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Audit of the Canadian Audio-Visual Certification Office and Grants and Contributions On-Line Project

Office of the Chief Audit and Evaluation Executive
Audit and Assurance Service Directorate

March 2009

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Executive Summary

Introduction

In recent years, Canadian Heritage (PCH) has taken important steps to improve services by surveying its clients with the Government of Canada's Common Measurement Tool (CMT).

The majority of the Department's services are Grants and Contributions (Gs and Cs) in support of the following objectives: Canadian artistic expressions and cultural content are created and accessible at home and abroad; Canadians have a sense of their Canadian Identity and Canadians participate and excel in sports. The Canadian Audio-Visual Certification Office (CAVCO) was selected to be a front-runner pathfinder program for the Department.

The Gs and Cs and CAVCO On-Line Business Case, dated July, 2005, recommended a two-year project to implement electronic capture, case workflow and improved management reporting for CAVCO and three other pilot Gs and Cs programs. PCH allocated funding to the CAVCO On-Line Project (OLP) in the 2007-2008 fiscal year.

In October 2007 the Information Management/Information Technology (IM/IT) Committee approved the amendment of the On-Line Project Charter where a decision was made to split the project into two phases. In June 2008, another decision was made to create four distinct sub-projects (see 5.3.4).

A budget of 1.5M$ was allocated for phase I ending in September 2008 and 900K$ for the completion of the initial portion of phase II scheduled for March 2009.

Key Findings

The audit team observed several controls that were properly designed and were being applied effectively within the OLP. Accomplishments are listed below:

- The senior management team has progressively established an appropriate governance structure (see Appendix B) to plan, control, and communicate decisions to control changes in the OLP scope and direction. In addition, the project committee has dealt with increasing demand from users for more system functionality. Risks have been identified, monitored, mitigated and reported.

- According to the Departmental financial reporting system, commitments for the first phase of the OLP and expenditures incurred are on target with the budget allocation.

- The OLP team and committees are diligent in managing their project files by properly documenting decisions that are made, including minutes, email correspondence, status reports and retaining relevant supporting documentation in the project file.

- Security measures are adequate and technology used by Knowledge, Information and Technology Services (KITS) is current and kept up to date.

Recommendations

1. The Chief Information Officer and DG, Knowledge Information and Technology Services (KITS), should ensure that the CAVCO and Gs and Cs On-Line Project is efficiently managed, with consideration given to overall multi-year investment requirement and procurement strategy, stakeholder sign off on final functional requirements, communication of differences between user expected functionality and application capacity and evaluation of the risks in production mode.

2. The Chief Information Officer and DG, Knowledge Information and Technology Services (KITS) should ensure that sufficient resources are available and provide enough capacity to ensure appropriate planning, development and maintenance of information systems. Special consideration should be given to stabilizing the project organization, taking charge of the work done by external contractual personnel, monitoring and evaluating the application development processes and ensuring that proper system documentation is available.

Statement of Assurance

In my professional judgment as Chief Audit and Evaluation Executive, sufficient and appropriate audit procedures have been conducted and evidence gathered to support the accuracy of the opinion provided and contained in this report. The opinion is based on a comparison of the conditions, as they existed at the time, against pre-established audit criteria that were agreed to with management. The opinion is applicable only to the entity examined and within the scope described herein. The evidence was gathered in compliance with Treasury Board policy, directives, and standards on internal audit and the procedures used meet the professional standards of the Institute of Internal Auditors. Sufficient evidence was gathered to provide senior management with the proof of the opinion derived from the internal audit.

Audit Opinion

In my opinion, the CAVCO and Gs and Cs OLP is well controlled, well managed and effective. Minor improvements are needed in the areas of Project Management and the internal capacity of the Project Team.

Original signed by:

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Vincent DaLuz
Chief Audit and Evaluation Executive
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Audit Team Members

Raynald Charest – Acting Director
Martin Montreuil
With the assistance of external resources

1. Introduction and Context

1.1 Authority for the Project

The authority for this assignment is derived from a Senior Management request to the Chief Audit and Evaluation Executive for a pre-implementation project audit.

1.2 Background

PCH is committed to improving the delivery of its services to clients. In recent years the Department has taken important steps to understand the potential for improving services by surveying its clients with the CMT. The eServices Branch* was responsible for leading the coordination of a Departmental Strategy for Service Improvement with the goal of advancing the Department to the Government's target of full end-to-end online services as part of a multi-channel approach to serving Canadians.

Service improvement requires investment in new systems for online delivery, improvements in management information and changes to processes and practices for front-line employees and third parties. Approaching such change in a piece-meal manner, program by program, would result in a plethora of systems and practices that would be impractical and uneconomical to support. As a result, there is a need for a common set of departmental solutions - systems and practices - to support improved service delivery.

The majority of the Department's activities are Gs and Cs in support of PCH's objectives. Through a series of workshops with program representatives, examinations of the business needs of both CAVCO and Gs and Cs programs were conducted. It was determined that there were sufficient similarities in the processes supporting these programs for a strategy of common solutions, recognizing the differences that must be accommodated.

CAVCO supported this direction and was chosen to act as a pathfinder for the Department's online service delivery to clients. CAVCO's client base is 100 % Internet-ready and 91 % have stated that they are in favour of using electronic media to submit electronic application forms. Because CAVCO has already performed the process mapping and client satisfaction measurement steps for service, it was a logical candidate to be the front-runner pathfinder program for the Department.

In July 2005, the Gs & Cs and CAVCO On-Line Business Case recommended a two-year On-Line Project (OLP) to implement electronic capture, case workflow and improved management reporting for CAVCO and three other pilot Gs and Cs programs. Management allocated funding to the OLP in the 2007-2008 fiscal year.

In 2007, the departmental IM/IT Governance Committee took the decision to change the initial project road map and to include two distinct Project Phases. The amended project

* The eServices Branch provides the on-line face of Canadian Heritage and works with PCH programs to improve the delivery of services to Canadians.

charter of June 2007 confirms the amendment made to expand into two Phases and four separate sub-projects.

