentation and interviews with the project team, the steering committee, and a sample of users.

3. Overall Findings

The eBusiness project is very important to NSERC and will have a major impact on the organization, its clients and other stakeholders. It will be a multi-year project with a significant scope in a new, complex and quickly evolving field (eBusiness).



Since the special Management Committee Meeting on November 6, 2000, where an eBusiness strategy was endorsed, the project has made significant progress. Given the responsibility to propose a direction for future e-business activities, the project has used the services of a private sector firm in defining this direction. Significant effort and participation by various stakeholders has resulted in: a confirmed NSERC eService delivery vision, eBusiness delivery model, eInfrastructure architecture, migration strategy, and eBusiness strategy plan. At the time of the audit these documents were in draft and had not been approved by management. They form the basis for scope definition and the direction of the project at the high level.

Management support and leadership is critical to project success and is difficult to maintain for multi year projects. At this point in time it is evident that senior management supports the project and considers it to be one of the main priorities of the organization.

A governance structure is necessary to manage project scope and to ensure project success. A management structure has been put in place but it requires some strengthening. It needs to represent a broader range of stakeholders and the definition of roles and responsibilities needs more clarification. Processes such as communications and decision-making need to be more structured and rigorous in their application.

A project team has been established with dedicated resources from the business areas filling the positions of project director and project managers. There is strong support and confidence in the members of the project team from others in the organization. Several key roles that are normally part of such a project have yet to be defined and staffed. These are configuration management, change management, and quality assurance. Others such as communications specialist and ISD project manager need to be fulltime. Project administration role is not currently sufficient to support the project director.

Since the project is very large and complex it increases the requirement for rigorous, disciplined and structured project management and development processes. The project needs a "toolkit" that would be used to manage the project and sub-projects. A "toolkit" is a framework of project management techniques and tools. Requirements management is an example of a development process that needs to be rigorous. It is essential that the knowledgeable users at the appropriate level articulate the requirements. Unless there is a structured and rigorous process that records the requirements, it is easy to miss requirements, mis-interpret, or over-simplify complex business rules and processes. The requirements management is extremely complex for this project. There are both internal and external users and the possibility of various delivery modes.

Management of change is one of the most significant risks for this project. As indicated in the Delivery Model document, the following will require major change:

- Culture – behaviors, norms and values of the organization;
- Organization – business portfolios and organization structures and roles and responsibilities;
- Competency – skills, aptitudes and knowledge that drives the business;
- Process – activities, tasks, workflows, operating and management processes.

There is a risk that the eBusiness project will be impacted by or will impact on a number of internal and external initiatives. There is the risk of duplication of scope/effort, of initiatives heading in opposing directions, or of impacting on each other's schedule. The projects are interrelated with respect to subject matter, resources, clients and timing. There should be a sharing of information and coordination of effort at multiple levels (strategic management and project). Management processes at several levels need to be implemented to ensure the integration of the various initiatives.

The project investigated the possibility of different ways to develop and operate eSolutions. Four delivery modes have been identified: external delivery alone, home alone, external delivery together, and cooperative in-house. Partnerships with other research organizations are being considered. This adds a complexity to the



governance structure that has yet to be considered. There may be a requirement for an external committee and leadership from the senior levels when dealing with other organizations.

Assuming the project addresses the issues raised by the audit, there is a good possibility that the project will be a success. The strength and dedication of the project team and management support are key factors in this success.