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VALERIE LUNDY [redacted])

HOW PROJECT LEADERSHIP APPLIED TO A PROJECT REDUCES THE RESISTANCE LEVEL TO CHANGE: THE CASE STUDY OF THE CHIEF INFORMATION OFFICER BRANCH (CIOB) OF ENVIRONMENT CANADA

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Résumé

Cette recherche a pour but d'étudier l'impact du leadership de projet sur le niveau de résistance au changement au sein d'une organisation du Gouvernement du Canada (GduC). Avec la venue de la nouvelle politique de gestion de projet (GdP) du Conseil du Trésor (CT), plusieurs changements dans le domaine de la GdeP au gouvernement sont survenus et sont encore à prévoir. La méthodologie de recherche est celle d'une étude de cas qualitative sur *comment* le département de la technologie de l'information et de la gestion de l'information (TI/GI) du ministère d'Environnement Canada (EC) fait face à ce changement. Les entrevues effectuées avec les employés de ce département ont permis de souligner le fait que la présence d'un leader de projet avec un sens de l'engagement et des comportements sociaux appropriés, est nécessaire au sein d'un projet. Le leader du projet a en effet un impact important sur la réduction de la résistance au changement. L'étude démontre également que, peu importe les qualités et le comportement positif du leader de projet, le support préalable de la haute gestion, est un prérequis essentiel au succès du projet.

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1. Introduction

Public sector organisations worldwide are expected to increase efficiency while simultaneously providing improved and integrated services (Crawford, *et al.*, 2003). The Canadian public sector is no exception to this reality. The Government of Canada (GoC) is currently taking a shift on how it defines and evaluates federal projects. Up to the end of 2007, federal projects were planned, tracked and reported based on their dollar-value, i.e. estimated for their Total Cost of Ownership (TCO). It has been recognized by Treasury Board (TB) that this TCO based approach to assess projects needed to be reviewed. Reports issued by the Auditor General in 1981, 2004 and 2005 on federal government research and development organizations[1] (GR&D) have been critical of the project management practices (Procca, 2008). Some of the points raised by the Auditor General were directed to: the limited use of formal project management documentation and processes; the absence or inappropriate use of project management practices and tools, the inconsistency within federal organizations in their approach in conducting projects, and the low organization maturity when it comes to the overall practice of project management (Procca, 2008). These findings have been supported by a report by Sussex Circle Inc. (2003) for the federal government Council of Science & Technology Advisors (Procca, 2008). In 1994, the Auditor General acknowledged that not only project management practices ought to be improved in some of the federal organizations, but there is also a need for a cultural change toward a more business-like culture (Procca, 2008). This preceding conclusion has been a recurrent theme that the Treasury Board Secretariat (TBS) has

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[1] Federal government research organizations (11): Agriculture and Agri-Food Canada, Canadian Space Agency, **Environment Canada**, Fisheries and Oceans Canada, Health Canada, Industry Canada, National Defense, National Research Council Canada, Natural Resources Canada, and Transport Canada

aimed to address through different project management procedures, directives and reporting tools.

Accordingly, a more efficient and up-to-date approach was required to provide high level directives to federal departments in their progress with project management processes and practices in their organizations. This revised approach ultimately aims to increase the percentage of project success in the GoC. In October 2007, Treasury Board (TB) came up with a new policy called *Policy of the Management of Projects*. Since its creation, this Policy has been updated in December 2009 (TBS, 2009). This Policy is expected to bring a more tailored oversight of the evaluation procedure of projects. By April 1st 2012, the new PM policy will have to be implemented by all Departments of the GoC. A new perspective is now being introduced in the assessment process of federal projects. Instead of the previous TCO based project evaluation, projects would now be evaluated according to their level of risk and feasibility (TBS, 2009). A project assessment tool to support TB's PM policy and the Project Complexity and Risk Standard (TBS, 2008) has been developed by TBS. This instrument is labelled as the *Project Complexity and Risk Assessment Tool (PCRA)* (TBS, 2009). This instrument is the GoC customized equivalent of a private sector based project risk assessment questionnaire derived from the *Continuous Risk Assessment* Guidebook developed by the Software Engineering Institute (TBS, 2008). As indicated by its title, the TBS assessment tool evaluates the risk and complexity level of a GoC project based on seven (7) project focus areas: 1) Project Characteristics, 2) Strategic Management Risks, 3) Procurement Risks, 4) Human Resource Risks, 5) Business Risks, 6) Project Management Integration Risks, and 7) Project Requirements Risks.

Projects are also (and officially will be) evaluated upon a Department's capacity to manage its own projects. This "project management capacity" of a Department is measured based on a standard developed by TBS called the *Organizational Project Management Capacity (OPMC)* (TBS, 2010).

The Treasury Board Secretariat (TBS) has been mandated to lead and manage the implementation of this new project management (PM) policy. Since 2007, TBS opted to implement this PM policy by phases (October 1st 2007) TBS, 2009). For the first phase in the end of 2007 early 2008, four Departments were invited to introduce the Policy into the management process of their major projects. These Departments were, Environment Canada (EC), National Defence Canada (DND), Royal Canadian Mounted Police (RCMP), and the Canada Border Services Agency (CBSA).

The essence of this research is based on the repercussion of this new PM policy on the information technology (IT) Branch of the Department of Environment Canada (EC). More specifically, the focus will be on the Chief Information Officer Branch (CIOB) of EC.

Background Information: The Government of Canada (GoC) general systemic structure, the Department of the Treasury Board (TB) and the Treasury Board Secretariat (TBS)

The Canadian federal government structure and its bureaucracy are quite complex. The "time-consuming processes just to get basic decisions" is often the first factor that often influences bias perceptions of the general public and the private sector

toward the GoC. The GoC is often perceived as being ineffective and dragging its feet when it comes to *making things happen.*

This sub-section has been added to provide an overview and some clarifications of the essential components of the federal government systemic structure. It will also broadly present the position and roles that the TBS plays within this federal "bureaucratic machinery" where everything and everyone has a purpose and a "raison d'être". Hopefully these clarifications will help the reader in putting into better perspectives the subject of this research, its related and defined problematic and the proposed solutions to address the raised problems.

Established in 1867, Treasury Board (TB) is a Cabinet committee. A Cabinet committee is basically a committee of federal government ministers. TB is responsible (for the Canadian Public Service) for: the federal accountability to the Canadian population (tax payers), the respect of values and ethics, the federal budget and financial reporting (comptrollership), the approval of regulations, and the transmission of administrative decision issued by the Governor General of Canada. In essence, the TB manages the Canadian government by translating the policies and programs approved by Cabinet into a context proper for its implementation down to the federal departments. It also provides Departments with resources and administration assets (such as pre-established templates and processes) to undergo their work.

The TB has an administrative wing, the Secretariat, which is formally known as the Treasury Board Secretariat (TBS). The TBS has been established as a Department

since 1966 (TBS, 2007). The TBS supports the TB with its committee of ministers. It also carries out its mandated statutory (e.g. legally authorized to) responsibilities of a central government agency (TBS, 2006). By being the central government agency of the federal government, the TBS is the employer of the core public administration, i.e. the federal departments and the other portions of the federal public administration as listed in the sections I and IV of the Financial Administration Act (FAA)[2]. The FAA lists all the Departments, the Agencies, the Crown Corporations, the Special Operating Agencies (SOA) and the other federal organizations related to the federal public administration. For sake of further clarification, when reference is made to the "public service" it relates to:

> …the several positions in or under
>
> (a) the departments named in Schedule 1 [off the FAA];
> (b) the other portions of the federal public administration named in Schedule IV;
> (c) the separate agencies named in Schedule V; […] (Financial Administration Act - Department of Justice, 2010)

A representation of the structure of the Canadian Federal Public Administration and the corresponding definitions of the terms used within the structure can be found in Annex A.

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[2] **Financial Administration Act (FAA)** is one of the major acts governing the personnel, administration and the management in the public service. This act provides "for the financial administration of the Government of Canada, the establishment and maintenance of the accounts of Canada and the control of Crown corporations" (Department of Justice Canada, 2010).

2. Research Problem

As previously mentioned, TBS has been mandated to implement the new PM Policy in the Canadian Public Service. It is further TBS's mission to be familiar with the challenges confronting the management of projects in the Canadian government under the present project evaluation procedure. These challenges perceived to be even more complex in the case of soft projects (where the deliverables are services and intangibles), and are typically related to the implementation and management of project management standards and procedures. The forthcoming change in the project evaluation criteria, focusing on risk and feasibility, is expected to have a major impact on those problems. One of the consequences of the change will be to impose a formal PM methodology, compliant with TBS PM Directives and reporting expectations related to projects (TBS, 2007, 2008). Even if the new procedures are expected to deliver better long term results, they are also expected to create some significant short term resistance (Gilley *et al.*, 2009, Saksvik *et al.*, 2009, Jacob *et al.*, 2008). Indeed, the implementation of the new policy should impact organizational structures, capacities and processes (Crawford *et al.*, 2003).

Therefore, the research problem can be summarized as being the limited availability of guidelines regarding the management of the expected resistance to change resulting from the implementation of the new project evaluation criteria.

In this research, any branch within a federal Department impacted by the change will be considered as an independent organization (Hornstein, 2010). This should prove to be useful as the new procedure should foster the creation of new conceptual

frameworks at the Department level, reflecting a shift from a centralized bureaucracy to a more flexible contextualized model (Crawford *et al.*, 2003). Under this model, it is expected that the need for new conceptual frameworks will arise locally and that the frameworks will include a focus both on strategic issues and structured managerial processes. The specific federal organization under study is the Chief Information Officer Branch (CIOB) of Environment Canada (EC). Not only is this branch presently implementing the required change in project evaluation criteria, but it also chose to do so using PM methodologies.

Because of this, it was appropriate to consider project management both as a tool to implement change in an orderly manner and as a change generating initiative by itself. In other words, projects generate change (Crafword *et al.*, 2003, Thoms *et al.*, 1999) and projects can be used to formally manage change (Fielder, 2010, Gareis, 2010, Lehmann, 2010, Gilley *et al.*, 2009, Schifalacqua *et al.*, 2009). These two perspectives should be instrumental in identifying issues regarding CIOB's objective of facilitating the change process.

However, resistance to change, even in the narrower context of projects, is still a fairly comprehensive subject. Because of the scope of this research and because of the organizational constraints of CIOB, it was found more appropriate ***to focus the research on the leadership aspect of change management. More specifically, this research will explore the impact of the project leader on the management of the resistance to change.*** Not only is this perspective more useful in terms of providing CIOB with applicable conclusions, but it is conducive to a deeper understanding of this particular aspect of PM change.

2.1 Research Questions

In the process of examining the role of the project leader in reducing potential resistance to change, four questions will be addressed. The first two are required to contextualize the two last ones, which are the research questions:

- (CQ1) First, what is the nature of the required change resulting from the implementation of the new TBS PM process?
- (CQ2) Second, what are the potential resistance mechanisms against that change?
- **(RQ1) Third, what is the influence of the project leader on the two previous questions?**
- **(RQ2) Fourth, what actions / behaviours / attitudes of the project leader can potentially facilitate the change?**

Those questions will investigate the relationship, if any, between the leader's role and competence and the team members' resistance to change.

2.2. Context

As in the private sector, public sector recognizes the benefits of project management (PM) (Crawford *et al.*, 2003). Governments are increasingly encouraging the adoption of project-based management and use of more formal PM methodologies (Crawford *et al.*, 2003). Therefore, the government shift towards a more formal PM practice is to be reflected by the implementation of the new PM policy in the public service. TBS defined project risk levels and project complexity

levels as evaluation criteria to be used in a new integrated approach of PM. The following benefits are expected from this approach: 1) an increased number of projects reaching their goals, 2) a clearer identification of who is (are) accountable for achieving project goals and outputs, 3) the minimization of project risks, 4) a reduction of project overlap(s) and/or duplication(s), 5) improved means to consult key project stakeholders and 6) enhance of the monitoring and reporting procedures of project outputs (TBS, 2009). In TBS terms, the principal result of readdressing the evaluation of projects on capacity and risk sums up to the following:

> An appropriate capacity for managing projects, which reflects the level of project complexity and risk, and integrates decision-making across projects, will support the achievement and demonstration of value for money and sound stewardship. This appropriate capacity will also ensure an optimal contribution to program, organizational, horizontal and government outcomes. (TBS, 2009)

2.3 State of the literature

The history of literature in the PM and project domain pertaining to change, more specifically to change created by projects in an organization, is quite extensive (Collerette *et al.*, 1997, 2006, Lehmann, 2010, Jacob *et al.*, 2008, Krysinski, *et al.*, 1994). The concept of change in the PM Field has been studied and observed (via academic and/or hands-on studies in the industry) for decades (Lehmann, 2010). The effect of change in an organization and its impact inside and outside of the organization has also been well documented in management literature for decades (Gilley *et al.*, 2009, Szabla, 2007, Vas, 2005). Among the impacts of change is the resistance to change (Gilley *et al.*, 2009, Saksvik *et al.*, 2009, Jacob *et al.*, 2008, Laframboise *et al.*, 2003). Resistance to change is a well familiar studied concept

proven and examined by few researchers/authors in the PM Field (Fielder, 2010, Pinto *et al.*, 1998). In spite of these studies, few have been realized in the context of the Canadian federal government (Hornstein, 2010, Laframboise *et al.*, 2003). Fewer have been done to examine the resistance level resulted from changes created by a project in a federal department (Laframboise *et al.*, 2003). Inherently, rare solutions to reduce the level of resistance to change in the context of a federal department have been explored and proposed in past and recent studies (Hornstein, 2010, Laframboise *et al.*, 2003).

In the twentieth century literature, leadership has been studied and written on in thousands of books and references for at least the past eighty years (Turner *et al.*, 2005). As early as 500 B.C., effective leader virtues such as love, proper conduct, piety, and the doctrine of the mean have been defined by Confucius (Turner *et al.*, 2005). In the project management literature some consideration has been made towards leadership styles applied in projects but few has been written on the ***impact*** of the leadership of a project manager on the project and its stakeholders (Yang *et al.*, 2010, Turner *et al.* (2005), Pinto *et al.* (1998)). Writings or studies on the concept of project leadership are somewhat scarce but growing (Müller *et al.,* 2010, Thoms *et al.*, 1999, Pinto *et al.*, 1998). Project leadership stimulates among other things, change on human components of a project through leadership (Schifalacqua, *et al.*, 2009, Turner *et al.*, 2005, Müller *et al.*, 2007, Battilana, *et al.*, 2010). Hence the human factor of leading change is among the essential aspects that ought to be considered when referring to project leadership (Schifalacqua, *et al.*, 2009, Battilana, *et al.*, 2010, Clarke, 2010). There have been few researches made to study the impact of project leadership on changes created by projects in an organization (Battilana, *et al.*, 2010,

Gehring, 2007), few works on the impact of project leadership on the resistance to change (Kan, *et al.*, 2004, Oreg, *et al.*) and rare studies linking the impact of project leadership on change and resistance to change. Understandably, PM studies and researches realized in the context of the public sector related to leadership and its impact on change and resistance to change are very limited (Crawford *et al.*, 2003) and even more so in the context of the Canadian public service (Hornstein, 2010, Laframboise *et al.*, 2003).

2.4 Nature of the Change: How does the change impact the Chief Information Officer Branch and its Stakeholders?

2.4.1 Background #1: Arrival of a New CIO for the CIOB

The TBS's requirements have an indirect purpose of making the overall project management practice and the reporting of project related activities more transparent, logic, and part of an established work process (TBS, 2009). This somewhat ***imposed change*** has its impact on each federal department (and its related branches) part of the public service. Applied to the CIOB's reality, the impact meant to review and apply a more formalized or known project management practice to a branch that is mandated for undergoing all Environment Canada's IT/IM operating activities and enabled projects. The arrival in 2008 of a new Assistant Deputy Minister (ADM) equivalent to the Chief Information Officer (CIO) for the CIOB of EC brought substantive changes of procedures on how projects would be managed. An electrical engineer undergrad and grad (specialty in radar systems), the new CIO had substantive work experiences in the military, computer science, engineering and PM Fields. He then joined the public service in 2006 as a Director General, Chief

Technology Office (CTO) for the IT Services Branch of Public Works and Government Services. Throughout these years of work experience, he often had to act either as a project manager, project lead or project executive for IT/IM and/or military based projects. Since his PM knowledge and experience were already well founded before joining EC's CIOB, he arrived having specific PM preferred approaches. Among them, was his great appreciation and support of the PRINCE2® Project Management Methodology[3].

2.4.2 Background #2: Introduction of a new standardized PM methodology at the CIOB

Consequently, the combination of the new TBS PM Policy and the arrival of this new CIO were bound to create a significant wave of change in the PM practice of the CIOB. The branch has to comply with the new PM Policy. However, the branch's High Management (e.g. group lead by the CIO, joined by the director generals and/or director levels) has a certain level of organization and process latitude on the means by which they reach the PM Policy compliance. From TBS's expectations, the CIOB is required to appropriately report on projects, in due time, and provide a set of minimum proof of proper PM tracking blueprint. Thus, for the CIOB's ADM the first and primal change focus was: the introduction and the progressive application of the PRINCE2® PM Methodology.

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[3] PRINCE2® which stands for "PRojects IN a Controlled Environments" originated from the UK government via the Office of the Government Commerce (OGC). Contrary to PMBOK (PMI teachings) this is a non-proprietary PM **methodology** providing a framework for managing any project of any size (OGC, 2007). The PRINCE2® approach is often used in the military project environment.

The nature of the required change from the CIOB would include a review of current work procedures of how the projects are created, chosen, managed, tracked and reported within the branch. It also would require from the assigned CIOB project managers and some of the project members, to undertake formal PM trainings such as formal PRINCE2® courses. By formal, it means to get either a Foundation PRINCE2® level of certification or a Practitioner level certification[4]. The preceding has the purpose to better situate the CIOB in its PM practices and carry the organization into a "PRINCE2® Project Governance Framework" as the CIO mentioned in one of his All Staff Meeting (Dec 2010) which is comprised of the CIOB PRINCE2® based PM Methodology (see Annex D).