2. Objective(s)

The OLP audit is intended to provide senior management with the assurance that:

- overall project governance structure, accountability, management (business financial and information) controls and risk management frameworks are effective, adequate and consistent with the departmental business process mapping initiative;
- the information for decision–making is reliable and that the requisite central approvals have been sought; and
- the current management of the project complies with policies and regulations set out by the Treasury Board Secretariat (TBS) and with the standards developed by the Information Technology Infrastructure Library (ITIL).

3. Scope

For the period of April 1, 2005 to May 31, 2008, the audit examined the following areas:

- The financial and non-financial controls encompassing the project's governance, operations, and information systems; and
- The proposed system's financial and non-financial controls encompassing the governance, operations, and information systems of the four sub-projects.

4. Approach and Methodology

The approach used during this assignment was designed to meet the established audit objectives and scope in accordance with:

- the International Standards for the Professional Practice of Internal Auditing;
- the standards and requirements set out in the Government of Canada Treasury Board Secretariat (TBS) Internal Audit Policy; and
- the "Guide to the Planning, Conducting, and Reporting of Internal Auditing Assurance engagements in the Federal Government of Canada" as endorsed by TBS - Centre of Excellence in Internal Audit in 2004.

In addition, the audit approach interpreted and applied the general requirements set out by the Information System Audit Control Association (ISACA) for IT development.

The planning phase used selected interviews, high level modelling and general documentation reviews to gain an understanding of the audit entity and its environment. The execution phase which ended in June 2008 used a combination of programs, questionnaires and tests to assess and synthesize the significance of issues and major findings. The execution phase with its testing techniques drew conclusions on the objectives of the study as indicated above.

In the reporting phase, the observations were aligned with the departmental Management Accountability Framework (MAF) Areas of Management. As a review of a technology project delivering a business solution, all observations relate to the MAF area of Stewardship in terms of Effective Project Management.

5. Observations, Recommendations and Management Response

The conclusions were based on a comparison of the situations at the time of the audit against the audit criteria. It should be noted that the conclusions are only applicable for the areas examined.

The audit team concluded that:

- since official project inception through the allocation of funds in 2007-2008, the overall project governance structures, controls and risk management frameworks are effective, adequate and consistent with the departmental business process mapping initiative;
- information for decision–making is reliable and central approvals have been sought; and
- management of the project complies with policies and regulations set out by TBS and the standards developed by the ITIL.

Some improvements are required to correct problems related to: the lack of multi-year funding allocation that provides continuity, the lack of permanent PCH staff to oversee contractors' work and the lack of application documentation as the system was being developed, which would have supported the further stages of development.

5.1 Project Governance

5.1.1 Management Control Framework

Overall project governance is adequate and provides a control framework within which the project is managed.

The audit team looked for evidence that the relationship of the project to strategic plans was evident; the assignment of responsibility was suitable for owners/sponsors, business users and other stakeholders; the committee structure was appropriate to control the project direction and scope; and, linkages to other project within PCH were addressed.

The audit team noted that investment and timely decisions were part of the role of the Assistant Deputy Ministers (ADMs) through the Departmental IM/IT Governance Committee (department-wide strategic planning). Scope, Business Case and governance of the project are the role of the Director Generals (DGs) through the Project Governance Committee. Execution and delivery of the plan is the role of the Project Review Committee. This committee structure is displayed in Appendix B.

Project responsibility is shared between the CAVCO Program as the business sponsor, and KITS as the project management specialist organization. The roles of key players are well defined in governance documents for both a financial committee and an Information Services Working Group.

The planning phase for the OLP was initiated in 2005 with the production of a business case, a presentation to the ADM's Committee and the approval of initial funding for the planning phase. In October 2006, a project charter was created and included project strategic direction and plans. However, between October 2006 and April 2007, the project was still in a planning phase and it only formally started with the allocation of funds for development in the 2007-2008 fiscal year.

In February 2008, a presentation was made to the project governance team to establish a three year sustainability plan to determine the requirements for continuing the CAVCO project and for its further development in support of the Grants and Contributions Information Management System (GCIMS) (this being the back-end for the CAVCO on-line services initiative). The audit team was told that in late June 2008, a presentation was made to the IM/IT Governance Committee. This committee endorsed a revised long-term plan to extend the OLP into a phase II to expand the use of on-line services to other Gs and Cs programs. The proposed plan for a Phase II project includes the creation four sub-projects, comprised of the current CAVCO OLP plus three pilots. The three other sub-projects will require business cases to determine additional funding requirement and get approvals. Project plans would follow to schedule activities over the next three to five years.

Risk Assessment

Now that the project has evolved from one project to four sub-projects over a multi-year period, management must consider if the existing structure will be sufficient and effective to govern a larger body of activities. This area may prove to be a bigger challenge and should be considered as a risk (although low) to be addressed by management in the future. In our view, the senior management team has established up to this point an appropriate governance structure to plan, control and communicate decisions. The level of risk around the management framework is low.

Recommendation

No recommendation required as this control is considered adequate.

5.1.2 Change/Scope Management

A formal process is in place for changes and scope management both for long-term and short-term project decisions.

The audit team looked to see that senior and project management had established processes to allow the project to adapt to changing internal and external conditions. Critical issues included project scope management, risk management and relationships to other key projects, initiatives and/or events.

The audit team found that senior management committees have dealt with the augmentation of project changes and scope by defining an adequate step-by-step approach, which includes planning, execution and reporting documents. Significant changes were made to the project roadmap between 2004 and 2008 as referred to in section 5.1.3. Management was diligent in producing estimates and revised plans for approval by the senior management committees as shown in Appendix C.

A risk management process is in place including a risk management matrix with 21 documented risk factors. Risks are flagged as low, medium or high. Presentations were made to the departmental IM/IT Governance Committee to assess and discuss mitigation strategies.

