NSERC CRSNG

Investing in people, discovery and innovation
Investir dans les gens, la découverte et l'innovation

Follow-up Report
Audit of e-Business Project
(initial audit - April 01)

Situation in September 2002

affaires e business

Prepared by Hallux Consulting Inc.

TABLE OF CONTENTS

1.0   INTRODUCTION

Natural Sciences and Engineering Research Council (NSERC), like most organizations, has been moving into eBusiness for the delivery of its programs and services. NSERC has established a multi year project (eBusiness Project) whose mandate is to implement the various eServices. The implementation of these services is one of NSERC's priorities.

The NSERC eBusiness Vision statement:

> NSERC will deliver a rich set of eServices to its communities of interest through a robust Internet portal that will provide for information sharing, collaboration, application processing and award administration.

During late fiscal year 2000/2001 and early 2001/2002 the eBusiness Project developed a strategic direction for future eBusiness activities that flowed from the mandate, strategic goals and objectives defined by NSERC Management.   The following documents were developed and approved as part of these activities: eService delivery vision; eBusiness delivery model; eInfrastructure architecture; migration strategy; and, eBusiness strategy plan. These documents provided a framework for the scope of the eBusiness project.

A System Under Development Audit of the project was carried out during the period March 1 to April 15, 2001.   At the time of the audit, the project team was being staffed and project processes were being put in place. Also, most of the above mentioned documents were drafts and had yet to be approved. The audit covered the following categories of risk: Governance; Business; Project; and, Technology. The audit recommendations were mainly in the governance and project management areas.

During fiscal year 2001/2002 the project governance was established including roles and responsibilities of committees, project team members and stakeholders.   The project team members were selected with representation from the major program and administrative areas. The corporate vision, key drivers and overall direction for eBusiness was established and approved. Specific projects (eSubmission, secure Site Expansion, Collaboration tools for Committees and Common CV) were approved and initiated. A survey of the user community was conducted to identify their priorities with respect to eBusiness solutions. A business transformation exercise was conducted and a preliminary performance analysis framework developed. The process for collecting user requirements was established and the process initiated. An on-going relationship was established with the Common CV project and NSERC representatives participated in the development of the curriculum vitae (CV). The development of an IT implementation plan (referred to as the Project Blueprint) was initiated. It was to include the NSERC business model; information architecture; and, application architecture. The purpose was to define NSERC's three-year roadmap for deployment of IT internet services.

A follow-up audit was conducted during the period July 7 to September 20, 2002. The follow-up audit reviewed the same categories of risk and the implementation of recommendations from the previous audit. This report presents the results of the follow-up audit.

It is anticipated that a follow-up audit will be done annually on this project.

2.0   OBJECTIVES AND SCOPE

There were two objectives for the follow-up audit:

!   ensure that recommendations made on the last system under development audit have been implemented; and,

!   identify new and existing 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 B 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 September 20, 2002. It included a high level review of major project documentation and interviews with the project team and the steering committee.

3.0 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 is a multi-year project with a significant scope in a new, complex and quickly evolving field (eBusiness).

Governance Risk

A strong and clearly identified governance structure is a critical success factor for scope management, keeping a project in sync with the strategic directions of the organization and other projects, and ensuring participation and support by all stakeholders over the full duration of the project. It helps to ensure project success: on time; within budget; and, a solution that meets user requirements. The eBusiness governance structure has been strengthened since the last audit. Roles and responsibilities have been clarified. The project's position as a business driven (not IT) has been improved by having the Project Director report to the newly created Executive Vice President and by having the Executive VP chair the Steering Committee. In addition, the new Executive VP's role includes ensuring strong linkages and communication across the organization and the various initiatives/projects.

There is an on-going 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). The new NSERC management structure was designed to address issues such as the integration of the various initiatives.

One concern that was repeatedly mentioned during the audit: the role of the Operations Committee in the successful implementation of change across the organization including business policies, processes, procedures, and job functions. The committee represents all program areas and its membership consists of very experienced individuals who manage the program areas that will be impacted significantly by the implementation of eSolutions. This is seen as a risk because these people are extremely busy and a question of whether there is support for change.

There are inherent risks of scope creep (increase or decrease) for large complex multi year projects. The eBusiness Project is at a stage in its lifecycle where scope creep could become a problem. Disciplined scope management ensures a project has the ability to adapt to internal and external changes. The eBusiness Project needs to continue to be disciplined in its scope management.

Business Risk

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.

The previous audit recommended that a resource with management of change expertise and experience be assigned to the project. This did not occur. As a project moves towards full implementation, the management of change becomes more critical. Projects that do not address this area often have problems as serious as users not accepting and/or refusing to use the new solutions.

The eBusiness project has a formal process for requirements management. The risk of not successfully identifying requirements and translating them into eSolutions is high. There are extenuating factors to complicate the process: there are users both internal and external to NSERC; the complexity of an overall project with many sub-projects; and the need for various delivery modes. Requirements management process must ensure that knowledgeable users at the appropriate level articulate the requirements. During the audit, this concern was identified.

Project Risk

The most serious area of risk is the lack of a detailed project plan with a critical path identified. The detailed plan must include user activities and schedule. The plan must be monitored and updated on an on-going basis. It facilitates the identification of workload issues, scheduling problems, missed deadlines and deliverables and the impact on other project activities.

