TRANSFORMATIONAL eGOVERNMENT SUCCESS THROUGH ENHANCED PROJECT MANAGEMENT

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ABSTRACT

Transformational eGovernment is the continuous innovation in the delivery of services, citizen participation and governance through the transformation of external and internal relationships by the use of technology; especially on the Internet. When introduced, it offered the hope and promise to revitalize and modernize public services; reinvigorate and improve services to citizens, business and governments; and, create an exciting environment for employees to work and contribute. Countries, world-wide are inexorably engaged and urged forward by both push and pull motivational pressures to use technology to improve democratic participation, social harmony and economic sustainability.

While eGovernment's first decade has been much more transactional than transformational, radical changes affecting eGovernment are needed in this decade: culture, different services and relationships with all stakeholders; organizational arrangements; business processes; and resource management. But progress thus far achieved is not without struggle and transformational eGovernment success is far to the deficit side of the performance measurement scale. The project failure rate is so high that transformational eGovernment progress is stalling.

The thesis used the mixed method research approach that included the design and implementation of a piloted and structured survey; data collection and analysis; and examination and testing of potential enhanced project management solutions to focus on international transformational eGovernment activity and problems in: project management; the transformation of public service and its organizational and operational arrangements; and international strategies for transformational eGovernment uptake.

The surveys conducted in this research identify a synergistic compendium of ten key challenges and barriers that prevent progress in the project management of transformational eGovernment projects. As a way forward in addressing these challenges, this thesis recommends that project management methodologies be improved by implementing a project initiation concept document process identifying a series of actions and methods to be incorporated as the initial stage of eGovernment project management methodologies to identify, manage and mitigate the unique challenges and barriers that impede eGovernment success.

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1.0 CHAPTER 1 – INTRODUCTION

Transformational eGovernment is the continuous innovation in the delivery of services, citizen participation and governance through the transformation of external and internal relationships by the use of technology; especially on the Internet. When introduced, it offered the hope and promise to revitalize and modernize public services; reinvigorate and improve services to citizens, business and governments; and, create an exciting environment for employees to work and contribute. Countries, world-wide are inexorably engaged and urged forward by both push and pull motivational pressures to use technology to improve democratic participation, social harmony and economic sustainability.

Transformational eGovernment has not been the success hoped for around the world and a number of the barriers preventing success have been identified and analyzed (Weerakkody, Janssen, and Dwivedi, 2011; Sharif and Irani, 2010; Ziemann and Loos, 2009; Dawes, 2009; United Nations, 2010; United Nations, 2008; World Bank, 2002; Nordfors, Ericson, Lindell, and Lapidus, 2009; Oxford Institute, 2007). It has been harder, slower and more complicated to deliver than what was originally expected, specifically from a business transformational agenda (BCS Thought Leadership, 2005; Roy, 2006). Transformational eGovernment promised hope for government transformation, public sector renewal and revitalization of the role of bureaucracies in the 21st century. eGovernment delivered primarily on the transactional success of using the Internet to allow citizens closer and more direct access to government programs (Weerakkody, Janssen, and Dwivedi, 2011); important and valuable, but not of the significance and benefit that was predicted. Transformational eGovernment remains slow and halting (Aikins, 2012b) and shackled to the time honoured approaches of managing existing organizational assets rather than reaching out to create new management capacities that business transformation demands and technology affords.

Even in Canada, where eGovernment was rated by Accenture number one in the world for five years in a row (Accenture, 2005, 2006, 2007; Government of Canada Foreign Affairs & International Trade, 2006), it is seen as being primarily a transactional success as opposed to a transformational one (Roy, 2006). Internationally, there has been a high and critical failure rate related to IT solutions (Aikins, 2012b; Fraser, 2006). More recently the failure in IT solutions that was the bane of transactional processing is now appearing in eGovernment initiatives (Heeks, 2008; Arif, 2008; Janowski, Estevez, and Ojo, 2007; Aikins, 2012b). eGovernment failures are often hushed up (Heeks, 2003) and as Misuraca (2009) points out, the majority of eGovernment projects are failures as high as 70-80% and are not meeting the 'messianic' expectations. Failures are costly; as per Irani, Al-Sebie and Elliman, 2006, the United Kingdom Parliamentary

Office of Science and Technology reported that cancelled or over-budgeted eGovernment projects was greater than 1.5 billion British pounds.

There are a number of reasons for the lack of transformational eGovernment success including unanticipated organizational opposition, difficulties in communicating requirements and obstacles to obtaining information from different government departments and agencies (Kamal, Weerakkody, and Irani, 2011). However, there is some support for the belief that one of the most significant reasons for transformational eGovernment failure is ineffective project management (Aikins, 2012b; Misuraca, 2009). The literature and this thesis refer to the dearth of peer-reviewed information on the effective role of project management and its impact on transformational eGovernment project success even though there are non-peer reviewed business publications and country audits (British Computer Society, 2004; Fraser, 2006;) that identify ineffective project management as an important cause of ICT failure.

Project management as derived from generic project management methodologies is a systems approach to planning scheduling and controlling project activities; it began its modern accelerated in growth in the 1960s (Kerzner, 2001). The systems approach creates a project management framework that is constructed from process groupings and knowledge areas. The implementation of this approach ensures that the work of project management activities is performed efficiently and effectively and is measured by such features as planning, cost, schedule management, scope control, and communications.

In transformational eGovernment, the project management systems approach is not enough. Instead, in transformational eGovernment, project management must discover the interrelated sets of challenges and barriers that impede transformational eGovernment project success and respond to and cope with them from a 'results achieved' perspective. The project management systems approach must become a basic entry level to the transformational eGovernment project management regime and project results must be the project drivers that are measured by the effective management of objectives, stakeholders, clients, technical and subject matter experts, resources, and functional support services (Kerzner, 2001).

There are many reasons cited for project management failure and many of them are attributed to one or more breakdowns in the traditional project management systems approach (Aikins 2012b). But when a project meets key stakeholder (user) requirements, many other project short-comings are overlooked such as cost overruns, late schedules, and scope creep. However, in the author's opinion, transformational eGovernment project management must result in success by ensuring that project management evolves from a system activity approach to a system results approach that starts with identifying an interrelated set of transformational eGovernment project barriers

and challenges. This research is focused on informationally enhancing the project management process in order to upgrade the traditional systems activities approach and support the project results orientation.

To address the difficulties currently experienced specifically in eGovernment projects, it can be argued that modern project management growth that began in the 1960s (Kerzner, 2001) now needs to be radically accelerated; become less process bound and more results driven. Transformational eGovernment project management could take on the functions and features of other management professions similar to the example of accounting and finance. By comparison, accounting equates to enhanced project processes and finance equates to project results. Processes supporting results should far outweigh processes supporting activities.

Transformational eGovernment project management should ensure that information management and information technology (IT) that has long been relied upon to assist governments in carrying out their mandates (Movahedi, Tan, and Lavassani, 2011) delivers on the demand for 'faster, better, cheaper' IT solutions. These demands are not abating as governments evolve from transactional management to eGovernment transformation. Creating transformational eGovernment citizen centric solutions and organizations requires (Schwester, 2009; Elliman and Irani, 2007):

- focusing on and targeting citizen centric requirements, cultures, and mores;
- responding to a broad and deep plethora of citizen demands;
- using technology as an agent to integrate technical architectures and information structures, and information from subject matter experts;
- managing technology to blend new and legacy systems, redesigned processes, and differently motivated human resources, while supposedly achieving cost and time savings;
- recognizing the lack of tools and skilled resources; and,
- evolving governments from paternalistic and hierarchical structures to collaborative and networked organizations.

1.1 Research Aim

The aim of this research is to consider the feasibility of advancing transformational eGovernment by discovering and mitigating the key challenges and barriers and by focusing on one of the eGovernment's missing tools - an informational enhanced project management methodology that could more effectively participate in the design, and drive the implementation of the transformational eGovernment outcomes.

Project management has been named as a major culprit for the underwhelming success of eGovernment; it has contributed to limiting eGovernment transactional initiatives instead of transformational developments. Project management has been named a key factor in the failure in both delivering IT solutions and transforming government (BSC Thought Leadership, 2005; Fraser, 2006; WITSA, 2006). Project management limits change instead of promoting it, and it could have unwittingly locked down the status quo.

Therefore, the research problem is to explore the reasons for the ineffective project management contribution to the lack of progress in transformational eGovernment. And the research aims to study the feasibility of designing an informationally enhanced project management methodology that takes into account the impact of a holistic set, a synergistic compendium of specific challenges and barriers to transformational eGovernment that are not effectively addressed by existing generic project management methodologies. This problem is exacerbated by the need to address the unique conflicting aspects of transformational eGovernment where departments and agencies act in the interest of the Ministries without addressing the needs of the 'whole of government' (Anthropoulos, Siozos, and Tsoukalas, 2007).

1.2 Research Question

If additional project management information associated with the compendium of challenges and barriers that prevent eGovernment project success could be collected and analyzed, and the related transformational eGovernment problems articulated, could this new knowledge be used to enhance project management and thereby improve transformational eGovernment success, since failure of eGovernment projects is so often attributed to ineffectual project management practices (Aikins, 2012b)?

1.3 Research Objectives

The objectives of this research are to:

- assess the weakness within generic project management methodologies in addressing the international eGovernment challenges and barriers and contributing to and promoting the transformational change resulting from eGovernment; and,

- determine how the eGovernment's challenges and barriers could be mitigated by designing an informational improvement to the generic project management methodologies.

1.4 Research Approach

Around the world, almost all public sector institutions are struggling with either entering the eGovernment market or advancing and realizing its success (United Nations, 2010; United Nations 2008). They are moving from the use of ICTs and the Internet for simple transactional activities to the provision of information and public services for the people (Bouazaz, 2008).Regardless of any country's position on the eGovernment progress continuum all can benefit from having access to the experiences and knowledge already gained from international colleagues. This experience provides a deeper understanding of the challenges and barriers and the role of project management that impacts the successful implementation and progress of transformational eGovernment initiatives.

Based upon this insight, in 2005, the author approached the World Information Technology Services Alliance (WITSA) Secretariat, an organization representing national technology associations around the world, to arrange for access to their international members to administer an eGovernment survey that would serve to collect information for this research, and act as a medium to share eGovernment knowledge for the international members. It was intended and anticipated to deliver quantitative as well as qualitative data on the underlying causes behind slow eGovernment progress and on the feasibility of enhancing project management methodologies to address the causes. The mixed methods research approach was chosen for the way in which qualitative and quantitative data was to be collected and analyzed; thereby enabling the employment of wider research data collection tools, and collaboration between survey respondents and researcher.

1.5 Structure of the Thesis

Chapter 1 - Introduction

This chapter outlines the background of transformational eGovernment; the research aim, the research question, objective, and the research approach.

Chapter 2 – Literature Review

This chapter examines the developments, trends and weaknesses in project management in relation to the unique and complex set of challenges and barriers to transformational eGovernment. It identifies the gap between transformational eGovernment problems and solutions.

Chapter 3 – Research Design

This chapter describes the research environment, methods examined and the election of mixed methods as the most approach method. It summarizes the research design objectives, approach and limitations.

Chapter 4 – Research Execution

This chapter provides a review of the survey and interview methods used to collect and analysis data; to identify, test, and validate findings with respect transformational eGovernment challenges and barriers; and to propose, test, and evaluate solutions to the challenges and barriers.

Chapter 5 - Research Findings

This chapter describes the holistic synergistic compendium of transformational eGovernment challenges and barriers that were derived from the research and, the proposals to strengthen the generic project management methodologies by incorporating informational enhancements that recommended the development of a project concept document to be incorporated within the methodologies' project initiation processes.

Chapter 6 - Evaluation and Original Contribution

This chapter describes the research methodology and limitations by reference to the author as a participant; the survey instruments and respondents; and the scope and 'insitu' testing. It describes the original contribution in terms of transformational eGovernment challenges and barriers and project management solutions.

Chapter 7 – Conclusion

This chapter contains an overview of each chapter; highlights the original contribution; describes continuing research requirements, and identifies methods for broadcasting and sharing research findings.

2.0 CHAPTER 2 - LITERATURE REVIEW

The first decade of eGovernment was a dot.com era of high hope and heavy promise (Roy, 2006). The advance of the Internet and the service delivery focus on the citizen, the major stakeholder, was supposed to modernize and transform the public service. The Internet and the 'e' opportunities were to be the catalyst to change how governments work while changing their relationships with citizens. These changes were to be imbedded in every aspect of government operations and its relationships with citizens, business, other governments and its own employees. These changes would supposedly influence its strategies, policies, management operations, structures, organizational arrangements, business processes, informational management with the promise of effective and efficient use of resources and the attendant savings (Weerakkody, 2011). However, eGovernment only partially delivered on its promise (Aikins, 2012a) and broad-based implementation is still in demand.

There remains in the public and private sectors, much discussion and angst as to why eGovernment is replete with failure (Misuraca, 2009) and has not achieved its promise. Academic literature over the last number of years has conducted much examination as to why this is so, as have think tanks and government organizations; and yet success is still elusive.

This chapter summarizes much of the academic and public literature on the project management 'absentee' role which is the focus of this research, the eGovernment issues and challenges to be overcome, and international importance in ranking and advancing along the eGovernment evolutionary scale or 'yardstick.' Continuous attention to new publications and insights is vital to constantly move towards solutions to tame the eGovernment behemoth that to date, has not yet fully delivered on escalating improvements in the delivery of public services and government operations.

These radical and needed changes to achieve transformational eGovernment are concerns that are germane to this thesis and they impact the nature of this literature review. However, since the domain and scope of transformational eGovernment and its elusiveness far exceeds the span of any one thesis or any one published research paper, this thesis and the literature review therein has targeted two key aspects of transformational eGovernment: namely, the role, impact, and relevance of project management methodologies and practice; and the challenges and barriers that impede transformational eGovernment progress that can be remediated by enhanced project management methodologies and practices.

The lack of modern, effective, and eGovernment-focused project management methodology (Shah, Khan, and Khalil, 2011) that addresses key issues and impediments has been identified

as one of the leading causes in preventing eGovernment from moving beyond its traditional transaction base to a much-heralded and much-needed transformational base (Aikins, 2012b).

This literature review examines the field of Project Management in supporting eGovernment and the complex issues and barriers and challenges that inhibit eGovernment transformational success. It concludes with a statement with respect to the knowledge gap and the contribution of this research to modify this field and identify opportunities and solutions to address these limitations.

However, a literature review caveat is that the literature, though providing coverage in most areas only tangentially touched on some aspects of project management and transformational eGovernment that were critically important to the author; these aspects are discussed in the upcoming relative sections.

The lack of significant literature in these aspects impacts the thesis research design and approach with respect to issues pertaining to proposals for informational enhanced project management that would respond to and cope with a synergistic compendium of transformational eGovernment challenges and barriers. As well, they highlight a gap in the literature and scholarly attention.

With the motivation of producing an informationally enhanced project management methodology to drive eGovernment, the literature survey outlined below was undertaken to better understand the issues facing the advancement of such research, as well as the current state-of-the-art in the associated research.

This research is focused on project management and business practice developments and challenges within large, complex and transformational eGovernment environments.

2.1 Project Management

The project management literature review was focused on the field and discipline of project management in supporting transformational eGovernment and in coping with the complex ICT issues, and barriers and challenges that inhibit eGovernment transformational success. It addresses project management developments, trends, weaknesses and general methodologies as they apply to ICT challenges and barriers, and how they contribute to transformational eGovernment implementation and operations.

2.1.1 Developments in Project Management

Role of project managers

eGovernment has its roots in the early 1960s when IT/IS were developed for single type transactional record-keeping activities in government finance, human resources, and departmental specific operations.

At the close-out of the 20th century, more broadly based IT/IS development included ERP systems, business intelligence, and unstructured informational management. In the early 2000s, eGovernment looked to IT/IS to bring about a transformation in the organization, business processes, and human activity. Project management has been significant in this time frame (Kerzner, 2001) and in the IT/IS arena and its role continues to grow as eGovernment momentum exponentially advances.

The areas of project management and eGovernment have been gathering momentum for the last 10 years. The adoption of IT/IS and managing the implementation of such technologies in the public sector provide opportunities to exploit the professionalism of the people involved in managing such large projects, the project management process, and the philosophy behind it. Effective project management practice is a main pillar in the success of eGovernment initiatives. Professional project managers play a major role in ensuring that large projects are delivered on time and on budget (Ebrahim and Irani, 2005). Such projects have a big impact on society (Weerakkody, Janssen and Dwivedi, 2009; House of Commons Public Administration Select Committee, July 2012). Governments are adopting new technologies to enhance service delivery to their citizens, and hence improving citizen-state relations. The aim of such large eGovernment projects is to cater for different and reliable services and not for profit organizations (Irani, Love, and Jones, 2008; Irani, et al., 2005).

Portfolio and Enterprise-Wide Management

There have been improvements in Project Management software, particularly in the area of ease of use, improved tracking, risk management and performance reporting (Kerzner, 2001). Most recently, there have been advancements in portfolio and enterprise-wide management to assist organizations and project managers to assess and validate the progress for groups of projects either within a specific organization or across organizations. These products address issues related to project capacity, productivity, costs, control, resource planning, performance measures, reporting and rating for groups of projects to ensure direct advancement of organizational objectives and effective use of resources. Issues related to standardization to measure,

communicate progress and manage groups of projects are challenging and require consistency and clear assessment criteria.

Most improvements have been focused on the overall project management processes, reducing operational expenses, enhancing customer satisfaction, gaining more control over projects and improving the information flow across organizations.

A preliminary examination of portfolio management products indicates that they are more effective in managing groups of related, smaller projects, as opposed to the large business transformation initiatives. Portfolio management attempts to strengthen executive sponsorship of priority initiatives and create a better framework for understanding the size, scope and number of projects, and their relationship to one another. But, portfolio management, similar to project management in general, is external to the management of the projects themselves. It does not serve the executives or project managers as an information source, or as an enabler, nor does it drive the project forward to implement a solution that is not already completely prescribed. Portfolio managers do not have the same interests as project managers (Krane, Olsson, and Rolstadas, 2012).

Customer Relationship Management (CRM)

Recent developments in Customer Relationship Management (CRM) also affect the project management environment. CRM is focused on delivery, operations and solution developments. This transcends the user's requirements and points to an iterative and holistic emergence of a project management solution that is fully integrated with the business strategies, culture and operational methods. Arif (2008) states that customer orientation is vital for success in today's competitive environment and that the customer orientation concept might improve project management.

Project Management Discipline

The project management discipline itself is becoming more difficult due to the collaborative and networked nature of present day complicated eGovernment projects and the overwhelming bombardment of information – both useful and irrelevant. The need to work across organizations and jurisdictions and create solutions that are a product of progressive elaboration and negotiation is a new dimension to project management that was not so pervasive until citizen focused transformational and innovative solutions were being developed. Aikins' 2012 text on *Managing E-Government Projects: Concepts, Issues and Best Practices* supports Roy's 2006 text on *Transformation for the Digital Age: E-Government in Canada* that the unrealized hopes in transformational eGovernment still remain. Aikins (2012a) also supports government

documentation as far back as 2006 in Canada (Fraser, 2006) and 2004 in the United Kingdom (BCS, 2004) that eGovernment should adopt a more concrete project management methodology (Aikins, 2012b), and that one of the best practices is rigorous application of its methodology (Aikins, 2012a). And, through the use and application of the repetitive processes afforded by the application of these methodologies, project management excellence is achieved (Kerzner, 2001).

This need is increasingly acknowledged through the recognition according to Jugdev (2011) that one of the generic international project management methodologies, the Project Management Body of Knowledge (PMBOK) material was number 108 on www.amazon.com's best sellers' list. Given the Project Management Institute's broad reach through its PMBOK guide, various certification and practice standards, extensive professional development services, and its research initiatives, it is curious why such an influential association has adopted such a narrow approach in providing complex, transformational eGovernment project management system implementation support.

The application of known computer system solutions to functioning business processes and informational flows existed in an era where the role of the 20th century government was to solve common problems usually in a 'one size fits all' approach. This is in contrast to our current environment where 21st century governments need to work collaboratively to facilitate individual-based and citizen-focused solutions. The way governments and officials work needs to be redesigned for our exploding information age and technology-enabled environment.

In this author's opinion project management is a discipline ripe for change since it primarily operates as an external monitoring and reporting tool. It helps the project manager stay on track according to predefined requirements and cost and time limitations, but it does not help the project manager drive the change, facilitate the transformation, nor create an innovative solution. Current technologies include the specificity of the scope, time, cost, risk and resource factors, but they do not help the project manager implement unprecedented solutions. For eGovernment project management to be properly understood and successfully applied it needs to be more comprehensively conceptualized (Sarantis and Askounis, 2010). This research is to examine the 21st century transformational eGovernment project management requirements coupled with the aid and incorporation of technology and information into the work itself so that along with the traditional monitoring and reporting functions, the project management methodology can more effectively contribute to project success.

Preliminary research suggests that intelligence could be based upon the amalgamation of information from the business processes, the organizational and project objectives and lessons

learned (Elliman and Irani, 2007) and analysis from previous projects to offer guidelines and advice to the project manager on activities to be performed and approaches to be considered.