The Project Governance Committee has also managed increasing business demands in an effective way by setting up a phased-in approach with respect to the initial delivery plan of a first version and limiting the functionality to must have items in the 2007-2008 project plan. The changes have been incorporated in the longer-term plans. This year, KITS will design the first iteration of the application and will further define procedures to better track/cost change requests, while managing expectations.

Risk Assessment

Good governance has been exercised by senior management since official project inception over change/scope management and a formal process is in place for the long-term and short-term project decisions. Risks have been monitored, mitigated and reported. In addition, the project committees have reduced the risk impact of an unplanned increase in scope by establishing a phased-in approach and time frames accordingly. The level of risk around the change/scope management is low.

Recommendation

No recommendation required as this control is considered adequate.

5.1.3 Investment / Benefits Management

The absence of multi-year procurement and funding represents a challenge for ensuring project continuity.

The audit team looked to see if senior and project management had defined expected costs and benefits through a business case, and measured project benefits realized by the organization as they are achieved through the project.

Initially the 2005 Business Case provided detailed estimates on the $2,100,000 project cost over a two year period. Investments covered four streams: Stream 1 CAVCO & GCIMS Update; Stream 2 Governance & Service Process Improvement; Stream 3 Solutions Architecture Implementation; Stream 4 Project Management and Support.

In November 2006, $300,000 was allocated for the planning phase of the project. In April 2007, a further $800,000 was invested to proceed with the project. In December 2007, $700,000 in additional funds was allocated through the Mid-Year Review process. In

March 2008, KITS returned unspent funds of $449,000.

Currently the Project Manager prepares annual budget estimates for committee approval and funds are allocated on an annual basis. A mid-year review is done in September.

The Project Review Committee is faced with challenges:

- Funds are allocated one year at the time. The inability to ensure adequate funding over a multiple year time frame creates a gap in the project continuity at the beginning of each fiscal year.
- Achieving spending plans for the allocated funds is difficult when annual budgets are delayed past April of each year, and when delays occur within the procurement system to hire consultants.
- Investments made on an annual basis for a multi-year project should be considered a risk because funds are not in place to secure a long-term relationship with consultants who hold the intellectual knowledge in the development work. The Project Manager has been experiencing difficulties with the renewal of consultant contracts.

Because of these challenges, only a portion of the $2.1M budget, approximately $1.1M was spent in 2007-2008 and the remaining $1M was reallocated to the 2008-2009 budget to complete the first phase of the project.

Risk Assessment

Without a long-term vision on how to fund and procure all development phases and a revised Business Plan with a multi-year procurement strategy to ensure retention of contracted human resources and protect the investments made to this point, the project's success and investment made in the previous 18 months could be at great risk.

Recommendation

See Recommendation number 1 at the end of Section 5.5.

5.2 Policy and Programs

5.2.1 Business Requirements Definition

Business requirements have continuously evolved from 2005 to 2008; as a result, the requirement definition documentation was incomplete when the development started in April 2007.

The audit team looked to see if senior and project management had measured the clarity and stability of the business rules and processes from which system requirements were derived.

A business case was done in 2005 to provide common departmental business requirement definitions for Gs and Cs, including Client Management (Communication, Application), Case Management (Eligibility, Approval, Denial) ; Service Management (Monitoring, Administration), Financial Management (Fees, Gs and Cs, Audit) and Management Information (Business Intelligence, Reporting). Horizontal needs were also defined: integrated approach for programs; review of authority levels between regions and HQ; Service Improvement – Regional CMTs; multi-channel capacity.

CAVCO program analysts were involved in the business process mapping in 2005 and 2006. In May of 2007, a second draft of the functional requirements was produced. A final version for the Project was completed in June 2007 (this sequence is shown in Appendix C – On-Line Project Timeline of Events).

The development started in April 2007 and both the Business Analyst and the IT Project Manager had changed. The definition of business requirements was still evolving from CAVCO needs to departmental wide needs (Security, Privacy, WEB alignment) and not all specific functional requirements were known at that time.

It has been reported by interviewees that managing the IT development activity is challenging as business requirements are constantly growing and evolving.

Requirements provided at the time of the initiation of the project in April 2007 were not complete and aligned with GOC and TBS policies. However, progress has been made since to complete the requirement definition. At the time of the audit, confirmation was given that must-have functionality would be included in an application release planned for September 2008 (which actually occurred in January 2009).

Risk Assessment

The change and evolution of requirements after the production of the project plan has increased risk in two areas. At the time of the audit, there was a risk that the delivery of the 1st release (September 2008) would be delayed. There was also a risk that not all of the needs of the CAVCO program might be met since the final product was still in development and on a tight delivery schedule.

Recommendation

See Recommendation number 1 at the end of Section 5.5.

5.2.2 Solution Design

The solution design was forced to evolve over the course of the project to comply with new TBS policies and PWGSC's MITS security standards, privacy requirements and audit controls. Specific CAVCO initial requirements have been delayed as a result of the choice to support the overall functionality of future Gs and Cs' needs throughout PCH.

The audit team looked to see if project and business management had measured the integrity and robustness of the design prepared to meet stated requirements and achieve expected benefits, and had put in place a process to translate the business requirements into the business solution that was adequate to the identified system needs.

Best practices in producing an appropriate solution design include the development of a good functional specification document. This document is normally completed jointly by business and IT analysts to map the business requirements into a conceptual design model. This design model will later allow a system architect to build a physical model of the application during the project development phase. Specifications should include: inputs, outputs, data element definition, security requirements, types of user and access control, data validation rules, etc.

The audit team found during interviews and document review that the functional specifications were defined at a time where the team had little knowledge of the impact of WEB based technology and how to exploit fully the constraints and benefits of this evolving technology. As well, the security and audit controls requirements were evolving in TBS and PWGSC MITS, forcing departments to change their approach to WEB portal designs.