The project team has been staffed with dedicated resources from the business areas, administration services and a community member (university). At the time of the previous audit there was strong support and confidence in the members of the project team from others in the organization. This support and confidence has weakened. There is a perception that the project team members are no longer knowledgeable about the program areas.   It is thought that the programs are in a state of constant flux so it is not possible to work outside the program area and still maintain current knowledge. This perception could impact the acceptance and implementation of eSolutions and the implementation of change.

The initial audit recommended number of positions be created and staffed full-time. With the exception of the management of change and a project administration role all have been defined and staffed. During the follow-up audit the project administration position was defined and staffed. The organization and management of project documentation will be key activity as well. In addition the position must support the

project director in the development and on-going monitoring and updating of a detailed project plan.

Technical Risk

Informatics readiness is an issue and the risk will increase as the project moves towards full implementation. The organization is intending to use internal resources for on-going support. This will require proactive staff training and skills development. This should be addressed as part of the management of change process. Risk can be reduced if the management of change processes are developed and implemented.

Conclusion

In general the recommendations from the previous audit have been implemented successfully. Appendix A provides a status of all the recommendations.

Assuming the project addresses the issues raised by the follow-up 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. The project is at a stage in its lifecycle where the risks in areas such as scope management and management of change can increase quickly and detrimentally.

APPENDIX A: FOLLOW-UP ON RECOMMENDATIONS

The following recommendations were made during the first the system under development audit of the eBusiness Project. The recommendations as stated in the Audit Report (dated in August 2001) are in italics. The status of their implementation is indicated below.

1.0 GOVERNANCE RISK

1.1 Senior Management Control Framework

It is recommended that the governance structure be reviewed, with the aim of strengthening the framework, including:
- *project organization - key roles, responsibilities, resources*
- *monitoring - change management, scope management*
- *communication - linkages among initiatives.*

Status: Completed

It is recommended that the governance structure be documented in the Project Charter and that the Project Charter be approved by the Steering Committee.

Status: The governance structure has been documented. Other elements of a Charter (as defined in the Treasury Board Enhanced Management Framework) have been completed but have not been combined into one document that represents the eBusiness Project Charter. Individual projects (sub) have or are in the process of developing an individual project charter.

1.2 Change/Scope Management

It is recommended that the Project Director ensure project scope management is in place, and includes:
- *scope definition and approval for the eBusiness project*
- *Communication and coordination between the eBusiness project and other key initiatives, and within management.*

Status: Completed

It is recommended that the Management Committee and the Operations Committee establish an integrated process for high-level monitoring of key strategic and tactical initiatives.

> **Status:** Completed

1.3   Investment Management

No recommendation at this time. Audit monitoring of business case progression suggested.

> **Status:** Reviewed during follow-up audit.

2.0   Business Risk

2.1   Requirements Management

It is recommended that the Project Director - in collaboration with the Director, ISD - ensure a formal requirements management process is developed and implemented, and that the requirements management process be integrated into the development methodology.

> **Status:**Completed

2.2   Solution Design

It is recommended that the process for selection of the solution delivery mode(s) be independently reviewed at the appropriate time.

> **Status:** Completed

2.3   Management of Change

It is recommended that the project secure a resource with extensive expertise and experience in the management of change to develop a change management strategy and plan.

> **Status:** Not completed. Project Director made a request to the Steering Committee but it was not approved since the Committee saw change management as being an important responsibility for all divisions (i.e. not a central role). Project used a change management specialist for business transformation study.

3.0 PROJECT RISK

3.1 Organization and Staffing

It is recommended that the DG CASD ensure:
- *ISD project manager is fulltime and reports directly to Project Director;*
- *Communications resource is assigned fulltime to project;*
- *Project administration role is defined and staffed;*

Key roles of configuration management, change management and quality assurance are defined and staffed.

> **Status:** ISD project manager is fulltime and reports to ISD Director. All parties involved (Steering Committee, ISD and the eBusiness Team) feel the reporting relationship is working.
> Communications resource has been assigned fulltime.
> Project Administration role defined and staffed (during period of audit).
> Quality assurance group in ISD is reviewing deliverables.
> Configuration management role of project deliverables is part of project administration role and position has been staffed.
> Change management – see status of recommendation 2.3

3.2 Control Process

It is recommended that the PD acquire a "toolkit" to be used to manage the overall project and sub projects.

> **Status:** Completed

3.3 Development Process

It is recommended that the Project Director ensure a development methodology is selected and followed.

> **Status:** Completed

4.0 TECHNICAL RISK

4.1 Informatics Readiness

See recommendation for change management (section 2.3)

It is recommended that the Director of ISD implement configuration and release management processes.

Status: ISD is working on its processes.

4.2   Infrastructure

No recommendation required.

APPENDIX B: RISK ASSESSMENT MATRIX

Introduction

The results of the risk assessment are presented on the following pages in the format of a risk matrix. These results are a snapshot as of September 20, 2002. The review took place from July 1 to September 20, 2002 and considers that the situation further described in the matrix will continue to evolve rapidly. The focus of the follow-up audit was on the implementation of recommendations identified in the previous system under development audit that took place between March 1 and April 15, 2001.

The purpose of the matrix is to identify factors that could affect the successful delivery of eBusiness solutions, on time, within budget, and that meet user requirements. The Risk Framework used to conduct the review is composed of four risk categories: Governance Risk; Business Risk; Project Risk; and, Technology Risk. Each category of risk has been organized into four columns describing: the related project activity; the review conclusions and assessment of risk, level of risk, and either an indication that no recommendations are required, or suggestions & recommendations for those areas where improvement would reduce the risk to an acceptable level.