2.1.2 Trends in Project Management Practice

Performance Metrics/Evaluation

Demonstrating the business value and impact of project management tools and techniques is another area of discussion. Examining measures to assess the value of a particular approach and the use of different technologies to improve project success is useful research. As described by Nidumolu (1996), structural contingency theory has been identified as the organizational analysis focused on the effect of neglecting the impact and contingency factors of management and organizational structures, and how factors such as inertia and incomplete information render organization adoption unlikely. The role of contingency theories has been discussed to contribute to project coordination both horizontally and vertically, and described the organization as a 'fit' between requirements uncertainty and the coordination mechanisms.

Project management is two sides of the same coin (Gray and Larson, 2003; Heeks and Stanforth, 2007). Project management is about managing technology, but more importantly is about managing people to deliver the tasks agreed upon on time and on budget. The success of the transformational eGovernment projects should be measured by what works, and not by how much saving has been achieved in cost.

There is other research focused on the ideology that projects are similar and 'one size fits all', and supported the contingency argument that different modes of organizing could be explained by complexity, uncertainty and size. Other trends focused outside the mainstream project management discussions to address the relationship between project-based management and organizational innovation, and how project management became the agent that allowed innovation to spread throughout the organization.

Progressive Elaboration (Outcome not known)

As discussed in the chapter introduction, though the literature covered the use of tools (Kerzner, 2001) and approaches to improving their use within the project management environment, no peer reviewed documentation was uncovered that questioned some of the premises of the project management discipline; most notably, the following observation on progressive elaboration and tools to assist the project manager.

When the project management discipline was originally developed especially as it applies in the IT environment, it was assumed the end users or at least the organizational representatives had the knowledge to articulate information requirements as they were usually building upon or improving a process currently in place. It was also assumed that design and construction could be separated; i.e., the user could develop specifications to which a contractor would build, similar to the way a house is constructed. While software developers such as Agile base their systems on iterative and incremental development, the current project management discipline does not assume that the lines between designer and constructer as well as builder and user have evolved; and, with the complexities of systems today, the ability to articulate specifications to build a system not yet experienced is an arena where current project management discussions and technology aids have not yet entered.

No tools for project manager to achieve results; only measures against plan

Current project management technologies and standards are generally designed to assist the project manager to apply and report upon progress, but do not integrate nor provide any intelligent information on issues, pitfalls, opportunities, or previously tried solutions that could help the project manager achieve the project objectives and deliver results. According to Cooke-Davies, Crawford, and Lechler (2009), the management of a project should be adapted to its specific characteristics. Information on current technologies and standards may be collected but then is often shelved. There is no easy system for using this information, no federated search on a body of knowledge, and no ability to apply the results of this search to a particular project plan or provide guidelines applicable to a specific project. The project manager is supported by software programs and methodologies that report upon progress, resource usage and deliverables against predefined expectations (Kerzner, 2001), but do not facilitate the effort of integrating these processes and knowledge areas along with blending technology, people, and business processes to achieve better performance within the business environment.

2.1.3 Project Management Weaknesses

Inadequate Leadership Support and Understanding

As per the chapter introduction with respect to the use of project management tools, the peer reviewed literature, other than the discussion of usual barriers, did not thoroughly examine the eGovernment realities and impact of people issues of leadership and support; expectations and promises; nor accountability and risk in this particularly complex environment.

There have been two major project management studies performed by Ontario, Canada (Deloitte's Government & Public Sector Group, 2007) and the Government of Canada's (Fraser,

2006) Auditor General that have recognized that the failure to successfully deliver many large-scale IT projects including the eGovernment area, is in part, due to the inability to understand the implications of managing business transformation initiatives. One study concluded that 40% of large public sector projects fail to come in on deadline and within budget due to poor and misunderstood project management activities. Heeks (2003), and recently republished by Aikins (2012c), reported on a survey of government projects in developing and transitional economies and concluded that 85% are partial or total failures. Though to challenge this conclusion, this research supports the view that these expectations were developed for a project environment that was augmenting and improving current processes and not for transformational and innovative government-wide projects not yet in existence.

Large-scale public service transformations require substantial improvements both to the information technology infrastructure, and to the way that customers and services providers interact and exchange information. During these projects, problems arise, like imprecise business rules that are erroneously tagged as IT problems. This obscures the fact that organizations misunderstand the changes being made to their business. Many senior executives fail to understand the scope or have the capability to lead and govern the extent of the change, and therefore erroneously defer the management of such a wide impacting project to the IT professionals.

This highlights a lack of resolve and understanding of the myriad of complicating and interdependent factors affecting organizational life. Assigning responsibility to the Chief Information Officer (CIO) guarantees that it will be treated as a technology exercise only, instead of a complex business transformation process and the organizational change management challenge that it actually is. It is almost by default that project leadership falls to the CIO as opposed to the business owners. Current project management methodologies, designed for the IT professionals more than the program managers, address the reporting and benchmarking issues of putting in new systems but they do not assist the executives in undertaking the management of the transformational change. There needs to be a balance between the CIO and business owner; the CIO ultimately becomes the conduit to the government as an enterprise as the business owner will always remain loyal to his own program interests.

The Government of Canada Auditor General Report (2006) highlighted the weaknesses of executive support and accountability as being critical to project success, and noted that large information technology projects across the federal government are no longer about introducing new computer systems but are meant to help departments change the way they do business. Though this report focused on the prevalence of overspending, delays, performance shortfalls and abandonment of major investments, it did not attempt to understand why these projects are

so difficult to successfully complete. Instead, it highlighted that the process for managing projects was insufficient and recommended improving the review of decision documents and justification as the means to improve success.

While these measures may improve project management to some degree, they add to the administrative effort without addressing the underlying reasons that make the management of large information system initiatives so problematic. In fact, recommending increased articulation of specific benefits and standards, producing plans to wind up the project, and forecasting citizen take-up for unprecedented solutions is another example of erroneously misdiagnosing 21st century problems and treating with 20th century tools.

Unreasonable Expectations -Achievement of business transformation objective

Project management has not completely evolved to meet the requirements of a business transformational initiative, which is often associated with eGovernment applications. However, it must be noted that the expectation for business transformation projects (those that radically affect the business and its delivery) to come in on budget and on time might be unreasonable considering these are unprecedented applications affecting the organization significantly beyond the traditional IT, Request For Proposal (RFP) specifications, and business planning focus environment.

People and Funding Related Issues - Lack executive support, funding and skill set

Project management literature includes a number of issues relating to project failure (Kamal, Weerakkody, and Irani, 2011). These include lack of executive support, insufficient funding, and people-related issues. It is interesting to note that as project management achieves recognition as a valued discipline and profession, it is becoming more complex, more risky, and more effort consuming; and yet, the Government of Canada Auditor General recommends that it is a function that should be done in-house (within governments) by program personnel. The function of managing projects is to be added to their day-to-day responsibilities and not performed by professional project managers; at least not by private sector personnel though within governments. Professional project managers who focus solely on managing projects in government do not exist.

In June 2006, Accenture stated that most IT projects fail not because of the inherent technology, but because of people related issues. These issues include weak of user support due to lack of evidence of valued change, skills gap within the project management community, and inability to drive and sustain organizational and cultural change.

Reasons for project management failure – Accountability and risk management

In many IT project failures and problems, accountability (Charih and Robert, 2004) and risk management are often cited as key contributors. In 1996, Canada implemented a regime entitled the Enhanced Management Framework to address these shortcomings and strengthen project accountability by primarily focusing on ensuring senior management's level of understanding, involvement and support. And though this regime intended to improve project management in a complex IT and eGovernment world, its impact has not really been proven, especially since even the Auditor General of Canada recently commented on the 'dismal state of project management' (Fraser, 2006).

However, the effort to create this regime does highlight that the accountability structure needed for managing projects and the recognition of their complexities warrants something in addition to a rigorous process; namely, that the use of technology itself to assist senior management and project managers themselves is absent in the management of projects. Currently, all project management accountability guides focus on the externalities of scope, risk, cost, and time and interdependencies and relationships; but not on how to address the 'stop and go' within a public sector environment, not on how to learn and transfer information and knowledge from one project experience to another, and not on how to soften the lines between technology, business processes and people; all crucial accountability requirements to the successful implementation of IT projects.

Risk management includes prioritizing crucial risks that are influenced by key project stakeholders (Krane, Olsson, and Rolstadas, 2012) such as project owners, project sponsors, and project users. Transformational eGovernment projects risk prioritization is influenced by these and other stakeholders with diverse and conflicting project interests. And the need to manage these stakeholders is well documented (Azad and Faraj, 2008; Kamal, Weerakkody, and Irani, 2011) The key risk conflict (Krane, Olsson, and Rolstadas, 2012) is the work to manage the risk of ineffective project implementation versus the risk of the lack of strategic project success. According to this author, the avoidance of key risk conflict is one of the reasons for the slow conversion from transactional to transformational eGovernment.

2.2 eGovernment

The eGovernment literature review was focused on the issues and impediments in the transformation of public services, organizational problems and challenges of ICT change including the traditional barriers in system implementation, and the international rankings by country now used as a lightning rod for international recognition.

2.2.1 Transformation of Public Services

Definitions

eGovernment has been defined by a number of organizations; the following provides a representative sample of a few.

The United Nations (2004) defined 'the transformation of public-sector internal and external relationships through use of information and communication technology (ICT) to promote greater accountability of the government, increase efficiency and cost-effectiveness and create a greater participation'. According to this definition, eGovernment covers a wide range of activities and can embrace local, national and international government and agencies. In order to be more precise on the scope of eGovernment, one definition that has been adopted by many governments is namely, the continuous innovation in the delivery of services, citizen participation, and governance through the transformation of external and internal relationships by the use of information technology, especially on the Internet (Roy, 2006). The OECD (2001) also defined eGovernment as fundamentally about achieving good government (in a modern day context). This perspective underscores the widening canvass of eGovernment as digital technologies and online activities that permeate most aspects of government activity.

In 2009, the World Bank defined eGovernment as 'the use of government agencies of information technologies that have the ability to transform relations with citizens, business, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth and/or cost reductions (Robertson and Vatrapu, 2010).

Other definitions include one from Esteves and Joseph (2007). In their interest to undertake a comprehensive assessment of eGovernment projects, they defined eGovernment as the changing nature of relationships from command and control to collaboration, and as a platform for multichannel interaction and multichannel delivery options. Others include that of Bouaziz (2008) as the use of ICT and its application by the government for the provision of information and public services to people, and Aikins (2012b) as a concept in government aimed at online interaction between stakeholders involving the use of information and communication technologies.

According to this author and this research, a definition can be extended as far back as 1999 when the Government of Canada published in the Speech from the Throne the commitment to become 'known around the world as the government most connected to its citizens, with Canadians able

to access all government information and services on-line at the time and place of their choosing, it was always understood to imply revolutionary changes to administration and democracy resulting from digital innovation – drastically changing how and what and to whom governments work, serve and relate to citizens. eGovernment was not something to pursued for its own sake, but rather for the contribution it could make to creating better government; a much more complex challenge than simply using ICT for automating government business and putting information and services on line. Bringing eGovernment into the mainstream of efforts to improve government continues to require an integration of its objectives, approaches and experiences with the reform of government.

Insufficient success/focus on transformational agenda

Governments, academics and private sector 'think tanks' are all realizing the lack of progress of the business transformation objective. Why have eGovernment initiatives and transformations not progressed around the world to the degree originally anticipated? Nor have they been the driving force hoped for to revitalise and modernize the public service (BCS Thought Leadership, 2005; Roy, 2006; Belanger and Carter, 2005; Belanger and Hiller, 2005). Some countries (Desautel, 2005; Jorgenson and Cable, 2002; Fraser, 2006) have been considered to be extremely successful including Canada who was recognized internationally as number one in the world by Accenture for five years in a row. Even though (in Canada), the public service remains pretty much the same as it was almost nine years ago when eGovernment (Government On-Line) was first initiated in Canada in 1999 (Furlong, 2008). Because of this, and an international push for eGovernment developments, there has been much analysis as to why it has or has not maturely developed, both in Canada and around the world, and how the experiences of those 'who have gone before' can be shared with those approaching the starting line (Aldrich, Bertot, and McClure, 2002; Elliman and Irani, 2007).

This research does not claim that it will cover all the issues that led to eGovernment project failure. According to Loukis (2011), understanding and reducing the unacceptable high rates of failure (in IS systems) has been a major research topic for more than 30 years. Instead this research addresses lessons and insights to practical applications of some eGovernment transformations and will provide direction for future eGovernment transformations in managing large projects effectively.

It is generally accepted, and by this author, that the conventional top-down eGovernment service driven approach has reached the limits of its transactional effectiveness and a new focus is required to deliver on the transformational agenda. It is also generally accepted that this next

phase will be considerably harder but with it should come potentially more benefits and ultimately be more rewarding.

The last decade has seen an increase in bolstering eGovernment projects and the focus on utilizing and the integration of IT/IS in such projects. Canada has been a leader in eGovernment initiatives (Accenture 2005). Europe has advanced many eGovernment initiatives (Irani, Elliman and Jackson, 2007) along with numerous world-wide eGovernment transformation project initiatives (United Nations, 2005). Often eGovernment projects concentrate on expenditures and saving cost as the main aim of such projects, rather than on the delivery, functionality, reliable communication amongst the project teams, effective project practice and bridging communication between the different parties involved including outsourcing teams ((Irani, et al., 2005). Cost savings as drivers are not the issue; they are not enough for transformational eGovernment.

Whereas most governments engage in eGovernment to facilitate citizen service via transactions over the Internet, Dubai engaged in a much more interesting societal value by attempting the seemingly paradoxical melding of concurrently pursuing the drive to use IT and eGovernment to decentralize public administration, and enhance the government's activities to oversee key activities. This is motivated from a desire to modernize and make more competitive the Dubai economy (Badri and Alshare, 2008).

eGovernment Failure Rate

As mentioned above, eGovernment has not been the success hoped for – and has barely addressed the transformational agenda. This is measured in the lack of transformational change and also the high degree of eGovernment project failure. As reported by Arif (2008), 60% of IT projects fail in terms of exceeding budgets or deadlines, or have dissatisfied customers. Janowski (2007) with the United Nations also stated that in reality many transformational eGovernment projects are unsuccessful and one of the common causes for failure is poor project management. Aikins (2012a) attributes the difficulties encountered in the implementation of eGovernment projects as the reason eGovernment has not delivered on its promises.

Lack of Information to Project Managers to manage conflicting demands

As pointed out in the chapter introduction, locating peer reviewed literature to cover the issues that impede eGovernment success has not been always possible. (Therein is the interest to share and broadcast these research findings and results for a better understanding of the eGovernment operational challenge.) This applies for example, to the following issues of capacity of the project manager to manage, and to a lesser degree the industry expected measurement criteria.

The focus of this research assumes that part of the delay and difficulties in delivering on eGovernment success is the lack of technology support available to those administrators attempting to balance the interests of public officials, services to clients and the capacity of employees against their ability to use, manage and drive the systems to deliver on program and operational results. In fact, the way of working, i.e., social capital (in the form of joined-up networks, effective processes and collaboration) now identified as the skill set required of senior public sector executives as opposed to the traditional human capital (in the form of formulating policy and advising Ministers) highlights even more clearly the need to incorporate technology into the heart of their leadership activities. By extension, negotiating and managing all forms of projects becomes the basics for social capital. There is a wave of interest that change in the public service will come from system-wide initiatives, and not through further top-down targets and performance management. This is all the more reason to aid practitioners to drive this change with the aid of more modern project management for an information management requirement as opposed to a set of mechanistic information technology tools.

Use of wrong measurement stick – Change not cost

There are papers and surveys around the world that analyze the major problems experienced by many public sector institutions that prohibit the development of eGovernment as a truly transformational driver for the modernization of public institutions. Some document the 'lessons learned' for success, and focus on the importance of and risk in being able to justify the 'value' of funding eGovernment initiatives and realizing supposed cost savings resulting from these initiatives. Though to date much of the research is focused on integration and interoperability cost savings as opposed to profound public sector operational transformations. But, cost drivers are not the issue. Investment techniques built around traditional accounting terms are not enough for transformational eGovernment. Using ROI (return on investment) to evaluate transformational eGovernment projects can be one of its main barriers (Irani, et al., 2005). Transformed eGovernment is not cheaper – it is better and that is the justification. Citizens want better; they cannot have cheaper.

Analyzing the barriers to eGovernment also focuses on the ways innovation can enable governments to transform the delivery of public services and approaches to governance, and innovation that changes the way things are done, as opposed to innovation to do faster and cheaper what is already being done. Unfortunately, there is much literature on acknowledging the existence of these measures and the performance measurement criteria without (from this author's perspective) enough critical analysis on the harm and regressive actions resulting from these procedural practices. For example, in Aydinli, Brinkkempter, and Ravesteyn (2009), there is a discussion on (tantamount support for) controlling mechanisms as management controls are

necessary to guard against the possibilities that people will do something the organization does not want them to do or fail to do something they should do, and the use of worldwide scandals such as Enron to justify triggering governments and institutions to create laws and rules concerning corporate governance. Clearly, protection is required from illegal and corrupt activity but this should not be interpreted to hobble employees to engage in creative problem solving and transformational ideas nor suggest the employee interest in innovation does not compliment organizational interests. The requirement for organizational transformation and eGovernment progress is not compatible with overbearing controlling mechanisms nor the use of measures applied from a pre-eGovernment environment.

2.2.2 Additional Organizational Problems of ICT Change and eGovernment Solutions

The Journal of Strategic Information Systems - Volume 17 (June 2008) Issue 2 - released a series of papers accessing the organizational implications and problems of ICT change instigated through the management and implementation of public sector eGovernment initiatives. Hackney (2008) summarized the six papers as follows: Azad and Faraj (2008) provide an analysis on making eGovernment systems workable through 'technology frames'; Phang, Kankanhalli, and Ang (2008) consider the theoretical contribution of organizational learning as leverage to eGovernment systems implementation; Gupta, Dasgupta, and Gupta (2008) analyse the adoption of an eGovernment system in a developing country through the theoretical perspective of government-employee behaviour; Irani, Love, and Jones (2008) address organizational learning as a means to evaluate eGovernment; and Belanger and Carter (2008) discuss the importance of citizen trust in eGovernment adoption.

EGovernment is expanding dramatically internationally with substantial investments being made to support improvements in ICT infrastructures as well as services to the citizen where emerging challenges facing adoption are not technical but organizational, political and cultural. Public sector provision and support is related to learning, change, user engagement and trust. There are six papers in this edition that focus on the differing kinds of impact on the organization resulting from the implementation of ICT business solutions. The references on stakeholders are included in subsequent chapters on corroborating evidence of the 10 transformational eGovernment challenges and barriers identified in WITSA Study. The following includes issues over and above these 10 challenges.

Employee Organizational Learning

Another paper by Phang, Kankanhalli, and Ang (2008) considers the theoretical contribution of organizational learning as a means of providing insightful leverage to realize the benefits of eGovernment implementation. One paper by Gupta, Dasgupta, and Gupta (2008) analyses the adoption of eGovernment systems within a developing country, and how acceptance and employee behaviour and expectations affects successful implementation and adoption.

Anthopoulos, Siozos, and Tsoukalas (2007) describe a tool to establish public servants' involvement in the design of digital services and of eGovernment in general in order to 'rebirth' public administration to demonstrate the importance of public sector employee involvement.

Jugdev, Yurka, Sennara, and Ruwanpura (2008) also reported that organizational inertia impedes effective organizational learning because people resist changes to routines and behaviours. They also referenced the terms 'corporate and project amnesia' to emphasize that lessons learned are ineffective learning tools when they are not done well, people do not learn from their mistakes, and are subject to selective recall that can affect the quality of a lessons initiative.

Citizen Trust

Belanger and Carter (2008) focused on citizen trust as an imperative to wide spread adoption of eGovernment. They acknowledged the critical role of understanding stakeholder issues and weighing their respective influences over the ICT created solution. They also acknowledged the learning barriers, issues of trust and employee intransigence towards adopting new solutions and business practices.

Demand for Horizontal and Collaborative Working Relationships

Though this is already well established, the requirement to deliver on the transformational eGovernment objective usually involves working across organizational units as citizen-centric and innovative applications most likely take the form of a new organizational approach that did not exist before. Scholl (2007) held that both vertical and horizontal integration would become the major focus of eGovernment.

This new approach requires working across organizational divides to achieve a unified solution, and the project management tools required to drive and facilitate this achievement could be lacking. Current project management methodologies address the needs of managing within the iron triangle of cost, scope and time, and effectively report upon and manage progress. But the real challenge is not the iron triangle but in moving eGovernment towards an enterprise

government, and this requires encouraging itself to work through common policies; and not permitting, for example, security to prohibit its integration.

Inadequate progress in transformation of public services

One of the key messages in this research is the lack of capacity to embrace the benefits and opportunities afforded by technology to modernize and transform the public sector as so much of eGovernment has been focused on transactional as opposed to transformational success. This view is supported by Anthopoulos, Siozos, and Tsoukalas (2007), as current eGovernment projects do not succeed in the essential modernization of public administration, but a new 'virtual' administration is installed, operating in tandem with the traditional one.