The development phase started in April 2007 with the first version of the specification document. However, further iterations of functional specifications were necessary to complete the document to the necessary level of detail.

The second draft (29 May 2007) saw the addition of the security component, the feature matrix, the requirements traceability matrix, the data model, the non-functional design criteria and the report specifications.

The final draft (30 June 2007) improved the specification document by adding the business logic layer, the CAVCO Business Model and the Audit & Control measures.

The audit team attended project meetings in May 2008 where a prototype of the applications was presented to three CAVCO business analysts. The audit team found that the Project Manager is facing challenges and pressure from the client to include “must-have” additional functionality rather than keeping the version 1 release to its initial scope. Subsequent meetings were held to establish necessary functionality required to meet the business requirements for the September 2008 delivery of version I.

KITS made an evaluation of the additional change requests. It was determined that changes required were minor and would not jeopardize the September 2008 delivery of the pilot version. Both the business and the IT team members were working together and making compromises in establishing must-have modifications to the product and trade-offs to delivery on the promised schedule. However, just one of the two CAVCO programs will be supported in version 1 of the application – this was the trade-off for more last minute must-have functionality.

Risk Assessment

The risk associated with broadening the design and scope is that the logistics and the team to support a multi-year project with subsequent phases are not in place. Because the Project Manager has restricted requests for change, there is a risk of a shortfall in expected functionality that will not be well understood by CAVCO.

Recommendation

See Recommendation number 1 at the end of Section 5.5.

5.2.3 Management of Business Change

Processes are in place to manage the business transformation and are deemed appropriate before the first pilot.

The audit team anticipated that functional management would address the impact of the project on the major business processes of the sponsoring organization and the ability of the organization to deal with the overall change.

In November 2007, a Business Model Transformation Plan was tabled and a Business Transformation Analysis followed in February 2008. Processes to manage the business transformation were put in place including a project communication plan, a risk management plan, a change management plan and a pilot scope statement. Nonetheless, one CAVCO Program senior manager told the audit team that the business transformation might still be weak because the new application will force more change to come in the filing and tracking of applicant demands.

According to the KITS Project Manager, the winter 2008-09 pilot will be the first test and may constitute some element of risk because the program officers will need to adjust to the new automated environment. CAVCO will run the new application in parallel with the current manual processes to iron out the problems as a backup strategy.

Risk Assessment

The risk associated with change stems from the possibility that the client does not fully evaluate, plan and communicate the impact of a migration to a new system on its operations. There is also a risk that the client organization may be resistant to change.

Recommendation

See Recommendation number 1 at the end of Section 5.5.

5.3 Stewardship

5.3.1 Project Organization & Structure

A good project structure exists but the absence of multi-year procurement vehicle and funding has caused the project to be managed in a number of segments and represents a challenge in terms of project continuity.

The audit team anticipated that project and technical management had defined the roles and responsibilities of each major organizational component of the project structure.

Interviews and documentation revealed that the IT project development structure is robust and follows industry standard elements. These standards include a project review committee, a project charter, a project plan, software releases management and document management. Controls, methodology and reporting processes are also in place.

The audit team found that there has been a lot of staff turnover in key positions. The initial Project Manager (PM) and Business Analyst (BA) involved in the preliminary design of OLP left in 2007. KITS was successful in replacing these key positions. In June 2008 the new PM had to be replaced by someone coming from outside the Project organization.

Currently the development team is composed of one KITS Team Lead (TL), one System Architect (SA), one Programmer, and one Quality Assurance Analyst (QA). On average, during peak periods, approximately 10 consultants do development work. The consultant contracts are ending in August 2008. The audit team was told that the next procurement phase to hire contractors to pursue the work will likely bring new people to the project as there is a high probability that delays in procurement will force the existing consultants to seek contracts elsewhere.

The audit team also found that the Project Team Lead and the Programmer positions have been staffed for less than three months and that, with the exception of the PM, System Analyst and the BA, OLP positions were not filled internally. The audit team was told that since the initiation of the project, interruptions have occurred because of scope growth, delays in annual funding and contractual staffing. This caused a situation where the project was in a "stop-and-go" mode with consultants at times dismissed before the programming work could be completed.

Risk Assessment

Due to frequent staff and consultant turnover in the project, there is a risk that important knowledge on the project structure and knowledge behind the system development will be lost. Delays in between contract allocation periods are affecting management's capacity to execute the project plan. These interruptions could put at risk the ability to sustain knowledge and the ability to deliver on time and/or on budget.

Recommendation

See Recommendation number 2 at the end of Section 5.5.

5.3.2 Application Development Control Processes

There was a lack of control over the application development done by the consultants.

The success of large development projects is related to the ability of an organization to control the project environment, ensure that key elements are monitored, and corrective measures are applied when required. Such elements include: planning & scheduling methodology; critical path management; budgets, financial reporting, and variance analysis; project change management; problem and issue identification and resolution; QA; and contract management controls.

As mentioned previously in section 5.1.1, a good control framework exists to govern project activities. A project charter, project plans and multi-level committees are in place. Budget estimates and variance analysis are done twice a year. Logs are kept to track issues and action items. Risk assessments are done periodically and documented. Quality Analyst (QA) tools are in place as well as a help desk for users.

However, the audit team found that few internal resources were assigned to this large project and it was difficult for them to control the development work done by the consultants. At the time of the audit, barely any reference documentation to the development work existed. With the exception of one new programmer in KITS, all developers are consultants that come in on short-term or annual contracts.

The interviews with the audit team revealed the difficulties in managing the development work.

- The consultants (specialists in Case Tracking Systems) were engaged on a pay-per-day basis rather than on a specific set of product deliverables basis.
- The consultants created the business requirements with the CAVCO program (business) team prior to the arrival of the current PM and Team leader (TL).
- Due to the lack of internal resources at the time of the development, the consultants often dealt directly with the CAVCO business analysts to establish undocumented specifications instead of proper documentation resulting in a situation where the PM and TL are not sufficiently aware of the current business direction and how the development work is being completed.