2.4.3 Background #3: CIOB's Organization and Stakeholders Environment

To better grasp the possible CIOB stakeholders of that change, further explanation of the branch setting is provided. As previously mentioned, the equivalent of the Chief Executive Officer (CEO) for the CIOB is at an Assistant Deputy Minister (ADM) level. Under the authority of this ADM, there are about eight hundred and forty (840) full time public servants employees[5] (also known as FTE's: Full-Time Equivalent) divided into five directorates with each having an executive head, i.e. a director general. Under each directorate are divisions each leaded by a director. The majority of the employees in the CIO branch are classified (formalized GoC job

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[4] PRINCE2® Certifications are two levels of accredited courses. The ***Foundation*** is a three-day course with multiple-choice exam at the third day. Its purpose is for the participants to have a good understanding of the P2® principles, project roles, terminology and method. The ***Practitioner*** is a five-day course with a writing exam at the last day. Purpose is for participants to be able to apply P2® to the running and managing of at minimum non-complex projects within an environment supporting P2®. One cannot take the Practitioner course if the Foundation has not been taken and passed.

[5] Approximate number (2% margin error) as of January 2011

classification) as CS's (Computer Systems). The CS levels can go from CS1 to CS5. In the context of EC-CIOB, CS1's are considered junior in their related computer systems expertise. CS2 are usually computer systems expert technicians. CS3's are team leads and/or project leads. CS4's are usually managers and/or project managers, and finally CS5's are director level doing executive tasks. CS's make for about 82%[6] of CIOB's pool of employees. Other found work classifications in the branch are essentially providing services in the branch outside the discipline of computer science. Focus of this case study is on the CS classified employees group which are mostly involve in the project delivery process at CIOB. Clarification (and justification) of the selection process and number of interview participants, will be made later in the paper. A high level organizational chart of the CIOB of EC with the previous divisions/subdivisions is annexed (Annex B) to this paper. The department, directorates, and divisions with key roles to the objectives of this case study (as defined in the "Research Objectives" section of this paper) are red highlighted in Annex B and further explanations are given below.

2.4.4. Background #4: Formal PM Changes applied to CIOB

As previously indicated, the CIOB ADM requires that the PRINCE2® PM methodology be used and implemented in the delivery of its IM/IT based projects. The mandate of reviewing the PM practice and overall PM process within the Branch, and implementing this standardized PRINCE2® PM methodology, has been given to the division of the **Project Delivery Office (PDO)** created in June 2008. The researcher and author of this paper is an employee of the PDO at EC. The PDO is

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[6] Idem

under the Service Standards & Office of the CIO directorate (part of the CIOB) (see Annex B). The PDO is comprised of the main CIOB projects and particularly the existence of the **Project Management Support Office (PMSO)**. The PMSO provides PM advice, coaching, guidance, and support based on the PRINCE2® methodology for all CIOB projects. It coordinates PRINCE2® workshop/training for the branch. It additionally provides these services for other EC departments when necessary for important EC projects or for projects in need of a PM "re-structure". The PDO is making its reputation at EC of a team composed of PRINCE2® PM Practitioner and Foundation CS3-CS4 certified employees. The PMSO is increasingly being known as a resource of project management with PRINCE2®experts.

2.4.5. How all this background is reflected in the current CIOB

Since the beginning of the 2009-2010 government fiscal year (start date April 1, 2009), all CIOB project managers are to formally use the PRINCE2® PM methodology in the management of their assigned projects. Based on the principles of this methodology, a project in the branch would not be called "a project" per se until a project manager has received (or agreed) from a project executive/project sponsor, a project mandate. A project mandate (in the PRINCE2® context) is a high level description of the proposed project. Once the mandate is agreed and understood, the project manager would then officially "Start-Up" the now formally labelled project. The project manager along with the project team would simultaneously undergo the delivery of the project while filling up a series of specific PM PRINCE2® based templates created by the PMSO. The number of PM templates to be filled and the

amount of expected information depend on the project size, risk, complexity, the organization strategic plan, and budget. A project that would be linked to one of the main organization strategic outcomes, involve important aspects of complexity and risk (e.g. public exposure), require a significant budget, etc., is expected to have a more detailed and dense amount of project documentation. According to the PRINCE2® PM methodology, the project delivery includes five (5) main process stages, where one of them "I- Directing a project" (which is the responsibility of the project executive) is done in parallel of the other four (4) main process stages: II- Starting Up a project, III- Initiating a project, IV- Controlling and Managing a stage of a project, and V- Closing a project. Accordingly, the PMSO not only provides any guidance or support to any project team member in filling up the PM templates related to these project phases (and any project related document) but when required or requested, also brings assistance in the project management overall delivery process of any CIOB project. This also includes helping project managers/project executives in filling up the TBS' project assessment tool, the PCRA (as defined in the paper's "Introduction" section). In the context of the EC "PRINCE2® Project Governance Framework" (Dec 2010), the PCRA should be completed at the Initiating project stage. Once completed, the PCRA project score should not only provide information for project reporting to TB but also help and support the project team (including project executive) in redefining the project expectations, requirements, and outcomes from the organization's perspectives.

CIOB is therefore increasingly including and contextualizing the new PM directives as established by the TBS with its use of the PRINCE2® PM methodology in the delivering and reporting of its projects. For instance, on a monthly basis all

CIOB projects are to be reported at the Branch Operations Committee (projects matters) and Monthly Operating Report (for any other initiatives, program, work status) (BOC/MOR). An example of a BOC/MOR report has been annexed (Annex E). Generic project information and status updates are provided. Among the reported information is the allocated project budget, the project manager/project executive, the current project process stage. The status updates are color coded (green-yellow-red basis) and generally concern project specifics such as project scope, schedule, risk, HR, procurement, compliance with budget. Project highlights are added when necessary or when important enough to be raised. The project process status became increasingly important in 2010 as new, more directed indications have been set to all employees of the branch. It was now expected that for any completed project stage if the corresponding PM documentation has not been completed or agreement has not been reached between the project sponsor and the project manager regarding the content of these documents: the project report status should reflect a yellow or even red status related to the current project stage. It is expected that at the following monthly report this same project stage status should be reflected as Green (showing that appropriate measures have been taken to ensure proper and thorough PM practice).

Since October 2010, a new project reporting entity has been created within the CIOB. The **Project Oversight Committee (POC)** assumes the PRINCE2® project management role of programme/corporate management for any project which the CIOB is entirely accountable for its delivery. The POC is the ultimate management decision making body for the CIOB project delivery process. Projects for which the CIOB shares the accountability (e.g. significant contributor) the POC not only

oversees the CIOB components, issues (resolve), resources etc. related to the project but ensures the efficient delivery of its obligations. The POC is structured as a formal committee of senior management representatives from all CIOB directorates. Other EC Branches are invited to the meetings when required specific field experts. The POC is chaired by the CIOB ADM (CIO). The other members are composed of director general and directors of the CIO Branch. The POC meetings are set as required by the Branch senior management. The goal is to have POC project reporting on a regular and automatic quarterly meetings for chosen projects (e.g. more significant, or sensitive, risky and/or complex projects). The requirements and fields to be filled for the POC reporting are quite more substantive compared to the BOC/MOR reporting requirements. An example of a summary one pager POC project report has been annexed to this paper (Annex F). In view of the increase amount of project information and the expected quality of this info to be given to senior management, the PDO is aiming to eventually remove the BOC project reporting to replace it with the quarterly POC project reporting to senior management (and probably a monthly reporting to the project sponsor(s)).

Addendum

(This Addendum has the purpose to clarify some of the content of the gathered data which will be presented and analysed in the "Presentation of Findings" section of this paper)

June 1st, 2011: New Changes in the Government that impacted the CIOB of Environment Canada

In the course of this case study, several changes and decisions were made in the federal government. Few of these changes are worth mentioning for sake of adding precision to the background/contextual environment behind this case study and to clarify the context of some of the gathered data. After the forty-first general federal election of May 2nd, 2011 and the re-election of the Conservative party, Prime Minister Harper followed through with his intentions of saving costs (aka cut expenses) in the public service. To do so, the federal Departments have been asked to realign their structural organization and review their programs in view of the reduced allocated budget (aka budget cuts). These cuts fluctuated depending on the Department or the federal organization's size and according to the Government's priorities for the next 3-4 fiscal years[1].

For example, the government has planned to reduce its expenses by 5-10% by end of January 2012 (PIPSC, 2011). An inevitable consequence of this total expenditure reduction for the federal Departments and organizations, is the use of the public service Work Force Adjustment (WFA). WFA is basically a synonym of "resources reduction".

a) The Application of the Work Force Adjustment (WFA)

The Work Force Adjustment is a directive that can be applicable (i.e. is part of the several public servants collective agreements) in situations such as when substantive budget cuts are applied to one, few or all federal Departments or organizations for which the Treasury Board is the employer (e.g. as listed in Schedule I and IV of the Financial Administration Act – see Annex A). The government has established special programs for federal organizations to facilitate the application of the WFA (PSAC, 2011).

The WFA has impacted EC to the extent that few organization changes were made. Among EC's structural modifications, were the re-organization and the creation of a new branch: the Corporate Service Branch (CSB). The CSB with its new and acting Assistant Deputy Minister (ADM) is comprised of the five former CIOB directorates and the Asset, Contracting and Environmental Management (ACEM) group (Annex C). The significant changes in the former CIOB pertaining to project management were the dismantlement of the PDO and the PMSO. It was however decided to keep the function of the Project Oversight Committee (POC) for projects under the CSB and the Branch Operation Committee (BOC)/Monthly Operating Report (MOR) for executive monthly reporting.

b) Creation of the Shared Services Canada Agency

In addition to the WFA in the summer of 2011, the Government announced on August 4th, 2011 (and launched) the creation of a new federal Agency: Shared Services Canada (SSC) (PWGSC, 2011). SCC has the mandate to transform IT services in the federal government by consolidating IT resources and services (centralizing) in three main areas: email services, data center services, and electronic network services. In a nutshell, it aims at standardizing the process of providing IT services with updated IT technologies and with enough flexibility to support departmental mandates (for each Department) for the previously listed areas.

The changes and realignment undertaken by the government in the summer of 2011 has not affected the application and the planned end date of the transition period of the TBS's new PM policy of April 1, 2012 (TBS, 2009).

Finally, for the context and purpose of this Case Study all the changes presented in this Addendum will not alter or impact the purpose of this research and the sought solution to the research questions. The CIOB continues to be considered and studied as an IM/IT organization.

[a]: A Fiscal Year (FY) in the government starts from April 1st to March 31st of the following year

End of Addendum

3. Research Objectives

3.1. General Research Objective

The main outcome of this research is to propose factors to be considered by project managers in the context of the IT Branch of EC, that would reduce the level of resistance to change created by IT/IM based projects. The impact of project leadership on change and inherently on the resistance level to change will be studied. As previously mentioned, a project manager having a level of project leadership is expected to have positive impacts (reducing effect) on change and the resistance level to change. These positive impacts will ultimately be converted into factors to reduce the resistance to change. These factors will then be used to ultimately develop a solution model, a PM implementation model for an IT/IM oriented federal department.

3.2 Specific Objective

To implement and contextualize the preceding general objective, as previously introduced, this research aims at developing a PM implementation model solution and possible conditions for its application (Fielder, 2010, Procca, 2008) based on the reality of the IT Branch of EC. This model would be in response to the new TBS PM Policy changes, and founded on the TBS expected benefits of the new integrated PM approach (TBS, 2009). From the project manager's perspective, this model applied to the organization of the Chief Information Officer Branch of EC, would constitute a possible project management comprehensive tool for the project managers to manage

change generated by their projects. It would also assist them in their effort in dealing with the counter-reaction of resistance to change.

4. Research Constructs and Theoretical Framework

4.1 Change

The first concept to be applied in this research and to address the first context research question (CQ1) is change. As reminder CQ1 is: *What type of change would be required by this new approach of assessing projects in the federal government?* The change in question here is the kind created in a workplace, which impacts both an organization and how it manages its projects. Change by its nature almost always disturbs, one way or another the equilibrium of powers, the portion of perceived advantages from stakeholders, the required involvements within the organization, and the current work practices (Langley *et al.*, 2008, Laframboise *et al.*, 2003). Generally speaking, one could agree that a possible universal, generic and simple definition of "change" could be: *a variation from one state/ form to another* (Lewin, 1951, Collerette, *et al.* 1997, Gilley, *et al.*, 2009). If we consider an organization as a human body with an immune **system** (Gilley, *et al.*, 2009, Jacob *et al.*, 2008) then and as the human body's immune system its natural tendency is to maintain and defend its equilibrium state or status quo (Gilley *et al.*, 2009, Collerette *et al*, 1997). When change occurs, a series of several categories of events and reactions follow: e.g. organization restructuration, modified work and decision processes, work dynamic transition, different levels of resistance from impacted individuals, etc. (Jacob *et al.*, 2008, Collerette *et al.*, 2006, Langley *et al.*, 2008). Taking on change can be a serious challenge. As written in *The Prince* by Machiavelli (published in 1532) translated by Marriot (2001):

> … it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, then to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions and lukewarm defenders in those who may do well under the new.

Change can be an even bigger challenge when it ought to be applied in the public sector (Hornstein, 2010, Jacob *et al.*, 2008). Among the recognized challenges among the subject experts of undertaking change are: the size of organizations, the multitude of different groups of stakeholders impacted by the new governance, a large mission, the rigid legal structure, established dispositions set in the collective agreements, stagnant informational and technological processes applied in rather unchanging applications, and limited financial resources (Hornstein, 2010, Jacob *et al.*, 2008). In the public sector, changes to be made to the organization's structure may involve concrete goals with precise schedules hence, easier to manage. Whereas transformations involving changes to paradigms, are more complicated to manage in a governmental environment (Hornstein, 2010). These transformations of cultural or systemic nature require a greater time investment (Jacob *et al.*, 2008, Laframboise *et al.*, 2003).

The concept of "change project" (Krysinski, *et al.*, 1994) has its significance in this research. As previously introduced, the changes originated by TBS are to be managed by projects in the organization of the EC-CIOB (Lehmann, 2010, Jacob *et al.*, 2008). These "change projects" generate systemic changes (i.e. affecting the organization) at the EC/CIO branch. Systemic change is a long-term continual engagement that usually goes through phases linked by unrestrained time frames (Krysinski, *et al.*, 1994). Hence, many aspects need to be looked into when dealing

with a change project. The critical factor is *time*. The time to allowing the stakeholders to acknowledge, understand, verbalize, learn, and lead a change project (Laframboise, *et al.*, 2003, Krysinski, *et al.*, 1994). The time factor can be transposed into a stage(d) approach in dealing with change projects. As defined in the article by Krysinki, P.R. and Reed, D.B. (1994) at the early stages of a new change project the four phases to keep in mind are:

Phase 1 – a) the stakeholders' assessment and awareness,

b) the project change assessment including the planning of the implementation, monitoring and evaluation stages.

Phase 2 – the project implementation including the implication and coaching of the essential stakeholders.

Phase 3 – the monitoring of the project change plan.

Phase 4 – the evaluation of the plan (assessment of the new "way" of doing things)

The phases may appear to be sequential but throughout the project change time frame (which can last up to several years) these phases can be cyclical and/or iterative until the project completion.

Therefore because of its complexity, especially in the public service, it could be conceivable that to increase the chances of successful change three things might have to be considered in this research: 1) the nature of the change affecting the IT branch of EC which could be for instance occasional, continual (progressive), or both (Collerette, *et al.*, (1997), Langley *et al.*, 2008), 2) to adopt a stepwise approach to change (Laframboise *et al.*, 2003), and 3) to subdivide the change into specific critical

stakes (objectives). The preceding should increase the main stakeholders` understanding and the legitimacy of the change to be undertaken (Jacob *et al.*, 2008, Krysinski, *et al.*, 1994). Diagnosing, planning and reviewing a change action plan with clear objectives and finally implementing that plan, has historically been an agreed way to go about managing change (Gilley *et al.*, 2009, Jacob *et al.*, 2008). Not only the steps for undertaking change (the "how") need to be well defined but the reasons and visions of its objectives (the "why") should also be communicated (Jacob *et al.*, 2008, Laframboise *et al.*, 2003). One option for the researcher is to consider the possible usefulness of analyzing the changes originated from the Policy and the changes to be made to the EC IT branch to address the Policy, by means of a new or existing change model - e.g. Lewin, Ulrich, or Kotter's model - (Gilley *et al.*, 2009). As previously mentioned, the main purpose of this research is to provide useful factors for project managers in succeeding in the implementation of change by reducing the resistance to it. To be successful, change ought to be carried out upon the inspiration of Machiavelli's quote (as stated before) where the "old" habits and culture need to be broken to free the organization and its people to innovative perspective (Hornstein, 2010, Huntoon, 1998).

In the context of public service, to address change and strategize it, the approach that ought to be considered is to breakdown the analytical framework by key stakes (objectives) such as (see Table 1):

Table 1

Key Stakes Approach to Change

Key Stakes (Objectives) Categories	Description
Rational Stakes:	Capacity to improve – realistic, reasonable improvements
Human Stakes:	Capacity to contribute – direct stakeholders[7] involvement
Political Stakes:	Capacity to cooperate – indirect stakeholders[8] cooperation
Symbolic Stakes:	Capacity to self-identify – bring meaning to change

4.2 Resistance to Change

The second concept to be applied in this research and consequential to the first defined concept of change is the resistance to change. Studying the resistance to change in the case study of the CIO branch of EC will address the second context research question (CQ2): *What is the resulted resistance of this imposed change* (by TBS)? It has been mentioned in this paper that among the imminent consequences of change is the resistance to change (Gilley *et al.*, 2009, Karp *et al.*, 2008). By aiming to understand through the literature research how and why resistance occurs it will help assessing how to deal with the resistance and eventually reduce it in the context of a project. There are several reasons for resisting change: uncertainties of the unknown, novelty, routine distraction, culture change, loss of status-control-power-security, etc. (Gilley *et al.*, 2009, Laframboise *et al.*, 2003, Krysinski *et al.*, 1994,). For the purpose of this research, when referring occasionally to the level of acceptance of change (instead of level of resistance) from a singular or a group stakeholder, it does not necessarily mean there is no resistance from that stakeholder.