The risk assessment describes the nature of the threat, the likelihood of it occurring, and the consequences of that threat. The risk assessment is based on the experience of the reviewer. The difference between projects fostered by unique business problems for which a solution is being sought, different business and project organizational approaches, personal project management styles, and different project control and system development methodologies, works against the applicability of a statistically derived assessment methodology. In this review, the following definitions are used:

Low Risk   Mitigation of the inherent risk either through a combination of significant project management measures or environmental influences. For example, Project Risk is reduced through the combined application of a recognized methodology, a quality assurance regime, and an experienced team familiar with the business and technology.

Medium Risk   Given that inherent risk is present, the project is taking adequate precautions to manage that risk and no unusual environmental influences are present.

High Risk   Compounding the inherent risk with either the absence of adequate precautions or the presence of unusual environmental influences. For example, Business Risk would be greater due to the absence of a documented comprehensive control framework, in the case of a mission critical financial system. Technical Risk would increase with the use of technology with which the organization is not familiar with, or dependence on unreleased versions of vendor software for a promised infrastructure.

Risk Assessment Structure

The risk assessment and the resulting matrix report adhere to the following Risk Framework:

Governance Risk

- Senior Management Control Framework – the relationship of the eBusiness activities to organizational strategy, assignment of responsibility, management structure and communications.

- Change/Scope Management – the ability of the eBusiness initiative to adapt to changing internal and external conditions.

- Investment Management – the process of resourcing that ensures anticipated benefits will be delivered.

Business Risk

- Business Requirements Management – the specification and management of business requirements related to eBusiness processes under consideration.

- Solution Design – the process to translate the business requirements into eBusiness solutions.

- Management of Change – the impact of the eBusiness activities on major business processes, and the organization's ability to deal with change.

Project Risk

- Organization and Staffing – the adequacy of roles, responsibilities and resourcing attributed to the effort.

- eBusiness Process – the existence of a formal process definition, and the degree to which that process is being followed by all participants to the eBusiness activity of NSERC.

- Project Control – evidence that planning and scheduling methodology was used addressing critical path management, risk mitigation, and critical issues identification and resolution.

Technology Risk

- Informatics Readiness – the readiness of the organization to deal with changes coming about from the implementation of eBusiness system solutions.

- Infrastructure – the degree of project conformity to the organizations technical standards/methods and technology environment, and the impact the project will have on this infrastructure.

Within each risk category and sub-category, there are numerous individual measures that are recorded in the following matrix. As some measures are not unique to an individual category, some apparent duplication is intentionally included for readability.

1.0   Governance Risk

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
1.1 Senior Management Control Framework			

NSERC management has established an internal control framework that includes a multi-level committee structure with roles and responsibilities. eBusiness is dealt with through this structure by delegation to specific committees as described below.
 	
Management Committee
  I.   Chaired by President, membership includes Vice Presidents and Directors General
  II.   Allocated funds, resources & policy framework
 	
Steering Committee for project – new format and some change in membership as result of NSERC re-organization
  • Chaired by Executive VP, members include: VPs of RPPD & RGSD; DG of CASD; and, Directors of ISD, Network Centres of Excellence, and Communications
  • Ensures project is consistent with Council's objectives
  • Approves scope, goals and objectives
  • Meets monthly – less frequently during summer months
  • Project Director/Team reports to Committee
 	
Operations Committee is a larger forum, involving Directors and others who report to the Management Committee.
  • Decisions made are operational in nature.
  • Members have significant business expertise and organization knowledge
  • Roles & responsibilities with respect to eBusiness project.
    – Group is key for business related decisions/policies and for successful change management and implementation
    – Concern voiced about level of involvement
  • Have had presentations and discussions about eBusiness
  • Project will result in changes to their programs
	At this point in time senior management continues to support the project and sees it as one of NSERC's priorities. The President has demonstrated his support through attendance at various project sessions. The governance structure has been strengthened since the last audit. Roles and responsibilities have been clarified. The project's position as a business driven (not IT) has been improved by having the Project Director report to the newly created Executive VP and by having the Executive VP chair the Steering Committee. The new Executive VP's role includes ensuring strong linkages and communication across the organization and the various initiatives/projects.
	
	A strong and clearly identified governance structure is a critical success factor for scope management, keeping the project in sync with the strategic directions of the organization and other projects, and ensuring participation and support by all stakeholders over the full duration of the project. NSERC is aware of this requirement and is ensuring there is a strong governance structure that evolves to meet new challenges.
	
	One area of concern that was repeated in many interviews was the importance of the role of the Operations Committee in the successful implementation of change across the organization. This includes business policies, processes, procedures, and job functions.
	
	Risk is medium.
		M	**Recommendation:**
			There is no recommendation at this time. However, the Steering Committee should monitor the role, responsibilities and commitment of the Operations Committee in the implementation of change.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
Project Director reports functionally to new Executive VP Some perception still that it is a technology not business project. President continues to champion the project.			