Anachronistic models

Current organizational designs are based upon 20th century bureaucratic approaches that support 20th century government hierarchies and accountability models, and are not designed for collaboration. Beynon-Davies (2007) even argued that the business model was murky and that it became an invitation for 'faulty thinking and self-delusion.' The 21st century work challenges these organizational structures and government hierarchies, and needs a greater ability to work across organizational boundaries and requires tools that are not solely regressively based. They must become an element that facilitates the networked society and collaborative spirit required to create the synergy to produce transformational solutions. Current project management and portfolio management methodologies are challenged when stretched to support cross-organizational and cultural demands to assist in the management, development and ultimate creation of a new system or product that did not exist before. Along with the new organizational approaches, skill sets, political direction, executive wisdom and transformational solutions required to manage in today's environment, this research seeks to use project management to contribute to the very process itself of creating innovative solutions.

Traditional challenges to ICT and eGovernment Systems

The design of the survey investigating the international challenges and barriers to eGovernment success was based upon the literature review, the author's experience and that of international colleagues on the major impediments to major ICT systems and eGovernment. The literature examination uncovered many of the same challenges and a few references are provided below to demonstrate the broad based and far reaching challenges that apply to eGovernment and other ICT systems.

Vanka, Sriram, and Agarwal (2007) stated that in the developed world, almost all eGovernment initiatives cost too much and deliver too little. They said that the reasons were many but they 'boil' down to three; bad strategy; poor delivery; and no management of benefits. Vanka, Sriram, and Agarwal (2007) also discussed a United Kingdom commissioned report that stated the seven 'sins' as the classic causes of project failure: lack of strategic clarity; lack of sustained leadership at political and senior management levels; poor understanding and segmentation of user needs; lack of effective engagement with stakeholders; lack of skills; poor supplier management; and 'big bang' implementation meaning failure due to seeking to deliver too much technological and organizational change at once.

Eynon and Dutton (2007), in their work with the Oxford Institute on barriers to networked governments in Europe highlighted the following list as most critical and central to organizational and institutional change: poor coordination; workplace and organizational inflexibility; leadership failure; lack of trust; financial inhibitors; the digital divide; and poor technical design.

The OECD (2003) stated the barriers that impeded the development of eGovernment were: legislative and regulatory barriers that impede uptake; budgetary frameworks that restrict initiatives; technological change; and the digital divide.

Cohen and Eimicke (2003) stated the following obstacles to the vision of eGovernment were: the digital divide; government procurement and information policies and processes; security; the politics of information; professional skills to use the web; and, the difficulty of absorbing the increased volume of information coming into government being disseminated by government.

Davison, Wagner, and Ma (2005) articulated a wider swath and stated that governments are ill prepared for eGovernment primarily due to the following barriers: functional insularity; deeply entrenched cultures and practices; integrating operational procedures and information systems not necessarily computer based among individual departments, agencies and bureaus. In addition, he cited the more traditional ICT barriers of citizen privacy and security, inadequately skilled citizens and government employees, the tendency for eGovernment to replicate traditional government (perpetuating functional insularity) and digital divide of the 'haves' and 'have-nots.'

And lastly (though there are others), Ebrahim and Irani (2005) summarized a number of barriers that prevent the realization of benefits and degrade the successful adoption of eGovernment to be technology, resources, infrastructure, management support, capable IT staff, and effective IT training and support.

These findings, along with influence from the author's and international colleagues' experiences (Appendix I), were synthesized and summarized, and incorporated into the attached survey

(Appendix II) under the 'list of reasons to be rated that inhibited progress of eGovernment' and 'factors that created additional challenges.'

2.3 International Ranking and Benchmarking by Country

One relatively recent international noteworthy tradition to be raised is the annual review of a number of international organizations to rank eGovernment progress around the world (United Nations, 2010; West, D, Brown's University 2007; Accenture 2005). Each uses a slightly different approach and criteria, but the most significant observation is the weight individual countries apply to these rankings.

As an example, the World Bank's (2001) 8th millennium goal to 'Develop a Global Partnership for Development' includes developing IT infrastructure. Many countries achieve this goal through demonstrating progress on the delivery of ICT and eGovernment services to their citizens and the modernization of their states, and thereby access funding from the bank.

It is also significant that the international findings on transformational eGovernment are interpreted such that transformational eGovernment projections are largely unfulfilled with each country attempting to 'leapfrog' over the other.

This research is aimed at targeting improved project management as an aid to advance eGovernment progress and allow each country to rise up the scale of progress.

In this section, the literature findings were compared against international eGovernment benchmarking and ranking measures for the purpose of corroborating the findings and adding to their impact and practicality. As well, an element of triangulation, through the use of empirical information obtained from ranking of country progress was deployed to confirm the international quest to advance on eGovernment transformational scale and add to the level of knowledge acquired from the literature findings.

This chapter focuses on the following three international ranking and benchmarking measures used around the world to measure eGovernment progress. The majority of these benchmark measures provide only a relatively superficial picture of the complex process of making public services available online, and more specifically do not address nor delve into the transformation elements and opportunities within eGovernment. Most are conducted through an examination of public sector websites to determine the depth and breadth of online services; some include interviews and some focus on the availability of infrastructure and technological access capabilities.

All report findings in a similar fashion in that there is a ranking attributed to each country, and use varying degrees of measurement specificity (for example, Accenture uses categories such as Trendsetters and Followers while the United Nations uses a four place decimal system). Theses ranking schemes have proved to be particularly effective in advancing eGovernment initiatives that need political visibility to obtain funding, resources and political commitment to succeed.

Many measures also report upon eGovernment readiness and the capacity to leverage ICT as an indicator of success and the degree of preparation to participate in and benefit from eGovernment /ICT developments. They usually report upon the readiness of the ICT environment, the readiness of the country's key stakeholders, and the usage by these stakeholders. Exploiting the power of ICT and gaining access to the global network is seen to be a key driver of growth and prosperity. This in turn according to the author's international consultations fosters social networks and virtual communities and thereby, is ultimately seen an agent for the development of healthy democratic societies and economies.

There are three main international eGovernment ranking organizations discussed below. A description of the approach and findings of each is provided below as well as a comparative review developed by Berntzen and Olsen (2009) of the three international ranking organizations. The countries involved in these studies vary from examining a broad international coverage to a more exclusive list. The following summarizes the methodology and international rankings of these organizations, and includes evaluation criteria, country selection, frequency, number of years conducting this analysis, and most recent findings including the top-ranked countries.

2.3.1 Accenture - Leadership in Customer Service: New Expectations, New Experiences, April 2005

1. Evaluation criteria and approach

   The latest Accenture Report 'Leadership in Customer Service: Building the Trust' issued in April 2006 did not include an international ranking. Therefore, for the purposes of this analysis, the 2005 Report entitled 'Leadership in Customer Service: New Expectations, New Experiences' was used as the reference source.

   The 2005 research methodology was based upon the quantitative assessment of the quality and maturity of services for both citizens and businesses covering 177 services in 22 countries. Accenture's approach was to engage researchers to behave as citizens and businesses for one week in January 2005, and as such attempt to fulfill service needs that typically might be provided by a national government. They assessed websites of

national government agencies to determine the breadth of services and the level at which citizens could relate with their governments.

The criteria used to rank eGovernment performance were based upon two elements; Service Maturity and Customer Service Maturity. Service Maturity is the level to which a government has developed an online presence (number of services and completeness). The Customer Service Maturity measures the extent to which government agencies manage interactions with their customers (citizens and businesses) and deliver services in an integrated way. The score is based upon an overall maturity percentage and categorized as being a Trendsetter, Challenger, Follower or being in the Formative stage.

2. Country selection

In the 2005 Report, Accenture selected the following 22 countries: Australia, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Malaysia, Mexico, the Netherlands, Norway, Portugal, Singapore, South Africa, Spain, Sweden, the United Kingdom and the United States.

3. Frequency

Annually

4. Number of years conducting this analysis

7th report, since 2000 (6th report used due to inclusion of international ratings).

5. Most recent findings

Purpose

The purpose of the Accenture report is to help governments identify the value of putting services on-line and embrace a vision of leadership in customer service and service delivery, because in their opinion, sweeping transformation of government service will lead to high performance by making them more citizen-centered, outcome-oriented and cost effective.

Key Findings

The key findings in 2005 are as follows:

- eGovernment is well advanced and should be an integral component of a service delivery agenda;
- Future leadership will be defined by customer service; and
- Citizens' willingness for new types of services outpaces governments' ability to deliver them.

The international rankings are Canada first, followed by the United States, Denmark, Singapore and Australia. The countries are categorized as being Trendsetters, Challengers, Followers or Formative.

2.3.2 United Nations - Global E-Government Readiness Report 2005: From E-Government to E-Inclusion (Most recent publication in 2010)

1. Evaluation criteria

   The eGovernment Readiness Survey 2005 assessed more than 50,000 features of the e-Government websites of the 191 UN Members states in order to determine their state of readiness in employing ICT to provide basic social services. Employing a statistical model for the measurement of digitized services, the UN eGovernment Survey 2005 assessed the eGovernment initiatives according to a weighted average composite index of e-readiness based on website assessment, telecommunications infrastructure and human resource capabilities.

   The results categorize the country as being an emerging presence, enhanced presence, interactive presence, transaction presence or networked presence. The 2005 results were based upon a two-month analysis in July-August 2005.

2. Country selection

   179 countries

3. Frequency

   Annually

4. Number of years conducting this analysis

   3rd year

5. Most recent findings

Purpose

The purpose of the UN Survey is to explore the linkages between e-Government and human development and to allow policy makers to make an international comparison.

Key Findings

The report stated that the most developed countries are promoting citizen awareness about policies and programs, approaches and strategies on their websites, and are making an effort to engage multi-stakeholders in participatory decision-making. It stated that eGovernment approaches differed from country to country and for effective eGovernment to develop there must be access, political commitment to the use of ICTs, a well thought out vision and practical objectives. The rankings placed the United States as the world leader (0.9062), followed by Denmark (0.9058), Sweden (0.8983) and the United Kingdom (0.8777).

In the latest 2010 United Nations eGovernment Survey (United Nations, 2010), South Korea has led the world in how governments have used ICT to give citizens and businesses better access to public services during the economic downturn. Korea edged out the United States in the 2010 UN eGovernment rankings, marking the first time an Asian country has topped the bi-annual table.

The survey which was completed in December, 2009 charted the role e-government has played in increasing public trust, boosting transparency through the free sharing of government data, and speeding up public service delivery and regulatory reform at a time of economic crisis.

The reasons for Korea's success were based upon a focus on citizen participation, and international cooperation to learn from other nations eGovernment paradigms.

The United Nations conducted this survey again in 2008 (E-Government Survey 2008: From E-Government to Connected Governance), and 2010 (E-Government Survey 2010: Leveraging e-government at a Time of Financial and Economic Crisis) with Canada's ranking rising from number eight to 2005 to number three in 2010.

The most recent 2010 United Nations eGovernment Report focused on the role of eGovernment to address the world financial and economic crisis by enhancing public trust through the free sharing of government sharing through open standards and its ability to handle speed and complexity underpins regulatory reform. It also claimed

eGovernment adds to the agility of the public service to help government respond to demands as revenues fall short.

The 2008 United Nations eGovernment Report highlighted the importance of integrating back office functions and highlighted that the key is integration of the people, processes and technology. It also stated that evidence indicates that the success or failure of eGovernment is less a technological issue and more a people issue, and the ability to change public service cultures and motivate public sector workers to new ways of working, address union concerns, and provide skilled and competent management and leadership.

2.3.3 Brown's University - Global E-Government 2006

1. Evaluation criteria

   This report reviewed 1,782 national government websites for the 198 nations around the world based upon information availability, service delivery and public access. Each country was rated on a 0 to 100 scale. This research was conducted during the summer of 2006 and in general, analyzed particular features and rated countries for overall e-Government performance.

2. Country selection

   198 countries

3. Frequency

   Annual

4. Number of years conducting this analysis

   6th report since 2001

5. Most recent findings

   Purpose

   The objective of this report was to measure and compare eGovernment or the online delivery of information and services.

Key Findings

The world leader is South Korea, followed by Taiwan, Singapore, the United States and Canada.

In 2007, Brown University conducted another 'Global E-Government' study where Canada dropped to 6th place from the 2006 rating of 5th place. The criteria in 2007 focused on well-designed sites that are easy to navigate and provide accessible services to all citizens. It included South Korea, Singapore, Taiwan, the United States and Great Britain as having the top spot among international websites for online services, presentation and functionality.

2.3.4 Comparative Review of International Ranking

Berntzen and Olsen (2009) developed a comparative review of the three international rating organizations. They designed a framework that compared complexity to integration on the axis and then plotted levels of maturity from Catalogue (online presence); Transaction (services on line); Vertical Integration (linked systems with similar functionality); and finally, Horizontal Integration (integrated systems across different functions). They compared the three methodologies used by Accenture, the United Nations and Brown's University.

They summarized Accenture's approach from 2000 to 2006 as the use of two indicators – service maturity as number of services implemented, and delivery maturity as the level of completeness from providing information on line (publish), allowing citizens to submit online (interact) and finally with providing a government response on line (transact). These two elements were weighted – service delivery was 70% and delivery maturity was 30%. They then created an index to group countries starting with innovative leaders, visionary followers, steady achievers and platform builders. In 2006 delivery maturity was substituted for customer relationship management and ended the ranking of individual countries.

Berntzen and Olsen (2009) summarized Brown University's approach to be an examination of websites starting in 2001 to 2008 in 198 countries. They had 28 criteria for each web site ranging from adequacy of information, linked material, handicap access, posting of privacy policies, and ability to pay and only examined the presence of features with no effort to measure maturity nor depth of individual services.

They summarized the United Nations approach which first started in 2002 as checking web sites for content and services used by citizens, and gathered statistical information on infrastructure and human capital from each they developed a complicated specific index. The web sites included five critical sectors; education, health, labour/employment, welfare/social services and

financial services. The UN assessment 191 member states (countries) and rated each as having an emerging presence, enhanced presence, interactive presence, transactional presence or networked presence. The 'web measure assessments are purely quantitative, and were based on a questionnaire that required researchers to assign a binary value to the indicator based on presence/absence of specific electronic facilities/services available.'

Berntzen and Olsen (2009) conclude that all three studies are based on observation and as such, do not reveal what is behind the façade. A service may be poorly integrated with back-office systems and still receive a high score. Another system will less functionality may be well integrated with the back-office system but receive a low score. They count counties' services not their sophistication. The services are not evaluated based on usage or impact or value as seen from the citizen point of view. These authors conclude that there are problems with the use of indicators, and important issues such as accessibility, transparency, efficiency and impact are not covered.

2.4 Knowledge Gap/Literature Review Gap

As regards transformational eGovernment project management, the literature review identified transformational eGovernment broad issues that described the context in which project management must function in order to cope with the transformational eGovernment challenges and barriers that can be monitored, controlled and managed; this must be done by developing, implementing and incorporating information enhancements to the generic project management methodologies. The issues are discussed under the rubric of: the transformation of public services; and organizational issues and associated changes needed to deploy eGovernment initiatives.

The literature also discusses the lack of effective project management as an impediment to transformational eGovernment but it provides only a scarcity of information on project management improvements.

As regards transformational eGovernment challenges and barriers, the literature identifies traditional challenges and barriers to transformational eGovernment progress such as the management of project resources, scope, schedule, funding, infrastructure; but it does not suggest a synergistic compendium of interrelated transformational eGovernment specific and unique challenges and barriers.

Most of the literature's description of transformational eGovernment many challenges and barriers is related to research on specific projects rather than as a product or result of research

that was directed at increasing knowledge about known challenges and barriers such as limited access to subject matter experts

This literature review attempted to close the literature gap by focusing on: transformational eGovernment's significance and benefit, project management, barriers and challenges, and international progress.

Most academics around the world are mainly analyzing and studying the effects and approaches of eGovernment and how it can and should accelerate and progress in all countries. And as a by-product of the work the resulting literature also touches upon the project management discipline and where it does and could assist in the delivery and management of complex IT/IS technology projects, including the eGovernment environment. Many share the view that project management has been nominated as the guilty party responsible in part for the lack of eGovernment success though none have identified the opportunity that project management could play a role in advancing not only complex IT/IS technology projects and transactional activities, but also driving and directing the critical complex transformational platforms necessary to realize and inculcate the benefits of technology in the management and delivery of public sector services and responsibilities.

Though many academics have identified to varying degrees some of the research findings challenges and barriers attributed to inhibiting the success and advancement of eGovernment, none (that has been discovered so far) has summarized a comprehensive list (other than the usual time, cost and quality 'iron triangle' so prevalent in large systems operating within government limiting parameters), and none has considered nor assessed the feasibility of strengthening the project management discipline as a potential solution.

2.5 Chapter Summary

The review of academic literature is ongoing and each paper, each journal, each conference advances this subject matter and constantly gets closer towards identifying the root causes of those challenges and barriers, and understanding solutions to facilitate success. The contribution of this thesis is to highlight the feasibility of using informationally enhanced project management as the driver and facilitator to uncover the possibilities available within technology to formulate applications to improve the ongoing and changing business of government. And, ultimately broadcast this message to sensitize public and private sector executives to the possibilities in project management to address the barriers that inhibit transformational eGovernment success.

This chapter summarizes the literature reviewed in the field of project management and in the field of transformational eGovernment, and the symbiotic relations between them.

3.0 CHAPTER 3 - RESEARCH DESIGN

As per the literature review described in Chapter 2, there are papers and information on the status of eGovernment around the world that measure eGovernment transactional activity [United Nations, 2010; Accenture, 2005; West, D. (Brown's University), 2006]. To a far lesser degree, there is information on eGovernment successful transformation with respect to human resources, technology and business processes (Schwester, 2009). That is, the literature reflects the reality of slow transformational eGovernment activity. (Roy, 2006; Aikins, 2012b).In the literature review, there is also some analysis outlining the barriers and challenges that have prevented many countries from making the eGovernment transformational progress (Weerakkody, Janssen, and Dwivedi, 2011; Sharif and Irani, 2010; Ziemann, 2009) that was anticipated since the advent of the Internet, the development of pervasive technology, and the demands of computer literate citizens who expect government services to be (at least) marginally equivalent to services available in the rest of their society (Movahedi, Tan, and Lavassani, 2011). As Movahedi, Tan, and Lavassani (2011) point out, the private sector shares the same stakeholders as the public sector and it is these stakeholders that hasten governments to adopt transformational eGovernment. However, there is no holistic, synergistic compendium of the transformational eGovernment challenges and barriers that impede transformational eGovernment progress; nor is there any explanation for the weaknesses of project management in this area.

In addition, in the public sector environment – those governments attempting to undertake eGovernment for the first time or to advance its stage – there is virtually no information easily available that shares knowledge and information on the eGovernment approach or guidelines within which to implement and manage its undertaking. The literature review highlighted three international organizations [United Nations, 2010; Accenture, 2005; West, D. (Brown University), 2006] that measure international eGovernment developments, but there is no depository that shares 'insider' strategies and disseminates best practice. And only these international organizations and the Organisation Economic Cooperation and Development (OECD, 2001) provided general information on principles, country approaches and international developments.

When this research was initiated commencing in 2006, this author was working with the Government of Canada in Government On-Line (GOL - the Canadian eGovernment), and at that time (and which still exists today), there was an international interest in the success and advancement of eGovernment around the world as corroborated by the international country rankings by the United Nations, Accenture and the Brown's University. Yet, success has not been what had been anticipated. It remained transactional and not transformational (Roy, 2006; Roy, IT World Canada, 2006). In addition, Sharif and Irani (2010) stated that it remained incremental rather than transformational. According to the eGovernment Unit in the European Commission,

international explanations on the lack of eGovernment success were limited to the following seven barriers; leadership failures, financial inhibitors, digital divides and choices, poor coordination, workplace and organizational inflexibility, lack of trust and poor technical design (Breaking Barriers to eGovernment, 2007). In addition, government documents identified project management as another factor that impacted the success of eGovernment (BCS Thought Leadership, 2005; Fraser, 2006; Sarantis and Askounis, 2010). The United Nations International Institute of Software Technology conducted a survey of eGovernment projects in developing and transitional economies which revealed that as many as 85% fail to attain goals or are total failures (Janowski, Estevez, and Ojo, 2007). This is similar to the rate quoted by Heeks (2008) and Furlong and Al-Karaghouli (2009). It is interesting to note that Mohammad Arif in 'Customer Orientation in eGovernment Project Management: a Case Study (Arif, 2008) uses a failure rate of 60% of IT projects and says that eGovernment projects face the same challenges as any other IT project.

The research for this thesis began with the generally accepted view, held by theoreticians and practitioners, that enhancements to transformational eGovernment would require formal investigation into aspects of government such as business and societal cultures; relationships with disparate stakeholders; business policies, processes, and procedures; information and technology management, human and financial resource management, and modern interactive communications (Schwester, 2009; Elliman and Irani, 2007). Further, the formal research requirement recognized the high failure rate of transformational eGovernment projects. As per the research findings of Aikins (2012b), roughly only one seventh of all projects are successful. There is a need to adopt an effective project management methodology as one of the critical elements of transformational eGovernment success (Aikins, 2012b).