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[7] Individuals directly impacted by a project change or a change project

[8] Individuals indirectly impacted by a project change or change project (but could be divergent factors to the change(s))

Even if a majority within a group accepts change one should not overlook the fact there still a portion that is still resisting (Laframboise *et al.*, 2003). From the article published by Gilley, A. Godek, and Gilley, J.W. (2009), if taken from the angle of levels of general acceptance, stakeholders can be regarded as (Table 2):

Table 2

Categories of Stakeholders

Categories of "General acceptance" for Stakeholders	Description
Innovators:	Enterprising, information seekers
Early Adopters	Opinion leaders respected members of a social group
Early Majority:	Deliberated accepters of change
Late Majority[9]:	Skeptical and sometimes surrender to peer pressure to change
Laggards[10]:	Traditional relentless individuals attempting to hold on to the past

Note. Taken from From the article published by Gilley, A. Godek, and Gilley, J.W. (2009)

Assessing the level of acceptance of change from stakeholders related to the IT-enabled projects of the CIO branch of EC, and understanding the reasons and context for which they have come to accept these changes will allow to extracting the common links (factors) of acceptance to change. It is therefore the intention behind this exercise by evaluating the level of acceptance to derive the level and the forms of resistance of the impacted stakeholders. The comprehension of the roots underlying the whys and the "by which means" of the resistance constitute a good basis on which solutions to reducing the resistance level are proposed in this research.

According to Jacob, *et al.* (2008), among the expected items to consider in studying factors to reduce resistance to change includes:

- to distinguish the constructive to counter-productive resistance to change;

[9,10] : Mostly resistant to change

- the implication of the main stakeholders in the change process via interactive communication involving sharing and dispatching information by any useful means;
- to demonstrate the necessity of the change as a plus-value to the impacted individuals;
- an appropriate learning plan to break the incrusted routine work practices and beliefs (culture);
- the credibility of the change instigators'; and
- the positive outside perception to the approach to change

When associating the change concept with the resistance to change, two observations ought to be kept in mind: 1) change enablers by their interventions or incorporations can change projects and organizations but in return, projects and organizations can also modify the nature of these change interventions while being implemented (Langley, *et al.*, 2008), and 2) resistance is often a symptom of an unease feeling rather than a rising human shield against change (Jacob, *et al.*, 2008, Laframboise *et al.*, 2003). Change and resistance to change are dynamic phenomenon. Depending on the change process, its interaction with change enablers and the stakeholders (direct and indirect), the change originally planned can eventually be transformed to a more contextualized change (Langley, *et al.*, 2008).

4.3 Project Leadership

Project Managers play a central role in their organizations. They serve project executives to reach their project objectives by 1) linking a variety of stakeholders, 2)

trying to keep a unified project team spirit and 3) aiming to balance the requirements, time and cost constraints throughout the project life. It is then understandable for numerous authors to indicate that leadership skills are among the essential qualities that project managers can possess or gain (Thoms *et al.*, 1999, Pinto *et al.*, 1998).

Leadership in its essence is about transforming ideas and notions into action (Elkins *et al.*, 2003), Pinto *et al.*, 1998, Krysinski *et al.*, 1994). In view of the literature (in the general interest and multidisciplinary areas such as management, organization, business, education etc.) this specific concept seems to generate two main schools of perception that sums up to *you are either born a leader or you become* one (Battilana *et al.*, 2010, Geoghegan, *et al.*, 2008, Gehring, 2007, Turner *et al.*, 2005, Pinto *et al.*, 1998). It is important to underline the fact that the intention behind this project research is not to pick a side between leadership as an inherent part of a personality and leadership as a quality gradually being taught and/or trained. To examine this duality within the notion of leadership, could be the source of a separate project research and is outside the scope of this paper.

Henceforth, the final concept to be studied and applied to this work is the notion of project leadership. Using the case study approach to research (management) leadership is consistent with earlier studies made on leadership in projects (Müller *et al.*, 2010). If undergoing a project change can have its string of hurdles, practicing project leadership is challenging especially because it directly tackles the management of human resources (Karp *et al.*, 2008, Pinto *et al.*, 1998). Project leadership will be crucial to the analytical portion of this research since its impact will be studied on the management of projects at the CIOB of EC. Investigating on

change and resistance to change will first be used to portraying the historic background of the CIO of EC and its management of IT enabled-projects. Once the conceptual framework is depicted for the two preceding defined concepts, the project leadership notion will be fundamental in addressing the two research questions:

- **(RQ1)** What is the influence of the project leader on the nature of the required change resulting from the TBS PM Process change and on the potential resistance mechanisms against that change?
- **(RQ2)** What actions / behaviours / attitudes of the leader can potentially facilitate the change?

The introduction of the concept of project leadership in this case study where change is generated by projects is fundamental. It will allow analyzing the consequences of leadership on change projects based on the *competence school* (Müller *et al.*, 2010, Geoghegan *et al.*, 2008, Gehring, 2007, Dulewicz *et al.*, 2005, Turner *et al.*, 2005). The competency school, which has been emergent since the 1990s includes all the previous leadership schools (i.e. behaviour school, contingency school, visionary and charismatic school, emotional intelligence school) (Müller *et al.*, 2010). According to previous researches and studies "competence" is generally accepted as being a combination of knowledge, skills, attitudes, and behaviour that trigger work performance (Müller *et al.*, 2010, Gehring, 2007). Focus is therefore to visit the influence and impact of leaders' competence in the process delivery of change projects. This case study will help to elucidate in the public service framework, if project leadership will have a positive or negative impact, i.e.

facilitating or impeding/delaying the stakeholder acceptance of the change generated by the project delivery process; or have no effect on the stakeholder acceptance level.

In 2003 Dulewicz and Higgs have developed an assessment tool called *Leadership Development Questionnaire (LDQ)* and a model, which are increasingly used, in recent studies on the subject of leadership in project management. The LDQ is a well-known and recognized questionnaire (for its scientific thoroughness in its creation) for the adapters of the competency school of leadership (Müller *et al.*, 2010, Geoghegan *et al.*, 2008, Dulewicz et al., 2005). In developing this tool, Dulewicz and Higgs did an extensive review of leadership studies, researches, theories, and assessment tools and highlighted and used fifteen (15) leadership dimensions to identify three (3) leadership profiles for organizational change projects. These dimensions, leadership profiles and corresponding brief description can be found in Annex G. These dimensions and leadership profiles will be compared and analyzed with the gathered information from the interviews. Similar leadership components (between Dulewicz and Higgs' study and the interviews) will be extracted and form the basis of the analysis of evaluating the impact of these leadership components on change and the resistance of change at the CIOB of EC.

5. Research Methodology

5.1 Case Study Qualitative Research

The Case Study methodology is chosen for this research because it will allow a more holistic, in-depth investigation of the subject matter in the context of a federal department (Yin, 2009). The suggested and previously defined constructs of change, resistance to change and project leadership will be studied in the context of the subject of this case study. The said subject, i.e. the CIOB of EC, will be regarded as an organization. This approach should provide the "subjective reality" of the current state of the organization, its projects, and the three research concepts, as perceived by the case study population. These viewpoints taken from the solicited participants will form the basis of the gathered data and its analysis. The participants' perspective will hopefully facilitate the research pragmatic approach to understanding the CIOB of EC and the methodology in seeking solutions to the research questions.

Taken from the constructivist paradigm of Piaget (1967), this project research will be a phenomenologic qualitative research approach based on the CIOB of EC as the case study. It has been mentioned in the article written by Jacob *et al.*, (2008) on the management of the strategic change in public organizations, that the case study is believed to be a good vehicle to highlight key success factors for implementing change in the public service. The milieu of the public service is also generally identified as more inclined to "let itself" be observed than the private sector for sake of research or phenomenologic concept studies (Jacob *et al.*, 2008). It is therefore believed that knowledge development might be more significant in the public sector

than the private sector. In view of the interest of this research on change, resistance to change and the project leadership impact on the change resistance in a public organization, some of Jacob *et al.*'s (2008) findings are applicable in this case study. The scope of work of this research involves the literature review of the defined three concepts, an analysis of a semi-structured interview touching these concepts in the context of the GoC, and the development of a project management (PM) implementation model solution. This PM model solution would serve to identify gaps between a federal government department's structure-culture and the optimal project management structure-culture (Hornstein, 2010). It would also serve as providing recommendations on ways (solutions) to linking these gaps and develop possible conditions for its application.

5.2 Literature Review

The literature review has few folds: 1- to explore and develop a fundamental understanding of each featured concept, i.e. Change, Resistance to Change and Project Leadership; 2- to develop an understanding of the cultural-structural background of project management (PM) of IT enabled-projects in the CIOB of EC; 3- to examine methods/procedures for increasing the PM maturity and practice at the EC-CIOB; and 4- to review existing PM models. The literature review findings will then be compared and be considered when analysing the gathered information from the proposed semi-structured interviews to be given to few public servant employees. More details are provided on this matter in the next section.

5.3 Data Collection

The literature search is comprised of searching through two main online databases engine tools (University du Quebec en Outaouais (UQO) online library/publications tool and the Haute Étude Commerciale (HEC) online library/publications tool) to access scientific and professional Web site publications (e.g. International Journal of Project Management (IJPM), Project Management Journal (PMJ), Leadership and Organizational Development Journal (LODJ), International Journal of Public Administration, Public Administration and Management, The Leadership Quarterly, Telescope). Other sources of publications are also searched such as peer-reviewed publications, government reports, specialized textbooks written by researchers and practitioners. Keywords such as "project change, project management, change organization, change management, resistance to change, leadership, project leadership, leadership-resistance, federal government, public service, government of Canada", have been used independently or in combination in the online searching engine tools. As the research evolves and following an iterative methodology, there is an increased amount of more concise gathered information pertaining to or applicable to the milieu of project management. The researcher can thus cultivate a richer and in-depth level of work.

An extensive and iterative search has been done. In view of the status of the existing literature and the scope of this research, saturation has been reached through the literature review of the fields of the three key research concepts.

5.4 Semi-Structured Interview

A semi-structured interview will be used for interviewing sixteen solicited employees (participants) of the CIOB of EC and chosen on three hierarchical levels. On contrary to the other interview formats, the semi-structured interview with its included open-ended questions would help to better define and emphasize the perceptions of the participants on concepts related to the research questions. The semi-structured interview provides direct information (from each participant), different or even new perspectives of the case study. It finally verifies by means of the interview questions particularities of the research investigation (Aktouf, 1987). Since the researcher is a current employee in the studied organization, observation is an additional advantage to cultivate a better understanding of the context and research interests to then develop effective semi-structured questions.

Even if the researcher is a current employee of the studied organization, independence between the participants and the interviewer will scrupulously be respected in the data gathering process of this research. No CIOB employee who might have any direct[11] line of authority (based on the hierarchic organizational structure) with the interviewer will be interviewed. It will therefore ensure the impartiality, transparency and neutrality of the gathered (and observed) information.

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[11] By "direct" it is inferred a responsibility link between two employees when it comes to setting and review work performance

The selection process of the participants will be described in the next section of this paper. The Interview Guide (IG) (as seen in Annex H) provides a reliable, comparable qualitative data of the research topic. Combined to the Consent Form (see Annex I), it provides to each participant further information on the research goal, the purpose behind the interview, the intentions of the gathered results and the means by which the confidentiality of each participant is ensured.

The information sought in this project research could be intricate and multifactorial. Therefore the semi-structured interview would allow the participants to supply some direction with open questions. The interview will allow to inherently measuring specific dimensions through indicators. Among the dimensions to be measured are: current project delivery context, change[12], impacts of change, resistance to change vs. acceptance of change, impacts of resistance or acceptance to change, project leadership, impacts of project leadership, etc. Once the dimensions are set, *indicators* such as: organizational project climate and availability of resources, interviewee's perception of change, resistance factors and/or satisfaction factors to change, interviewee's perception of project leadership, project leadership criteria, project manager competencies, perception of project manager competencies, and other possible significant values to be explored when creating the interview template will be reflected in the interview questions.

The Interview Guide (IG) is comprised of these indicators. As indicated in the IG, to comply with the Université du Québec en Outaouais (from thereon referred to

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[12] As previously mentioned in this paper, 'Change' here refers to the kind that is created in a workplace that impacts both an organization and how it manages its projects

'University' or 'the University') Research Committee Ethics, a Consent Form (Letter of Agreement) and Confidentiality Agreement (see Annex I for Consent and Confidentiality Form) must be signed before undergoing any interviews. These forms will be provided in advance to each participant few days or hours before the interview by email or paper format. The face-to-face format is favoured for the interviews and the phone interview will be an option in extreme circumstances, such as when the interviewee is unable to physically be present (e.g. substantive geographic distance between participant and interviewer). Recording the interviews will be essential in this project research to ensure a plus value in the legitimacy (authenticity) of the gathered information (responses). If the interviewee declines to be recorded, the interview will still be given but the gathered data might be as used as secondary information.

The purpose behind the interview will be to compare (and hopefully validate) the literature review findings and depict the cultural/structural context of federal departments. The findings will also help in contextualizing a proposed project management implementation model to the reality of the IT Branch (CIOB) of EC. Hopefully this model will be useful for the delivery process of projects at EC.

5.5. Participants

As previously mentioned, sixteen participants, i.e. sixteen federal government employees (FTE's) from the CIOB of EC will be chosen to undergo a semi-structured interview based on the three research concepts previously defined in this paper. Different types of projects are undertaken in the IT branch. Even if most of these

projects are IT/IM based (about 90%), other kinds of projects are delivered to improve different work processes in the Branch. As the focus of this case study is for an IT/IM organization, the interviewees' selection is taken from the Computer Systems (CS) work classification group. This group forms a bit more than 80% of the CIOB work force. The CIOB employees' distribution list based on their work classification has been annexed to this paper (Annex J). There are about 840 employees in the Branch (with a 2% margin of error since numbers have been manually compiled from each separate directorate org chart and summarized in Annex J). From the project management (PM) perspective, CS1's are usually computer related technology support employees. They form about 21% of the CS community and about 17% of the CIOB organization. CS2's are usually computer related technology experts. They form about 40% of the CS community and about 33% of the CIOB org. CS3's are usually team/project leads. They form about 25% of the CS community and about 20% of the CIOB org. CS4's are usually project managers. They form about 11% of the CS community and 9% of the CIOB org. Finally, CS5's are usually executives or project executives. They form about 3% of the CS community and about 2.6% of the CIOB org. The selection of specific CS interviewees will primarily be done according to their level of experience in the process of project delivery and the expected higher impact that the change might have on these participants. The minimum number of years of projects experience required for an employee to be considered for an interview is five (5) years. In the federal system (especially established by the Human Resources) a minimum of five (5) years of experience at a same position or within a similar field is considered at senior level. For instance one can be a "Policy Advisor" but classified a "senior Policy Advisor" with a minimum of five (5) years of experience. For these preceding reasons, the

CS1's are not being considered in this case study, nor for the interview and for the data (information) gathering exercise. To ensure all the CIOB directorates have been considered (in view of the distribution of CS's) and the expected higher impact of change on some of the CS's is reflected, the following numbers of CS participants have been chosen as sampling pool for the project management context of the CIOB:

- Three (4) CS5's (Three from SSOCIO and one from BASD) ;
- Seven (7) CS4's (one (1) from BASD, two (2) from IMD, one (1) from MPSD, one (1) from SSOCIO and two (2) from OPSD);
- Three (3) CS3's (three (3) from IMD); and
- Two (2) CS2's (one (1) from IMD and one (1) from OPSD).

⇨ Total = Sixteen (16) interviewees or participants.

The majority of the participants' selection pool is represented by the CS5-CS4 since a greater impact (off the changes) is anticipated at these levels for the project delivery work practice and work processes. For example, transparency of project accountability (sponsorship) is increasingly required by project executives (CS5) in the Branch. More thorough PM documentation, follow-ups and links with the project team members and the project executive(s) are necessary from project managers (CS4). These consequences have the purpose to create a more visible and effective project reporting at all levels (CS2 up the ladder to TBS) which should facilitate decision making in the process of project delivery.

The opted number of 16 participants is expected to be sufficient to reach data saturation and consequently provide a substantive amount of valuable information.

Throughout the course of this project research it is understood that proper and thorough ethical codes and conditions will be followed and respected. Hence, a Consent and Confidentiality Agreement Form (see Annex I) is used and presented to the University Ethical Committee where this research is undertaken). The Consent and Confidentiality Form comprises clear explanations of the purposes and foundations of this research. No interviews will be done without prior signing of the Form by the participant ensuring his or her confidentiality in any divulgation in the context of the case study research. Signed copies of the Consent Form from each participant are available and stored in the research director's possession.

5.6 Data Gathering and Analysis

At this stage of the project research, the gathered information has been mainly done through the means of consultation of references and eventually the information taken from the interviews will also be compiled. Once all the information/data is gathered different analysis means will be used. A first technique will be direct data compilation and data interpretation from the researcher/observer via an iterative process of cleaning-grouping-summarizing the gathered data. As the iteration progresses so as the justification of the reasoning behind each of those iterations will be documented to reflect situations where observations are include or excluded from each summary. A second technique will be the use of a data process tool, i.e. computer software (e.g. Nvivo Data Analysis Software) to compile, manage the data and assist the researcher with the analysis of the gathered data.