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

1.2 Change/Scope Management

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

Scope Management
 	
General scope was defined as part of Accenture work.
• Deliverables included: Integrated eBusiness Strategy; Delivery Model; Migration Strategy; IM/IT Assessment; eInfrastructure Design
 	
eBusiness Project received approval for year 1 project plan and budget (included eSubmission, secure site expansion, collaboration tools for committees, common CV)
• EBusiness project consists of (sub) projects (eg. FDSR).
• Each (sub) project's scope is defined in its project charter
 	
Steering Committee members indicated that the scope of eBusiness is clearly defined and priorities established
• Feel they are getting adequate information at meetings
• Anticipate scope management will be difficult but doable
 	
Project Director has overall responsibility for scope management and seeking approval for changes
 	
Other key projects/initiatives both internal and external
• External – Government on-line, Services Improvement Initiative
   – TBS will require Departments/Agencies to report on progress against the TBS objectives.
   – Joint external initiatives with other granting/funding agencies – common CV
• Internal initiatives: lightening the load, program consolidation, peer review processes, web re-design, family album, information management and records management
	The management framework has been put in place to manage project scope. This includes any changes as the project evolves – time, budget and functionality.
	
	The deliverables generated by Accenture are defining the high level scope for the project. The related documentation demonstrates how complex and large the project will be and how difficult it will be to manage the scope (functionality, budget, and schedule).
	
	The Steering Committee has approved the scope of the project.
	
	There are inherent risks of scope creep (increase or decrease) for large complex multi year projects. Disciplined scope management ensures a project has the ability to adapt to internal and external changes that always occur for multi year projects. The eBusiness Project needs to continue to be disciplined in its scope management.
	
	Risk is medium/high
	
	There is a risk that the eBusiness project will be impacted or will impact on a number of internal and external initiatives. There is a risk of duplication of scope/effort or of initiatives heading in opposing directions or of impacting on each other's schedule. The projects are interrelated with respect to subject matter, resources, and timing so need to be monitored at a higher level. The initiatives in several cases will interface the clients of NSERC so a coordinated effort is necessary to minimize
		M/H
		
		M/H
			Recommendations:
			
			No recommendation at this time. It is important that scope management be continuously monitored by the Steering Committee as well as the integration of other internal/external projects/initiatives.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

– Initiatives at varying stages in their development – Initiatives have not all defined their scope and management framework – Accountability assigned to several individuals in various parts of organization • Various levels of integration with eBusiness Project required. • Could impact on each other and directions taken. • It was pointed out that there is a common thread of subject matter and resources involved in the various initiatives. • There is no formal framework for overall managing the initiatives. New committee established: On-Line Communications Forum • Not a decision forum but an information exchange • Focus on ensuing communication among the various internal projects/initiatives and the various areas of the organization Potentially many services will be built and delivered in partnership with other research agencies. • Governance of partnerships is being addressed for common CV • May need some variation in the structures depending on the partnership environments	the burden and duplication. The initiatives should share information. The creation of the Executive VP position and the On-line Communication Forum are specifically designed to address cross program and cross organization issues. These are recent events so it is not possible to determine the effectiveness of these changes. **Medium/high risk of initiatives impacted each other negatively.**		

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
1.3 Investment Management			

Investment management is a process of resourcing that ensures anticipated benefits are delivered. The eBusiness project is being described as the means to improve the efficiency and effectiveness of the business processes at NSERC.
 	
Benefits definition
• Usually defined in the project business case/charter (assuming the TBS Enhanced Management Framework Charter outline is used as a guide)
• Business case/charter not yet finalized for overall eBusiness project nor for the approved projects
• eMission statement – anticipated general benefits
  – To transform its internal processes
  – To optimize its use of information technologies
  – To strengthen its information and knowledge management services and services capabilities
  – To develop a broad range of easy-to–use and value-added electronic services to be delivered through a single electronic window (portal)
• Business Transformation Report
  – Study conducted by a change management consultant
  – Costs, time and resources savings and benefits identified for application processing and peer review process for all programs
  – Results presented to Operations and Steering Committees in March/April 2002
• Resource levels and projects for 2002/2003 established and approved
• Cost/benefit analysis for FDSR project in progress at time of audit
	The eBusiness services require a re-engineering of processes and it is only with the global view of the transformation related to a complete business process that benefits can be fully appreciated. As a result at this point in time it is not possible to ascertain if the anticipated benefits will be achieved and if there are sufficient resources to accomplish eBusiness activities.
	
	Medium risk.
		M	No recommendation.