Risk Assessment

Over-reliance on contractual resources without sufficient oversight by permanent PCH staff has led to absence of control over engineering work. There is a risk that once contractors leave, important knowledge such as what all the pieces of code do and/or where to look to find pieces of programs for maintenance purposes will leave with them.

Recommendation

See recommendation number 2 at the end of Section 5.5.

5.3.3 Development Process

There is a lack of documentation on the development processes and content.

The audit team expected that project and technical management would have adopted a formal process definition with milestone deliverables. The project should follow a formal, documented System Development Life-Cycle (SDLC) process which defines how the design is documented, managed and controlled and how the construction process is planned, controlled and ultimately delivered.

The implementation of an IT development methodology helps organizations face critical issues during the course of a project, such as: understanding the requirements to be addressed; solution design integration and cohesiveness; construction risk minimization; and preparation for and control over transition to system operation.

Initially, this project started with a standalone PM who relied on external consultants to develop an application based on the functional design documents provided from the Business side. At that time, there was no PCH Team Lead to help the PM coordinate the implementation and to impose a direction and guidelines for the consultants. The PM did a good job of providing a good development environment and tools to his contractual staff.

For example:

- A methodology for document management (OREGON) was implemented to manage records of decisions.

- A system architecture design was developed and plans were created for the development and implementation of security measures and a MITS accreditation plan to host this application development.

In the last six months the team lead, QA and programmer positions have been staffed and efforts have been made to gather the information residing in the hands and heads of the consultant team. However, the audit team was told that it was very difficult to achieve this goal because the consultants were busy finishing off the application development for the first pilot. The audit team was also told that there is very little, if any, development documentation.

QA testing using the functional design specification revealed that the development is well done and the application now contains much more functionality than in the specification requirements. In the view of the audit team, this leads one to believe that the team's concerns around transition are not exaggerated due to the size of the development.

Risk Assessment

If proper documentation is not made available before the contractors have completed their mandate, capability of KITS' team to transition from the development phase to ongoing support and maintenance, and knowledge transfer to KITS' permanent staff will constitute a significant risk for this project.

Recommendation

See recommendation number 2 at the end of Section 5.5.

5.3.4 Testing & Delivery

A plan is in place to test and release the application.

The audit team expected that project and technical management had ensured the level of preparedness of the project by planning for delivery, and conducting and proving the results of appropriate testing.

A test plan is in place covering scripts using real client data and team training. Acceptance testing will be done under the supervision of the CAVCO Business Analyst (BA). Testing will include the validation application functionality, the business transformation processes for the service delivery and a communication plan to applicants. Following CAVCO's internal testing pilots will be conducted to validate the results in multiple clients' environment.

In 2007, the IM/IT Governance Committee took the decision to change the initial project road map and to include two distinct Project Phases. The amended project charter of June 2007 confirms the amendment made to expand into two Phases and four separate sub-projects.

Phase I is scheduled for September 2008 with the delivery to the CAVCO Program of a beta version that will include: a front-end portal for e-Services; a back-end module for applicants' form processing, storage, reporting; and a case-tracking module. In case of delays, the contingency plan is to maintain the current paper process for applicants.

The proposed plan for a Phase II project includes the delivery of four sub-projects over a three year period. A decision was made on June 9th, 2008 by the departmental governance to divide the project into 4 streams:

I. CAVCO On-Line Rollout
   Sponsors : Director General Cultural Industries
   Chief Information Officer and DG KITS
   - Electronic form prototype for CAVCO
   - Case Tracking Application's
   - e-Pass / Secure Channel infrastructure
   - Operational Pilot

II. GCIMS 3 year Sustainability Plan
   Sponsors: Director General Financial Management Branch
   Chief Information Officer and DG KITS
   - The application needs to be evolved to ensure its relevancy and allow PCH to maintain its leadership role in the G&C management domain
   - To ensure technology viability over the medium to long-term.

- The plan will define, evaluate & prioritize changes to be performed to GCIMS

III. Gs & Cs On-Line Readiness Plan
Sponsors: Director General eServices
Director General Financial Management Branch

- Protocol and criteria to identify and engage the next programs for roll-out needs to be defined and endorsed.
- Define & communicate the implications of engaging the next program areas.
- Confirm & name the next programs.

IV. Gs & Cs On-Line Integration Plan
Sponsors: Chief Information Officer and DG KITS

- New elements have been added to PCH IM/IT environment. These new technologies need to co-exist and integrate with the PCH network and with the other initiatives driven by the center such as "Blue Ribbon Panel & shared Services Initiative".

In the audit team's opinion, a base application will be delivered whether it is partial or complete to start the beta testing process. The level of completeness and the usability of the planned September 2008 version is uncertain because there was no way to estimate the programming effort left before the deadline. The new proposed date for the delivery is January 2009.

Risk Assessment

Test and implementation strategies are in place. However it is too early at this stage to conclude on the capacity of KITS to deliver according to its plan. The probability of a delay is high. The impact of delays would result in rescheduling the pilots start dates and the go live date.

Recommendation

No recommendation required as this control is considered adequate.

5.4 Technology

This class of risk pertains to the degree of inherent risk in the technology platforms chosen to support the system. This class also addresses the transition of the application into the infrastructure within which it will operate.

5.4.1 Infrastructure Management

Implementation of servers, networks and security measures is well managed.

Project and technical management should ensure that the technical solution conforms to the organization's technical standards and methods and technology environment. Project and technical management should measure the impact that the project will have on this infrastructure.

The procedures and tests performed by the audit team included an assessment of project management's awareness of current technology environment and departmental architecture and potential impacts of its implementation.

A visit by the audit team revealed that the physical server environment conforms to PWGSC security requirements: doors are kept locked, and only a small number of individuals that require admission in the server environment are granted access via their ID cards. Separate environments are in place for development, QA, production and testing, and provide redundancy for version control.