The findings from the interview will be compared and validated with the literature and/or traditionally accepted indicators in the PM domain. The gathered data/information will be fundamental in proposing a PM implementation model solution for the department of the CIOB of EC.

The concept of change and resistance to change will be studied, inquired, and compiled in the context of the EC-CIOB based on some of the categorization previously explained in this paper (i.e. *key stakes or objectives categories* for the concept of change and *stakeholders' acceptance categories* for the concept of resistance to change). Some of these essential changes are stemming from the TBS PM Policy, which raises the particularity of this research to the predicament of the Canadian federal government.

Project Leadership competencies (inspired from work done by Dulewicz and Higgs published in 2003), will be compared to the interviews collected information. The overall gathered information will be compiled and analyzed with pre-established criteria (e.g. the situational context in which the defined leadership competence occurred, the relationship of the participant with the source of project leadership, the impact on change and resistance to change, etc.). As previously mentioned in this paper few authors such as Müller *et al.* (2010), Crawford *et al.* (2003), and Dulewicz *et al.*, (2005), "competence" in this research means a combination of skills (learning factors), personal characteristics (e.g. personality, traits), behaviour and knowledge (cognition). The compiled leadership competency findings will be mapped to the well validated Leadership Dimensions Questionnaire (LDQ) developed by Dulewicz and Higgs in 2003. Ultimately, the purpose will be to highlight project leadership

competencies that have the tendency to facilitate the introduction of change generated by projects and facilitate the reduction of resistance to that change in an organization (addressing Research Questions #1 and #2). These project leadership competencies will be significant in the creation of the proposed PM solution model. Examples of proposed solutions could be a new mandate for departmental project delivery, a modified or new change management approach, an updated definition of the roles and responsibilities for the actors, etc. By factoring in the introduction of change (via project change), the resistance of project stakeholders to this change and the contribution of project leadership practices in a change project, the research findings could be valuable in the creation of a possible future "comprehensive PM implementation management process" (Collerette *et al.*, 2006) for the EC-CIOB.

5.7 Reliability

In the course of this research, the researcher aims at ensuring the veracity of the research methodology and the gathered information (data). As it is a qualitative research study the goal is to get the most reliable and valid findings (Gagnon, 2005). Internal reliability of the research findings is ensured by using concrete and precise descriptive terms, by protecting the raw data, using informants (research director and at least one employee of the CIOB) to confirm (validate) the gathered data and review the analysis of these data. The external reliability is also optimized by controlling the researcher's impartial position (influence or bias) on the results. External reliability is also ensured by describing the informant's selection, the identification of the characteristics of the case study environment, the study concepts, constructs and theorical framework, and the data gathering strategy.

5.8 Validation

A central issue in qualitative research is validity. Validity at this point pertains to reflecting both the internal and external validities of this work study. The internal validity is fundamental in a case study and constitutes its principle advantage (Gagnon, 2005). The internal validity is addressed by, controlling the effect of the presence of the observer (researcher) on the nature of the collected data (via for instance the interviewer's corroboration notes); by using a representative selection of participants and manage any potential change not to influence the data gathering procedure; and by "cleaning" any challenging information using confirming or contradicting information/data by means of comparison (e.g. triangulation, Ferlie *et al.*, 2004). The triangulation will be made between the gathered information/data taken from the semi-structured interview, literature review, and other studies (if available). Other validity means will be used when needed. For example, the *interview sampling*, *respondent validation*, *peer debriefing*, *extended engagement of participants* (respondents), and *use of recording* will be considered. The external validity is addressed by, making sure of the applicability of the concluding constructs and results to other contexts (avoiding idiosyncratic positions and instead promoting possible parallels with other circumstances) (Gagnon, 2005); by observing a non-overexposed study environment (to avoid studies saturation applied to one site); and by tracking the history of the gathered information with its explanation.

To summarize, the data analysis will be presented according to what has been gathered through the search of the literature, other studies and findings from experts

in the domain. The preceding will be combined to what has been gathered through the findings of this project research (e.g. interview, debriefing, etc.) and based on the three essential research concepts: Change, Resistance to Change and Project Leadership.

6. Presentation of Findings

6.1 Data Gathering by Semi-Structured Interviews

Sixteen (16) semi-structure interviews have been performed within the month of October 2011 to public servant employees of the Computer Science (CS) work classification from the CIOB of Environment Canada. As mentioned throughout this research, three concepts have been studied through the fourteen questions of each interview. These concepts are: Change, Resistance to Change, and Project Leadership and its Impact on Change. The findings from these interviews will be compared, analysed (including the use of the NVivo qualitative data analysis tool version 8) and mapped in reference to those concepts.

6.1.1 Selection of Participants

All the interviewees (also called "participants") have a long experience (minimum of five (5) years) in the domain of project delivery and project management (PM). Their level in the hierarchical organization varies from director to technical support employee. A summary of the interviewees' experience and expertise is reflected in Table 3.

Table 3

Interviewees' Hierarchical Level and Years of Experience (GoC, PM, and both)

		Years of Experience			Domain of Expertise
Interviewee	Hierarchical Level	GoC	Project-PM	PM in the GoC	
1	CS05 (Director)	15-19	20-24	15-19	Strategic Planning
2	CS05 (Director)	25-29	20-24	20-24	Portfolio Management
3	CS05 (Director)	20-24	10-14	10-14	Quality Assurance, Deployment
4	CS05 (Director)	10-14	15-19	10-14	Enterprise Architecture, Innovation
5	CS04 (Manager)	10-14	10-14	5-9	Quality Assurance, Web Services
6	CS04 (Manager)	5-9	5-9	5-9	Business Analysis Services
7	CS04 (Manager)	15-19	15-19	10-14	IT Operations
8	CS04 (Manager)	20-24	15-19	15-19	Enterprise Architecture, Innovation
9	CS04 (Chief)	20-24	20-24	20-24	HPN, Data Acquisition and Distribution Services
10	CS04 (Manager)	15-19	10-14	10-14	Data Center Operations
11	CS04 (Manager)	30+	5-9	5-9	Business Development Application Services
12	CS03 (Business Analyst)	10-14	5-9	5-9	Information Management
13	CS03 (Team Leader)	10-14	5-9	1-4	Information Management
14	CS03 (Project Leader)	15-19	10-14	10-14	Project Leader
15	CS02 (Tech Support Analyst)	15-19	5-9	5-9	IT Operations
16	CS02 (IM Analyst)	10-14	5-9	5-9	Information Management
Average		15-19	10-14	10-14	

Note. The above Interviewees' Summary has been sorted by 'Hierarchical Level' and not necessarily in the order in which the interviews have been given

It can be seen in the previous table that the level of experience in the domain is considerable. On average, the interviewees' years of work experience in the Government of Canada (GoC) is between 15-19 years. Also on average, the

interviewees' years of work experience in the domain of projects and PM is within the range of 10-14 years. Finally, the interviewees' average number of years of work experience in the domain of projects and PM in the GoC is also in the range of 10-14 years. This experience guarantees that their overall knowledge of the general practice of PM and more specifically their understanding of the context and reality of the federal government when it pertains to managing projects is relevant and credible. They have a clear understanding (or at least opinions) of the differences between practicing PM in the public service compared to the private sector.

6.2 Change

The questions on the concept of Change were used to set the context for the two research questions. As a reminder, the first "Context Research Question" (CQ1) is: "What is the nature of the required change resulting from the implementation of the new TBS PM process?".

6.2.1 Approach to Project Management

The first question of the interview questionnaire was about the participants' approach to PM. Using NVivo, data analyses were made on the basis of the most frequently used key words or key terms ("key" in the sense of meaningful to identify themes or concepts). These queries also included "wildcards", i.e. any possible characters at the end of these key words (e.g. "structure*, which would include "structures" and "structured", etc.). It was obvious that all participants at all responsibility levels recognized the value and importance of project management. According to them, a structured approach is necessary to manage projects to at least

ensure a measurable business value and a return on investment for the project. It was expected that the PRINCE2® PM methodology would have an impact on the participants' approach in dealing with projects in CIOB in view of its PM organizational governance. Often, the mention of PMBOK referred to the participants' former PM approach with projects or the fact that they still use parts of it within a PRINCE2® approach. The analysis showed that ***eleven (11) participants (69%)*** used the term 'PRINCE2®' in their answer (besides the obvious terms such as "project" "approach" and "management). ***Among these eleven (11), five (5) participants (31%)*** used the term 'PMBOK'. ***Eight (8) (50%)*** used either one of the terms "clear" or "structure*"in their answer. ***Fifty percent (50%) of the participants*** did not really care about how the approach is labelled, as long as there is a certain structure or a minimum of process in dealing with projects. One director summed it up from his perspective: "I am way more focussed on people management and results", raising the importance to track the success criteria from the onset, regardless the PM methodology (framework) used. It should be noted that ***fourteen (14) participants (88%)*** used either one of the terms "people, stakeholder*, team*, member*, staff, employee*) in their answer. The study uses these terms to evaluate the human resources (HR) factor in projects (or PM). The participants' response illustrates that the HR aspect needs to be taken into consideration (even at pre-project stage) when tackling PM.

6.2.2 Federal Government Change in Project Management

The second, third and fourth questions were linked to the change in the federal government regarding PM. This change, introduced by Treasury Board Secretariat

(TBS), is mainly governed by its recent PM policy (to be officially enforced to all Departments in 2012). The purpose was to evaluate the interviewees' impression of this change, how it impacted them, and what, according to them, would be required to face the necessary changes. Each interviewee understood the goal and purposes behind the policy in addressing, for instance, the reality of failed IT projects (TBS, 2009) in the federal government and providing standardized expectations **on what to report** on projects. ***Ninety-six percent (96%)*** thought it was a positive requirement since it didn't require major changes for an organization already using the PRINCE2® methodology. However, one common issue raised was on **how** the PM methodology and its practice were implemented in the branch and in general introduced to EC. The use of PRINCE2® was often perceived a 'filling PM template documents' exercise instead of being a tool that can be tailored to each project.

One manager summed up the recent reality of IT when it pertains to PM and how the TBS PM policy impacted the IT employees in the GoC:

> IT department shops across the government are forced to become more attentive to how they run projects, how they express business value, [how they] do cost analysis and business cases, and to express it in such a way that it's clear to management of the IT side and it can actually be explained in such a way that the business side can understand it.

How the change impacted (positively, negatively or neutrally) the participants' daily work has been summarized and classified according to their hierarchical level in the following table:

Table 4

Impact of the Change on the Interviewees' Daily Work

Impact (change) on Participant's daily work	Hierarchical Level				Observation(s)
	CS02	CS03	CS04	CS05	
Positive Impact:	2	2	2	1	Mainly because of the need to be more structured and transparent in the management of projects and in its accountability
Negative Impact:	0	0	0	0	No participants perceived the change (PM policy and use of a more formal PM approach) as having a direct negative impact on their daily work
Neutral or no impact:	0	1	5	3	Most of these answers included a clarification of indirect changes (impacts) on the overall work process in CIOB

Fifty percent (50%) of the interviewees' perceived the arrival of the TBS PM policy and consequently the use of a more formal PM methodology in PRINCE2® was positively changing their daily work. The ***remaining fifty percent (50%)*** (where half of that percentage comes from the manager and director levels) did not perceive any major change to their daily work. This was mostly due to the fact that the use of an official (mandatory) PM methodology in CIOB did not put the focus on the Policy per se.

However, even considering their generally positive evaluation of the impact of the change these participants did admit that, to face the change resulting from the Policy, having only a formal PM methodology in the organization, is insufficient. Planning and handling projects on the basis of a set approach (methodology) becomes a bureaucracy or administrative exercise if no resources and time are allocated to manage and apply the approach to projects. This change also has to be considered from a more holistic perspective. At some point, projects have to generate business value, and return on investment to the Department as a whole. As it will be seen later, it is also crucial **to be transparent about it** (documenting via a business case, project

mandate, or tracking project deliverables). To be able to do the preceding, there is a need to work on the HR aspect and the related work processes before being able to formalize (throughout an organization such as CIOB) a PM methodology (or framework) **and to applying it**. As mentioned by one of the interviewees "culture change is the hardest thing to achieve". Consequently, to face this specific change, it calls for the **inclusion of the impacted people (as well as clients) in the change management process** by at least establishing:

- A comprehensive **PM training program** (from CIOB)
    - E.g. providing advanced competency based programs, including well trained, knowledgeable people management skills not just technical
- A robust **PM support/guidance mechanism** (from TBS or CIOB)
- A structured and enforced **communication mechanism** (from TBS and CIOB), including messages on communicating the reasons and benefits (the whys) behind the change and not only the how to go about the change
- An avenue for employees to be able to provide **feedback** and find information about the change (from TBS and especially CIOB), leaving room for a possible **Continuous Improvement function** to track and monitor the progression and the success of the change (at CIOB)
- A clear upper management support, including an **overall incremental (stepwise) approach**.

Participants often mentioned the existence of the former Project Delivery Office (PDO) in CIOB which was seen unanimously as important to face the change. At the time, the lack or resources in the PDO was an issue to respond to the demand, but now, according to the participants, it is more so because the PDO has been

dismantled. A bit of PM guidance and support was perceived to be better than nothing.

6.2.3 Links with Literature

As raised in the Research Constructs section of this paper, to have a chance to successfully implement change, especially in a public service organization such as EC-CIOB, three things ought to be considered: 1) the nature of the change affecting EC-CIOB (e.g. occasional, continual (progressive) or both, 2) to adopt a stepwise approach to change, and 3) to subdivide the change into specific critical objectives. These steps should increase the main stakeholders' understanding, and the legitimacy of the change to be undertaken. The preceding supports the above-described findings from the interviews on the change in CIOB. The proposed 'CIOB Change Management Process', which should include the impacted stakeholders (as well as the clients), touches all three listed items to be considered for successfully implementing change. Another suggestion to be considered within this change management process would be to breakdown the analytical change management framework by key objectives (stakes) categories as seen in Table 2 of this paper. The use of an existing change model, e.g. Lewin, Ulrich or Kotter (Gilley *et al.*, 2009) could be considered for EC-CIOB or, the creation of a 'personified' model that can stem from EC-CIOB employees and piloted by them might also be interesting.

6.3 Resistance to Change

The questions on the concept of Resistance to Change were also used to set the context for the two research questions. As a reminder, the second "Context Research Question" (CQ2) is: "What are the potential resistance mechanisms against that change?".

As for the first concept, the answers to the six interview questions linked to this second CQ2 have been compiled, classified, and analysed into the NVivo software.

6.3.1 Availability of Resources and the Organization's Support

The first two questions for this concept were directed to the interviewees' perception of available resources and their expectation in terms of support from the organization to face the changes (TBS policy, use of a more formal PM methodology, etc.). When it came to analysing the responses regarding the interviewees' access to the required resources in dealing with the changes, if the answer came with a "yes but" format the researcher considered the answer as "no". Consequently, at ***eighty-eight percent (88%)*** the interviewees did not feel they had the resources to face the changes. The remaining ***twelve percent (12%)*** who felt they did have access, brought up the point that the **challenge or question was rather about the willingness to actually use these resources. That is where the resistance came.**

It has unanimously been mentioned (***100% of the interviewees***) **that regardless of the kind of resources they would have access to, without a true "commitment" (support) from at least one Senior Manager** (minimum at director level but

ultimately better at ADM level) **they could do their best to face the changes but the chance of a successful outcome is good as nil**. Without that particular level of governance, the function of sponsorship (and the corresponding funding that usually comes with this support) to provide the platform to link with other directorates and EC strategic stakeholders will not be possible.

An interviewee at director level, provided an observation that encompasses an aspect raised by all interviewees' for these two questions: "Resistance to change is all about how you communicate, who you communicate to, how often and what the message is". ***Slightly less than half of the interviewees (44%)*** felt that the **implementation strategy of the change** introduced by the use of the PRINCE2® methodology was either not well planned or not done appropriately. Even if IM/IT projects are managed by CIOB employees, most of these projects are for clients outside CIOB. Part of the strategy lacked by not including the clients (mainly at lower management levels) in the implementation process of using PRINCE2® in the management of CIOB projects. **To somewhat mitigate that issue, project managers had to add branches to their skills tree**. They had to become salespersons, ambassadors and/or educators to clients about the new PM approach. This was a challenge. Not only **available project managers in CIOB do not necessarily have the additional required PM or soft competencies** to take on these tasks but also, clients usually do not care much about the methodology but redirect their focus on getting things done. They are rather results oriented. Another often-mentioned example was the fact that even if this PM methodology is flexible and can be tailored in its application, that fact was not well understood by a group of employees and most stakeholders (of that change).

Table 5 summarizes what participants considered was missing or would be a source of support from the organization:

Table 5[13]

Source of Organization Support to Face the Changes

Lacking from / Expected from the Organization to face Changes	Frequency	
Change Management - Implementation Approach (ensure consistency & governance)	Thirteen interviewees	(81%)
Resources (finance, time and HR) Commitment	Eleven interviewees	(69%)
Project Delivery (Management) Office (PDO/PMO)	Nine interviewees	(56%)
Training	Eight interviewees	(50%)
Collaboration with Client	Eight interviewees	(50%)
Project Management Expertise (for guidance, mentorship purposes)	Eight interviewees	(50%)
Communication – Communication Strategy / Plan	Seven interviewees	(44%)
Set clear roles and responsibilities of the change enablers	Seven interviewees	(44%)

6.3.2 Impacts on the Participant's Professional Future Plans

Answers to the third question show that ***fifty-six percent (56%) of the participants*** did not feel the change would affect their future plans. It rather represented PM formalization, via documentation, of something they were already doing. Most of these interviewees will keep the focus on making a difference at work (using common sense) regardless of the process since usually the objectives remain the same. They did not see it as a major change; more as part of an unofficial "continual improvement" natural work process. It is basically a different name and related terminology of doing similar things in the PM domain. Having a methodology is better than having none at all. A positive outcome was, at the time, a more concrete recognition of PM and of the role of the project manager.