2   Business Risk

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

2.1 Requirements Management

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
eBusiness will have a major impact on how NSERC business processes are carried out. • Main business function offers funds for research in three broad areas: research grants; scholarships; and research partnerships • Stakeholders are: researchers/students, universities, peer reviewers, industry, government, public, and NSERC staff Delivery Model Document • Defined four functionality-based categories of eServices • Provided high level description of each of 23 services • Delivery modes to be based on business and technical considerations, delivery guiding principles and dependencies among services Priority setting process was carried out with Operations Committee • Ranked the eServices in order of priority • Requirements – flexibility, simplicity, data integrity and data retrieval functionality (eg. management information) Security and access requirements • Information processed will contain personnel information (requirement for Protected B level classification) • Statement of sensitivity/threat risk assessment been completed • Some limitations – security specification not issued by TBS; corporate policy framework in development; availability of secure channel not confirmed by PWGSC Requirements of external clients and their environments	The development of an eBusiness vision and strategy was positive. The delivery model defined high-level requirements; helped develop a common understanding of eBusiness and the setting of priorities for eSolutions. Requirements management is a difficult task for any project but it is critical for success. It is essential that the knowledgeable users at the appropriate level articulate the requirements. A structured and rigorous process that records requirements helps to ensure requirements are not missed, mis-interpreted, or oversimplified (complex business rules and processes). The eBusiness project has clearly defined formal process for requirements management. The risk of not successfully identifying requirements and translating them into eSolutions is high. There are extenuating factors to complicate the process: there are users both internal and external to NSERC and the complexity of an overall project with many sub-projects. There will be need to be a cultural change. The requirements management process must be more disciplined and rigorous. Users must take accountability for identifying and signing off requirements. The risk is requirements will continue to grow and this makes it difficult to implement a solution. Requirements are never stagnant but they do have to be frozen so a solution can be implemented. After that the change management process is used to implement new requirements. **Medium/high Risk.**	M/H	**Recommendation** No recommendation.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
• Sent out survey on eBusiness services and opportunities • Identified and ranked their priorities and requirements • Conducted sessions with clients from various universities eBusiness is one umbrella project with many sub-projects • Process to collect and maintain requirements complex • Coordination and integration of managing requirements is complex • All requirements are documented and signed-off – Are kept in project files Complexity of dealing with external client requirements. • If working with partners (other research organizations) their requirements must also be identified and managed. • Experience with Common CV has demonstrated the complexity and time involved Credibility • The concept was to have program resources on the team to provide program knowledge, expertise and experience • Concern voiced that team members do not know the current business processes and requirements because they change so quickly – therefore are not sure requirements are reflective of the programs • Lack of confidence in project team's program knowledge once they have been on the project for a period of time			

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
2.2 Solution Design			
Process to translate business requirements into the solution is complex. Potentially four modes of delivering the solutions. • External delivery alone – delivered by third party but no shared services with other research partners. • Home alone – custom developed – in-house staff or contractors or combination. • External delivery together – common to other research partners. • Cooperative in-house – with a partner but no third party provider. • Based on Delivery Model document there will be a variety of modes used to deliver the solutions. Security Framework – to be developed. • Threat risk assessment completed • Will be complex with various modes of development and operation. • Necessary to integrate across the eSolutions. Internal Control Framework – to be developed. • Accounting, integrity and management controls. • Management trails, data security and privacy.	At the time of the audit some solutions were already implemented and others were in development. The risk is inherent because eBusiness is a fairly new and very dynamic area. **Medium risk.**	M	It is recommended that the Project Director ensure the process for selection of the solution delivery mode(s) is structured and appropriate stakeholders are involved.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

2.3 Management of Change

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
The various eBusiness solutions will involve change. Delivery Model identified areas requiring change in: Culture – behaviours, norms and values of organization. • Will have to change as move from paper to electronic • Staff will need to be more open to new technologies, integrate into internal processes and how they deal with clients • More client focused culture using technology to more proactively address customer needs Organization – business portfolios and organization structures and roles and responsibilities • Will be new activities involved and redefined roles and responsibilities. • Must reflect integration with external parties (service providers and partnering organizations). Competency – skills, aptitudes and knowledge that drives the business • Focus on managing as opposed to collecting information • Increase in need for integration skills and managing relationships among NSERC partners. Process – activities, tasks, workflows – how business transactions work – operating and managing processes • Significant impacts anticipated. • Knowledge and content management processes to ensure consistency and integrity of data required. Technology – applications and development skills	The implementation of the various eBusiness solutions will mean significant change at NSERC. It will include culture, organization, competency, and process (activities, tasks, and workflows) changes. This area is high risk that the benefits anticipated will not be achieved unless an effective process to manage change is implemented. The impact of poor management of change processes is users are not ready for the new processes and do not endorse the new solution. It can be as extreme as users sabotaging the solution. Data integrity issues can arise. In addition the business processes are not efficient and effective and do not integrate well with the technical solution NSERC does not have the internal resources with the required expertise and experience to identify and carry out required management of change activities. The previous audit identified this area as high risk. This area continues to be high risk and is even more critical as the project moves towards implementing eSolutions. **High risk.**	H	It is recommended that the Project Director secure a resource with extensive expertise and experience in the management of change to develop a change management strategy and plan.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
• Focus on integration between components in both external and internal environments. • Skills to develop and maintain all eServices delivered in-house. Concurrently there are a number of internal initiatives (as mention in section 1.2 eg. lightening the load, program consolidation, common CV, peer review processes) that will also result in change. • There is a requirement to coordinate/integrate the changes. • Most will involve communication with external stakeholders. Communication planning will be complex. • Change is facilitated by communication activities. Expectations Management – users • Limitations vs. delivery expectations. • Managing people's expectations is key. • Expectations high after the Accenture working groups • What is technically feasible may not be cost feasible.			