The author's academic and practitioner experience was the starting point for the research and led to an extensive literature investigation of the problems, opportunities, successes, and failures of transformational eGovernment and the role of project management in support of transformational eGovernment. The literature review findings were plentiful on transformational eGovernment (Kamal, Weerakkody, and Irani, 2011). Unfortunately, on the role and impact of project management, they were exceedingly sparse –a scarcity of information (Aikins, 2012b; Sarantis and Askounis, 2010). The author located literature only in 2012 (Aikins, 2012b) that significantly addressed the role of project management. However, as mentioned above, the literature review did confirm that ineffective project management was a key factor in the failure of transformational eGovernment. The literature investigation was reinforced by the author's peer reviewed, and non-peer reviewed publications of transformational eGovernment papers.

After completing the literature investigation, a research information survey was designed, implemented, and controlled. Survey follow-up and analysis procedures were created and implemented. A committee of experts was established.

This author's interest and the focus of this thesis was in understanding the reasons behind eGovernment failure (Arif, 2008) in addition to an understanding of the specific list of barriers that specifically target the uniqueness of transformational eGovernment applications as opposed to limitations applicable to all information system applications. To this end, the author arranged for access to an international group of interested parties, and designed and delivered a survey with the intention of probing in more detail, and to a deeper level, the underlying barriers that prohibited the advance of international eGovernment. The details of this contact and the design and implementation of the survey are described later in this chapter.

In spite of well-known and well documented transformational eGovernment failure rates (Janowski, 2007; Aikins, 2012a; Arif, 2008), there is a yawning gap in the current literature as to why transformational eGovernment projects fail. As well, there is a similar gap in the identification and description of the 'research generated' list of barriers and challenges that impede eGovernment project management.

Therefore, the first and over-arching aspect of this research design was to collect and analyze the research data that was based on the need to uncover why transformational eGovernment progress was floundering, and why project management within transformational eGovernment was not contributing to project and eGovernment success.

As well, the research design to collect and analyze data grew out of the need to listen and document what all research participants had to say; the need to use many data collection tools; the requirement to resolve differences that arose from responses to the survey questions and interpretations and assessments; and, the reliance on collaboration throughout the research process.

Further the research design relied on the practical considerations which included an examination of a variety of research methods and components. Since there was no single emphasis on quantitative or qualitative information, both were used more persuasively in the Mixed Method Research (Creswell, 2006a).

This research design comprised a data collection and analysis approach that included a developed and tested data collection plan and promoted a structured and systematic survey delivery and interview process (Creswell, 2006b). The processes in the plan consisted of identifying a purposeful and adequate survey size; obtaining adequate permissions for survey

and other participants; determining appropriate data sources; ensuring that reliable and valid data was recorded; and developing procedures for administrating data collection.

3.1 Research Design Objectives

The main research objective of this study was to determine how project management could be informationally enhanced to address the problems in transformational eGovernment.

The primary and practical research objectives were to:

1. assess the weakness of project management in addressing the international eGovernment challenges, and in contributing to and promoting the transformational change resulting from eGovernment initiatives; and,

2. determine how the transformational eGovernment's challenges could be mitigated by designing an informationally enhanced improvement to the generic project management methodologies.

A secondary and theoretical research objective was to:

- build upon this knowledge and work to bridge the understanding of the 'coal face' experiences in managing and delivering on eGovernment projects;

- ensure the understanding and appreciation of the international challenges and barriers that impede eGovernment transformational success; and,

- work with the private and academic sectors to assist in examining and designing more 'hands-on' solutions.

3.2 Research Method – Mixed Methods Research

The following five research methods were investigated and tested: Exploratory Research; Implementation Driven Research; Empiricism research; Action Research, and Mixed Methods Research. The Mixed Method Research proved to be the most effective and it was used for the thesis.

The five research methods were analyzed by applying their features to the requirements of the thesis and thereby assessing their practicality and capacity to support the thesis research objectives. The research analysis in following subsections summarizes the features of the research methods that were examined and the choice to select Mixed Methods Research as the

most relevant approach for assessing the effectiveness of project management to meet the needs of transformational eGovernment initiatives.

3.2.1 Exploratory Research

Yin (2003) and Eisenhardt (1989) state that case studies are appropriate for exploratory research which in light of the complexity of the variables in eGovernment could apply to this analysis. In addition, Eisenhardt also supports the use of case studies for new topics in the absence of theory, where measurement is unclear, or when changes need to be tracked in large and complex projects; all of which applied to this study. This research combines action research and case study approaches and multiple qualitative data collection techniques. Data is collected through survey, observation, semi-structured interviews, and document analysis.

Based upon Johnson's work at Glasgow University (Johnson, 2011), it was critical to provide a good understanding of the data collected to determine the most effective research method to evaluate the potential improvements of a technology enabled project management methodology. This approach was not used because case studies were not the source of the input information.

3.2.2 Implementation Driven Research

The Implementation driven research methodology (Johnson, 2011) is based upon iteratively building better systems but it was discarded since this is not the focus of this research. It is also considered less than optimal if the system fails; the analysis does not uncover any insights into the research question since the failure could be due to operational and implementation issues. In addition, it does not necessarily support that experiences and observations from a specific system be generalized to generic principles. In all, this approach is based upon iteratively building better systems but it was not further pursued since it directed the author away the desired research.

3.2.3 Empirical Research

The Empirical approach (Hjorland, 2005) lays out a sequence of steps; hypothesis, methods, results and conclusion, and requires a carefully controlled environment if the results of the evaluation are to be accepted. In addition, Observational Studies are needed to assess the utility of a system in use. And the assessment based upon the individual analyst and subject to operational variances including time constraints and resource availability was not suitable for this research.

3.2.4 Action Research

Action Research (O'Brien, 1998; Baskerville and Wood-Harper, 1996) was examined and tested for implementation as it was believed to be appropriate to meet the criteria of this research as action research engaged the author as the action researcher. According to O'Brien (1998), action research is also called participatory research, collaborative inquiry, action learning and contextual action research. This approach allows the researcher to engage a group of people involved in managing eGovernment systems to assess and test a solution that addresses the limitation in project management and that provides recommendations. It allows for the members to study a system and problem and concurrently collaborate in influencing its change but the cyclical of action research was deemed to be impracticable for this thesis research requirement.

3.2.5 Mixed Methods Research

Even though four research methods, above, were investigated, according to Migiro and Magangi (2011), there are three broadly recognized research methods: quantitative, qualitative; and mixed methods. The strength of mixed methods research is the way in which data is collected and analyzed so that the qualitative and quantitative aspects of data management are employed.

The author's analysis showed that the mixed methods research enabled the preparation and distribution of research survey questions so that both quantitative and qualitative answers could be collected and analyzed. In this thesis the research survey questions and answers were the principle source of the anticipated quantitative research data. Further, clarifications of the survey answers by the follow-up interviews, interpretations of the survey responses, and assessments from the Advisory Committee were the principle sources of qualitative data. These two sets of information were mixed by imbedding the qualitative data sets in the quantitative data sets, with the qualitative data set providing a more informative role.

The processes to validate the collection and control these two mixed data sets were: examination of one set from the survey responses and the other set from follow-up interviews; interpretations of the survey responses; and assessments from the survey Advisory Committee. This began with the planning and preparation on the pilot survey and it concluded with the final publication of research results. As well, there were milestones in the processes where data validation occurred; they were after the data collection from the pilot and final survey; after interviews with survey participants; and after consultation and interviews with the survey Advisory Committee members.

In this thesis, the mixed methods research approach to collect and analyze data grew out of the need to listen to and document what all research participants had to say; the need to use many data collection tools; the requirement to resolve differences that arose from responses to the

survey questions and interpretations and assessments; and, the reliance on collaboration throughout the research process.

The mixed methods research approach was chosen because (Creswell, 2006a):

- It combined the strengths of quantitative and qualitative research by supporting the survey response data with information from interviews with survey participants, the survey Advisory Committee, and information from survey follow-up and analysis;
- It provided stronger research evidence by enabling the wider use of research data collection tools than could have been used for singular use of quantitative and qualitative research methods i.e. surveys; interviews, analysis;
- It provided answers for questions that could not have been provided by singular use of quantitative or qualitative research methods as interviews were used to explain survey responses;
- It encouraged collaboration between survey participants and survey advisory team members;
- It has practical applications in that the author was able to use all research tools such as surveys, interviews, analysis, discussions, expert advice, creation and testing of models;
- It allowed the author to further increase eGovernment knowledge and collaboration, and to identify specific proposals to advance transformation eGovernment progress;
- It enabled the author to engage different parties involved in managing transformational eGovernment systems, to assess and test a proposed solution, and to address the limitations in project management that impact transformational eGovernment;
- It encouraged the information survey participants to study eGovernment systems and problems and to collaborate in influencing required changes and to provide corroborating information through post-survey interviews; and,
- It enabled the author to participate in the research activity and to bring to bear the author's academic and practical knowledge and experience on the research subject.

3.3 Research Design Process

The proposed research design process as outlined below in Figure 1 is to:

1. Conduct a literature review on transformational eGovernment progress;

2. Initiate, design, test and pilot an international eGovernment survey to highlight the major challenges and barriers in advancing eGovernment;

3. Distribute, administer, analyze and follow up on all findings and input with respect to the identification of the major findings, and challenges and problems that prohibit the success of transformational eGovernment;

4. Assess the major challenges and barriers identified to explore opportunities to apply informational enhancements as a potential solution to project management;

5. In consultation with an eGovernment Consultation Committee (Appendix I), examine and develop potential informationally enhanced project management solutions (three proposals) to mitigate the impact of the eGovernment major barriers and challenges related to the management of eGovernment projects; and,

6. Validate and update findings on the feasibility of project management solution based upon on-going discussions with international experts, interested parties, and publications to consider the potential impact and ultimate improvement to the management and success of eGovernment projects.

The following diagram (Figure 1 – Research Design Process) provides an overall summary and timeline of the steps involved in conducting the research for this thesis and in developing, testing and implementing the eGovernment survey.

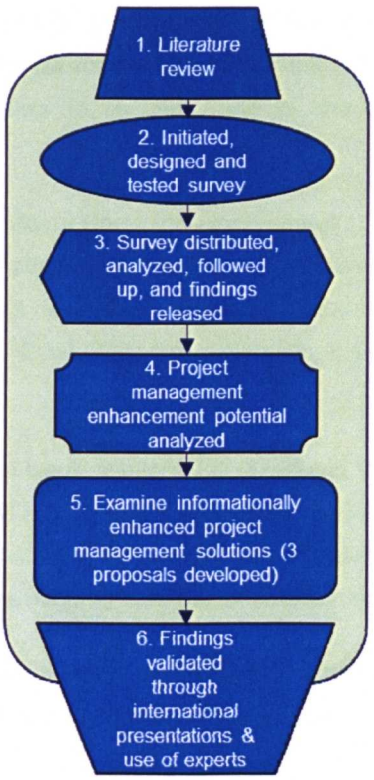

Figure 1 – Research Design Process

Step 1 *Literature Review*

2006-2011

Initiate and review of literature on eGovernment project management and eGovernment success, failure and international progress.

Step 2 *Initiated, designed and piloted the survey*

2006

In order to have access to research data, the author approached the executive and secretariat staff of the World Information Technology and Services Alliance in Washington, D.C., USA, to obtain permission to survey its members to examine international transformational eGovernment issues. The World Information Technology and Services Alliance (WITSA) represents the national information and communications technology (ICT) industry associations in 80 countries (At the time of the survey, WITSA represented 67 countries and 90% of the world ICT market). The author had been a delegate at the WITSA conferences and used this opportunity and relationship

to approach the WITSA personnel to propose to design, administer and implement a transformational eGovernment survey for the educational use of the researcher in understanding international eGovernment barriers to success, and to share the results with the WITSA members.

The author created a WITSA Advisory Committee made up of 15 countries to review and accept the survey drafts that were to be administered to the WITSA members. The countries represented on the WITSA Advisory Committee were Argentina, Australia, Canada, Ecuador, Kenya, Macedonia, Malaysia, Morocco, Nepal, Philippines, Singapore, South Africa, Uganda, the United Kingdom and the United States.

The information survey questions were developed to contribute to the main research objective of this thesis, which is to determine how project management could be informationally enhanced to address problems in transformational eGovernment, by identifying the impact of project management on the failure of international transformational eGovernment initiatives.

The survey questions are discussed below, and they are recorded in Appendix II. However, the focus of the questions is summarized by the following four areas impacting transformational eGovernment:

- the countries' approach to transformational eGovernment;
- access and management of strategic transformational eGovernment information;
- the degree of experience with transformational eGovernment progress; and,
- the role and impact of project management on the success or failure of transformational eGovernment.

The detailed and specific survey questions and their anticipated outcomes addressed a number of data requirements in the four areas outlined above. These data requirements included: summarizing information per country on its eGovernment status and approach; interests; priorities; experiences; reasons for successes; reasons that inhibited progress; lessons learned; advice to other countries; and case information if applicable.

The author worked through the Advisory Committee mentioned above (15 countries) by creating survey question drafts and by projecting potential outcomes. Also, the author conducted a pilot with the Advisory Committee to test and assess the survey questionnaire and the data follow-up and analysis process with specific attention to the validity of the collection and management of the (anticipated) quantitative and qualitative data.

The survey began with an introduction and purpose and explanation that the survey (Appendix II) was divided into two parts:

> Part I, with three sections addressed the basic elements of each country's transformational eGovernment approach, experiences and progress; and,
>
> Part II invited case study information with the intent to develop a case study transformational eGovernment database that could be shared with other countries. (This aspect of the survey was not successful.)

The information to be collected in Part I was intended to be a combination of quantitative and qualitative information and as such, the mixed methods research method after having been compared to other research methods, was found to yield the most appropriate, valid, and useful findings. The Likert scale (Oppenheim, 1992) was employed to facilitate the most useful recording of respondent information by means of scaling to rate the respondent input from the most important to less important to some questions to degrees of agreement to disagreement on others. (In Chapter 5 - Research Findings, it is reported that the respondents did not always respect the use of the Likert scale so a quantitative result was not fully effective or possible. Nonetheless, the follow up conversations and interviews to validate the data input provided additional and to some degree, more relevant information on the individual country experiences and challenges in implementing transformational eGovernment.)

Subjective information was also sought on some individual questions and this invited more general comments and feedback. The seeking of subjective information also elicited more data to provide transformational eGovernment case study input which was to be used to create a case study repository to be shared among other respondents.

The individual survey questions (Appendix II) and anticipated outcome is outlined in the following paragraphs starting with Part I which focused on 'eGovernment Experiences and Country Approach' and consisted of three sections; Section 1 – Contact information; Section 2 – Strategic Information; and Section 3 – Experience with eGovernment.

Part I Section 1 included the survey contact information of the respondent including country name, respondent name, respondent title/role, phone number and contact email address.

Part I Section 2 on 'eGovernment Strategic Information' was made up of nine survey questions with some questions sub-divided so that responses to 58 data points were requested.

The first question in Section 2 asked if the country had an eGovernment policy (none, limited, or fully developed); if there were substantial (measurable) improvements as result of eGovernment,

and a scale as to the importance of one to nine reasons for his/her country's motivation in pursuing eGovernment. The reasons included the following: reduce costs and number of personnel; improve government efficiencies; provide citizen centric services; proceed with public sector modernization; offer promises of interoperability and integration; take advantage of technology advancements; demand for 24/7 services through the Internet; shared infrastructure and security between programs and departments; and other.

This question was followed by requested 'yes or no' and a description if the country had a definition of eGovernment; a strategic approach for eGovernment applications, and if the national technology association (the responder) was involved with the eGovernment in any federal/national department. The next set of questions were on the eGovernment priority or area most important to the country strategy and requested the respondent to select a 'none, medium or high rating on the following categories; citizen information or business information and transactional capacity; a particular sector including but not limited to health, employment, education, tourism, financing, benefits, administration, transportation, taxation, voting, eCommerce or another domain; issuance of certificates and permits; or any other motivation. The section concluded with a question on the year the respondent's country initiated eGovernment and why; and the respondent's assessment of where his/her country was on the eGovernment continuum (planning, initiating, emerging, implementing or transforming).

Part I Section 3 on 'Experience with eGovernment' included questions on successes in and barriers to eGovernment starting with requesting a description on positive or most rewarding results with eGovernment, followed by a similar request to describe negative experiences or more unsatisfactory results with eGovernment. The next question asked for a rating from one to eight on the order of importance for successes in advancing eGovernment, and the options included, but were not limited to: visible political support; bureaucratic support and dedicated funding; government interest to address citizen's requirements; government interest to modernize and transform the public service; government interest to take advantage of Internet technologies; promises of cost savings, interoperability, efficiencies, and 24/7 service; horizontal governance structures or other.

Part I Section 3 also included a rating of importance from one to thirteen on the reasons that inhibited the progress of eGovernment, namely; complexity of transformative and innovative solutions; lack of skilled technological staff and leadership qualifications; outdated business and financing models; outdated systems development methodologies; significant organizational or bureaucratic opposition; focus on technological drivers instead of business drivers; extent of government interdependencies and collaborative partnerships; expectations for public service reform and modernization; relationship with private sector and numerous stakeholders;

movement to citizen centric applications; lack of political support and adequate funding; lack of professional management resources; and other. The next set of questions sought input on lessons learned, the hardest part of implementing eGovernment, the advice to member colleagues, and his/her approach to assessing or quantifying eGovernment success.

The next question in Part I Section 3 asked the respondent to agree or disagree that the following eleven factors created additional challenges in implementing eGovernment solutions: complicated working environment, partnerships and governance structures; requirements for an holistic approach across agencies and jurisdictions; outdated business models and system development methodologies that didn't recognize progressive elaboration and negotiation elements; pressure to over promise savings, efficiencies and interoperability benefits; lack of single organizational driver or accountability point; requirement for employee and citizen participation; importance of executive and political support and champions; issues of citizen access and security; expectations to modernize and streamline bureaucracy, interest in applying enterprise resource planning technologies and shared services; and other. The last question invited recommendations to facilitate the progress of eGovernment in his/her own environment.

Part II of the survey focused on 'Case Study Information and Government Contacts' and it asked for input on eGovernment success stories and applications, experience with eGovernment research, interest in working to further examine underlying barriers to eGovernment, and questions on the use of the online service.

The respondent input and success in meeting the expectations of this survey and data collection is discussed in Chapter 5 – Research Findings.

This survey was administered to 67 countries and invited commentary on the major challenges and barriers that impeded eGovernment success with the intent to offer and share information to facilitate the advancement of all countries in the eGovernment objective.

The research survey was the principle source of the intended quantitative research data (but morphed into qualitative data as a result of the respondent input, and follow-up calls and inquiries). Clarifications of the survey answers by the follow up interviews, interpretations of the survey responses, and assessments from the Advisory Committee were the principle sources of qualitative data.

In addition to this survey focus, findings in the literature review; advice from the Advisory Committee; and early discussions with potential eGovernment survey members about their challenges and barriers to eGovernment progress provided the scope and specificity for the survey questions.

The review of the proposed survey was conducted via email and conference calls, and in response to the interests of the WITSA Advisory Committee and Secretariat included an invitation to submit case study information for the creation of an international repository and knowledge sharing centre.

The author arranged for the survey to be tested and piloted by Advisory Committee members before being administered to all members.

Step 3 *Survey distributed, data collected, analyzed, followed up, and findings released*

2006

The survey was launched at a WITSA meeting in Texas inviting 67 countries to participate and complete on-line. The author followed up with all participants and the Secretariat through email and/or conference calls to confirm input and learn more about the individual country's experiences and concerns. The follow-up conversations often provided more insight to the author than the survey input as a more 'unstructured' less formal approach engendered more conversation, and more effectively bridged the cultural barriers and digital divide differences. It also allowed more discussion on potential solutions and a general education on country specific eGovernment concerns. The follow up was a significant source of qualitative data.

The survey findings (Appendix III) were summarized and presented at a conference in Athens in October, 2006.

These findings were further summarized into a compendium of ten international barriers and challenges, and continued to be analyzed to determine potential remedial action and mitigating solutions.

Step 4 *Project management enhancement potential analyzed*

2007 - 2008

The author followed up with a number of countries and the Advisory Committee to examine the feasibility of developing case studies to be shared, and the feasibility of a examining a solution to the barriers and challenges. Project Management was identified as a major barrier (as cited earlier), and the author undertook to assess project management as a potential facilitator to improve the management and successful implementation of eGovernment projects. This assessment further took the form of an examination of a sample of the international generic project management methodologies to test the applicability of a project management

methodology. (Details of this examination and the results to assess the effectiveness of one international generic project management methodology example is provided in Appendix IV.)

Based upon the initial survey and follow-up discussions, as well as on-going international discussions with colleagues and the eGovernment Consultation Committee, the field of project management was determined to be lacking in adequately supporting eGovernment success and an area ripe for enhancement to more fully address transformational eGovernment needs.

This research was based upon the hypothesis that the project management discipline does not effectively manage the delivery of eGovernment projects because it does not address the most critical challenges in managing eGovernment projects (Aikins, 2012).

If additional information could be collected and analyzed, could this informationally enhanced project management methodology improve eGovernment success, since its failure is so often attributed to ineffectual project management practices?