Forty-four percent (44%) of the participants did feel that the change would affect their future plans. It was nonetheless mostly a positive impact as it allowed a better organization of projects and its management. There was a noticeable change in how

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[13] Table generated with the combination of reading the response for II.1-II.2 and using the NVivo text (word) query

people tracked and documented their projects and formalized a bit more the project approval process. There is however a downside. Certain work functions are currently being questioned and evaluated for their usefulness in the IM/IT domain, as the goal is to do more with less resources (human and finance). Especially in the current transition period in the GoC because of the creation of this new Agency "Shared Services Canada", few work functions might be removed and impact the delivery of projects. An increasing amount of changes within a short timeframe is and will change the future plans of some of the participants.

6.3.3 Impacts on the relationships between employees

The fourth question for this concept assessed the impact of the change in the relationships (interactions) between employees affected by the change. ***Sixty-nine (69%) of the interviewees*** felt the change will affect relationships at some point. Depending where the employees are located (EC has lots of regional offices throughout Canada) or in which section they are working, the interactions will be different.

A positive relationship outcome was the use of a common PM terminology, which facilitated discussions, collaborations, and information sharing around projects. For projects, this change required more transparent communications and collaborations between colleagues of different CIOB directorates and between CIOB employees and clients. Among the goals of this change, one is to reduce the 'silo mentality' and facilitate the indispensable matrix interactions when planning-delivering projects. On the more challenging side, it increased the workload and the number of interactions between colleagues. That was mainly due to the formalization of PM documentation (mainly for reporting and QA purposes).

Thirty-one percent (31%) of the interviewees did not feel the change will impact relationships between colleagues. Their perspective was that the Policy itself would not affect the relationships on the hierarchical level since it is a guideline for all federal departments. It is rather the implementation of this Policy within each contextual reality that will affect the reactions and therefore the interactions between the employees. More specifically, how Senior Management from each Department will decide to take on the Policy guidelines. Support reflected on paper instead of in practice can increase the challenge for lower levels of managements in implementing that change. On the other hand, if a group had already a good work structure, the change (regardless of its level of support) will not necessarily affect the relationships (interactions) between members of that group; but it might affect the interactions between them and less work-structured colleagues.

6.3.4 Expected Resistance and its Related Decreasing/Increasing Factors

The two last questions for this concept pertained to the kinds of resistance (if any) the participants were expecting from employees and what would potentially increase or decrease this resistance. **All participants expect resistance whenever there is change**. As one interviewee stated: "There is always resistance to change because a change impacts the way a person views the world, the way that person interacts with the world". The types of resistance the participants raised were essentially behavioural. Their answers reflected initial criteria that would influence the employees' types of resistance. The employees' personality, their motivation, the nature of the business they work in, their hierarchical level (work classification), and even their age group. These criteria were often identified by the interviewees as a "type of employee" when faced with change, i.e. 1- The ones who embrace change

(early adopters), 2- The ones who eventually go for the change (middle adopters), 3- The ones who are rather indifferent, on the sideline (lurkers), and 4- The ones who will never embrace it (despise change). One particular point has been raised by ***75% of the participants*** is the fact that, among the main source of the possible resistance, is the perception of the increase workload required to be part of the PM change in CIOB. For instance, the amount of PM documentation to be filled "on top" of managing or directing a project is seen as an additional burden. To better appreciate for which context the participants have mentioned the most recurring kinds of resistance, they will be presented on the basis of hierarchical level categories (Table 6). As for table 7, it summarizes the factors increasing and decreasing resistance as seen by the participants. Again, the "word frequency" function of the NVivo tool combined with the researcher's analysis of each answer have been used to create these tables.

Table 6

Kind of Resistance Identified by Interviewees

Hierarchical Level	Types of Resistance
Management & Senior Management	- Not participative / See it as threat because of inherent increase of the required responsibilities (workload) (2) [14] - Unwilling to provide HR for projects or reduce their influence if authority (accountability status) - Do not assign proper people to address the change - Unwilling to provide time for employees' learning curve
Employees (Staff)	- **Opposition / Stubbornness / Argumentation / Frustration / Objection / Challenge authority (10)** - **Procrastinating / Stalling work /Focussing on other stuff / Decrease in their work due diligence (5)** - **Not participative – Not involved/ See it as a threat because of inherent increase of the required responsibilities (workload) (4)** - Passive aggressiveness (e.g. do not volunteer as project manager - continue their usual daily work) (2) - Sabotage / Make themselves unavailable (e.g. negative advice to high management or being a problem to a project) (2) - Contradiction / Interpretation (2) - Manifestation / Complain (to demonstrate the resistance) (2) - Say one thing do another (2)
Clients	- Object new or external procedures - Push backs – Do not understand the use of PM policy

Table 7

Decreasing and Increasing Resistance Factors According to Interviewees

Decrease Resistance	Increase Resistance
- Clear communication-Communication strategy (including to present clear intentions/vision and set desired outcomes (High management) **(12)**	**The opposite (8)**
- To offer HR, time allocation, proper funding and tools to face the change (5)	**The opposite (6)**
- People see themselves in the solution, work status "what's in it for them" (Build sense of ownership) (9)	**The opposite (5)**
- Change implementation strategy / Good planning including **change management** techniques **(5)**	**The opposite (2)**
- Clear engagement from high management / Clear leadership from proper people / Lead by example (3)	The opposite (4)
- Organized training adapted to audience / work (4)	The opposite (3)
- To show how the change will make more efficient work processes / the value-added (3)	The opposite (2)
- Use people management approach including work psychology (organization psychology) techniques/ Empathetic to employees' context and reality (3)	The opposite
- Lead by good behavior and examples (2)	The opposite
- To make the change incremental (build the habits) (2)	The opposite (2)
- To have a good level of PM team competency / Develop a solid PM foundation through schooling	The opposite (2)
	- Not good past experiences with change
	- Imposing the change

[14] In bracket, the number of interviewees who mentioned these types of resistance

The ***four participants (25%)*** who mentioned that some of resistance would come from management or senior management, observed a high level of resistance from that particular group. The participants who identified that resistance would come from the employees (staff), observed (and expected) a medium to high level of resistance. The ***two participants (13%)*** who mentioned that resistance would come from the clients observed a low to medium level of resistance.

Based on the participants' feedbacks two main conclusions can be made to summarize their general impression on the resistance of the change:

1. The **more you communicate** about the change, the **more it will increase knowledge and decrease worries**. The outcome is ultimately **a decrease of the resistance**.
2. The **less you communicate** about the change, the **more it will decrease knowledge and increase worries**. The outcome is ultimately **an increase of the resistance**.

According to the participants, **communication is highly important** when it pertains to resistance to change. Without communication, there is no means to exchange information, objectives, goals, implementation approach and status updates of the change **to and from** any stakeholders of that change. These stakeholders include the directly impacted people, such as the employees that will implement the change, and the indirectly impacted people, such as the clients that will receive some of the products (deliverables) of that change. An example of a product of the change would be how a project is delivered to a client.

6.3.5 Links with Literature

As previously mentioned, all interviewees expected resistance whenever there is change. The kinds of resistance they depicted based on the types of employees are directly in-line with the idea presented in the article by Gilley, A. Godek, and Gilley, J.W. (2009) titled *Change, Resistance, and the Organizational Immune System.* The only main difference was the additional 'Innovators' category described in the article. Because of its intricate and rigid bureaucracy, in the case of a federal department (or a branch such as CIOB), the opportunities to initiate a change before any prior indications or warning (e.g. studies, audit, TB decision or policy, etc.) that a change is eventually in the works in the government are rare. So the occasions for the 'Innovators' to have an impact on the overall resistance level to a change has not been mentioned by the interviewees.

When taking into consideration the participant's answers to both the concepts of Change and Resistance of Change, the points to keep in mind when studying factors to reduce resistance to change as defined by Jacob, *et al.*, (2008), have been covered by the participants. As a reminder, Jacob *et al.*'s key points are described in section 4.2 of this research paper.

6.4 Project Leadership and its Impact on Change

The final four interview questions on the concept of Project Leadership and its Impact on Change were set to address the two Research Questions (RQ1-RQ2). RQ1 and RQ2 are respectively:

- "What is the influence of the project leader on the two previous questions (CQ1 and CQ2)" and
- "What actions / behaviours / attitudes of the leader can potentially facilitate the change?"

6.4.1 The Role of the Project Leader and its Competencies related to Change

The first, third and fourth questions of this concept explored the participants' perception of the role of the "Project Leader (PL)" and the consequences of its competencies (i.e. actions, behaviours, or attitudes) in the context of the change[15]. Data analyses were made on the basis of the most frequent key words or key terms ("key" in the sense of meaningful, useful to identify themes or concepts) used by the participants for this question. These queries also included "wildcards" as explained before in this paper.

The expression "Project Leader" brought some interesting challenging viewpoints and was a good source of discussion. There were clearly different views based on experience (work background), perception and subjective understanding of the questions behind the concept of project leadership. The participants' standpoints on "What is a Project Leader", the role it has, were not all congruent.

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[15] Meaning the change as reflected in the interviewees' answers previously presented in the section of the "Change" concept

Table 8 is a recap of the participants' answers of the role levels of the project leader (PL) within a project organization structure.

Table 8

Role Levels of the Project Leader According to Interviewees

	Answers by Participant's Hierarchical Level				Observation(s)
Role Levels of the PL (in a project)	CS02	CS03	CS04	CS05	
PL = Project Manager	N/A	1	1	2	25% of the interviewees believed the PL should or is the project manager (2 out of the 4 directors)
PL = Team Lead (not Pmgr)	1	1	N/A	1	19% of the interviewees believed the PL is at the team lead level (i.e. implementation level) not the project manager
PL = Project Executive	N/A	N/A	1	N/A	One manager was more categorical in the perspective that the project executive is the PL
PL = Any Project Team Member (Level does not matter)	1	1	2	1	25% of the interviewees did not think the project role level mattered as long as the PL had the essential required skills (mainly people skills) **and** applied them appropriately at right time
PL = Few Levels at Once (depends on project)	N/A	N/A	3	N/A	19% of the interviewees highlighted the fact that there were different levels of leadership within a project. Depending on the project, at minimum, the project manager and the project executive both could be leading the change. PMgr on the ground and the PExec at higher level

From the preceding table the participants are demonstrating that: 1- There is room for further discussions about the role of the PL, 2- PLs can be found at all hierarchical levels and will be responsible to deliver a product (or solution) and managing a team, but he/she might not necessarily be a project manager, 3- PL is a social role, i.e. it requires people and people management skills. One of the managers provided further explanation on the term "Leader" inferred from the notion of PL:

> [There is a] Distinct difference about the term "Leader". The LEADER is not the same as someone having a leading role. For me, the Leader is someone I will follow the instructions or follow him because he has a vision to get somewhere. I don't personally believe that the project manager

> always has to be the person with the vision, he doesn't have to articulate the vision but he carries out the implementation of the vision. Many managers are not leaders

Even in view of the context in which the participants set the PL role there was a definite consistency in their perception of **what the project leader would bring** (hence project leadership) within the circumstance of a project; regardless of the PL role and hierarchical level. ***Consequently, for the purpose of this study and the analysis of its findings, there will be no distinction between the role of the project leader and the project manager.***

There was also a coherent perspective from the participants when it pertained to the kind of competencies they were expecting from a PL to either facilitate or mitigate change. All their answers were first compiled then analysed for most frequently mentioned competencies, grouped as categories at times, using the key words queries and frequency functions of NVivo for the third (3^{rd}) and fourth (4^{th}) interview questions of the 'Project Leadership and its Impact on Change' concept. Terms such as "(people, human*, soft*, social*, empath*, motivat*, flexibl*, collaborat*, contact*, adaptab*, influenc*, parent*), communicat*, (commit*, positive*, support*, availabl*, present*, visibl*), (expert*, knowledg*, coach*, advi*), (organiz*, approach*, method*), have been queried.

Eighty-one (81%) of the participants mentioned PL's leadership competencies (including an important number of people management related soft skills), ***sixty-nine percent (69%)*** raised PL's good communication competencies, **sixty-three percent (63%)** good leadership competencies and ***fifty-six percent (56%)*** pointed

positive involvement (commitment) from PLs could facilitate the change. All the major PL competency groupings brought up by the interviewees have been compiled in Table 9. ***Eighty-one (81%) of the participants*** answered the opposite from the facilitating competencies when it came to PL competencies that could adversely effect the change. Those results are also reflected in Table 9 by the mention of "The opposite" in the 'PL Competencies Adversely Effect the Change' column with additional clarification if necessary.

Table 9

Project Leader Competencies Facilitating and Adversely Effecting the Change (according to Interviewees)

PL Competencies Facilitating the Change	PL Competencies Adversely Effect the Change
Leadership competencies including an important number of human/people/social management related soft skills (i.e. skills required to create cohesion and trust with team members/ stakeholders while making decisions on time to align with project end-goal. Inspire by example) (13)	**The opposite** (13) (including the mention of "too introverted")
Good and clear communicator (11)	**The opposite** (12)
Positively involved (committed) in leading the change (9)	**The opposite** (11)
****Structured (well organized) but yet flexible** (= open-minded) in applying phased approach to introduce the change. This includes defining clear roles and responsibilities (8)	**The opposite** (10) (including the mention of "dogmatic approach)
Expert and knowledgeable (related to PM, process, organizational, strategy, etc.) to be able to contextualize the change (6)	The opposite (7) (including mention of "too technically oriented"

6.4.2 Impact of the Project Leader

Finally, a question was asked to discover the interviewees' views of the impact of the project leader (PL) in the context of the change (meaning the change as reflected in the interviewees' answers previously presented in the section of the "Change" concept). ***Sixty-nine percent (69%) of the interviewees*** considered the PL as having an important impact on how change is implemented, therefore a direct impact on its successful implementation. The preceding has been evaluated by using the key words queries and frequency functions of NVivo for the first two interview questions of the 'Project Leadership and its Impact on Change' concept. Based on the answers tendency (through the researcher analysis), key terms of a similar category such as "important*, huge, major*, tremendous*, big*, positive*, facilitate*" have been queried. The **PL is a change enabler**; it is an essential factor that will make or break the change. The PL with its people management, human soft skills will favour the

more 'matrix' work approach necessary to manage projects that involve few stakeholders from different programs (interests).

A statement summarizing all the answers could be as follows:

- An ***experienced project leader*** with a ***positive attitude*** (who believes in and understands the change) will typically create ***positive reactions*** from team members /stakeholders) thereby ***reducing resistance***.

Fifty percent (50%) of the interviewees, the ones who believed that the PL could be at any level not necessarily at the project manager level, added an interesting point. Regardless how good a PL is and how effective that PL is in using the essential skills set, in the absence of a clear or obvious Senior Management support for a project, the PL impact is as good as vain. **We can once again appreciate the importance of the upper management support when it comes to change and moving it forward as projects**. This fact is not surprising according to one of the interviewees, as it is part of the governmental culture (and structure) to be extremely hierarchical. Therefore, without the appropriate hierarchical support for a task that is outside the work routine, skills and good intentions might be an incomplete formula for a successful outcome.

6.4.3 Links with Literature

When Dulewicz and Higgs developed their well-known (in the PM field) assessment tool *Leadership Development Questionnaire (LDQ)* in 2003, they did an extensive review of all sorts of leadership references including assessment tools. That

research study allowed them to highlight and use fifteen (15) leadership dimensions to identify three (3) leadership profiles for organizational change projects. These leadership dimensions and profiles (Table 10) highlight the links with the findings from the interviewees. The brief descriptions of these leadership dimensions can be found in Annex G. These dimensions and leadership profiles will now be compared to the findings from the interview around the concept of project leadership. The objective is to link/map the most important PL competencies raised by the interviewees with the ones listed by Dulewicz and Higgs (D&H) to be able to identify a prominent leadership style that could potentially alleviate the resistance to change.

As previously presented in Table 9, the interviewees highlighted five main 'grouped' (dimensions) PL competencies that can be compared to D&H's identified leadership dimensions. To do so, the researcher looked into each of these fifteen (15) leadership dimensions and graded their level of relevance or importance (low, medium or high), according to the interviewees. The results have been emphasized or added (in black bold) to the D&H tool.

Table 10

The Project Leadership Competencies Identified by the Interviewees Mapped to the Leadership Competencies and Leadership Styles of Dulewicz and Higgs' Tool

Group	Competency	Goal Oriented[16] (L/M/H)	Involving[17] (L/M/H)	Engaging[18] (L/M/H)
Intellectual (IQ)	1. Critical analysis & judgment	High	Medium **(Low)**	Medium **(Low)**
	2. Vision and imagination	High	High	**Medium**
	3. Strategic perspective	High	**Medium**	**Medium**
Managerial (MQ)	4. Engaging communication	Medium	Medium	**High**
	5. Managing resources	High	**Medium**	Low
	6. Empowering	Low	Medium	**High**
	7. Developing	**Medium**	**Medium**	High
	8. Achieving	High	**Medium**	**Medium**
Emotional (EQ)	9. Self-awareness	Medium	**High**	**High**
	10. Emotional resilience	**High**	**High**	**High**
	11. Motivation	**High**	**High**	**High**
	12. Interpersonal sensitivity	Medium	Medium	**High**
	13. Influencing	Medium	**High**	**High**
	14. Intuitiveness	Medium	Medium	**High**
	15. Conscientiousness	**High**	**High**	**High**

When we compile the results from the comparison exercise we see that there are four (4) highlighted leadership dimensions under the 'Goal Oriented' leadership style: one (1) Medium and three (3) Highs. There are ten (10) highlighted leadership dimensions under the 'Involving' leadership style: one (1) Low, four (4) Mediums, and five (5) Highs. Finally for the 'Engaging' leadership style there are thirteen (13) highlighted dimensions: one (1) Low, three (3) Mediums, and nine (9) Highs. In view of the number of emphasized leadership dimensions under the **'Engaging' leadership style** and the number of 'High' grades, this is the leadership style with its related graded leadership dimensions that is chosen to reduce the resistance to change.