3.0   Project Risk

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

3.1 Organization & Staffing

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
Project Director • Overall responsibility and project management • Definition of overall strategies for project success • Leadership to ensure business transformation and the required cultural change – Service delivery to optimise the use of technology • Responsible for planning, budgeting, monitoring and reporting • New reporting relationship – reports to Executive VP Project Managers – from program areas • Report directly to project director • Two full-time and one 50% (will be fulltime soon) • One Project Manager left and was replaced • Manage specific projects, identify and analyse requirements. • Consultations with external clients/users. • Minimal project management experience ISD project manager – now full-time position. • Reports to ISD Director who collaborates with Project Director • Significant project and project management experience. • Responsible for identifying or changing ISD policies or implementing new ISD procedures. • Responsible for managing the other IT resources • Ensures successful completion of technical development tasks and ensures its quality and adherence to standards. Client representative • Seconded a resource from University of Ottawa • Experienced in projects activities and requirements	The Project Director continues to be well regarded in the organization. The role and responsibilities of the Project Director are clear. It is positive to have the Project Director reporting to the Executive VP. It is positive to have project managers from the business areas available on a fulltime basis. It is positive to have a representative from the client community. In the last audit we recommended that the ISD project manager should report to the Project Director. This has not happened but all parties involved, indicated relationship is working effectively. The previous audit recommended a communications resource be assigned full-time to the project. This has occurred. Project administration activities are a key success criteria for every project. With the recent hiring of a project administrator, it is assumed there will be increased support for the Project Director and team. The lack of a management of change resource represents a significant risk to the success of the project implementation of eSolutions. **Risk is high**.	H	**Recommendations***:* It is recommended that the Project Director ensure: – Key role of change management is defined and staffed.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

- Knowledgeable about processes at the University for grants and scholarships

IT resources – in-house resources have minimal experience with eBusiness solutions.
- There are not a lot of these types of resources available in the market place.
- Are training internal staff and have contracted out in interim and expect a knowledge transfer to occur

Communication Division
- One communication officer assigned full-time
- Responsibilities include communication strategies, plans, internal newsletter, external communication activities planning and delivery (eBusiness web site)
- Ensure project adheres to corporate communication standards.
- Responsible for current web site management.
  - Participate in definition of Web e-product standards.
  - Lack of detailed project plan causing difficulty in scheduling competing activities for translator and English editor (half-time resources)

Project Administration role – position has just been staffed.
- Projects require such a role to help the Project Director manage
- Activities should include maintenance of the project plan, records of decision, presentations, management information structure, meeting minutes, communications, project sign offs, status reports (configuration management) etc.
- Not a junior role rather a resource who understands project administration and processes
- A review of project documentation noted
  - All team have access to a shared drive which contains official documentation
  - Some interviewed indicated they had documents on their own drives

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
No roles yet • Information management – All project deliverables should be managed – paper and electronic (role of project administration). • Management of change – more critical as project moves toward implementation of eSolutions.			

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

3.2 Control Process

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

The eBusiness project has been set up so that it is sub divided into smaller projects with defined deliverables. The concept is to manage smaller projects (manageable deliverables) keeping in perspective the longer term deliverables.
 	
Planning – at the high level
• Plan was to use Microsoft Office as tool to manage project
• There is a high level plan with key dates identified
• Results of Blueprint development to be project plan for next three years (in progress at time of audit)
• There is no detailed project plan that includes all sub-projects activities and a critical path
  – Should include user activities in the detailed plan
  – Should be monitored and updated regularly
  – Tool for monitoring deliverables on time and within budget
• Not monitoring progress against a detailed plan and critical path
• ISD is using the tool for its planning (Msproject)
 	
Budgeting – financial control.
• Budget process resulted in year one budget approved
• Part of cycle to review budget three times a year
 	
Project Charter
• Overall charter for eBusiness project still in progress
• Charters for subprojects incomplete
• Outline for charter in TBS Enhanced Management Framework document
 	
Project toolkit implemented as follows:
	It is positive that the project is being sub divided into smaller projects with defined deliverables. This technique has proven effective in project management.
	
	The previous audit recommended that a project "toolkit" be implemented. The project has implemented most elements.
	
	Project Charters are "living" documents and do change and need updating during a project's lifecycle. They are important as a tool for scope management.
	
	The most critical area lacking is a detailed project plan with a critical path identified. The detailed plan must include user activities and schedule.
	
	Risk is high.
		H	**Recommendation:**
			
			It is recommended that the Project Director ensure the development of a detailed project plan with a critical path identified.
			
			It is recommended that the Project Director use the detailed project plan and critical path to continuously monitor the eBusiness project.
			
			It is recommended that Project Director ensure project charters are completed and approved.

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
• Problem tracking and solution process in use • Risk management monitoring not evident • Quality assurance in IT area • Signoff requirements and processes evident			

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
3.3 Development Process			

Formal development process
• Development methodology has been approved
  – To be used by all (sub) projects
  – In place since beginning
  – Includes all phases of lifecycle (feasibility, analysis, requirements definition, solution design, testing, implementation)
  – Using methodology previously used (NAMIS)
• A few interviewed did not seem to be aware of what is involved in a development methodology and its importance for project success
	Higher probability of success if a formal development methodology is used. It will be very difficult to manage all the sub-projects and to maintain quality if the development methodology/process is not understood by all project team members and stakeholders.
	
	Risk is low.
		L/M	**Suggestion:**
			It is suggested that the Project Director review the development methodology with the project team.