Thus, work is required to address the following research questions:

- What is the design model of an informationally enhanced eGovernment project management method?
- How do we take into account technical, business, citizen, economic needs when designing an informationally enhanced eGovernment project management method?
- How do we evaluate the impact of this model given the research limitations?

Step 5 *Examine informationally enhanced project management solutions*

2008-2010

The author established an eGovernment Consultation Committee (Appendix I) represented by senior public and private sector officials involved in Canadian and international eGovernment activities.

The eGovernment Consultation Committee was made up of academics and practitioners and team members from management consulting firms, Government of Canada agencies, WITSA representatives, and international think tank colleagues.

Over a period of three years, the author developed a number of proposals and based upon the review, feedback and advice resulting from these consultation activities, proposed and examined three proposals to informationally enhance project management. These proposals are entitled

Quadrant Template, Government of Canada Case – Inputs/Outputs, and Project Concept Document.

Step 6 *Findings validated through international presentations and use of experts*

2005-2010

- Throughout the research period, the author continually validated and improved upon the transformational eGovernment barriers and challenges to success, and in the design and examination of potential solutions through discussions with eGovernment officials and private sector experts (Appendix I) and international presentations (Appendix X). In addition, the author published (or was a co-author) in the following peer reviewed reference papers: Furlong, 2008; Furlong and Al-Karaghouli, 2009; Furlong and Wafi, 2010; Furlong, 2012, Ezz, Furlong, and Papazafeiropoulou, 2006; Taleb-Bendiab, Liu, Miseldine, Furlong, and Rong, 2006; and Taleb-Bendiab, Liu, Miseldine, Furlong, and Rong, 2009.

3.4 Research Analysis – Approach and Limitations

It is important to describe the context and limitations of the analysis and research in this thesis so as not to offer a conclusion or solution without adequately testing to warrant implementation. The literature review is ongoing, and within the last couple of years, there has been a greater influx of academic attention to transformational eGovernment albeit a dearth on project management support still exists (Aikins, 2012a).

The importance of the project management discipline is growing and its impact is critical (Aikins, 2012a); yet despite this, its capacity remains limited and there are negligible enhancements identified that address transformational eGovernment problems.

The eGovernment Consultation Committee (Appendix I) is primarily limited to the author's contacts and international connections. In addition, the author does not have access to the resources and political support for the completion of the testing of project management solutions to 'live' (in progress) or even retrospective eGovernment projects. And, this research requires political and technological support by many industry and government players to 'progressively elaborate' a workable, practical solution (Kerzner, 2001; Aikins, 2012). As well it must be acknowledged that some solutions may be a product of experience and knowledge inherent in the process and in the skills of the project manager as opposed to an external methodology.

The objective of this research and thesis is to assess the weakness of project management methodology in addressing the international eGovernment challenges, and to contribute and promote the transformational change resulting from eGovernment; and to determine how the eGovernment's challenges could be mitigated by designing an informationally enhanced improvement to project management.

A practical 'off shoot' of this research could be to initiate discussions and debate with respect to how eGovernment can be better designed and implemented. Future research along with additional operational support is needed to further examine and develop project management solutions to eGovernment failures and inadequate success. For example, understanding the implications of taking a socio-technical approach into the technical, business, citizen and economic needs in the creation of project management support to eGovernment solutions would be worthy of examination.

Another theme could be to evaluate the change in the management and hypothetical delivery of eGovernment projects based upon the assessment of eGovernment executives if the informationally enhanced project management method was incorporated. Future research and organizational support could be examined with private sector support to build and test 'insitu' project management enhancements designed for eGovernment systems.

Ongoing and continual work and research is required to ensure the relevance and applicability of the survey findings and project management limitations as eGovernment developments evolve around the world, especially as many countries advance and get aggressively involved in eGovernment initiatives.

The fundamental research strategy focused on identifying the need for informationally enhanced project management to address the 'ever evolving' transformational eGovernment challenges. Nonetheless, irrespective of the list of challenges (no matter what the number), project management needs to acquire the capacity to manage them.

3.5 Chapter Summary

Based upon the literature review, a status of transformational eGovernment progress, and the catalyst for research design, a research design approach was developed. This approach included research design objectives, research design processes and associated timelines, and the investigation and selection of appropriate research methods.

This research design approach recognized that transformation of eGovernment processes and practices in a post Internet era are grappling with the changes pervading the management of

human resource activity; technology and systems development and operations; and the data and information life-cycle. Transformational eGovernment changes the way governments interface with employees, citizens, business, and other governments (Irani, et al., 2005).

The research design for this thesis must first address the scarcity of literature on project management in support of transformational eGovernment, informal knowledge, and the level of information sharing about eGovernment transformation. And this, in spite of the few organizations (The United Nations, Accenture, and Brown's University) that examine eGovernment activity and progress by country.

This author developed a research survey that identified and validated challenges and problems impeding transformational eGovernment, and created an Advisory Committee to design, test and pilot the survey. In addition, the author arranged for exploratory interviews to better understand the respondent input but also to assess the effectiveness and feasibility of project management in serving the needs of transformational eGovernment. These conversations continued after the survey findings were analyzed and released in order to continue to examine the potential of informationally enhanced project management to serve the needs of transformational eGovernment as the original survey questions focused mainly on barriers and challenges to transformational eGovernment success. Project management methodology enhancements (to be discussed in later chapters) were developed in consultation with an eGovernment Consultation Committee comprised of senior public and private sector officials involved in the development and promotion of transformational eGovernment. And finally, the research design included ongoing and continued validation with experts and interested parties through the author's international presentations and publications.

4.0 CHAPTER 4 – RESEARCH EXECUTION

To proceed with the examination of the barriers and challenges, and project management solutions that impeded international transformational eGovernment progress, the author approached the secretariat of the following international association to have access to its members. The World Information Technology and Services Association (WITSA) is an international alliance that currently represents 80 countries (at the time of the survey, WITSA represented 67 countries). This association is committed to sharing knowledge and ICT expertise among and between developed and developing countries. The author proposed to the WITSA Secretariat to recognize that eGovernment developments are vital to each country's progress in revitalizing and transforming their public sector institutions. Frame breaking changes were required to governments' organizational structures, culture, operations, and practices to compete and survive in the 21st century. Around the world (Bemtzen and Olsen, 2007; United Nations, 2010), almost all public sector institutions are struggling with either entering the eGovernment market, enhancing operations through limited incremental eGovernment progress, or realizing some advanced form of transformational eGovernment.

The author promoted that regardless of each country's position on the eGovernment continuum, all could benefit from having access to the experiences and knowledge already gained from their international colleagues; they gain a deeper understanding of the barriers and challenges that impede the successful implementation and progress of eGovernment initiatives. Based upon this insight, the WITSA Secretariat supported the author's interest to develop an eGovernment survey to be designed and delivered by this author to collect, and act as the medium to share eGovernment knowledge.

4.1 Survey Launch

The first activity undertaken by the author was to create an eGovernment Advisory Committee charged with coordinating the review of the survey drafts to be administered to all WITSA countries. This Advisory Committee was made up of 15 countries with representation from each of their national technology associations. The countries were Argentina, Australia, Canada, Ecuador, Kenya, Macedonia, Malaysia, Morocco, Nepal, Philippines, Singapore, South Africa, Uganda, United Kingdom and the United States. Membership was based upon interest in responding to an invitation email, and membership was encouraged from both developed and developing countries. There were a number of email exchanges and conference calls (collectively and one-on-one), and a pilot that resulted in the attached final survey (Appendix II - WITSA eGovernment Survey 2006). The country survey focused on four eGovernment areas; country approach, country strategic information, country experience, and case study information.

- Part I, Section 1 eGovernment experiences and country approach

  Name/title of the person who responded to the survey (contact information)

- Part I, Section 2 eGovernment strategic information

  Information on the existence of eGovernment policies, approach, definition, progress, assessment, priorities, status and reasons for undertaking an eGovernment initiative in each country.

- Part I, Section 3 Experience with eGovernment

  Positive and negatives experiences, and reasons that facilitated and inhibited progress, lessons learned, and challenges in implementing eGovernment solutions.

- Part II, Case Study information

  System description, contacts and experience with eGovernment solutions, plus potential role that WITSA could play to facilitate progress.

This survey was launched by the author at a WITSA meeting in Austin, Texas in May, 2006 (Appendix II – WITSA eGovernment Survey) along with a presentation to introduce and activate the survey. The author's 'inducement' to the WITSA members was to share and learn information about eGovernment but also to develop a repository of case studies and contacts to be of value when other countries undertake similar applications.

The presentation was supported by an outline of the survey purpose; the reason for author launching the WITSA survey; how the survey was developed and completed; the reason why countries would participate and what was required to do so; and why this author, as the Canadian WITSA representative was leading the survey over what time frame.

- What was the purpose of the survey (from a business perspective)?

  1) report on defining eGovernment progress and describing the various developments around the world;

  2) identify, validate, and examine the most important challenges, complexities, and barriers in advancing eGovernment around the world; and,

3) share experiences on the failure and success stories thus far identified. To create an on line, real time network for WITSA members to share experiences, learn from work done so far, and consult with and advise one another.

- Why was the author launching the survey to the WITSA members?

eGovernment has not developed and progressed to the extent hoped for around the world – it has not been the panacea expected (Roy, 2006; Aikins, 2012), but it still holds the key to phenomenal eGovernment transformation organizationally and culturally concomitant with modernization and improvement to citizen services. Nonetheless, though expectations have not been met, there have been great strides towards the application of citizen centred Internet based applications, and public service modernization and transformation (Weerakkody, et al., 2011). This was due to the availability of new enabling technologies, and the world-wide interest in using the Internet to improve government services (Weerakkody, et al., 2011).

All governments need to advance, tailor, and harness the power of transformational eGovernment in order to modernize their structures, incorporate changing cultural demands and improve operations to overcome internal and external barriers and improve services to business, employees, citizens, and other governments (United Nations, 2010). They must use the opportunities now available through the Internet, and they must interface with the global community to develop and share best practices. Because many countries received government funding depending upon their eGovernment progress and on international recognition, publication of country results was an important practical consideration (United Nations, 2010). Developing and advancing eGovernment is extremely difficult; perhaps more so than originally envisioned and all countries could benefit from the experiences and lessons learned from their WITSA counterparts who are facing similar situations.

The intent of the survey and author's inducement was to support WITSA to understand the progress and issues in eGovernment among their 67 members (as of 2006). In addition, the product of this survey would share success and create a network for WITSA members to contact and learn from one another – and thereby hopefully, allow individual countries to leapfrog into transformational eGovernment success and transformation by 'standing upon the shoulders' of their WITSA colleagues.

- How was the survey developed?

  The survey was developed by the author through consultation and negotiation with the WITSA Public Policy Chairman and Director, Public Policy, who invited all WITSA members to participate on an eGovernment Advisory Committee and Secretariat, and to work with the author from Canada, nominated as the WITSA eGovernment survey manager.

  The author consulted and reviewed survey and pilot drafts with the following 15 countries as the formal Advisory Committee to design a survey to meet the objectives described above and those of the participating Advisory Committee countries; Argentina, Australia, Canada, Ecuador, Kenya, Macedonia, Malaysia, Morocco, Nepal, Philippines, Singapore, South Africa, Uganda, United Kingdom and the United States.

- How would the survey be completed?

  The survey would be completed on-line through the WITSA website developed by Liverpool John Moores University (LJMU). Each country had the choice to complete the survey in sections, and change and update responses, and submit by country and/or jurisdiction (province/state/region).

- Why would the WISTA countries want to participate?

  The author, with the support of the WITSA Secretariat encouraged countries to participate so that they could contribute to the analysis of the eGovernment situation and progress of the WITSA countries. They were also invited to celebrate and market their success in eGovernment applications (as many received eGovernment funding through international recognition and rankings). Countries could nominate government officials as potential contacts for other countries to learn from their experience. They would benefit from the WITSA network as a potential source of expertise for their government colleagues to contact to discuss similar barriers, challenges, and opportunities.

  In addition, the countries' contribution to this survey allowed them to participate in additional analysis and follow-up inquires aimed at testing potential solutions, and focused on probing and examining the underlying issues that prevent eGovernment success. (This aspect of the survey was not successful; no satisfactory WITSA case studies were developed. The representatives in the National Technology Associations either did not have the knowledge, contacts or interest to develop this database.)

- What was required to participate?

  The WITSA representatives were advised by the author that completion of the survey required time, a commitment to undertake this work, and a willingness to consult with their own government officials to respond to the questions asked. They were asked to review the survey along with their government officials in order to respond to the specific questions, and to provide the details of the case studies to be promoted and celebrated. Their interest in learning from others and sharing experience was also another vital factor that would enhance participation and enrich contribution.

- Why was this author leading the survey?

  The author designed and developed the survey, and it was being undertaken on the author's behalf. The author obtained permission to complete the survey because of being recognized as a Canadian delegate and executive working in the design and implementation of Canada's eGovernment strategy and implementation. The author used Canada's success in being rated by Accenture as being number one in the world in eGovernment from 2000 to 2005 to be recognized as an experienced practitioner which provided credibility and facilitated access and legitimacy to the WITSA members.

- What was the survey timeframe?

  The survey was launched in May, 2006 at the WITSA - WCIT 2006 Public Policy Committee meeting with completion requested by the end of September, 2006 in order to meet the author's and WITSA's timetable for identifying preliminary but in-depth findings.

4.2 Summary of Survey Findings

The author released the survey findings report (Appendix III) at a WITSA meeting in Athens, Greece in October, 2006. This report was provided to all WISTA members. The release of these findings was supported and complimented by presentation delivered by the author at the WITSA meeting at the same time. The report and presentation summarized the WITSA input on the following survey questions:

- evidence of improvements due to eGovernment actions;
- each country's place along the eGovernment continuum;
- positive experiences and motivations;

- recommendations to facilitate progress;
- lessons learned;
- negative experiences and barriers;
- reasons that inhibited eGovernment progress;
- hardest part of using eGovernment;
- factors that created additional challenges in eGovernment;
- countries interested in case studies;
- advice offered to WITSA colleagues; and,
- WITSA suggestions to advance eGovernment.

Sixty seven countries were invited to participate in the survey; 36 countries (54%) responded (some in complete form; some only partially completed though all countries that responded received follow up clarification and confirmation correspondence from the author to strengthen the survey findings.)

According to the author, the most important findings delivered to the WITSA members were as follows (These findings were not released to the members but were used to consult with the eGovernment Consultation Committee to develop the project management enabled solution and compendium of 10 challenges):

1. All countries face similar problems; irrespective of their position on the eGovernment continuum. And, this applies to the distribution of countries in the initial emerging stages (40%) versus those implementing or transforming their governments (60%).

2. Both developed and underdeveloped countries face similar challenges in managing cultural change within their organizations, implementing citizen-centric solutions, and adequately modernizing and transforming their public sector institutions.

3. Benefits from eGovernment are not automatic; it depends upon how the initiative is implemented and incorporated into the government infrastructure and blended with government priorities. (Five respondents categorically stated there were no substantial improvements from eGovernment.)

4. Most countries approached eGovernment in the same manner and implemented comparable applications; but none expressed success in transformational change from within the public service itself.

5. Most countries had similar problems with change management, organizational opposition, the inadequacy of skilled labour, developing supporting infrastructure, encouraging citizen take up and citizen centric solutions, and dealing with the complexity of the government wide interdependent solutions.

6. There are lessons and knowledge to be learned and shared between one another – what is missing is the mechanism to make the connections for collaboration.

7. Most of the positive experiences in eGovernment were limited to the transactional domain; call centres, websites for citizens, Internet access, filing taxes, finding information, paying fines and registering vehicles.

8. Most of the negative experiences were in inadequate infrastructure, keeping content relevant, lack of citizen take-up, and delay of implementation.

9. The reasons that inhibited eGovernment progress was the complexity of transformative and innovative solutions, lack of skilled staff, organizational opposition and government interdependencies.

10. The lessons learned ranged from the need to keep projects small, the importance of moving quickly, offering value, having a national plan and skilled people.

11. The hardest part of eGovernment was the culture change, availability of funding, creating trust between government and solutions providers, the lack of legal framework implementing portals and maintaining the content, breaking down the silos, and satisfying users.

12. The additional factors that challenge eGovernment are complicated work environments, outdated business models and systems development methodologies; lack of single organizational driver, the need for a holistic approach, and the requirement to engage citizens and address security needs.

13. The recommendations to facilitate progress were to ensure political support, develop cluster groups, break down silos and administrative resistance, ensure availability of qualified personnel, and to develop a well thought out plan to be communicated to all stakeholders.

These findings constituted matters of most interest to the members, and in terms of this research, highlighted and supported the literature review in the consistency of the barriers and challenges that inhibited eGovernment success.

4.3 Follow Up Consultation Activity

The author's survey findings were summarized and released in 2006 and the above 13 key survey findings in response to the survey questions. The survey findings were presented to the eGovernment Consultation Group and other key survey stakeholders for review, analysis, feedback, and corroboration. The author led an interactive, iterative review and analysis of the survey and follow up information with the objective of providing a well-articulated and valid record; the thesis created a compendium of 10 transformational eGovernment challenges and barriers. This consultation activity to consolidate and validate the information from the survey findings was conducted through meetings, telephone discussions, email correspondence and presentations to clarify, elaborate, consolidate, compare and contrast the findings with the literature review. In this way, the author and consulted colleagues were able to develop a more in-depth appreciation and understanding of the actual 'show stopping' barriers that impede the progress of success of eGovernment.

Through this research and follow-up consultation and analysis, a holistic synergistic compendium of 'transformational eGovernment challenges and barriers' was created, and each item in the compendium is supported by relevant literature, albeit in some cases the description and intent of the challenge is not precisely, but rather only tangentially recognized. The examination of how project management could address these challenges was based upon the development of the compendium described below.

4.4 Development of Compendium of 10 eGovernment Challenges and Barriers

As stated earlier, based upon an interest to uncover the challenges and barriers that prohibit eGovernment success, an eGovernment survey was developed and administered by this author. This was undertaken by consulting with an eGovernment Advisory team comprised of 15 countries to design the survey that was administered by the author to the World Information Technology and Services Alliance (WITSA), the national technology associations in 67 countries in May, 2006. The purpose of the survey was to determine the key problems and challenges inhibiting the success of eGovernment around the world and how project management could be enhanced to remedy them.

It was also intended to summarize eGovernment information per country and include successful case studies that could be used as a learning tool and shared with other countries. Based upon these findings and extensive follow up consultation with the survey members, the eGovernment WITSA Advisory Committee, and the eGovernment Consultation Committee (Appendix I), the lack of modern project management tools to aid in the design and delivery of eGovernment across countries was highlighted as an inhibitor that could be examined as a potential application ripe for informational improvements. The following eGovernment challenges were identified that could potentially be addressed through a revamped, technology enabled project management methodology. (A summary of each challenge is provided along with a short description; references are provided in the next section):

1. Requirement to manage diverse and conflicting stakeholder interests within a governance framework

   Stakeholder interests are usually conflicting because eGovernment applications are usually developed with one or more departments and central agencies. Each of these departments and agencies has a unique legislative mandate, accountability regime, culture, history and background, and more recently security requirements. .

2. Challenge to continuously adapt to and blend technology, people and processes

   Today's system environment is more organic that it was in the past; previously, system solutions were applied to a corporate service environment. Today's systems are at the core of company performance, not on the periphery. They are significantly affected by evolving priorities and circumstances, and are more integrated with the operational environment including technological developments, the capacity of the resource experts, and constantly changing and evolving business processes.

3. Outdated business models that reward traditional applications

   Most business models do not recognize that collaborative and unprecedented solutions do not meet the criteria for performance measurement targets, accurate costing and resource utilization, and work plan deliverables whose solutions are not known until they are negotiated and well into the implementation stage. Promises of cost and resource reductions along with improved efficiency and effectiveness gains the funder's attention more than promises of transformation and innovation.

4. System development models affected by political realities and a new relationship with the private sector

Most system development models do not recognize the 'stop and start' reality of projects affected by political cycles and funding priorities, and the need for system development fragments to be reused instead of continuously 'starting over'. Though cancelling projects is generally due to changing systems objectives, it is critical to recognize the waste of precious resources and time, and the inability to recover and reuse these efforts. However, public service has been impacted significantly through private sector contracting and outsourcing arrangements. The integration of private and public sector resources is now mandatory.

5. Lack of access to lessons learned and a body of knowledge for government wide projects

   Project managers are designing and implementing system solutions that are often unprecedented and government wide, and yet they have no facility to access the knowledge nor benefit from the experience gained from other project managers in similar circumstances. The problem is that there is no way to harness previous experience and no demand to conduct and access lessons learned.

6. Promises of interoperability, integration, and cost and resource savings

   The eGovernment environment is predicated upon a collaborative and partnership based environment that requires sharing both work and accountability responsibilities, and it is usually argued (and ultimately funded) under a banner of promised cost savings and resource reductions.

7. Proliferation of information and the challenge to judiciously access and manage information

   The information age exacerbates project management because of the massive and exponentially produced data that must be sorted out to effectively implement system solutions. The interconnectedness of information and system requirements is so overwhelming that projects suffer from the weight of information. Mining through this data to retrieve the relevant information produces a 'spin and churn' that can be non-productive; and this along with the lack of authoritative control to wind through the layers of information can derail the project.