The audit team found that security measures around privacy and safeguard of information are adequate. Programmers and users that log on and attempt to access development files and databases require a Public Key Infrastructure (PKI) certificate for authentication purposes which can only be granted by PWGSC Security Services upon clearance of a security check.

Risk Assessment

Based on the audit team's site visit and the implementation plan submitted to the audit team, there is no significant risk related with the presently used and planned OLP infrastructure implementation. If the certification process by MITS reveals that adjustments are required to the IT infrastructure, a letter of interim authorization to operate would be granted by the Information Technology Security Directorate (ITSD) in order to comply with the change requests issued.

Recommendation

No recommendation required as this control is considered adequate.

5.4.2 Technology Transition

There is an "evergreen" plan in place for technology.

The audit team looked for evidence that project management had reviewed the degree to which the project/department had prepared for the transition of the application into the infrastructure within which it will operate.

The audit team found that the technology (software, hardware) used by KITS is recent and kept up to date. The software development tools are WEB-based and modern. Applicant's

registration forms for Gs & Cs are developed according to departmental standards and policies under the coordination of the e-Services Group. A transition plan is in place and includes the upgrade of IT equipment through a contract with a supplier who monitors and replaces KITS' equipment at a set point of their lifecycle according to contract specifications. This ensures that an evergreen environment is always in place.

Imposed PWGSC security procedures are now mandatory in the Government of Canada for departments implementing systems that process PROTECTED 'B' level sensitive information. This constraint was imposed on the project and has required additional resources. The audit team was informed that a specialized firm in security measures would prepare a safeguard implementation plan to comply with the new PWGSC requirements under MITS. The firm's team will then follow an inspection and accreditation process for the application prior to its transition to a production environment with live access by applicants through the PCH Web Portal.

Risk Assessment

It is the audit's team opinion that the technical transition with regards to the OLP is well managed and represents a low risk.

Recommendation

No recommendation required as this control is considered adequate.

5.5 Audit Recommendations and Management Response

1. The Chief Information Officer and DG, Knowledge Information and Technology Services (KITS), should ensure that the CAVCO and Gs and Cs On-Line Project is efficiently managed, with consideration given to overall multi-year investment requirement and procurement strategy, stakeholder sign off on final functional requirements, communication of differences between user expected functionality and application capacity and evaluation of the risks in production mode.

Management Response

Agreed

2. The Chief Information Officer and DG, Knowledge Information and Technology Services (KITS) should ensure that sufficient resources are available and provide enough capacity to ensure appropriate planning, development and maintenance of information systems. Special consideration should be given to stabilizing the project organization, taking charge of the work done by external contractual personnel, monitoring and evaluating the application development processes and ensuring that proper system documentation is available.

Management Response

Agreed

Appendix A: Audit Criteria

The conclusions reached for each of the audit criteria used in the audit were developed according to the following definitions.

Numerical Categorization	Conclusion on Audit Criteria	Definition of Conclusion
1	Well Controlled	• well managed, no material weaknesses noted; and • effective.
2	Controlled	• well managed, but minor improvements are needed; and • effective.
3	Moderate Issues	Has moderate issues requiring management focus (at least one of the following two criteria need to be met): • control weaknesses, but exposure is limited because likelihood of risk occurring is not high; • control weaknesses, but exposure is limited because impact of the risk is not high.
4	Significant Improvements Required	Requires significant improvements (at least one of the following three criteria need to be met): • financial adjustments material to line item or area or to the department; or • control deficiencies represent serious exposure; or • major deficiencies in overall control structure. Note: Every audit criteria that is categorized as a **"4"** must be immediately disclosed to the CAEE and the subjects matter's Director General or higher level for corrective action.

The following are the audit criteria and examples of key evidence and/or observations noted which were analyzed and against which conclusions were drawn. In cases where significant improvements (4) and/or moderate issues (3) were observed, these were reported in the audit report, and the exposure risk is noted in the table below.