16, 9, 10 : Leadership Styles

As to the corresponding factors that would reduce the resistance to change, focus should be on the thirteen (13) highlighted leadership dimensions under the 'Engaging' leadership style with consideration of their graded level of importance (or relevance):

- Mandatory Factors (9): *Engaging communication, Empowering, Self-Awareness, Emotional Resilience, Motivation, Interpersonal Sensitivity, Influencing, Intuitiveness*
- Significant Factors (3): *Vision and imagination, Strategic Perspective, Conscientiousness, Achieving*
- Less Significant Factor (1): *Critical analysis & judgment*

With these results, the interviewees are stressing the importance of the ***project leadership competencies related to emotions*** (equivalent to D&H's defined 'Emotional Competencies' grouping). The ***project leadership competencies related to management skills*** (equivalent to D&H's 'Managerial Competencies' grouping) are clearly valuable whereas the ***project leadership competencies related to analysis and judgment*** (part of D&H's 'Intellectual Competencies' grouping) seem to be more 'nice to have' competencies that would help a project leader to reduce the resistance to change.

6.5 Conceptualization of the Findings

When addressing the research problem, the objective is to propose factors to be considered by project managers in the context of the IT Branch of EC that would reduce the level of resistance to change created by IT/IM based projects. The research

found that the project leadership role is not automatically linked to the role of the project manager. There is definitely room for more in-depth explorations on this matter in future research studies in the context of the Canadian government.

Table 11 summarizes the findings of this case study research. They are listed according to their importance and relevancy following the participants' answers. Subsequently, a conceptual model which considers the top listed findings (top eight), is developed as a suggested solution tool for implementing a change (generated by a project) while reducing the resistance level.

Table 11

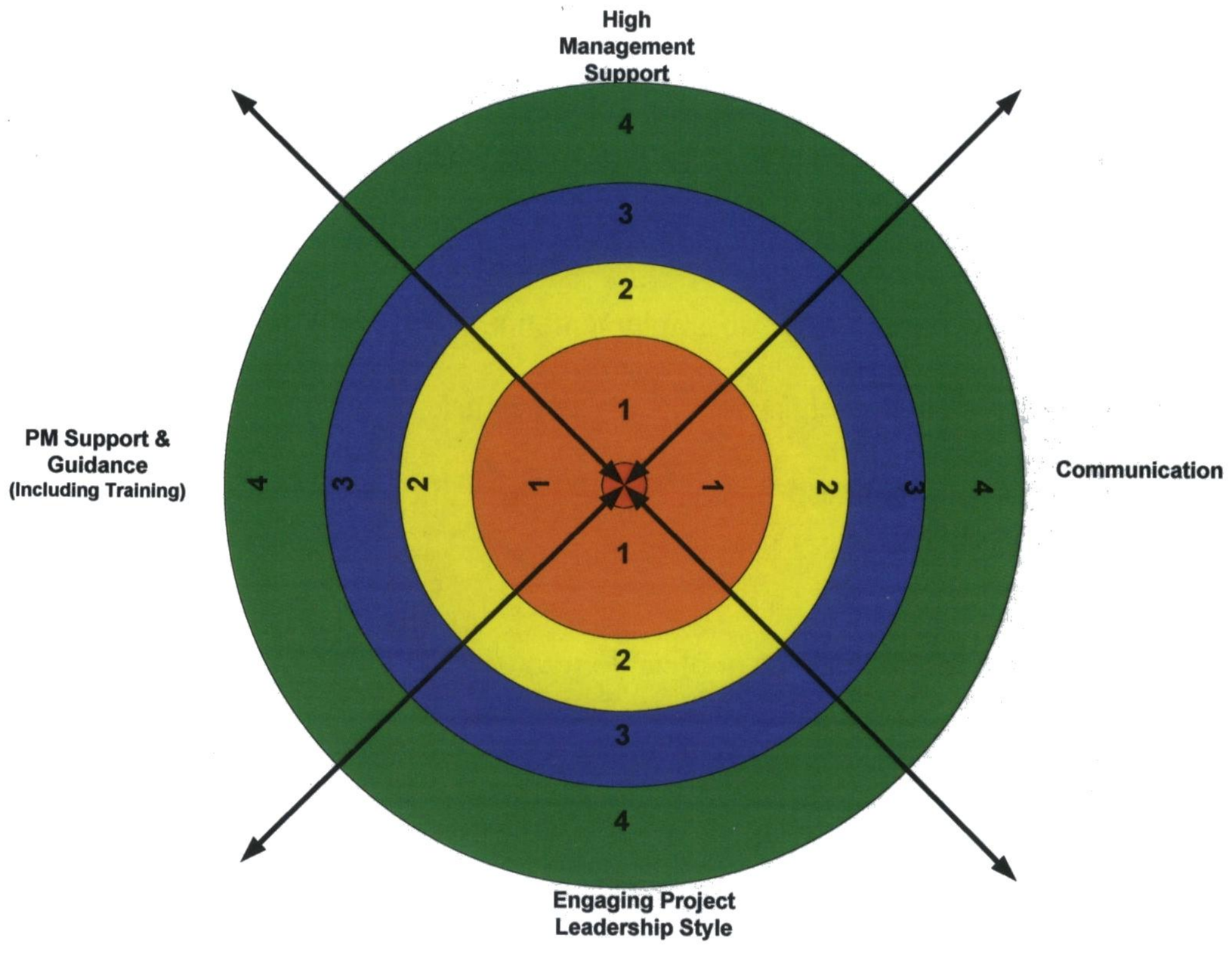
Summary of the Case Study Research Key Findings

Summary of Findings
• **Upper management support** (at least from CIOB) should be visible and active
• **Open communication is highly important**
• For **EC-CIOB the Engaging Leadership style** would be the preferable leadership style in **reducing the resistance level to the PM methodology change**
• The implementation of a **PM Support/guidance mechanism** such as a PMO (Project Management Office) is also perceived as **very helpful**
• The development of **a PM social skills (competencies) training program** is central to lowering resistance to change (to develop an expertise pool of project managers). Those skills include the project leadership competencies that are related to emotions.
• The **use of an overall incremental (stepwise) approach** in dealing and implementing the change is perceived as **very helpful**
• To face such a change it calls for the **inclusion of the impacted people** (which comprises **clients**) **in the change management process**
• Feedback from the **impacted people** should be part of a **Continuous Improvement function** to track, monitor the progress and success of the change
• For **EC-CIOB the mandatory PL competencies** to reduce the resistance to change are (9): *Engaging communication, Empowering, Self-Awareness, Emotional Resilience, Motivation, Interpersonal Sensitivity, Influencing, Intuitiveness*
• **A positive experienced project leader (PL) who understands the change is influential** on how change is implemented. The **PL reduces resistance** and therefore **has a direct impact on the successful** implementation of the change
• Participants (interviewees) thought that having a more **formalized PM approach** structure **was useful and important** (as it brought governance and structure in the work process) (especially at manager and lower levels)
• The **project leadership competencies related to management skills** are **significant** in helping a project leader in reducing resistance to change
• For **EC-CIOB the significant PL competencies** are (3): *Vision and imagination, Strategic Perspective, Conscientiousness, Achieving*
• A PM methodology in the organization on its own, is not sufficient
• Departments should have a **transparent strategy to implement** the PM methodology change
• The **project leadership competencies related to Analysis and Judgment** would be more 'nice to have' in helping a project leader in reducing the change
• For **EC-CIOB the less significant PL competency** is (1): *Critical analysis & judgment*

Inspired by the gathered data and the references consulted on the three concepts of this research, here is the proposed conceptual model:

Figure 1

Incremental PM Methodology Change Implementation Model



The proposed conceptual model starts at the centre with the red highlighted trigger which is the change itself. In the case of EC-CIOB the change is the implementation of the PM structured approach. From the trigger starts the stepwise (phased) approach of the implementation (including the strategic considerations, planning the change, managing, directing and its implementation). Each concentric circle (1-4) represents an implementation phase. The number of circles is at the discretion of the change implementation team. The four arrows stemming out from the trigger point **delimit** the **four main continual activities** (and/or growing activities) that ought to consistently be part of the overall change implementation process at EC-CIOB. These activities form concentric quadrants of the model. Each arrow has opposite ends to

reflect the continual and incremental **way forward** with the change process as well as the **'way back'** for the change (project) management team to be able to reconsider some previous activities or stage decisions (part of the **Continual Improvement purpose**). This retroactive approach ("retro-feedback mechanism") would allow for the stakeholders impacted by the change to be able to share observations and questions. The change is fully implemented when no further concentric implementation phases are necessary. There could be several concentric circles groupings representing sub-implementations within an overall programme of projects. In order terms, each grouping (of concentric circles) would represent one project within a programme.

This model could be applicable to any other federal department since it has been developed in such a way that it's very flexible in its application (items of the model can be modified at the user's needs) as the essence mainly resides in its incremental (phased) approach and the factors to consider.

7. Discussion – Conclusions

7.1 Answering Research Questions

Answering the two research questions

- What is the influence of the project leader on the change resulting from the TBS PM process and on the resistance mechanism against that change? (RQ1)
- What actions, behaviours, attitudes of the leader can potentially facilitate the change? (RQ2),

participants unanimously perceived that the project leader has a direct impact on the change and on the resistance mechanisms. They also think that a combination of skills, attitudes and behaviors on the leader's part will effectively reduce resistance to change. Not only do communication and social skills play an important role but specific actions are also instrumental in facilitating change. They also stated that all projects *do* have at least one team member who can be identified as the project leader. Consequently, there always is an individual who can act as a change facilitator. With this conclusion in mind, there are also other factors affecting change that should be considered.

7.2 Other research findings:

The preceding results are not unexpected. They in fact empirically confirm literature findings, this time in the specific context of a project management methodology and in a public service environment. The case study methodology allowed for a holistic, in-depth investigation of how project leadership impacts the

resistance level to change. The study was directed to the reality of IM/IT in the public service. Using the CIOB of EC as the studied organization, it allowed for a phenomenologic qualitative research approach. The semi-structured interviews provided subjective perspectives on precise concepts but realistic viewpoints of Canadian federal employees going through current PM related changes.

Through data compilation and analysis of the findings (Table 11), this research brought up a few additional conclusions worth emphasizing:

1. As stated, the project leader will have a positive impact on the resistance level to change only if he/she has useful and engaging social behaviours. According to the participants, this ability to relate to fellow workers *is not based on the leader's personality per se*. It has been described as a set of behaviours that can be acquired through proper training.
2. No matter what the project leader's qualities and positive attitude are, his/her success in reducing the resistance to change will be conditional to upper management support. It is thus a pre-condition to his/her success.
3. There are differences between the public and private sectors when influencing the resistance to change, namely: in government, the combined size of the money portfolio (budget) and the visible involvement of high hierarchical authority are significant factors influencing the resistance to change. This would arguably be different from the private sector, where the focus on the team's ability to generate profitable outcomes is typically central.

The preceding statements are thought to be distinct from previous project management studies as this research is performed in the context of the Canadian government. In view of the current GoC reality changes (including the formal application of TBS' PM policy), the period of transitions, work positions being revisited, and the creation of the Agency "Shared Services Canada" (SSC), IM/IT organizations are effected in such a way that they have to review their approach in managing projects. It is hoped that this research findings and proposed conceptual model will constitute usable, practical tools in addressing some of the challenges the GoC employees are and will be facing.

7.3 Research Validity and Limitations

Reliability and validity of research findings are a condition to their usefulness.

Confidentiality and ethics in general were also a constant concern. The raw data has been protected and verified by the research director as it has been recorded and stored in the director's possession. The confidentiality has been ensured and officialised through the use of confidentiality forms signed by each participant. All ethical aspects have been addressed and complied with the University du Québec en Outaouais' ethics code and conditions as well as with the 'Values and Ethics' code of the federal government. Clear terminology has been used for the interviews and consistent explanations have been provided whenever required by any participants. The research director also reviewed the analysis of the gathered data to ensure the researcher's impartial position on the results. Participants were free to provide any additional post-interview information when the purpose was to clarify raised items in their

interviews. Triangulation has been made between the gathered information/data from the interviews with the reviewed literature and other studies. This triangulation permitted for the mapping of existing PM related tools (for all three studied concepts) with the research findings. Table 11 and the "Incremental PM Methodology Change Implementation Model" are explicit examples of the applicability of in-depth, proven and well known PM related studies contextualized into this research. Even if the gathered data is essentially taken from the case of the IM/IT branch of EC with perceptions of a specific group of employees, it is believed, because of the thoroughness in the application of the research methodology, that the results and findings are pertinent to fellow IM/IT federal organizations. The number of interviews reflected the desired saturation level. The conclusions are succinct yet general enough to be contextualized in any federal department.

7.5 Implication for Future Research

Project management is increasingly being recognized for its usefulness and value in the GoC. We have also seen that the GoC's bureaucratic system, where transparency of performance and status updates reporting are essential practices, has an impact on resistance to change. Therefore, in order to facilitate the reporting process of projects, there is a need to initially seek structure in the management and planning of these projects.

The originality and relevance of this research lays in its context, namely a project management methodology within the public sector, namely the Canadian federal government. The key findings are perceived to be useful and applicable and should be

taken into consideration when addressing the questions of project management (PM) and change management (CM) in a governmental environment.

Future studies in the public service, in Canada or abroad, could further investigate the current findings by exploring means to structure projects and facilitate the project reporting process. In addition, the concept of the hierarchical and functional roles of the project leader could also be further investigated as this research exposed that the project leader would not necessarily be the project manager.

7.6 Contributions to the Project Management Knowledge

This research, with its overall findings and additional conclusions, is believed to have contributed to the overall knowledge and studies on the subject of project management. The unique aspect of studying the impact of project leadership on the resistance to change in the context of the federal government brings up the importance of the human factor in dealing with projects. This research will hopefully be the beginning of further studies on the human impact on projects.

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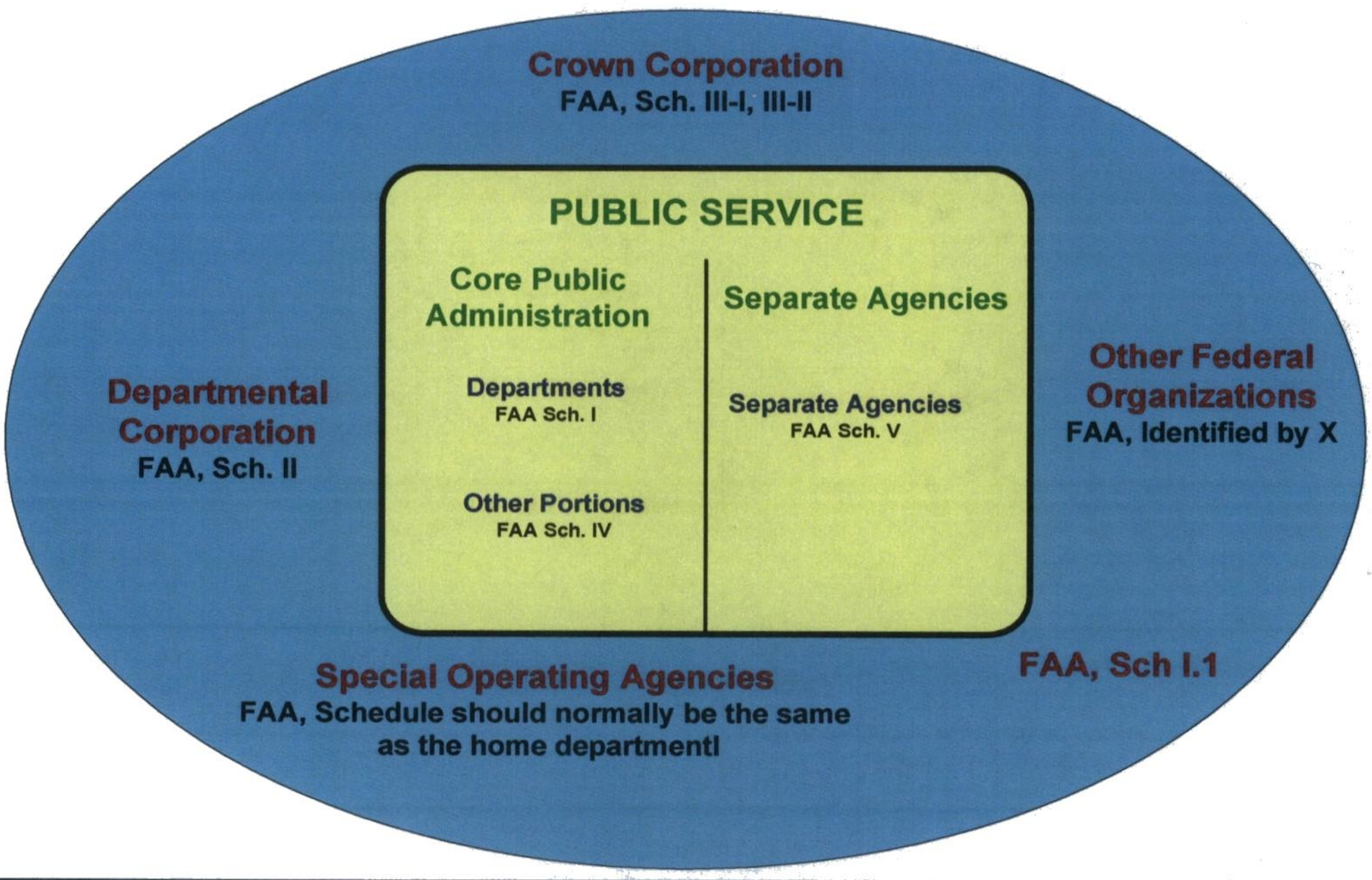
Annex A: The Canadian Federal Public Administration Structure



Lexicology :

Core Public Administration: organizations for which the Treasury Board is the employer, i.e. the departments listed in Schedule I of the FAA and the other portions of the federal public administration as listed in Schedule IV of the FAA.