8. Lack of a comprehensive holistic approach to project management as the driving force

   Project management often plays the role of arbitrator, as it is often the agent that brings the disparate parties together to deliver a solution that was not driven by either party.

This is usually the case with citizen centric applications as they cross the program interests of each of the contributing organizations. Project management needs to drive the solution to change the business processes of the affected departments and turn the solution into a government wide enterprise.

9. Limited access to vital subject matter expertise

   Within governments, knowledge is either so vastly spread or not available that it is difficult for the project manager to understand the implications of systems design. The knowledgeable personnel are difficult to locate and approach given hierarchical and organizational limitations, and are frequently reassigned and no longer accessible.

10. Organizational environment not presupposed to enterprise wide transformation

    Departments do not necessarily act as units of a government enterprise; they are vertically based with individual objectives and resource reward mechanisms. Accountability of each department is to its Minister and senior officials, and to the government acts for which it was created.

4.5 Corroborating Literature on 10 eGovernment Challenges and Barriers

Each of these challenges described above has been (to varying degrees) corroborated in the eGovernment literature which affirms that none of these barriers are new. Each has been examined before but not all specifically identify the relevance and interference in successfully managing and implementing eGovernment applications. Nowhere does the literature specifically identify the relevance of this set of ten, or any such synergistic group, in successfully managing and implementing eGovernment applications. Many of these challenges are tangentially referred to in those reviewed papers that are focused on other objectives. But not all were discussed in depth as an inhibitor to transformational eGovernment, nor as a unique collection of challenges that outline *en masse* the additional complicating elements that impede progress and contribute to eGovernment failure.

In addition, the literature does not cover the redesign and refocus of project management as a solution to eGovernment success, and one that may be singularly well placed to handle the particular complexity of eGovernment with its collaborative, unprecedented, citizen focused and transformational nature.

The following summarizes the corroborating evidence found in the literature review to the 10 WITSA eGovernment challenges and barriers:

1. Requirement to manage diverse and conflicting stakeholder interests within a governance framework.

The first eGovernment challenge identified was the requirement to manage diverse and conflicting stakeholder interests, culture and mandates within an enterprise-wide governance framework. It is very crucial to identify, to elicit and to manage requirements of such diverse and large eGovernment projects as the requirements of different stakeholders are so diverse and conflicting stakeholder interests, culture, and mandates prevail within an enterprise-wide governance framework. This challenge, to identify functional (smart requirements) and to manage requirements of such diverse and large eGovernment projects was clearly stated by Al-Karaghouli, AlShawi, and Fitzgerald (2000), and as far back as Mumford (1985). Mumford (1985) also acknowledged the importance of developing systems requirements based upon user involvement before technical options are considered, and complimented the user knowledge so critical in their own working environments that ultimately contributed to user commitment and project success.

Azad and Faraj (2008) also focused on the need to engage the full range of stakeholders and bridging their perspectives during implementation.

In addition, Kamal, Weerakkody, and Irani (2011) also state that the role of stakeholders is to improve the efficiency of public service with respect to new IS/IT and legacy systems. They affirm that there is a significant amount of information on the role of stakeholders but a preponderance of the information is on technical and organizational issues. Their analysis deploys cases to explore this problem.

In the foreword to the Weekakkody, Janssen, and Dwivedi (2009) 'Handbook of Research on ICT-Enabled Transformational Government: A Global Perspective,' Hans Jochen Scholl further stresses the importance of managing stakeholders. He discusses issues around purposive fragmentation and the division of powers within democratic systems where organizational units within government are designed to function individuality, verticality, and with separateness of authority and responsibility with objectives that often conflict with cross-functional government objectives and need to be managed as government as a whole. He also states that few countries and governments have excelled in accomplishing sustainable eGovernment transformation.

In addition, Elnaghi, AlShawi, Weerakkody, and Aziz (2009) also confirm that senior executive participation and the active engagement of stakeholders is key to

transformational eGovernment success. This can significantly contribute to the governance framework of the transformational initiative.

As utilization of stakeholder expertise has become crucial to the success of transformational eGovernment, managing key stakeholders, such as subject matter experts is becoming essential to eGovernment project management. But as Kamal, Weerakkody, and Irani (2011) point out, there is limited understanding of the role and impact of stakeholders on the technical integration solutions that supports eGovernment. There also state that few studies have examined the role of stakeholders and surrounding challenges when implementing these solutions.

Transformational eGovernment is a multi-dimensional initiative that must respond to the needs of stakeholders whose capacity to cope with aspects of the transformation supporting technology ranges from very high to very low. Bertot (2003) describes the haves and have-nots in his multidimensional definition of the digital divide, in a manner that highlights the need to manage diverse stakeholders within transformational eGovernment.

2. Challenge to continuously adapt to and blend technology, people and processes.

The second challenge to blend changing technology, a mobile workforce and increasingly bureaucratic work processes including outsourcing parties, which is the normal practice in large e-government transformational projects was reported by Carr and Gannon-Leary (2007), Andersen (2001), and Anttiroiko (2002).

As highlighted by Weerakkody and El-Haddadeh (2011) in the context of eGovernment, public sector agencies will be subject to fundamental changes that will require radical re-engineering of work processes in a manner than has not been encountered before' which will affect organizational change and a shift in power. Weerakkody (2009) in his foreword to 'ICT-Enabled Transformational Government – A Global Perspective' reaffirms that service improvement requires changing the processes and behaviour of government organizations and establishing cooperation between government agencies. This service approach must address established but outdated organizational practices and move beyond providing on line information and digitizing transaction activity, it must coordinate the whole of government services and interact with business, citizens and other public sector jurisdictions.

3. Outdated business models that reward traditional applications.

   The third challenge raised was the weakness in the application of traditional business model that rewarded outdated government transactional-based work routines and supporting applications as acknowledged by Ward and Peppard (2002), and Atkinson and Leigh (2003), as opposed to the eGovernment innovative and transformational applications and solutions.

4. System development models affected by political realities and a new relationship with the private sector.

   The fourth challenge highlighted was the problem in the 'start and stop' mentality of most system development models and the continuation and project approval subject to political and executive whims and priorities.

   The issue of system development models affected by political realities including a heavy reliance on private sector resources and skill sets was examined by Ward and Peppard (2002); Bentley (2002); and Avison and Fitzgerald (2003).

   In the foreword of 'ICT-Enabled Transformational Government – A Global Perspective' Weerakkody (2009) addresses the new relationship with the private sector as prior to the e-commerce era, governments and commercial enterprises had little to do with one another, and people are less accepting of poor government service in contrast to the power of the Web in personal service delivery, and this has increased the pressure for advanced eGovernment service.

   The issue of system development models affected by political realities including a heavy reliance on private sector resources and skill sets with an emphasis on system development models affected by political realities was examined by Ward and Peppard (2002); Bentley (2002); and Avison and Fitzgerald (2003).

5. Lack of access to lessons learned and a body of knowledge for government-wide projects.

   Lack of legislative requirements to incorporate lessons learned from a body of knowledge for government wide projects, as indicated by Elliman and Irani (2007), and Bentley (2002) respond to the fifth challenge and the corresponding disinterest and continuity and value in doing so.

As reported by Jugdev (2008), the expression that knowledge is power can negatively impact lessons learned when participants resist sharing what they know because that knowledge may give them an advantage over others. She also reported that people may be reluctant to participate if the lessons learned feel inquisitorial. However, as per Elliman and Irani (2007), learning from eGovernment experience is a key research issues and this includes the need to dialogue with people participating in transformational eGovernment. One of the sources of learning for transformational eGovernment is experience and lessons learned from the private sector business process re-engineering work since business process re-engineering is now recognized as being comparable to transformational eGovernment. But researchers and practitioners alike, as Weerakkody, et al. (2011), discuss, do not explore the business process movement because of the cynicism and criticism of its capacity to achieve results. Lessons learned are often done superficiality and resisted (Jugdev, 2012).

6. Promises of interoperability, integration, and cost and resource savings.

Promises of cost-effective, enhanced functionality because of system interoperability and work processes integration, and resource and cost savings as discussed by Brown (2000), hinder the focus and value of eGovernment in this sixth challenge. And, as reported by Weerakkody and El-Haddadeh (2011), overall system integration is one of the biggest obstacles in system implementation. This point is strengthened by Aldrich, Bertot, and McClure (2002), as problems do arise because of existing stovepipe, stand alone, and legal systems when both horizontal and vertical integration is required.

Ziemann and Loos (2009) point out that automation of cross-organizational processes is critical but this is difficult due to traditional independence of administrations and the need to minimize modifications to current systems, so they recommend a loose coupling between departments as opposed to system integration. In this way, individual and specific department and agency objectives are achieved concomitant with the automation of cross-organizational processes. Ziemann and Loos (2009) further state that collaboration among the independent organizations with their individual legal regulations needs to be supported by a technical interoperability framework to ensure the appropriate consideration of implementing technical specifications as well as the methods for creating system standards and technical recommendations.

7. Proliferation of information and the challenge to judiciously access and manage information.

   To judiciously collect a range and access the enormous and increasing volume and fluidity of structured and unstructured information, and to derive an effective information driven management regime is corroborated by BVPL (2003) and Bygrave (2003), and is becoming more critical as the information age exponentially explodes and the relevant bits lost in a wave of 'noise' in this seventh challenge.

   Sharif and Irani (2010) also highlight the problem for decision makers to manage the 'overloaded' information, and eGovernment as it requires the source from different entities and organizations compounds the problem. Ray (2011) acknowledges that the success of an eGovernment project depends on how information is shared within and outside the organization. Almarabeth and AbuAli (2010) further state that the inclusion of an information management framework is vital to 'make sense of available data', and Ndou (2004) describes the importance and willingness of all government agencies and departments to share data to ensure better and faster decision making.

8. Lack of a comprehensive holistic approach to project management as the driving force.

   The eighth challenge and the lack of results driven comprehensive holistic project management approach and methodology that is grounded on eGovernment objectives as the driving force was raised by Gray and Larson (2003).

   In the Weerakkody, and El-Haddadeh (2011) Qatar case study, it was revealed that 'project leaders were frequently hindered due to the rigid organizational structures, where the coordination of activities with other public agencies and private organizations was difficult to execute'.

   The work of scholars Sarantis and Charalabidis (2011), and Shah, Khan, and Khalil (2011), corroborate this need. These papers outline a goal driven electronic Government Transformation Project Management (eGTPM) framework to plan and manage foundational government transformation projects, and strive to blend the management of technology, people, organization and knowledge noted for being a complexity in large government transformational projects. These authors developed a result-oriented approach to project management which is offered as a radical departure from the more traditional methodologies focused on what must be achieved rather than on predicting timescales and resources for activities, often the bane of unprecedented, innovative, and transformational eGovernment objectives.

The work in Pakistan (Shah and Irani, 2011) also recognizes the limitations of project management methodologies in complex public sector environments due to the few similarities of significance between public and private sector organizations. It proposes an electronic Government Directorate (EGD) approach based upon incorporating a knowledge repository, engagement model, enterprise architecture and revamped organizational structure to the project planning processes (Shah and Irani, 2011). These authors appreciate the limitations of the current 'hard' project management tools to support the change management, organizational impact and transformational aspects of eGovernment solutions, and recognize the need for a more suitable project management methodology (Shah and Irani, 2011).

9. Limited access to vital subject matter expertise.

The penultimate challenge of scarce vital subject matter expertise within government organizations and limited access to private sector expertise which hinders the running and managing of eGovernment transformation projects was discussed in the CITU (2000).

Locating precise references that addressed the idea of access to subject matter expertise as an impediment was difficult but 'proxy' references have been provided. For example, Sarantis and Askounis (2010) described a barrier that reinforced that different participants and their perspective roles are necessary to achieve success and acknowledges their importance during project initiation. He also outlined a myriad of 'subject matter expert' participants including key users, end users and external experts. Damodaran, Nicolls, Henny, Land, and Farbey (2005) also recognized subject matter expertise in the form of knowledge workers and the problems associated with the absence of knowledge and the understanding of the implications and significance embedded in the business and organizational processes. And finally, Sefyrin (2009) commented upon the importance of administrative officers possessing knowledge (and tangentially access to subject matter experts) when formal descriptions of work practices are non-existent.

10. Organizational environment not presupposed to enterprise wide transformation.

The last and final tenth challenge of organizational environment not presupposed to enterprise wide transformation was identified by CEG, (2001) and Cok (2003). This is due to the professional culture of which certain public organizations function in their approaches to large public projects, which is different from the approach adopted by the private sector.

Anthopoulos, Siozos, and Tsoukalas (2007) state current eGovernment infrastructures have not yet been incorporated into organizations' procedures, and they function as discrete and independently operated virtual organizations. He also mentioned that public executives appear reluctant concerning eGovernment due to the possibility of job losses and a downgrading of their role.

Aydinli, Brinkkempter, and Ravesteyn (2009) state that a 'holistic approach of all aspects of the enterprise' including ICT infrastructure and procedures, business related issues and management of internal and external information is required to ensure proper information to politicians and managers.

Even the entities that governments are mandated to serve (clients, citizens, business, and other governments) often restrict transformational government progress because they and their representative organizations resist the necessary changes in policies and procedures. Hart-Teeter (2000) points out that, by more than two to one, Americans want to proceed slowly with transformational eGovernment. In fact, Weerakkody, Janssen, and Dwividi (2011) state that changing the behaviour of eGovernment organizations is fraught with difficulty.

The holistic impact of the synergistic compendium of challenges and barriers is professed in this paper as the underlying structural impediment that inhibits project management success in these types of complex, government wide eGovernment projects. This impact is not adequately addressed in current project management methodologies and software.

4.6 Project Management Analysis to meet eGovernment Challenges and Barriers

There are a number of project management frameworks/guidelines/templates/checklists/tools and methodologies that offer guidance and direction in managing projects. And often organizations waste time arguing about what methodology to use (Kerzner, 2001). The methodologies provide a roadmap and are a collection of processes, methods and tools for accomplishing an objective, and they provide a checklist of key deliverables and activities required to effect successful project completion. According to Harold Kerzner in 'Project Management: A Systems Approach to Planning, Scheduling and Controlling (2001) project management is a series of activities and tasks that: have a specific objective to be completed within certain specifications; have defined start and end dates; have funding limits; consume human and nonhuman resources (i.e. money, people, equipment); and are multifunctional (i.e. cut across several functional lines). In addition, project management usually involves a structured approach or guideline, framework or methodology and includes elements of initiating, planning, executing, controlling and monitoring,

and closing, as well as project integration, scope, time, cost, quality, human resources, communications, risk and procurement management (Kerzner, 2011).

As a result of consultation with the survey members and Advisory Committee concerning the analysis and identification of the eGovernment challenges and barriers to progress and success, enhanced project management was identified as a potential solution to address some of the barriers. This solution required that the project management methodology be strengthened and focused on assisting the management and administration of the project. The key to the assistance was held to be interactive access to information from key stakeholders such as project decision-makers, clients, subject matter experts, and technical experts.

The identification of the required information for the proposed enhanced project management solution was completed by comparing each of the eGovernment barriers to generic project management documentation to determine if and where eGovernment challenges could be addressed. The author conducted a comparison of the project management features and capabilities to a representative project management guideline (an international standard) to confirm the effectiveness and relevance of project management to manage transformational eGovernment projects. The international generic example is described in Appendix IV. This analysis examined the effectiveness of the sample methodology in meeting the challenge, and offered a potential improvement determined to meet the eGovernment domain requirements. This examination confirmed the weakness in one project management methodology, and thus provided some credibility as a contributing agent. The weakness lay in not adequately completing the feasibility stage of the eGovernment project, before it was submitted for project planning and execution by a project management regime.

Based upon the assessment of the project management discipline *en total* and one project management methodology, the author, along with the support of the survey members and eGovernment Consultation Committee, designed the informational enhancements required to the generic project management methodology that would meet the needs of transformational eGovernment systems.

The following three project management methodology enhanced proposals were developed in consultation with the eGovernment Consultation Committee. Each proposal highlighted the need to progress to another approach, and each one had limited value. All three proposals served to articulate and define the problem required to design a solution, and support a need that still exists.

The objective of the proposed project management modification was to fortify the project methodology initiation phase so that it specifically addressed the transformational eGovernment

requirements as expressed in the compendium of transformational eGovernment challenges and barriers; primarily prior to project planning, but throughout the life of the project. The three proposals that were developed are outlined in the next section.

4.7 Development of Project Management Proposals

Three proposals are described below; they are summarized in this introduction, and fully described in the following sections.

Proposal # 1 – Quadrant Template (Appendix V)

This proposal was developed based upon the application of four comprehensive categories summarizing the generic project management field. The categories were integration and governance; delivery (time, cost, scope and quality); risk and uncertainties; and corporate support (human resources, communications, and procurement). The categories were entitled management domains to reflect the consolidated nature of the information contents. The consolidation provided broader target areas for mapping the transformational eGovernment challenges and it enabled more effective collection and analysis of relevant information needed to plan, execute, and control the project. Proposal #1 in the next section provides the full description and approach of the 'Quadrant Template.'

Proposal # 2 – Government of Canada Case – Inputs/Outputs and Government of Canada Case – Test 1, 2 & 3 (Appendices VI and VII)

This proposal relied heavily on the critical output information, particularly as regards transformational eGovernment project integration. This is somewhat troublesome for eGovernment, that has not yet been universally defined and for which there are very few key performance indicators; qualitative or quantitative. However, the results of this scenario pointed to the need for a more qualitative, business process approach to the required project management modification. Proposal #2 in the next section provides the full description of the 'Government of Canada Case'.

Proposal # 3 – Project Concept Document Information per eGovernment Challenge, and Project Concept Document Data Entry Requirements (Appendices VIII and IX)

This proposal focused on a business orientation rather than data analysis and the view that information should be in narrative form. The information must support a business focus as opposed to data collection and analysis. Proposal #3 in the next section provides the full description of the 'Project Concept Document'.

Proposal # 1 – Quadrant Template (Appendix V)

The first proposal was based upon the analysis conducted with the support of the consultation group to enhance project management as a potential solution to improve the management and delivery on eGovernment projects. Each of the synergistic compendiums of ten transformational eGovernment challenges and barriers was compared to the generic project management methodologies to determine if the methodologies responded to the challenges, and then to identify where specific improvements could be suggested in each of the processes and knowledge areas to address the eGovernment weaknesses. This analysis resulted in the creation of the following 'Proposal # 1 - Quadrant Template - (Appendix V) as the initiating process appeared particularly weak in addressing the eGovernment challenges.

In the design of this proposal, it was determined that replication of the project management methodology's individual elements created unnecessary duplication, and did not lend itself to specifically focusing on the eGovernment weaknesses. To eliminate duplication, more effectively focus the proposal, and create a Project Initiation Template, the methodology categories were reorganized and consolidated into the following Project Management Domains:

a. Integration and Governance;

b. Delivery (Scope, Time, Cost and Quality);

c. Risk and Uncertainties; and,

d. Corporate Support (Human Resources, Communications, Procurement).

Each of the ten challenges were compared to the above four consolidated Management Domains with the intent to describe what information would be required in the Project Initiation process that would address each of the consolidated Management Domains. For example, in order for stakeholders interests to be better managed (Challenge # 1); the integration and governance domain of project management must include additional information on the stakeholder accountability roles and governance structure to guide the project management activities.

The delivery domain of scope, time, cost and quality would have to describe the stakeholders' interests according to these characteristics so that the project manager could weigh the interests as per the governance structure developed above.

In addition, documentation would be required on risks and uncertainties to address the third domain so that the project manager would understand the impact and influence of the stakeholders' interests.

And finally, to meet the project management process methodology, the corporate elements of human resources, communication and procurement would have to be classified and identified with priority ratings in order to manage the conflicting stakeholder interests.

This analysis was completed for each of the ten challenges of transformational eGovernment using the Project Initiation Template and Quadrant structure.

Ultimately, this analysis uncovered the complexity and repetition of this approach and concluded that it was an ineffective design. However, it began the process for this researcher of reflecting upon what information and in what format and priority would be required within a project management methodology initiation framework that would help guide the management of the synergistic compendium of ten transformational eGovernment challenges. A review with the eGovernment Consultation Committee confirmed the ineffective approach but served to better articulate the weaknesses in a project management methodology that does not adequately address the project requirements.

Proposal # 2 – Government of Canada Case - Inputs/Outputs - (Appendices VIII and IX)

Stemming from the literature review and empirical survey findings and follow-up, this thesis research study has highlighted ten eGovernment challenges which are not adequately covered in the project management methodology and specifically not addressed within the project methodology initiation process. This research activity is premised upon the position that the project initiation process conducted as part of the project management methodology is not always adequate nor relevant to the needs of systems development for transformational eGovernment projects – those applications that tailor specific technology and information to drive and service the 'business' of government. Along with designing input, output and analysis routines to address the key eGovernment project management challenges, this research documents the need to maintain a technology supported description of the project requirements in order to improve the management of the project as it unfolds.