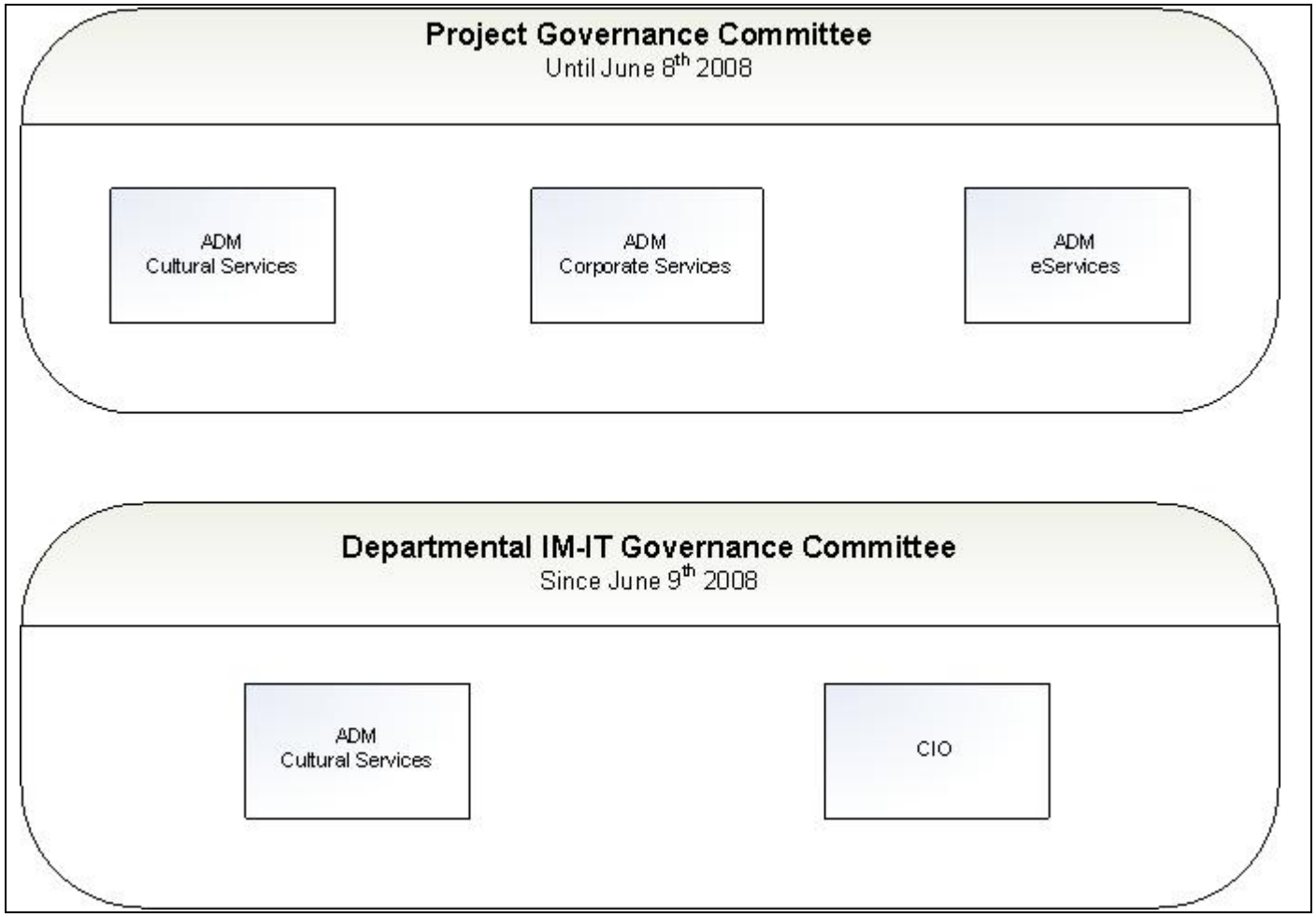
Criteria #	Audit Criteria	Conclusion on Audit Criteria	Examples Of Key Evidence/Observation
1	**Management Control Framework** Senior departmental management should define: the relationship of the project to strategic plans; the assignment of responsibility, owner/sponsor, project structure, committee structure, and linkages to related projects; the roles of key organizations and people; the flow of management information; and communications within organization, and with clients.	**2**	• The roles of key players are well defined. • Project responsibility is shared between the CAVCO Program as the business sponsor, and Information and Technology Service (KITS) as the project management organization. • The project has now evolved from one project to four sub-projects over a multi-year period – management must now consider if the existing structure will be effective to govern a larger body of activities.
2	**Change / Scope Management** Senior and project management should establish processes to allow the project to adapt to changing internal and external conditions.	**1**	• Significant changes were made to the project roadmap between 2004 and 2008; management was diligent in producing estimates and revised plans for approval. • An adequate Risk management process is in place. • The Project Governance Committee has managed business demands by setting up a phased-in approach and limiting the functionality to "must have" items in the 2007/08 project plan.
3	**Investment Management/Benefits Achievement** Senior and project management should define expected costs and benefits through a business case, and measure project benefits realized by the	**3**	• The initiative was in a planning phase until April 2007 – the project formally started with the allocation of funds for development in the 2007-2008 fiscal year. • Funds are allocated annually. Funds are not in place to secure a long-term relationship with consultants who hold the intellectual knowledge in the development

Criteria #	Audit Criteria	Conclusion on Audit Criteria	Examples Of Key Evidence/Observation
	organization as they are achieved through the project.		work. • By not securing adequate funding over a multiple year time frame, management risks creating a gap in project continuity at the beginning of each fiscal year.
4	**Business Requirements** Project and functional management should ensure the specification of business requirements adequately meet the functional requirements and achieve the stated benefits.	**2**	• The requirements provided at the time of the initiation of the project in April 2007 were not complete and aligned with GOC and TBS policies. • Although progress has been made since inception to complete the requirement definition, requirements are still evolving. • There is a medium to high risk of delays in the delivery of the version 1 release and all CAVCO program needs might not be fully met.
5	**Solution Design** Project and functional management should ensure the process in place to translate the business requirements into the business solution is adequate to the need.	**3**	• Functional specifications were defined at a time when the team had little knowledge of the impact of WEB based technology. • Development started in April 2007 with the first version of the specification document – further iterations were necessary to complete the document to the necessary level of detail. • Just one of the two CAVCO programs will be supported in version 1 of the application – this was the trade-off for more last minute, must-have functionality.
6	**Management of Change** Project and functional management should address the impact of the project on the major business processes of the sponsoring organization and the ability of the organization to deal with the overall change.	**2**	• Processes to manage the business transformation were put in place. • Fall 2008 pilot will be the first test and constitutes some elements of risk because the program officers will need to adjust to the new automated environment.
7	**Project Organization & Structure**	**3**	• IT project development structure is robust and follows industry standard elements.

Criteria #	Audit Criteria	Conclusion on Audit Criteria	Examples Of Key Evidence/Observation
	Project and technical management should define the roles and responsibilities of each major organizational component of the project structure.		• However, there has been a lot of staff turnover in key positions. There is a high risk that the next procurement phase to hire contractors will bring new people to the project as project staff anticipates delays in procurement will force the existing consultants to seek contracts elsewhere.
8	**Project Control Processes** Project management should have a standard approach to project control.	**3**	• A good a control framework exists to govern project activities. • Few internal resources were assigned to this large project and it was difficult for them to control the development work done by the consultants.
9	**Development Process** Project and technical management should have adopted a formal process definition with milestone deliverables.	**4**	• Initially this project started with a standalone PM who relied on external consultants to develop an application based on the functional design documents provided by the Business. Since then, improvements have been made in managing records of decisions and system architecture design. • In the last six months the team lead, QA and programmer positions have been staffed and efforts made to gather the information residing with the consultant team. • However, there is very little, if any, development documentation and there was no way to verify the programming effort left before the Fall 2008 deadline.
10	**Infrastructure** Project and technical management should ensure that the technical solution conforms to the organizations technical standards and methods and technology environment. Project and technical management should	**1**	• Security measures around privacy and safeguard of information are adequate. • The implementation plan assessed if the project is congruent with the current departmental architecture and the potential impact of this implementation.