4.0   Technology Risk

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS

4.1 Informatics Readiness

The ability of IT area to be ready to deal with changes coming about from the implementation of eBusiness system solutions. The IT organization needs application support (production control, maintenance, documentation), telecommunications support (network management), and technology support (contingency planning). This support is required for both the short and long range. Team Leader Development eBusiness project (ISD) is responsible for IT development team • Meets weekly with Director ISD to ensure corporate IT requirements met • Works closely on an as required basis with the various areas of ISD eg technical services, technical architect Availability of skilled technical resources in marketplace. • Acquired eBusiness applications development skills. • Need eBusiness operational skills for on-going maintenance and operations (production environment). • Resources not readily available. • Have contracted externally for some resources, others are internal and are acquiring the requisite skills Configuration and release management of eBusiness solutions is being managed through the QA team activities (ISD) IT Readiness Report Card identified need to retain current staff and to improve skills through proactive training. Management of change process has not been addressed • Anticipate using internal staff	Informatics readiness is an issue and the risk will increase as the project moves towards implementation. The organization is intending to use internal resources for on-going support. This will require proactive staff training and skills development. This should be addressed as part of the management of change process. Risk can be reduced if the management of change processes are developed and implemented. **Medium risk with potential to increase quickly.**	M	Recommendation. See recommendation for management of change (section 2.3).

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
4.2 Infrastructure			
The technical solutions implemented under the e-Business project will require changes to the current technical architecture. Newer and less widely-proven platforms have substantially higher risk than mature and widely used platforms. Risk is less in organizations where projects adhere to the organizations technical standards and methods and technology environment.	The assessment covered all major IT areas, however it was conducted before the NSERC eBusiness vision was finalized and as a result the technology gaps are generic and may be incomplete. As indicated in the previous audit it will be necessary throughout the project to assess the IM/IT environment and to identify gaps.	M	No recommendation required.
An IM/IT Assessment was completed as part of eBusiness strategic planning (March 2001). It included: application architecture; hardware and software; network; web services; information management; security; development and operations architecture - Used a structured approach for the assessment of NSERC's existing execution, development, and operations environment. - Identified preliminary gaps and grouped them by level of risk. - Assessment identified the technical, policy, methodology, and procedure gaps.	ISD has been taking action to address the gaps identified and to continue to assess the IT environment. The Enterprise Architecture Blueprint provides an overview of the information, application and technology architecture and provides a base to develop the three-year roadmap for ISD and the eBusiness Project to deploy IT internet services. A number of high-risk items have been identified but as long as action is taken to address them the risk is medium. It will be the responsibility of the ISD Project Manager on the eBusiness team to work with ISD and ensure the appropriate IM/IT environment is in place for the implementation of eBusiness solutions.		
IT readiness Report Card was completed last year - Reviewed: human resources, technical infrastructure, IT operational procedure, project management and governance, business process discipline, organizational culture - Developed action plan to address issues: ensure internal staff retention through training; improve internal IT business processes; strategic planning and working with clients to understand IT needs and priorities - ISD has invested in EA server technology	**Medium risk with potential to increase quickly.**		
eBusiness Enterprise Architecture Blueprint developed. Includes NSERC business model; information architecture; and, application architecture			

ACTIVITY	CONCLUSION	RISK	SUGGESTIONS & RECOMMENDATIONS
• Document to be used to define NSERC's three-year roadmap for deployment of IT internet services.			

APPENDIX C: LIST OF INTERVIEWS

Isabelle Blain, Vice-President, Research Grants and Scholarships

Michel Cavallin, Director General, Common Administrative Services

Sue Dodds, eBusiness, Analyst

Jean-Claude Gavrel, Director, Networks of Centres of Excellence

Martha Heyerdahl, Security and Administration

Lorna Jones, eBusiness, Analyst

Lynda Laforest, eBusiness, Project Manager, Scholarships

Deborah Lee, eBusiness, Project Manager Technical, Information Systems Directorate

Daniel Lefebvre, eBusiness, Project Manager, Community Representative

Annie Létourneau, eBusiness, Analyst

Nigel Lloyd, Executive Vice President

Monique Martin, eBusiness, Manager, Promotions Office

Kalvin Mercer, A/Director, Information Systems Division

Cliff Moore, Technical Services Manager, Information Systems Directorate

Tim Nau, Director, Communications

René Quirouette, Director, Administration

Marie Rainville, eBusiness, Business Analyst

Daniel Savoie, eBusiness, Webmaster

Walter Veira, Project Manager, RPP

Christiane Villemure, Project Director, eBusiness Project

Janet Walden, Vice President, Research Partnerships and Programs Directorate

APPENDIX D: LIST OF MAIN DOCUMENTS REVIEWED

eBusiness Strategy (accenture documents)
      Executive Summary (November 20, 2001)
      Integrated eBusiness Strategy (May 18, 2001)
      Delivery Model (May 17, 2001)
      Migration Strategy (May 24, 2001)
      Current IM/IT Assessment (March 26, 2001)
      eInfrastructure Design Requirements (May 17, 2001)
      Project Charter (May 17, 2001)
      Internal Communications Plan (April 27, 2001)
      Vision Workshop (March 14, 2001)
      NSERC Stakeholder Requirements and Expectations (April 27, 2001)

Presentaion: eBusiness Project (May 30 2001) - for stakeholders

Project Charter: Financial Data Submission and Reconciliation (April 10, 2002)

On-Line Communications Committee Meeting Minutes of July 15, 2002

eSubmission Pilot Strategy: Presentation to Operations Committee May 2, 2002

Chronology and general approach to internal and external communications on eBusiness Project (as of Sept 4, 2002)

Focus group presentations: end of February to September 2002 13 presentations across the country

Guiding Principles (April 6 2002)

Enterprise Architecture Blueprint (July 16, 2002 v 0.3)

Proposed NSERC E-Forms Project Flow, Defect Tracking System, Defect Management Life Cycle, Defect Report, Issue Resolution Report, User Feedback

All documents on the S:drive audit file

Hallux Consulting Inc.