The model used to evaluate this approach is based upon the design of an informationally enhanced project management methodology framework to collect and report upon additional information. The following procedures and analysis were conducted to produce additional project initiation information required to more effectively manage and implement a successful transformational eGovernment project:

> Step 1 Identify the transformational eGovernment challenges to be addressed by an improved project initiation management methodology

Step 2 Identify the project management methodology framework to be used to collect the additional information and outputs required to improve project management through a more fulsome project initiation analysis. The components of the framework are:

a. Generic project management initiation approach

b. Proposed informational enhancements to the generic project management initiation approach

c. Information Inputs and Outputs

Step 3 Identify a group of experienced eGovernment and Information Systems personnel involved in managing and delivering major, complex, government wide eGovernment applications

Step 4 Identify three Government of Canada eGovernment Test Cases

Step 5 Populate the framework with the input and output information for the three Government of Canada eGovernment Test Cases

Step 6 Compare the 'before and hypothetical after' condition with eGovernment executives with respect to project improvements. Assess the impact of the improvement that would have resulted from the application of the new project management framework.

Step 7 Summarize feedback from the eGovernment executives

Step 8 Document the findings and develop the recommendations from this proposal

In 2009, an eGovernment Consultation Committee known to the author (Appendix I) was used as an evaluation and consultative forum to develop project management methodological improvements to address the transformational eGovernment challenges, and ultimately raise the rate of eGovernment system success.

The start-up was completed over a period of numbers of months from January to October 2009. In the preceding months, this activity had been initiated by collaborating with individuals to determine their interest in participating and experience with eGovernment applications. The author consulted with these individuals to seek their advice and input on their experience and their perspective of the research and survey findings identified eGovernment challenges and on the effectiveness of the project management methodologies to address for eGovernment projects.

Based upon this collaboration, the attached template Government of Canada Case – Inputs/Outputs (Appendix VI) was designed as the data entry document to record the input information required to strengthen the project initiation process that would produce the output documentation required to address each of the ten transformational eGovernment challenges. Because of the detail and complexity in collecting information to address each of the ten eGovernment challenges in consultation with the eGovernment Consultation Committee, it was decided to reduce the list to evaluate the collection for six of the eGovernment challenges. These challenges were summarized as Governance, Stakeholder Interests, Information Management, Lessons Learned, Organizational Interdependencies and Innovative Business Model.

It was also assumed that if a couple of challenging complex eGovernment applications (known to the eGovernment Consultation Committee) were used as test cases for the template outlined in Proposal # 1 – Quadrant Template (Appendix V), the effort of identifying the additional information at the Project Initiation Stage would allow for an evaluation or assessment of the value of the template as an approach to strengthen the Initiation process. This could be used as a tool to improve the management of the project and increase eGovernment success. Or at the very least, it would provide information early in process and 'alerts' that could result in a recommendation for non-continuance or a different course of action.

Initially, six test cases were identified but only three (Government of Canada Case –Test 1, 2 & 3 - Appendix VII) were developed as it became apparent with the completion of the data entry input forms, and the preparation of the output documentation that the use of six test cases as a means to strengthen project initiation process was too unwieldy and complicated to be of any practical value to the Project Manager or Steering Committee. The three test cases chosen were as follows:

Case #1 - The Government of Canada Canadian Winter Olympics 2010 eGovernment application to provide Spectrum (Broadcast) telecommunications management and the telecommunication licenses to all the international broadcasters involved in broadcasting the Olympic Games through the use of Internet based technology;

Case # 2 – The Government of Canada National Research Council 2000 eGovernment initiative to provide enterprise resource planning systems (finance, personnel, operations, business intelligence) driven by employee/user Internet access and inquiries at a national level; and,

Case #3 – The Government of Canada Treasury Board Secretariat Secure Channel, Government On Line 2002 initiative to provide multi-channel, one-stop access to eGovernment services in a safe and secure environment.

The attached (Government of Canada Case – Test 1, 2 & 3 - Appendix VII) summarizes the input data from these 3 test cases to populate a project initiation template along with the projected output documentation.

This material was prepared and forwarded to the Consultation Committee. After analysis and due consideration it was determined that it was too complex, too ethereal and too detailed with no guarantee or obvious improvement in effective project management let alone in eGovernment success.

Therefore, in the fall of 2009, an alternate approach was proposed simplifying the process, yet still maintaining the mandate to test the validity of an enhancement to the project initiation process in the project management methodology.

Proposal # 3 – Project Concept Document (Appendices VIII and IX)

In collaboration with the Consultation Committee, another aspect of the problem highlighted the attempt to merge the project authorization document (Project Charter) that was often prepared without the contribution of the Project Manager, with a more fulsome description and more rigorous data collection in the project initiation process. Therefore, it was determined to test an approach that allowed the preparation of the Project Charter by an external manager; and that would be submitted as the quintessential document that formally authorizes the project, describes the business need and product, identifies or assigns the project manager, and outlines general constraints and project assumptions.

In this third proposal, the approach being assessed was the value and feasibility of the participation of the project's sponsor/steering committee, the project manager and the project team to more fully 'flesh' out the details of the project and its interrelationships and implications in order to better prepare for its inception and continuation. This could be the source of much of the eGovernment failures as this extensive up-front analysis is not done prior to project implementation.

This analysis and the associated additional data collection (Appendix VIII– Proposal # 3 - Project Concept Document – Information per eGovernment Challenge) so critical for project success are to be completed by the project manager in advance of the project planning. For purposes of this thesis, the output of this analysis will be referred to as the 'Project Concept Document' (Appendix IX – Proposal # 3 – Project Concept Document – Data Entry Requirements), and it was to be completed after the Project Charter and before the Project Plan, and it needed to include the following elements in the informationally enhanced project management methodology to address each of the ten eGovernment challenges.

The full descriptions of the 10 challenges and barriers in the synergistic which would be addressed by informationally enhanced project management are provided below:

1. Requirement to manage diverse and conflicting stakeholder interests within a governance framework

An information enhanced project management aid could categorize and 'weigh' the stakeholders influence. It could relate their interests to reporting requirements. It could monitor and incorporate changes to their interests and changing degree of influence. It could provide 'intelligence' to the project manager on the implications of accommodating changing interests; i.e. impact on other interests and additional time, cost, and reporting requirements. It could highlight to the governance committees the complexities and interdependence of stakeholder interests and the impact on project success and accountability without impeding development. It could highlight, for example, the gap between the interest in considering a government as a single enterprise versus the reality of managing different and competing departmental or ministerial interests and accountabilities. It could also relate interests of the delivery agent (responsible department) with the product – for example, to highlight the inappropriate assignment of accountability to a third party not directly involved in the product line.

2. Challenge to continuously adapt to and blend technology, people and processes

An informationally enhanced project management methodology could highlight the impact of systems and projects on organizational business processes and the issues associated with personnel revising their workplace practices. It could assist in mapping and managing the business process changes resulting from the implementation and evolution of the project. It could also relate the organizational objectives to those particular practices, and identify potential technology enabled support; for example, offer an automated checklist to the project manager to recognize the organizational and personnel impact. It could revisit the changes and implications along the project implementation process as they are not static and are adjusted as the project evolves. Ultimately, technology could be designed to contribute to the core performance as these systems form the new basis of the organization's capacity to meet its mandate.

3. Outdated business models that reward traditional applications

If the feasibility analysis and project approval process could become part of the overall project management methodology, technological improvements could be developed to help support a shift in the business model criteria to fund the more controversial eGovernment projects. This could involve changing the criteria from performance specificity and delivery measures to rewarding more innovative and transformational based applications.

4. System development models affected by political realities and a new relationship with the private sector

The project management methodology could be expanded to subsume system development approaches that meet partnership and transformational solutions. Technology could be provided to assist the management of information based projects, which would address the system elements and project management environment, and contribute to the negotiated effort of finding and delivering a project based solution.

System development and the identification of requirements has become a more 'moving target'. The relationship between government officials who express their requirements and the private sector capacity to lock them down is strained. The scope and requirements shift is due to changing political interests, funding levels, relationships, accountability regimes, resource availability, and individual influences just to name a few, and this is becoming increasingly difficult for the private sector to carry the cost of chasing requirements.

5. Lack of access to lessons learned and a body of knowledge for government wide projects

A key feature where additional information could benefit the project manager is in having access to the experience and knowledge attained from actual 'on-the-ground' applications. The project management methodology could be expanded to support the overall project management and implementation of new solutions, and contributing to building a repository of experience could be of immense value towards the successful implementation of future projects. This approach could encompass the need to access and document experiences from individual projects for a historical database but more importantly, targeted as the agent to influence the design and implementation of future projects.

6. Promises of interoperability, integration, and cost and resource savings

The project management methodology could be strengthened to provide project managers and governments the tools to achieve interoperability and integration. (Achieving cost savings is another matter, and perhaps not reasonable in the short term due to the high costs required to design and implement new systems.) Using technology to have access to the information required to deliver on interoperability and integration would be extremely helpful to the project manager. Having automated access to an understanding of the systems and processes required to accomplish interoperability and their interrelationships, as well as the business processes and systems to achieve integration would contribute greatly to eGovernment progress and ultimate success.

7. Proliferation of information and the challenge to judiciously access and manage information

   A broader project management methodology could benefit from the aid of additional information and support in managing the interrelationships, location and access of information as it pertains to all facets of project management including the horizontal and user related content information as well as the process related information required to manage the project itself. This content information would also assist in assessing the implications of changing and evolving requirements, users and stakeholder and governance committee reporting requirements

8. Lack of a comprehensive holistic approach to project management as the driving force

The project management scope and tools for overall responsibility for project success could be expanded to recognize the project manager as the holistic driver, negotiator and consensus builder. In this capacity, he needs authority and information on the delicate interests both overt and unarticulated on the issues and complications that could derail or promote project success. Technology support and an expansion to and recognition of the scope and responsibilities of project management could contribute to project success.

The proposed enhancement is the creation and ongoing use of a Project Concept document followed by a 'Project Charter'. Both these documents could be developed and maintained through the creation of 'smart' templates i.e. documents that are programmed to determine what users need to do and to give those users help along the way. And they could retain, update and report upon information that is technologically linked to other project documents. The 'Project Charter' would then be prepared with the Project Manager and would clearly outline his responsibilities, access to resources, and authority to act and work across organizational boundaries and 'drive' the project forward.

9. Limited access to vital subject matter expertise

The project management scope could be expanded to recognize the importance and difficulties in having access to the subject matter expertise within the client area for the project team when and as required. Though these personnel do not form part of the project team, they do influence the success of the project, and in an informationally enhanced environment, a project management methodology could include the facility to identify, manage, and have access to this expertise as required.

10. Organizational environment not presupposed to enterprise wide transformation

The project management scope could be expanded to recognize the interdependencies and breadth of a government enterprise, and could use technology to help tag and identify the relationships and associated transformational eGovernment activities.

Proposal Summary

Collaboration with the Consultation Committee raised similar problems with each proposal. There is little incentive, and often weak mechanisms to collect the information required to address the eGovernment project management requirements. Either the information is not available, often not yet known, or the project and governance team members do not have the knowledge or authority or mechanism to retrieve and document let alone maintain this information.

Nonetheless, discussions on information requirements raised the issue of the failings of the current project management practices and technological support – and all supported the need for 'something better' not yet articulated or actualized.

The concluding assessment was that 'it can't be done' and tested by a single researcher within the scope of this project. All enhancements and elements to be considered with the governance structure include a continuous learning 'loop' to revisit these issues as progressive elaboration unfolds.

4.8 Validate Findings, Reliability and Limitations

The validity of the source data from the respondents confirmed by the eGovernment Consultation Committee still remains relevant as of 2011 even though the original source data is somewhat dated. This relevancy is confirmed by an up-to-date literature review, current international eGovernment ranking institutions, publications, and recent and ongoing discussions with private and public sector eGovernment officials and academics.

To ensure the relevancy of the survey findings, post-survey interviews and follow-up analysis with the survey members, the eGovernment Advisory Committee (members) and eGovernment Consultation Committee (executives) occurred in 2007 and 2008. Consultation with members of the eGovernment Consultation Committee has continued until current day (2011).

In addition, the author's presentations to and discussions with Canadian and international governments and organizations on transformational eGovernment continued throughout the life of the thesis (before and during) as shown below.

- Macao, China, United Nations, March 2010
- Ottawa, Ontario, Conference Board of Canada, February 2010
- Ottawa, Ontario, Conference Board of Canada, January 2009
- Ottawa, Ontario, Project Management Institute (PMI), November 2008
- Ottawa, Ontario, Canadian International Processing Society (CIPS), November 2007
- Montreal, Quebec, eGovernment International Conference (ICEG), September 2007
- London, United Kingdom, eGovernment Summit, March 2007
- Ankara, Turkey, e-Turkey Congress and Awards, December 2006
- Athens, Greece, WITSA, October 2006
- Dubai, United Arab Emirates, GCC e-Government Forum, May 2006
- Liverpool, LJMU, School of Mathematics & Computing, (PG Net), 2006
- Turin, Italy, Torino Digital World, September 2005
- London, UK, eGovernment Workshop, Brunel University, September 2005
- Vienna, Austria, WCIS Contributory Conference on ICT & Creatively, June 2005
- Washington, USA, World Bank, June 2005
- Dubai, United Arab Emirates, GCC e-Government Forum, May 2005
- Toronto, Ontario, Conference Board of Canada, December 2004
- Dar es Salaam, Tanzania, East Africa eGovernment Working Group, November 2004

The author also published (or was a co-author) on the need for enhanced project management to manage eGovernment challenges in the following peer reviewed papers, Furlong, 2008; Furlong and Al-Karaghouli, 2009; Furlong and Wafi, 2010; Furlong, 2012, Ezz, Furlong and Papazafeiropoulou, 2006; Taleb-Bendiab, Liu, Miseldine, Furlong, and Rong, 2006; and Taleb-Bendiab, Liu, Miseldine, Furlong, and Rong, 2009.

The non-peer reviewed publications also validated these findings.

The proposed enhancements to the project management methodology model are targeted to the key weaknesses of the project management methodology's failure to deliver transformational eGovernment projects, and it offers a powerful construct to the project methodology's initiation

process. They represent a catalyst for the future design of a fully developed project management methodology to address eGovernment requirements.

Ongoing presentations and research by this author and numerous others will raise the profile and understanding of the eGovernment transformational initiative. Hopefully, this will enlighten policy makers and government officials, bring together academics and practitioners, and encourage software designers and professional organizations to build the tools and methodologies required for effective eGovernment. In this way, the value of eGovernment will be realized as the catalytic agent to drive transformation of the public sector.

4.9 Chapter Summary

This chapter outlined the launch and findings of the author's survey which resulted in a synergistic compendium of ten specific challenges and barriers that impede transformational eGovernment development. They represent in one location a comprehensive list specifically targeted to address a group of challenges in eGovernment transformational systems. (The list resulting from this research is ten but it could be more or less or a different combination depending upon additional research and international experience. Irrespective of the number of challenges and barriers, the intent of this research is to acknowledge the importance of holistically addressing an interrelated 'bundle' *en masse,* and to determine a project management mechanism to address the limitations that impact eGovernment.) Other research and the literature may focus on one or more of these challenges, and on the more traditional technology, security, funding, resource, legislative, and change management elements that are cited as the usual ICT eGovernment impediments, but no other research has been located that isolates an eGovernment specific list of holistic and comprehensive of transformational challenges, nor documents the need to address (or at least understand) the potential impact of each of the ten challenges. (Current literature focuses on one or more at a time, but not on the need to 'manage and break the bundle'.)

This chapter summarized the comparison of the research findings which produced the explanation of the ten eGovernment challenges, and identified weaknesses and opportunities to strengthen the project initiation process within the project management methodologies with enhanced information. Three proposals were developed and tested to enhance the project initiation process. The first Proposal # 1 - Quadrant Template (Appendix V) was an attempt to address the challenges by a grouping of the most common project management elements as four management domains with required information identified in each domain to address the eGovernment challenge.

The same objective was attempted through the identification and management of additional information necessary to strengthen project initiation in two additional proposals. The second Proposal # 2 – Government of Canada Case – Test 1, 2 & 3 (Appendix VI and VII) was to manage additional information electronically, and the third Proposal # 3 – Project Concept Document (Appendix VIII and IX) to complement the Project Charter as the authoritative project 'kick-off' document.

All proposals were reviewed with the eGovernment Consultation Committee which included both private and public sector eGovernment executives: the first and second were found wanting. Proposal # 3 – Project Concept Document was found worthy of further research development. It highlights the weaknesses in project management in serving eGovernment, and identifies and focuses upon project management as the emerging discipline 'ripe' to fill this need.

5.0 CHAPTER 5 - RESEARCH FINDINGS

The following thesis research findings outline in detail the results of the research survey and follow up analysis including the limitations of project management to meet the requirements of eGovernment, and specifically managing the compendium of ten challenges and barriers to transformational eGovernment. As per the following diagram, Research Findings – Figure 2, there are three distinct stages of input, each with progressively improved output. The first stage was the development of the piloted survey questions producing the survey findings; the second stage was the follow-up with the eGovernment Consultation Committee and international fora producing the compendium of 10 transformational eGovernment challenges and findings; and lastly, the analysis of the assessment of generic project management methodologies culminating in the design of three proposals to informationally enhance project management methodologies resulting in the most feasible, and workable proposal – the concept document.

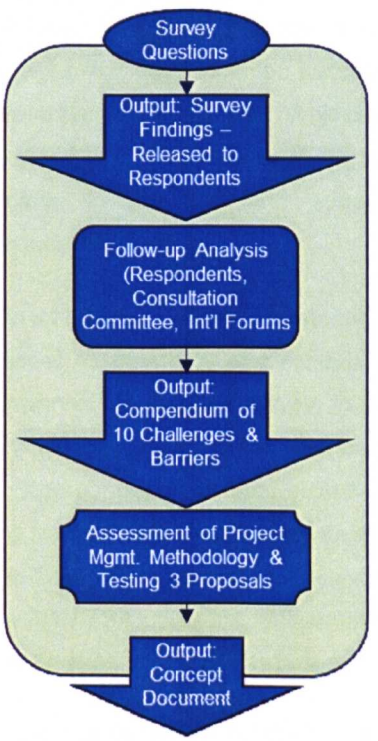

Figure 2 – Research Findings

The next paragraphs discuss the survey findings along with the follow up analysis and improvements; the assessment of project management methodologies; and, the development of and the recommended proposal.

The survey was designed and implemented by the author with access to international respondents by obtaining permission from the World Information Services and Technology Association (WITSA). The author approached this organization to arrange access to its members in order to submit the research survey on transformational eGovernment barriers. The author arranged with the WITSA secretariat to explore and examine the elements impeding international eGovernment success. The holistic compendium of the research findings, the ten interrelated transformational research barriers and challenges, was determined to be a candidate to test an enhanced project management methodology as a solution to mitigate failure and potentially improve success. The research findings in this chapter also summarize the three proposals designed and hypothetically tested to improve the project initiation process within the project management methodology.

As mentioned above, the author arranged with WITSA, an international association of the national technology organizations in 80 countries (67 countries at the time of the survey) to have access to their country members to conduct a survey to undercover international transformational eGovernment barriers and challenges that have inhibited success, and to examine and test the feasibility of developing an informationally enhanced project management methodology. In addition, the author proposed that the WITSA members share eGovernment knowledge among their member countries in order to advance and support international progress on transformational eGovernment around the world.

The author of this thesis approached the WITSA secretariat in Washington to arrange for permission for the author to: access its members and establish an Advisory Committee of 15 countries; to test and pilot the design of the author's survey; to conduct a post-pilot survey; and, to submit and review all survey findings with WITSA members. This enabled the author to establish a survey supported compendium of interrelated transformational eGovernment challenges and barriers inhibiting transformational eGovernment success. As a by-product (and author's inducement) it enabled WTISA to progress with eGovernment advancement through the benefits of lessons learned. As well WITSA could prepare an international information repository to create and share case study information and contacts between member countries.

There were two formal contacts with the survey respondents (36 countries responded out of the 67 member countries in the association as of 2006). Appendix III, the report issued to all WTISA members summarizes the respondents' input. The first formal contact was the administration and analysis of the survey results; the second formal contact was to have follow-up discussions on the telephone, via email correspondence, and at international meetings to discuss and better understand the respondent results.

After the follow-up with the survey respondents, the author also consulted the eGovernment Consultation Committee (created as an eGovernment expert focus group). This Committee was comprised of private and public sector executives involved in eGovernment, and committed to explore and examine the underlying barriers that eluded transformational eGovernment success. In addition, the author met with a number of international personnel (Appendix X) interested in eGovernment to further refine and validate the survey and research findings and conclusions. This work and research was carried out over a number of years (2007-2011).

This consultation effort resulted in the creation of a synergistic compendium of ten interrelated challenges and barriers that impeded advancement of transformational eGovernment along with the conception and design of informationally enhanced project initiation process in the project management methodology to improve its capacity and effectiveness to support and contribute to the management and success of transformational eGovernment projects.