Crown: i.e. the Majesty in right of Canada.

Corporation: (¨personne morale¨) a company or corporate body however or whenever incorporated.

Crown Corporation: (¨société d'État¨) a parent Crown corporation or a wholly-owned subsidiary as listed in Schedule III-1 and III-2 of the FAA.

Departments: organizations as listed in Schedule I of the FAA.

Departmental Corporation: organizations of the federal public administration as listed in Schedule II of the FAA.

FAA, Sch I.1: organizations as listed in Schedule I.1 of the FAA.

Federal Administration Act (FAA): Act providing the financial administration of the Government of Canada, the creation and maintenance of the accounts of Canada and the control of Crown corporations.

Federal Public Administration: include all federal organizations listed in Schedules I-V and identified as `X` in the FAA.

Other Federal Organizations: organizations as identified by `X` in the FAA.

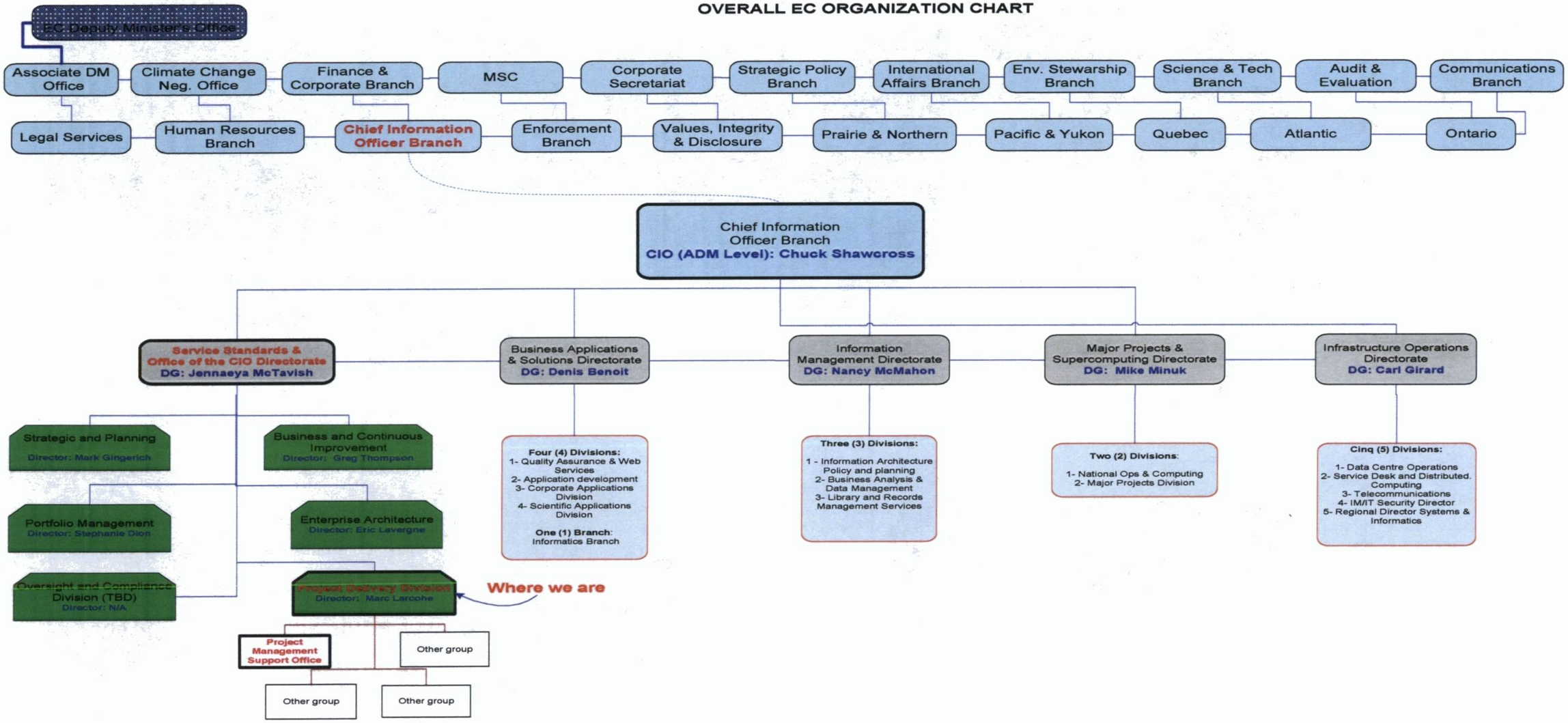
Other Portions (within the Core public administration): other portions of the federal public administration as listed in Schedule IV of the FAA.

Public Service: all federal public working positions included within the core public administration and the separate agencies.

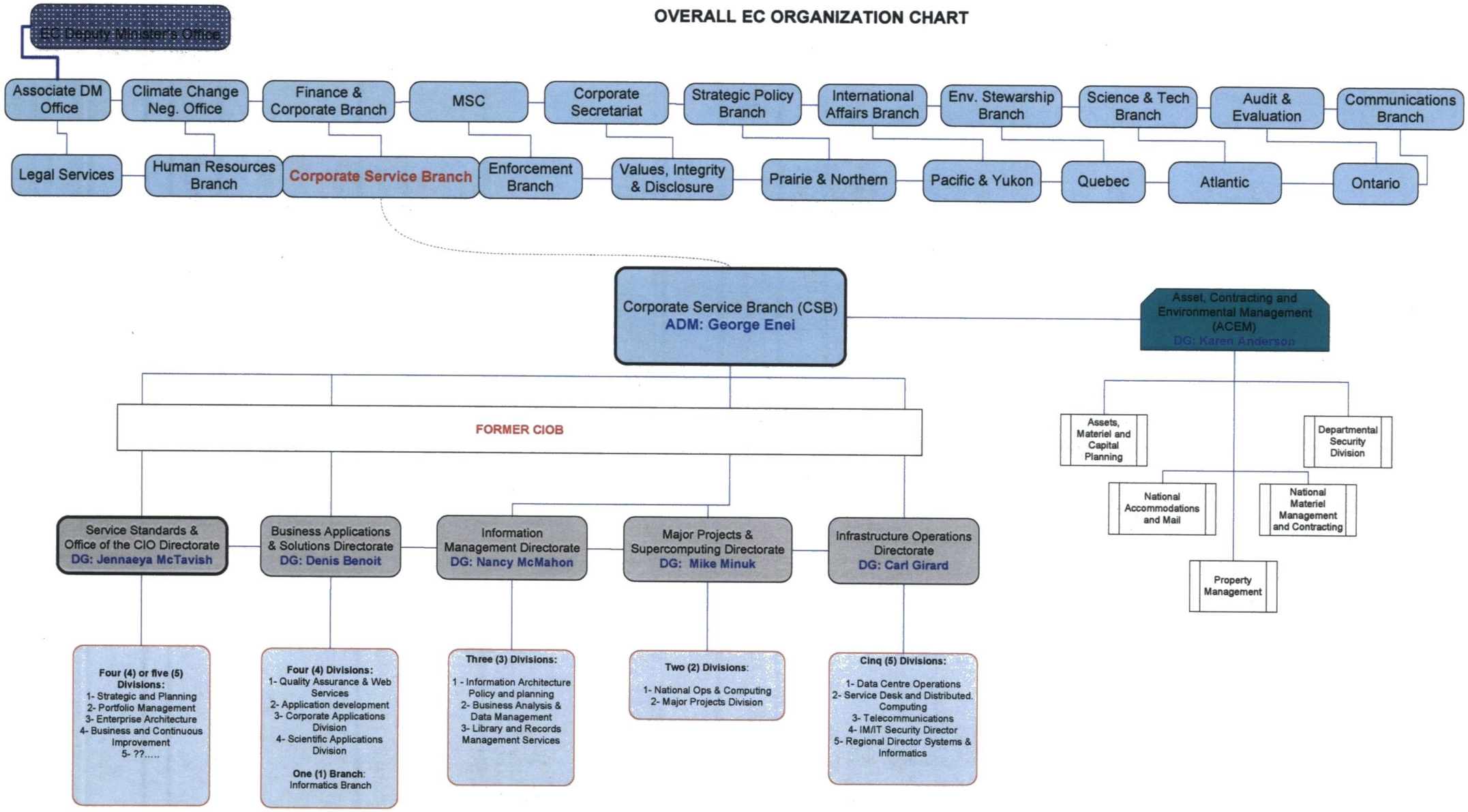
Separate Agencies: organizations for which the Separate Agency is the employer. The organizations of the federal public administration as listed in Schedule V of the FAA.

Special Operating Agencies (SOA): Even if SOAs remain part of their department organization, they have increase management flexibility in return of agreed pre-established levels of Performance and results (¨framework agreement`between the SOA and its home department). They are therefore accountable for results to their home department.

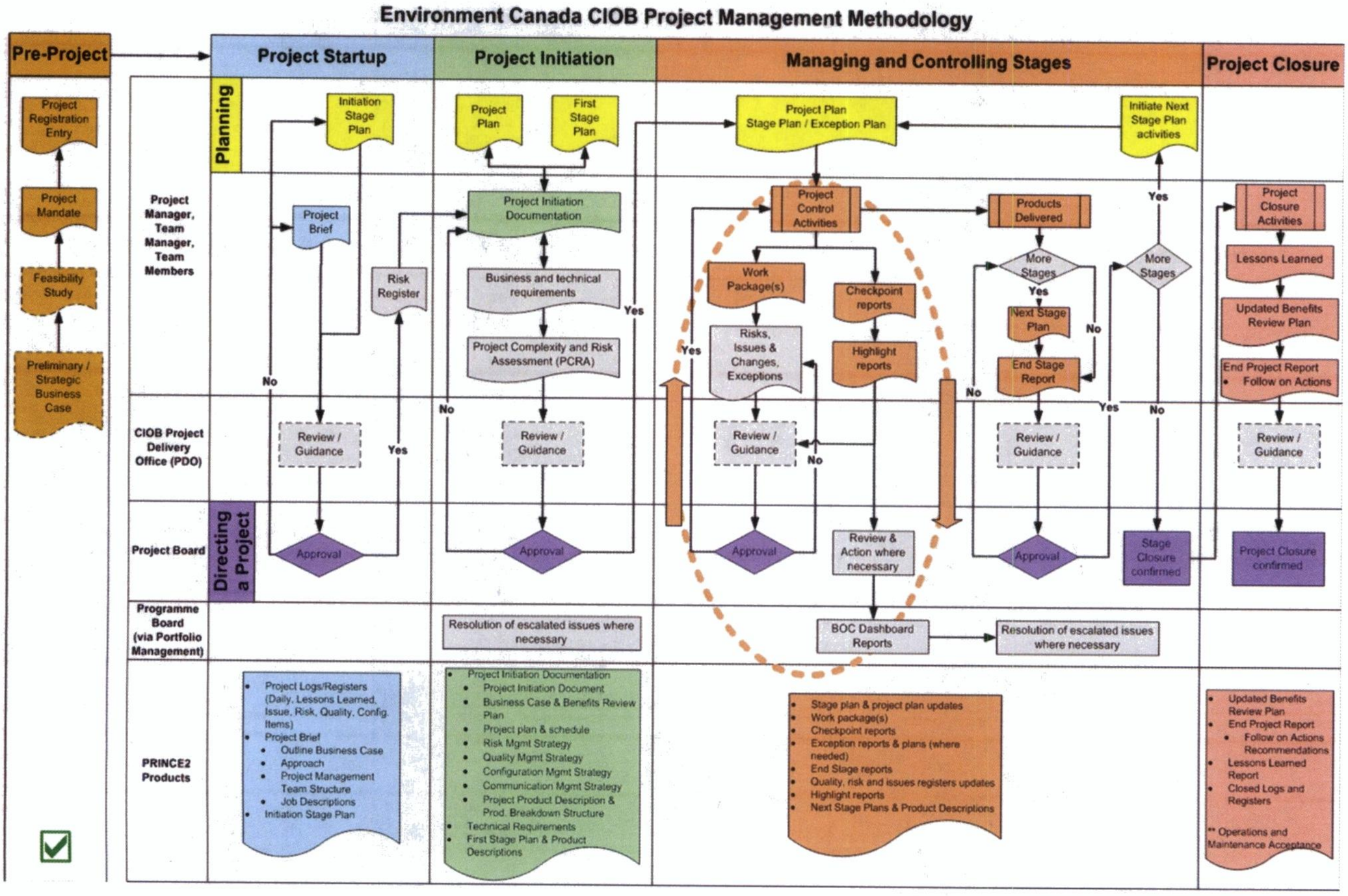
Annex B: High Level Organization Chart of Environment Canada **(as of April 30, 2011)**



Annex C: High Level Organization Chart of Environment Canada **(as of June 1, 2011)**



Annex D: CIOB Project Management Framework



Annex E: Example of a CIO Branch Operations Reporting (BOC) and a Monthly Operations Reporting (MOR)

Overall Status		Project Name	Manager / Director	Project Specifics						Highlights
Current	Forecast			Sched.	Budget	Scope	Risk	HR Staffing	Contracts	
●	●	Integrated Investment Planning (IIP)	Cathy C / Mark G.	●	●	●	●	●	●	▪ 2010-11 December reallocation requests submitted Nov. 26 ▪ 2010-11 Q3 Status report completed. Dec. 3 ▪ 2011-12 Multi-year requests submitted to IIP Dec. 1
●	●	Integrated Corporate Planning (ICP) - DPR - Operational Budgets - Business / PA Plans - ICP Narrative - CRP (Risk)	Shannon A. / Mark G.	●	●	●	●	●		▪ RPP: CIOB input completed ▪ CRP: CIOB input completed ▪ Mid Year review coming to an end ▪ Preparing for 2011-2012 Integrated Plan - Lessons Learned completed - Updating tools, templates ▪ ICP Narrative completed, CIOB input to ICP completed
●	●	Management Accountability Framework (MAF) - MAF VII Action Plan – Update completed - MAF VIII - Analysis and Evidence gathering completed	Deb B. / Mark G.	●	●	●	●	●	●	▪ Completed November 18. ▪ Awaiting initial assessment (Feb 2011). ▪ Next steps: Analysis of submissions, develop plan to address gaps. Target: early Jan 2011.
●	●	Accommodations Investment Plan (AIP)	Cathy C. / Greg T.	●	●	●	●	●		▪ 2011-12 Multi-year AIP call letter sent to Directors Nov. 26. ▪ Contracts
▲	●	Business Architecture	Chantal SG / Mark G.	▲	▲	▲	▲	▲		▪ EA taking over as chair, Will now be reporting to BOC.
▲	●	IM&IT Strategy & Multi-Year Investment Plan	Mark G.	▲	▲	▲	▲	▲		▪ Priority Investment Proposal Process adopted ▪ 2010-11 IM&IT Plan v2.10 submitted via MAF VII
▲	●	IM&IT Governance	Chantal SG / Mark G.	▲	▲	▲	▲	▲		▪ Governance key element of IT Resources Audit and MAF 2011 - AOM 3 Governance and Planning ▪ Review of scope & objectives

Annex F: Example of a Project Oversight Review Summary One Pager Report

EC CIOB Project Highlight Report

Programme Name (if applicable):			
Project Name:	XYZ	Project Stage:	Execution
Project Executive:	John Doe	Report Period From:	1-Apr-11
Project Manager:	Joanne Doe	To:	3-Jun-11
CIOB Role(s)			
Supplier			

Project Start:	April 1, 2011	Project End:	TBD
Project Repository:	Internal Website link (RESTRICTED INFORMATION)		
Project Classification:	Renew - Level 1	Project ID:	
Next Project Board Meeting:		End-Stage Review	

Project Health	RED
Budget	RED
Schedule	YELLOW
Scope	GREEN
Risk	GREEN
Issues	GREEN

Project Management Products — RED

	Project Mandate		Stage Plan & Prod Descriptions		Project Board Appointed	
	Project Brief		Project Initiation Documentation			
	Risk Register		PCIRA Complexity/Risk Score			

Business Case

Expected Benefits ($Millions)	One Time:	Ongoing/Yr.:	
No Change	vs.Project baseline:	No Change	vs. Stage baseline:

Draft | Benefits Realization Plan

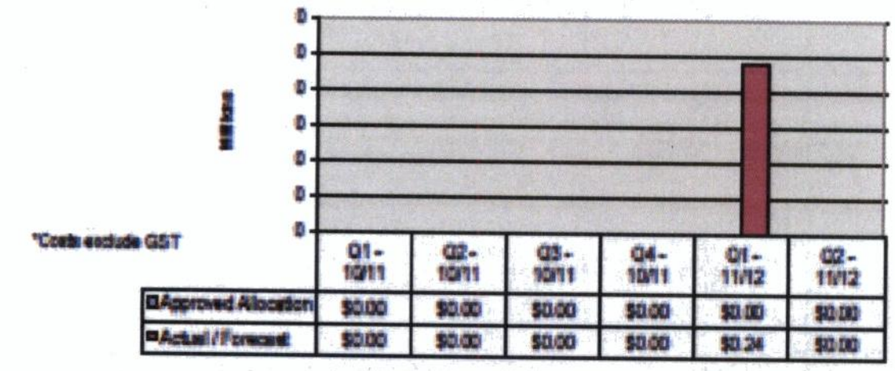
Key Business Outcomes:

ON-TRACK	Info #1
ON-TRACK	Info #2
ON-TRACK	Info #3
ON-TRACK	Info #4

Financial Summary (Cost Budget) — GREEN

Approved Project Budget: $0.0 million
Actual/Forecast Project Budget: $0.1 million

YYYY/YY	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Total
Approved											$0.0
Actual/Forecast						$0.1					$0.1



*Costs exclude GST

	Q1 - 10/11	Q2 - 10/11	Q3 - 10/11	Q4 - 10/11	Q1 - 11/12	Q2 - 11/12
Approved Allocation	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Actual / Forecast	$0.00	$0.00	$0.00	$0.00	$0.24	$0.00

Project Schedule — Project Launch Date: April 1, 2011 — GREEN

Project Stages	Baseline Start Date	Actual / Forecast Start	Approved Baseline Completion	Actual / Forecast Completion	Variance in Weeks
Start-up Stage	1-Jun-10	1-Jun-10	30-Jul-10	30-Jul-10	0.0
Initiation Stage	1-Jun-10	1-May-10	30-Jul-10	30-Jul-10	0.0
Change requests for reporting year 2010	1-Jun-10	1-May-10	12-Apr-11	28-Apr-11	2.3
Change request for reporting year 2010	13-Mar-11	13-Mar-11	12-Apr-11	28-Apr-11	2.3
Complete delayed functionality for Reporting	1-May-11	1-May-11			
Pre-population with....reporting data	13-Jan-11	13-Jan-11	12-Apr-11	12-Apr-11	#REF!
					0.0
Closure Stage					
Project Cancelation					
Benefits Realization Review					

Project Specialist Products (Deliverables to Users)

Current Stage				Project			
Completed & Approved	In-Progress	Planned But Not Yet Started	Total	Completed & Approved	In-Progress	Not Yet Started	Total
0	0	1	1	0	3	1	4

Project Risks Profile

Per Risk Register - last updated:

Total Risks Actively Managed:

Impact (Consequence) \ Probability (Likelihood)	Low	Medium	High
High	0	0	0
Medium	0	0	0
Low	0	0	0

Top 3 Risks: — GREEN

Risk # 01 :
Category :
Mitigation:

Risk # 02 :
Category :
Mitigation:

Risk # 03 :
Category :
Mitigation:

Project Scope / Requests for Change — GREEN

	Rejected RFC	Approved RFC	Estimated # Effort Days	Estimated Cost (x 000)	Impact On Project
This Stage	0	0			
Project To Date	0	0			

Project Issues — GREEN

Issues	Brought Forward	New	Open	Closed
This Period	0	0	0	0
Project To Date			0	0

Key Open Issues & Change Requests	Resolution Plan	Due Date	Assigned To

Annex G: Leadership Competencies and Leadership Styles based on Dulewicz and Higgs's Studies (2003, 2005)

Group	Competency	Goal Oriented[19] (L/M/H)	Involving[20] (L/M/H)	Engaging[21] (L/M/H)
Intellectual (IQ)	1. Critical analysis & judgment	High	Medium	Medium
	2. Vision and imagination	High	High	Medium
	3. Strategic perspective	High	Medium	Medium
Managerial (MQ)	4. Engaging communication	Medium	Medium	High
	5. Managing resources	High	Medium	Low
	6. Empowering	Low	Medium	High
	7. Developing	Medium	Medium	High
	8. Achieving	High	Medium	Medium
Emotional (EQ)	9. Self-awareness	Medium	High	High
	10. Emotional resilience	High	High	High
	11. Motivation	High	High	High
	12. Interpersonal Sensitivity	Medium	Medium	High
	13. Influencing	Medium	High	High
	14. Intuitiveness	Medium	Medium	High
	15. Conscientiousness	High	High	High

<u>Leadership Competency and Profile Descriptions</u>

Intellectual Competencies (IQ)

1. *Critical analysis and judgment:* leader gathers relevant information from a wide range of sources, probing the facts, identifying advantages and disadvantages. Sound judgments and decisions making, awareness of the impact of any assumptions made.

2. *Vision and imagination*: the leader is imaginative and innovative. He or she has a clear vision of the future and foresee the impact of changes on implementation issues and business realities.

3. *Strategic perspective*: the leader is aware of the wider issues and broader implications. He or she balances short and long-term considerations and identifies opportunities and threats.

Managerial Competencies (MQ)

4. *Engaging communication*: the leader engages others and wins their support through communication tailored for each audience. He or she is approachable and accessible.

19, 14, 15 : Leadership Styles

5. *Resource management*: the leader organizes resources and co-ordinates them efficiently and effectively. He or she establishes clear objectives and converts long term goals into action plans.

6. *Empowering*: the leader gives direct reports autonomy and encourages them to take on challenges, to solve problems and develop their own accountability.

7. *Developing*: the leader encourages others to take on ever more-demanding tasks, roles and accountabilities. He or she develops others' competencies and invests time and effort in coaching them.

8. *Achieving*: the leader shows an unwavering determination to achieve objectives and implement decisions.

Emotional Competencies (EQ)

9. *Self-awareness*: the leader is aware of his or her own feelings and able to recognize and control them.

10. *Emotional resilience*: the leader is able to maintain consistent performance in a range of situations. He or she retains focus on a course of action or the need to obtain certain results in the face of personal challenge or criticism.

11. *Motivation*: the leader has drive and energy to achieve clear results and make an impact.

12. *(Interpersonal) Sensitivity*: the leader is aware of, and takes account of, the needs and perceptions of others in arriving at decisions and proposing solutions to problems and challenges.

13. *Influencing*: the leader can persuade others to change a viewpoint based on the understanding of their position and the recognition of the need to listen to this perspective and provide a rationale for change.

14. *Intuitiveness*: the leader arrives at clear decisions and is able to drive their implementation in the face of incomplete or ambiguous information by using both rational and 'emotional' perceptions.

15. *Conscientiousness*: the leader displays clear commitment to a course of action in the face of challenge and matches 'words and deeds' in encouraging others to support the chosen direction.

Engaging leadership style: a style based on empowerment and involvement in highly transformational context. This leadership style is focused on producing radical change through engagement and commitment.

Involving leadership style: a style for transitional organizations which face significant, but not necessarily radical change of their business model or way of work.

Goal oriented leadership style: a style focused on delivery of clearly understood results in a relatively stable context

Annex H: Interview Guide

Purpose of the research and the interview

Research purpose: *We are soliciting your participation in a research at the Université du Quebec en Outaouais entitled:*

"How Project Leadership Reduces Resistance to Change: The Case of the Chief Information Officer Branch (CIOB) of Environment Canada (EC)."

This study aims at providing factors to be considered by project managers at the CIOB-EC to increase the chances of a successful implementation of a new project management procedure. To help in the implementation and contextualization of this objective, a project implementation model solution and possible conditions for its application will be developed. By soliciting experienced project members (project leads, project managers and project executives), a practical perspective of the main resistance and challenges when introducing changes in the Government of Canada will be exposed.

Purpose of the interview: *gather relevant information from stakeholders in order to understand and acknowledge their perceptions, beliefs and opinions.*

Name of the EC-CIOB Directorate:
Work Location:
Respondent Work Classification:
Respondent Job Title:
Duration:
Starting Time:
Ending Time:
Frequency: *In case an interview is divided into a certain period of time*
Respondent Data Information Verification and Presentations (e.g. Rights, Experience, Responsibilities, Consent from supervisor(s), etc.):
Overview of Interview Layout: *Semi-structured i.e. with structured and open questions. Recorded, transcribed.*
Confirmation of informed consent and signatures: ***A consent form will be signed before any interview by both the interviewee and the interviewer.***
Preliminary Questions (i.e. before Start) if any:

Start of recording: **(Mark start time)**

I- Change:

I.1 What is your current approach to project management?
I.2 Since the arrival of the recent TBS project management policy and the use of PM methodologies (e.g. PRINCE2® methodology) in the CIOB, what is (or was) your general impression about this change?
I.3 How do you perceive the preceding will (is) change (ing) your daily work?
I.4 What do you feel is required to face these changes?

II- Resistance to Change **(Track time status)**

II.1 Do you feel you presently have access to the required resources to face the changes? If not, what do you think is missing?
II.2 What are your expectations in terms of support from the organization?
II.3 Do you feel this change will affect your future plans in the organization? How?
II.4 Do you feel this change will affect the relationships between employees and/or yourself? How?
II.5 Do you expect resistance from some employees? What kind?
II.6 What do you perceive would potentially decrease/increase this resistance?

III- Project Leadership and its Impact on Change **(Track time status)**

III.1 How do you perceive the role of the project leader in the context you have described?
III.2 What impact do you think the project leader would have in that described context?
III.3 What do you perceive would be the project leader competencies (i.e. actions/behaviours /attitudes) that could potentially facilitate the change?
III.4 What do you perceive would be the project leader "competencies" (i.e. actions/behaviours/attitudes) that could potentially adversely effect the change?

***A posteriori* questions:**

IV - Context

IV.1 For how long have you been working for the GoC?
IV.2 How long have you been working in the PM Field? (PM Field includes any project team work without necessarily being project manager positions).
IV.3 How much of your PM work/experience has been within the GoC?

End of recording **(Mark end time – Track time length)**

Thank the participant; offer to share the results.

Annex I: Consent and Confidentiality Agreement Form

Université du Québec en Outaouais

Mailbox1250, succursale B, Gatineau (Quebec), Canada, J8X 3X7
Tél.: 819 595-3900
www.uqo.ca

Consent Form

How Project Leadership Reduces Resistance to change: The Case Study of the Chief Information Officer Branch (CIOB) of Environment Canada (EC)

Valerie Lundy, Eng., Project Management Advisor (Environment Canada), Project Management Grad Student (UQO)

We are soliciting your participation to the titled research. By interviewing *project leads, project managers and project executives*, a practical perspective of the implications of implementing change (via projects) in the CIOB of EC. The main result of this research will be the assessment of factors potentially facilitating the implementation of project management change and possible conditions for their application at the EC-CIOB.

Your participation in this research implies that you will spend 60 to 90 minutes answering questions on two main areas: information pertaining to the you and your working environment, and questions regarding different perceptions related to project management, e.g. change, resistance to change, project leadership and the impact of project leadership on change. This interview will take place in your work office or at a location of your choice. The interview will be recorded on a digital device, for further analysis.

All the gathered information for this study is entirely confidential and will not be made public in a form that may lead to the interviewee's identification. This confidentiality will be guaranteed through the following measures:

1. Your name will not appear on any report;
2. Not only will the information be identified by a code only, but we will make sure that the link between individual answers will not make identification of the individual source possible;
3. Under no circumstances will the individual results be communicated to anyone.

The results of this research may be published exclusively in an academic environment or in public conferences. Once published, the results will also be available to you upon request.

The main data and results will be safely kept, locked at the research Director, Professor Pierre-Paul Morin's from the Department of Administration Sciences at the Université du Quebec en Outaouais, Office B-2064. Professor Morin will be granted access to the results. The results will be destroyed after 2 years and will not be used for other purposes than the ones specified in this document.

Your participation in this study is on a voluntary basis. You are entirely free to participate or not, and to withdraw at any time without prejudice. **There is, in our**

standpoint, no sizable risk related to your participation or direct consequences on your work. The only cost/risk to you is the time required to participate to the research study. Your contribution to the body of knowledge concerning providing factors to be considered by project managers at the CIOB-EC in succeeding in the implementation of change (via projects) is the direct anticipated benefit of your participation. No monetary compensation is allowed.

If you have any further questions pertaining to the subject of this project research, you can contact either the project researcher Valerie Lundy at [redacted] or the research Director, Professor Pierre-Paul Morin at [redacted]9.

If you have questions pertaining to the ethical aspect of this project, please contact Lucie Villeneuve, resource person on questions of Ethics in research from Universite du Quebec en Outaouais at [redacted]4.

Your signature attests that you have clearly understood the information concerning your participation to this research and infers your acceptance to participate. It does not suggest that you wave your rights and waive the researchers or the research authorities from their legal or professional responsibilities. Your participation should be as clear as your initial decision to participate in this study; you have to be aware of all the main matters related to this research. Henceforth, you should not hesitate to request explanations or new information throughout this research.

With your permission, we would like to be able to keep the gathered data at the end of this research for subsequent research activities. As for this specific research, we will maintain confidentiality on your personal information and your identity and respect the same ethical rules.

It is not mandatory to consent to this latter portion to participate at this research. If you decline, your data will be destroyed at the end of the current research. If you accept, your data will be kept for a period of two (2) years following the end of this project research and then will be destroyed.

□ I accept a secondary use of the information that I will provide.

□ I refuse a secondary use of the information that I will provide.

After acknowledging the information concerning my participation to this research, I apply my signature, which implies my freewill to participate. The form is signed in two copies and I will keep one of the two copies.

Name of Respondent: _____
Respondent Signature: _____ Date: _____
Name of Project Researcher: _____
Project Researcher Signature: _____ Date: _____

Annex J: Chief Information Officer Branch's Employees' Distribution

	CIOB DIRECTORATES[22]						
Work Classification	BASD (#)	IMD (#)	MPSD (#)	OPSD (#)	SSOCIO (#)	Total	Note
AS1	5	4	4	8	5	26	AS: Administrative Services
AS2	1	0	1	7	5	14	" "
AS3	1	4	1	2	1	9	" "
AS4		2		1	2	5	" "
AS5		1		1	3	5	" "
AS6		1			2	3	" "
AS7		1				1	" "
CS1	**37**	**3**	**12**	**90**	**1**	**143**	CS: Computer Systems
CS2	**97**	**9**	**47**	**119**	**4**	**276**	" "
CS3	**54**	**14**	**22**	**73**	**8**	**171**	" "
CS4	**22**	**5**	**10**	**21**	**19**	**77**	" "
CS5	**5**	**3**	**2**	**7**	**5**	**22**	" "
CR4	1	13		3	3	20	CR: Clerical & Regulatory
CR5		2				2	" "
EC1		7				7	EC: Economics and Social Science Services
EC2		6				6	" "
EG4			12			12	EG: Engineering and Scientific Support
EX1		1			2	3	EX: Executive
EX2	1	1	1	1	3	7	" "
EX4					1	1	" "
GT1						0	GT: General Technical
GT2		1				1	" "
LS1		1				1	LB: Library Services
LS2		14				14	" "
LS3		7				7	" "
LS4						0	" "
LS5		2				2	" "
PC1						0	PC: Physical Sciences
PC2		3				3	" "
PC3		2				2	" "
PM5	1					1	PM: Programme Administration
Total for each Directorate	225	107	112	333	64	**841**	

Directorates Legende:

BASD: Business Applications & Solutions Directorate
IMD: Information Management Directorate
MPSD: Major Projects & Supercomputing Directorate
OPSD: Infrastructure Operations Directorate
SSOCIO: Service Standards & Office of the CIO Directorate

[22] Approximate numbers (2% margin error) – As of January 2011

Université du Québec en Outaouais

Case postale 1250, succursale B, Hull (Québec), Canada J8X 3X7
Téléphone (819) 595-3900
www.uqo.ca

Gatineau, le 22 juin 2011

Madame Valérie Lundy
Étudiante
Département de sciences administratives

c. c. Pierre-Paul Morin
Professeur
Département de sciences administratives
Université du Québec en Outaouais

Objet : **« How Project Leadership Reduces the Resistance to Change: The Case of the Chief Information Branch of Environment Canada. »**
Demande de certificat d'éthique

Dossier : **1414**

Bonjour madame Lundy,

Je tiens d'abord à vous remercier des précisions et des modifications que vous avez apportées suite à nos commentaires. Suite à l'examen de l'ensemble de la documentation reçue, je constate que votre projet rencontre les normes éthiques établies par l'UQO. Par ailleurs, je prends également note que vous nous ferez parvenir une copie de l'approbation de l'organisation une fois que vous l'aurez obtenue. Madame Lucie Villeneuve, du secrétariat général, fera un suivi à cet effet.

C'est donc avec plaisir que je joins le certificat d'approbation éthique qui est valide pour une durée d'un an à compter de sa date d'émission. Votre approbation éthique pourra être renouvelée par le Comité d'éthique de la recherche suite à la réception du Rapport de suivi continu requis en vertu de la *Politique d'éthique de la recherche avec des êtres humains*. De fait, toute recherche en cours doit faire l'objet d'une surveillance éthique continue et cette responsabilité relève des chercheurs eux-mêmes. Pour plus d'information, je vous invite à consulter le site internet de l'éthique (http://www4.uqo.ca/recherche/ethique/index.asp). Toute modification au protocole de recherche devra être soumise au Comité d'éthique pour validation avant la mise en œuvre des modifications.

Par conséquent, vous devez faire parvenir au Comité d'éthique de la recherche un Rapport de suivi continu le ou avant le **22 juin 2012**. Dans l'éventualité où une demande de renouvellement de l'approbation éthique serait requise, vous devrez déposer votre Rapport au moins 45 jours avant l'échéance du certificat afin de vous assurer d'avoir une approbation éthique valide pendant toute la durée de vos activités de recherche.

Je demeure à votre disposition pour toute information supplémentaire et vous souhaite bon succès dans la réalisation de cette étude.

André Durivage
Président
Comité d'éthique de la recherche

p. j.

Notre référence : 1414

CERTIFICAT D'APPROBATION ÉTHIQUE

Le Comité d'éthique de la recherche a examiné le projet de recherche intitulé :

Projet : **« How Project Leadership Reduces the Resistance to Change: The Case of the Chief Information Branch of Environment Canada ».**

Soumis par : Madame Valérie Lundy
Étudiante
Département de sciences administratives

Financement : **Non**

Le Comité a conclu que la recherche proposée respecte les principes directeurs de la Politique d'éthique de la recherche avec des êtres humains de l'Université du Québec en Outaouais.

Ce certificat est valable jusqu'au **22 juin 2012.**

Au nom du Comité,

André Durivage
Président
Comité d'éthique de la recherche

Date d'émission : Le **22 juin 2011**