APPENDIX E: Management Responses as of 2003-Apr-09

Audit Recommendations and Suggestions	Management Response
1.0 Governance Risk	
1.1 Senior Management Control Framework	
There is no recommendation at this time. However the Steering Committee should monitor the role, responsibilities and commitment of the Operations Committee in the implementation of change.	The executive Vice-President has taken the chair of OPS and the eBusiness Steering Committee since April 2002. It is believed that having the same Chairperson for both these groups will facilitate the monitoring of the role of OPS in the project. In addition, the Project Director, in collaboration with the various divisions, is preparing a transition management strategy to provide a framework under which eServices implementation and business process adjustments will be managed. This strategy re-affirms the roles and responsibilities of the Operations Committee, the eBusiness team and the Human Resources Division in the implementation of change, as they were defined at the beginning of the eBusiness initiative. Roles, responsibilities and commitment/participation of the Operations Committee can be integrated in the regular reporting to the Steering Committee. OPS is involved in setting project implementation plans and policies. For projects where a significant change is expected, a stakeholder group is composed, with participation from key members of the Operations Committee, to follow a project more actively and ensure proper management of change in impacted divisions.
1.2 Change/Scope Management	
No recommendation at this time. It is important that scope management be continuously monitored by the Steering Committee as well as the integration of other internal / external projects / initiatives.	The eBusiness initiative evolves in an environment where several complex projects are conducted in parallel. These projects can be internal to NSERC, can be conducted in partnership with other organizations and new project opportunities can present themselves along the way. Projects include several check-points, ranging from the definition of objectives, inclusion/exclusions, interrelation management, strategic scheduling, up to various prioritizations exercises during the course of projects, to ensure scope is managed to maximize the use of project resources and time and to attain the long-term project vision.

	Scope issues related to any of the above elements are brought to the attention of the Steering Committee. However, with the recent appointment of a Project Administrator, an improved and more systematic reporting process is being put in place to better anticipate and address scope issues earlier in the projects.
1.3 Investment Management	
No recommendation	N/A
2.0 Business Risk	
2.1 Requirements Management	
No recommendation	N/A
2.2 Solution Design	
It is recommended that the Project Director ensure the process for selection of the solution delivery model(s) is structured and appropriate stakeholders are involved.	For each of the services/project under the eBusiness initiative, a preferred solution delivery model was identified during the development of the eBusiness Strategy in Spring 2001. This process involved the Operations Committee and NSERC Management and is documented in the eBusiness Strategy. But at the beginning of eBusiness projects, the solution delivery model is always reviewed to confirm its continued appropriateness or identify if other mechanisms should be considered. If a change in the Strategy needs to be considered, the Project Director will seek approval of the eBusiness Steering Committee. Any change in delivery model and its rationale will be documented in the Project Charter.
2.3 Management of Change	
It is recommended that the Project Director secure a resource with extensive expertise and experience in the management of change to develop a change management strategy and plan.	See section 1.1. The Human Resources Division has appointed the Senior Officer, HR Program Development, to oversee change management issues from the HR perspective. This resource works with the necessary flexibility to accommodate the project. Specialized expertise will be acquired on an ad hoc basis as needs arise. A Transition Management Strategy is being developed and will provide direction to address resources requirements and the development of more detailed change management strategy. It will rely on proper understanding and balance between business transformation (process re-engineering) and the more psychological/human nature of change.

3.0 Project Risk	
3.1 Organization & Staffing	
It is recommended that the Project Director ensure: key role of change management is defined and staffed.	See section 1.1 and 2.3 This is in progress at the present time.
3.2 Control Process	
It is recommended that the Project Director ensure the development of a detailed project plan with a critical path identified.	At the time of the audit, a Project Administrator position was being staffed. This position was subsequently filled in October 2002. This person's responsibility is to develop and maintain the integrated project plan, conduct critical path analysis and anticipate potential conflicts in resources, tasks and timelines.
It is recommended that the Project Director use the detailed project plan and critical path to continuously monitor the eBusiness project.	See 3.2. This is in place.
It is recommended that Project Director ensure project charters are completed and approved.	Several project charters are in development and scheduled to be presented to the Steering Committee in the coming weeks. Establishing project charters is a key step in project management and it is part of NSERC's project management process workflow.
3.3 Development Process	
It is suggested that the Project Director review the development methodology with the project team.	Agreed. The project director has already started to review the project management methodology with the project team. Also, this process is being formalized in a consolidated document, to facilitate the transfer of knowledge when new staff is joining the project or to periodically re-assess the methodology when pertinent. It is possible that the perceived lack of knowledge about the development methodology may be due to the fact that a number of project staff members were relatively new on the team at the time of the audit. Also, "client" divisions and new divisions taking a role in project management have to be trained/mentored as to the project development methodology in place.

4.0 Technology Risk	
4.1 Informatics Readiness	
Recommendation. See recommendation for management of change (section 2.3)	Management of change for the IT division will also be addressed as part of the overall Transition Management Strategy. This will require increasing attention as more on-line services are developed and move to on-going operations. The role of the ISD Director will be critical in setting direction for the division and ensuring change management risks are addressed.
4.2 Infrastructure	
No recommendation required.	N/A