Criteria #	Audit Criteria	Conclusion on Audit Criteria	Examples Of Key Evidence/Observation
	measure impact the project will have on this infrastructure.		
11	**Technology Transition** Project and technical management should address the readiness of the organization to deal with the new technology, overall technology configuration management, and the ability of the organization to offer support (short and long range).	**1**	• The technology (software, hardware) used by KITS is recent and kept up to date. The software development tools are WEB based and modern. • A transition plan is in place and includes the upgrade of IT equipment through a contract with a supplier who monitors and replaces KITS' equipment.

Appendix B: CAVCO On-Line Project Governance



Appendix C: On-line Project Timeline of Events

	Timeline	Events	Reference
1.	2004-12-20	Gs and Cs System Development DRAFT Business Case	2004 12 20 eMail BC Costs.pdf
2.	2005-07-01	CAVCO Project Business Case	PCH CAVCO and Gs & Cs Final On-Line Business Case July 6 2005.doc
3.	2005-07-22	ADM Presentation	July19 ADM Review.pdf
4.	2005-08-15	On-Going Cost Presentation	2005 09 02 CAVCO Gs and Cs Operating Cos - Aug 28.doc
5.	2005-11-22	GCO-CAVCO Project Risk Assessment	risk list and matrix -- GCO-CAVCO.d
6.	2006-02-02	ADM Presentation	CH2006-00433_presentation.V2a.pdf
7.	2006-03-17	IM / IT Governance committee	IM_IT Governance_March 17.v5 Richard.pdf
8.	2006-08-09	Fujistu PPA Evaluation	M. Bizier Project Manager
9.	2006-10-31	Executive Project Charter Document	
10.	2006-11-28	Project Kick-off with first Meeting to Plan work to March 2007	
11.	2006-12-18	IM / IT Governance committee approval of 300K for planning phase	IMIT Governance CAVCO GC Online 18 December E.pdf
12.	2007-02-28	Change Management Plan - Dave Armstrong former Business Analyst	Cavco change management plan,version2.doc
13.	2007-04-04	Draft Business Functional Specifications & Design Document	CAVCO-Gs and Cs Funct Spec & Design D1a.doc
14.	2007-04-05	ADM Debriefing	ADM Presentation April 5 ENGLISH.pdf
15.	2007-04-24	Allocation of $800K to proceed with project	SAP
16.	2007-04-30	New Project Manager appointed (Mario Bizier)	M. Bizier Project Manager
17.	2007-05-25	Project Charter Amendment to split project in two: (Phase I & Phase II)	Amended GCO Executive Project Charter 2007 05 25.doc
18.	2007-05-29	Second Draft Business Functional Specifications & Design Document	CAVCO-Gs and Cs Funct Spec & Design D2a.doc

	Timeline	Events	Reference
19.	2007-06-07	Project Scope Clarification to exclude Phase II from initial funding	CAVCO Gs and Cs SCOPE 2007 06 08a.doc
20.	2007-06-19	Revised Project Plan	CAVCO GC Plan 2007 06 19 Doug.ppt
21.	2007-06-30	Final Business Functional Specifications & Design Document	CAVCO-Gs and Cs_FSD_Complete_Binder_Set.pdf
22.	2007-06-30	IM / IT Governance committee - Cancelled	Elapsed 4 months
23.	2007-10-17	IM / IT Governance committee approval of amended Project Charter	CAVCO Gs and Cs On-LineE.pdf
24.	2007-11-06	Business Model Transformation Plan	Business_Models.ppt
25.	2007-12-04	Allocation of $700K in additional funding - Mid-Year Review	SAP
26.	2008-02-28	3-year Sustainability Plan for CAVCO - GCIMS	GCIMS CAVCO Onlie Initiative v1.ppt
27.	2008-03-19	Steering Committee Briefing by KITS Director on project	No minutes found email
28.	2008-03-31	CAVCO & Gs and Cs On-Line Services - Business Analysis & Requirements by Independent Consultants	CAVCO Gs and Cs_On-Line_Business_Analysis.doc
29.	2008-03-31	KITS Annual Project Review – Document not Approved	PCH_CAVCO_status_report 2008 03 28.doc March 31.doc
30.	2008-03-31	KITS Returned Funds Unspent - $449K	SAP
31.	2008-04-18	IM / IT Governance committee to approve funds for Phase II - Cancelled	M. Bizier Project Manager Interview
32.			
33.	2008-05-22	Demo of Phase I Prototype Application – did not meet all requirements	Presentation at PCH-KITS Boardroom
34.	2008-05-25	Meeting to discuss additional business requirements for Phase I to meet mandatory business requirements not included in Functional Specifications document.	Project Team Meeting
35.	2008-05-29	KITS confirmed development & delivery of modifications to application to be included in Phase I.	M. Bizier Project Manager telephone Interview

Appendix D: List of Acronyms

CAVCO	Canadian Audio-Visual Certification Office
CMT	Common Measurement Tool
GCIMS	Grants and Contributions Information Management System
IM-IT	Information Management - Information Technology
ITIL	Information Technology Infrastructure Library
ITSD	Information Technology Security Directorate
KITS	Knowledge, Information and Technology Services
MAF	Management Accountability Framework
MITS	Management of Information Technology Security
OLP	On-line Project
PCH	Canadian Heritage
PM	Project Manager
PRC	Project Review Committee
PWGSC	Public Works and Government Services of Canada
QA	Quality Assurance
SDLC	System Development Life Cycle
TBS	Treasury Board Secretariat
TL	Team Lead

Appe ndix E: On-Line Project Process Mapping