The following analysis on each transformational eGovernment challenge one to ten, provides a summary description of the survey findings (repeated from the previous chapter) with respect to the compendium of ten transformational eGovernment challenges and barriers that individually, and collectively as a 'singular' bundle can, and do impact the successful management and implementation of transformational eGovernment projects. The next section addresses the survey findings with respect to analysis of the effectiveness, suitability and feasibility of enhancing the project management methodology to support the success of eGovernment initiatives:

1. Requirement to manage diverse and conflicting stakeholder interests within a governance framework

   Stakeholder interests, especially those at the decision-making level, are often conflicting because transformational eGovernment applications are often developed with one or more departments and central agencies. Each of these departments and agencies has a unique legislative mandate, accountability regime, culture, history and background, and more recently, security requirements

2. Challenge to continuously adapt to and blend technology, people and processes

   Today's system environment is more organic that it was in the past; previously, system solutions were applied to corporate services within the government environment. Today's systems are at the core of departmental performance, not on the periphery. They are significantly affected by evolving priorities and circumstances, and are more integrated with the operational environment including technological developments, the capacity of the resource experts, and constantly changing and evolving business processes.

3. Outdated business models that reward traditional applications

   Most business models do not recognize that collaborative and unprecedented solutions do not meet the criteria for performance measurement targets, accurate costing and resource utilization. In addition they do not recognize work plan deliverables whose solutions are not known until they are negotiated well into the implementation stage. Promises of cost and resource reductions along with improved efficiency and effectiveness gains the funder's attention more than promises of transformation and innovation.

4. System development models affected by political realities and a new relationship with the private sector

   Most system development models do not recognize the 'stop and start' reality of projects affected by political cycles and funding priorities, and the need for system development fragments to be reused instead of continuously 'starting over.' Though cancelling projects is generally due to changing systems objectives, it is critical to recognize the waste of precious resources and time, and the inability to recover and reuse these efforts. However public service has been impacted significantly through private sector contracting and outsourcing arrangements. The integration of private and public sector resources is now mandatory.

5. Lack of access to lessons learned and a body of knowledge for government wide projects

   eGovernment project managers are designing and implementing system solutions that are often unprecedented and government wide, and yet they have no practical access to the knowledge or benefit from the experience gained from other project managers in similar circumstances. The problem is that the practitioner is operationally aloof from harnessing previous eGovernment experience and there is no stakeholder oversight to ensure that a lessons-learned procedure is carried out.

6. Promises of interoperability, integration, and cost and resource savings

   The eGovernment environment is predicated upon a collaborative and partnership based environment that requires sharing both work and accountability responsibilities, and it is usually argued (and ultimately funded) under a banner of promised cost savings and resource reductions.

7. Proliferation of information and the challenge to judiciously access and manage information

The information age exacerbates project management because of the massive and exponentially produced data that must be sorted out to effectively implement system solutions. The inter-connectedness of information and system requirements is so overwhelming that projects suffer from the weight of information. Mining through this data to retrieve the relevant information produces a 'spin and churn' that can be non-productive; and this along with the lack of authoritative control to wind through the layers of information can derail the project.

8. Lack of a comprehensive holistic approach to project management as the driving force

   Project management often plays the role of arbitrator, and is then the agent that brings the disparate parties together to deliver a solution that was not driven by either party. This is often the case with citizen centric applications as they cross the program interests of each of the contributing organizations. Project management needs to drive the solution to change the business processes of the affected departments and turn the solution into a government wide enterprise.

9. Limited access to vital subject matter expertise

   Within governments, knowledge is either so vastly spread or so unavailable that it is difficult for the project manager to understand the implications of systems design. The knowledgeable personnel are difficult to locate and approach given hierarchical and organizational limitations, and they are frequently reassigned and no longer accessible.

10. Organizational environment not presupposed to enterprise wide transformation

    Departments do not necessarily act as units of a government enterprise; they are vertically based with individual objectives and resource reward mechanisms. Accountability of each department is to its Minister and senior officials, and to the government acts for which it was created.

    It was proposed by the author to consider the effectiveness of project management in meeting the needs of eGovernment implementation, and in addressing the compendium of ten transformational eGovernment challenges since project management had been raised as a major factor in the failure of eGovernment around the world (Standish Group, 2003; BCS Thought Leadership, 2005; Fraser, 2006; Sarantis and Askounis, 2010; Aikins, 2012).

5.1 Project Management Analysis

The objective of this research is to propose the design of an informationally enhanced project management methodology. To this end, the role and effectiveness of project management in supporting and contributing to effective transformational eGovernment was explored by the author in consultation with the eGovernment Consultation Committee to assess the effectiveness and weaknesses of the project management methodological approach in supporting and contributing to the effective management and implementation of eGovernment projects. In addition to the review and input provided by the private and public sector executives on the eGovernment Consultation Committee, this approach and assessment was also vetted and considered by international experts on the eGovernment Consultation Committee who were interested in advancing and promoting eGovernment success – namely, the international think tank members who were accessed through email and telephone correspondence as well as face-to-face meetings and conferences in different geographical locations.

In the next section, the author assisted by the eGovernment Consultation Committee assessed and evaluated the effectiveness of the project management methodology in its (ineffectual) treatment of the compendium of ten transformational eGovernment barriers and challenges that are the thesis findings. The project management proposals in Section 5.3 reflect these assessments and conclusions, and the author's solutions are built upon these assessments. That is, the failings of project management methodologies to support transformational eGovernment success because of its incapacity to provide guidance, direction, or assistance with the holistic compendium of ten interrelated transformational eGovernment challenges and barriers.

As mentioned in earlier chapters (Kerzner, 2001), there are a number of project management frameworks/guidelines/templates/checklists/tools and methodologies that offer guidance and direction in managing projects. The methodologies provide a roadmap and are a collection of processes, methods and tools for accomplishing an objective, and they provide a checklist of key deliverables and activities required to effect successful project completion. According to Kerzner (2001), project management is a series of activities and tasks that: have a specific objective to be completed within certain specifications; have defined start and end dates; have funding limits; consume human and nonhuman resources (i.e., money, people, equipment); and are multifunctional (i.e. cut across several functional lines). Project management also usually involves a structured approach or guideline, framework or methodology and includes elements of initiating, planning, executing, controlling and monitoring, and closing, as well as project integration, scope, time, cost, quality, human resources, communications, risk and procurement management (Kerzner, 2011).

The author's view which is supported by the eGovernment Consultation Committee is that project management methodologies are primarily used to manage and measure progress in time and space but they do not actively support the requirements of the project manager and team to advance and move the project into place. They do not constitute part of the project manager's 'tool kit' to manage the challenges and barriers to transformational eGovernment progress. In any event, methodologies do not manage projects; people do (Kerzner, 2001).

The author, in consultation with the eGovernment Consultation Committee conducted an assessment of the eGovernment requirements by comparing the ten transformational eGovernment challenges to the generic project management methodologies to determine its applicability to transformational eGovernment. This comparison was conducted by the author. And, to triangulate, the comparison was reviewed with the transformational eGovernment Consultation Committee and survey participants to determine the effectiveness of project management methodologies in meeting the eGovernment challenges. This comparison and analysis is provided below and includes a complete description of how each of the ten barriers and challenges impacts transformational eGovernment (1a to 10a), and an assessment of the effectiveness of the (internationally generic) project management methodologies (1b to 10b).

1a. TRANSFORMATIONAL eGOVERNMENT CHALLENGE

- Requirement to manage diverse and conflicting stakeholder interests within a governance framework

Interests of stakeholders of transformational eGovernment initiatives are usually conflicting because transformational eGovernment applications are normally developed with one or more departments and central agencies. Each of these departments and agencies has a unique legislative mandate, accountability regime, culture, history and background, and more recently, security requirements. In most countries there is no common Government mandate, procedure, or policy to share and manage the information, business processes, and communications technology required to support transformational government wide applications.

Because of the increasingly horizontal environment of current government bureaucracies, governance structures usually include and often are driven by third-party collaborators since the new citizen-centric solutions do not necessary form part of, nor integrate with, the traditional bureaucratic hierarchical structure. In many cases, Central Agencies and Chief Information Officers play the role of delivery agent for solutions not normally within their program responsibilities or sphere of ownership. And these agencies and officers often have no stake in the outcome (i.e., no skin in the game), which perverts their participation, as their authority is not commensurate with their knowledge area and responsibility. Within the governance model there

needs to be a balance to establish these relationships so that the stakeholders' interests guide and aid the design process to enhance action, without impeding development.

Since government wide system applications affect so many players, the horizontal government focus requires engaging all parties (departments, central agencies, citizens, users, employees, and political interests) irrespective of their particular angle or influence in the project deliverables, which ultimately results in adjusting the product to, at least marginally, address their interests. Prior to transformational eGovernment applications or solutions that crossed government-wide relationships, marginal interests did not command the attention or influence that they do today.

1b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

Within the project methodologies material in the project knowledge areas, project processes, and project life cycle, the importance of managing stakeholders and identifying their particular interests and influence is acknowledged. In the project methodology background and introductory material on project planning phases and throughout project life cycle, it is stated that project management teams must identify the stakeholders, determine their requirements, and then manage and influence those requirements and expectations to ensure a successful project. This documentation highlights the importance of recognizing all stakeholders irrespective of their interests. Managing stakeholder expectations may be difficult because stakeholders often have very different objectives that may come into conflict. When discussion in the project methodologies focus on project integration management, the project plan development knowledge areas and the associated planning the tools and techniques highlight the importance of gathering and taking advantage of stakeholder skills, knowledge, interests, and expectations.

Though the difficulty of managing stakeholder interests is acknowledged in project methodologies, there is an underlying assumption that once defined and categorized, the conflicting interests can be managed, and that focusing on the project product, prime user and task at hand, is all that is required to address stakeholder concerns issue. In the project life cycle preparatory analysis, and in the project plan development, it is assumed that once identified, the stakeholder knowledge can be classified, categorized and managed. This treats stakeholder management as an effort to fully understand the requirements in the context of the application area, and in the government sector it assumes that transformational eGovernment is a commonly understood government wide mandate. This is rarely the case for transformational eGovernment. The government does not act as a single enterprise nor is it persuaded to operate within a horizontal mandate. The drivers are individual departments and executives focused on particular interests and personal rewards. To date, the motivation to operate within a horizontal environment is overshadowed by the benefits and ease of servicing one ministerial position.

Project management methodologies also underestimate the capriciousness of stakeholder interests and assume that these interests are static, definable, as well as controllable. In designing transformational eGovernment systems that respond to a need or in updating an existing transformational eGovernment system, these relationships and expectations may be reasonable. But this is rarely, if ever, the case when transformational eGovernment is managed by third parties, for example, Central Agencies and Chief Information Officers, who often have no direct vested interest in the outcome. Deferring the management of transformational eGovernment projects to a third party may be expedient due to the political sensitivities of giving control to one department over the other, but it does not contribute to delivering a service when the host is not personally engaged or accountable. In the author's review of a Government of Canada's transformational project it was shown that the interests of delivering tax programs for example, is paramount to the Government Revenue Agency, and only peripherally, of interest to the third party. This is an example of the perversion of the identification of stakeholder needs which often results in indifference to, or at least placating stakeholders and thereby marginalizing their concerns and rights to peripheral interests.

Often, in a transformational eGovernment environment that has facilitated the creation of horizontal solutions, the user requirements are not driven from a citizen need or improvements to what existed before. Sometimes, they are designed and developed from negotiations among numerous organizations or they are erroneously created as a need or service where one did not exist before. This problem is more common in citizen centric applications that require different organizations to attempt work together to produce a service that was not offered in the past, and which is only possible because of the Internet and advances in technology.

It is also valuable to note that throughout the project management methodologies, they do not highlight the testing or revisiting of stakeholder requirements and the corresponding resulting system alterations. In the political environment that surrounds transformational eGovernment projects, user requirements are high-jacked to prove or market success, or demonstrate financial viability in order to expedite a political interest. This shift in user requirements does not emanate from stakeholder interests, but rather highlights the influence of one party over the other – and this may not necessarily be the party most dedicated to the original user requirements.

Project management methodologies in their approaches to human resource management and project communications identify that stakeholder responsibilities and the needs of the various stakeholders should be analyzed to ensure that their needs will be met so that reporting structures can be developed to respond to the various stakeholder interests. This reinforces the need to manage stakeholder interests but it does not contribute to managing the transformational

eGovernment stakeholder conflicting demands or to creating a new holistic service where none of the existing stakeholders is singularly responsible.

2a. TRANSFORMATIONAL GOVERNMENT CHALLENGE

- Challenge to continuously adapt to and blend technology, people and processes

Today's transformational eGovernment system environment is more organic than systems were in the past; previously, system solutions were applied to a corporate services environment. They focused on improved financial or personnel systems that were generally outside of government department's program operations and that were designed to monitor, report upon and assess company performance. Now, transformational eGovernment systems are aimed at the core of eGovernment performance - not on the periphery. And, they are significantly affected by evolving eGovernment priorities and circumstances, and are more integrated with the operational environment including technological developments, the capacity of the resource experts, and constantly changing and evolving transformational eGovernment business processes.

2b. EFFECTIVESS OF PROJECT MANAGEMENT METHODOLOGY

Project management methodologies address the steps required to manage a project, and as such, do not specifically address the issues resulting from the requirement to blend technology, people and processes. Blending technology, people, and processes at least from the international project management methodologies perspective, has not traditionally been focused on the need to revise transformational eGovernment business processes. Blending these project features has not extended, to the same degree, into the workplace that implementation of a new system extends. Blending does not consider its ramifications within an organization as if they were resulting from a new project. Also, it does not consider technological implications in implementing new solutions.

However, in the project management methodologies documentation, the concept of 'progressive elaboration' is introduced when referring to the blending of technology, people, and processes. This concept describes the activity that recognizes the iterative process of better defining project requirements that are 'made more explicit and detailed as the project team develops a better and more complete understanding of the project.' This concept acknowledges the relationships between understanding the requirements and appreciating the context within which they operate, and what becomes eventually possible through negotiation and progressive elaboration.

The project management methodologies do not specifically address the impact of a project within either an organization or its resulting changes to business processes. Nor do they address the

need to maintain an understanding of the reciprocal impact upon people, processes and technology that occurs within projects, and specifically within transformational eGovernment projects where the Internet and citizen based services alter the working environment and the government's relationship with its citizens.

3a. TRANSFORMATIONAL eGOVERNMENT CHALLENGE

- Outdated business models that reward traditional applications

Outdated business models do not recognize that collaborative and unprecedented transformational eGovernment systems and solutions are not effectively measured and assessed solely by the current criteria for performance measurement such as; predefined scope targets, costing and resource utilization plans, and project schedules and work plan deliverables because transformational eGovernment project solutions and outcomes are not known until they are negotiated well into the implementation stage. Current business models are mandated for the status quo where transformational eGovernment innovation cannot flourish. Promises of cost and resource reductions along with improved efficiency and effectiveness (more probable in enhancement in corporate applications as opposed to unprecedented transformational eGovernment projects) gains the funder's attention more than promises of transformation and innovation.

3b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

The project management methodologies commence once the projects have been approved. In some cases, when an organization identifies an opportunity to which it would like to respond, it will often authorize a needs assessment and/or a feasibility study to decide if it should undertake a project. The project management methodologies propose that the definition phase of a project life-cycle will determine whether the feasibility study is treated as the first project phase or as a separate, standalone project. In the event that the feasibility study is considered a project, or part of a subsequent project, it would employ the project management methodology.

As a precursor to a transformational eGovernment project, a feasibility study does invoke business model approaches and criteria that influence the approval process. However, in most project feasibility studies the approval criteria favors those projects that are low risk, have a good chance of success, are 'tried and true,' and satisfy enough stakeholders interests to make the costs and effort worthwhile. These models favor improvements to status quo applications as their success and seeming value is easier to assess and articulate than a non-traditional innovative transformational eGovernment solution that challenges the status quo. The transformational eGovernment project may in fact have a higher societal benefit but since it may be a higher risk

with an unsure and unprecedented approach, potentially unavailable or inexperienced (in the new field) workers, dubious performance measures, and untried citizen take-up, it does not meet the traditional business model criteria for government funding. Therefore, it is not as easily supported by the governance committees, and not funded as readily as the more corporate banal applications. This approach may be of comfort to government funders and service political safety interests, but it does little to advance the public service transformation and need to modernize program and service delivery.

4a. TRANSFORMATIONAL eGOVERNMENT CHALLENGE

- System development models affected by political realities and a new relationship with the private sector

System development models do not recognize the 'stop and start' reality of transformational eGovernment projects that are affected by political cycles and funding priorities and the need to provide for system development fragments to be reused instead of continuously 'starting over.' Cancelling or revamping transformational eGovernment projects is often due to changing systems objectives in this new field of government endeavor. However, it is important to avoid the waste of precious resources and time and to develop the capacity y to recover and reuse system development fragments.

Previously, government systems were designed based upon government users documenting system requirements and private sector consultants designing systems to meet these requirements. In transformational eGovernment and other government wide projects, system requirements cannot be developed without the participation of the private sector as they cannot proceed without professional advice in terms of what is feasible to develop and maintain.

4b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

Managing information and technology systems and managing projects needs to be more effectively coordinated. The separate effort of managing transformational eGovernment system projects using extracts from project management methodologies and incorporating scheduling and control proprietary project tools and techniques (for example, Microsoft Project Manager) duplicates the work, and neither approach seems up to the task. Even if integrated or operated in tandem, they do not address the needs of the project manager to manage transformational eGovernment systems within an eGovernment partnership based working environment. The relationship between the effort to build and design the system (often the private sector) with the group directing and implementing the system (usually within the public sector) needs to be examined and products need to be designed to meet these relationships and requirements. For

example, system development systems were traditionally designed to fulfill a need articulated by the user and it was built based upon specifications by one organization and used by another. This required the capacity to specify requirements to the degree required to build, and generally not waver on those requirements until the system was built. This model worked where systems were building upon or improving something that already existed or when new operations were well documented. The requirements were clear; the user understood what was required and how it would be used, and the project managers were able to explain to the system developers what was required.

Current large and partnership based systems and transformational eGovernment solutions do not necessarily meet these criteria. The requirements often cannot be articulated until the partnership consortium can negotiate what will be delivered, how it will be delivered, who will use it, and who will manage it. In innovative and transformational eGovernment projects where requirements did not exist in the past, and a single owner and driver is not immediately evident, this specificity may not be possible until the business owners and users gain experience as to what can be produced. This experience is only gained by working through the options and designing what is possible and feasible based upon a compromise of interests, technology and capacity. This negotiated effort could be enhanced by technology enabled tools that allow more flexibility in the system design models and more direct management value from the project management methodologies.

Highlighting the weaknesses in traditional system development models and the lack of consistency and overlap with project management methodologies, within transformational eGovernment recognizes and confirms: the need to create a project management approach that blends and compliments system development models recognizes; the need to integrate system design and project management organizations; and the need to include effective relations with the private sector, and the need to respond to the political realities created by a citizen-centric approach to transformational eGovernment.

5a. TRANSFORMATIONAL eGOVERNMENT CHALLENGE

- Lack of access to lessons learned and a body of knowledge for government wide projects

Project managers are designing and implementing transformational eGovernment system solutions that are often unprecedented and government wide, and yet they have no practical access to the knowledge nor benefit from applying the experience gained from other project managers in similar circumstances. The problem is that the practitioner is operationally aloof from harnessing transformational eGovernment experience and there is no stakeholder interest or oversight to ensure that a 'lessons learned' procedure is carried out, so there is no way to harness previous experience. There is no measurable demand for project managers to conduct

lessons learned and record reflections, and there is no motivation to store and access this information. There is no formal lessons learned process that includes a reward for consulting and implementing lessons learned.

5b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

International project management methodologies acknowledge the importance of documenting lessons learned, the causes of variances and the reasoning behind corrective action chosen so that they become part of the transformational eGovernment historical database for use in current projects and future projects of the any government organization engaged in related transformational eGovernment projects. Though this is acknowledged to be of value, few transformational eGovernment project managers undertake the effort to document lessons learned. In managing large scale horizontal transformational eGovernment projects there is value from accessing information from the lessons learned repository and comparing the information to transformational Government challenges and barrier encountered in the current project, and at the same time contributing to an historical lessons learned database. Finally there is long term value in providing information to other projects to share knowledge and experience gained. Developing a lessons-learned database is not set out in the project management methodologies as an input and guide to managing projects but it is part of managing transformational eGovernment projects. It could be of immense value to the project managers, project team members, and project stakeholders when implementing unprecedented and transformational eGovernment applications.

Project management methodologies continue to focus their processes and knowledge areas on project generic issues such as scope, schedule, quality, cost, risk, communications, and human resources. They are virtually silent on the thesis compendium of transformational eGovernment challenges and barriers, including lessons learned.

6a. TRANFORMATIONAL eGOVERNMENT CHALLENGE

- Promises of interoperability, integration, and cost and resource savings

The transformational eGovernment environment is predicated upon a collaborative and partnership based environment that requires sharing both work and accountability responsibilities, and it is usually argued (and ultimately funded) under a banner of promised cost savings and resource reductions.

Interoperability is dependent upon stored data that is common and similarly structured; and most of the organizational information in government is unstructured, is stored in different formats, and

is knowledge based; that is, it is more qualitative than quantitative so its retrievability is more complex. There is no method for determining which piece of information is the authoritative piece when it loses its validity as is easily acknowledged from the prolific hits and irrelevant sites produced from a Goggle search.

6b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

Project Management (Standish Group, 2003; British Computer Society, 2004; Aikins, 2012) is often cited as the 'guilty party' responsible for not achieving transformational eGovernment systems success. Though these particular objectives of interoperability, integration and savings are not obvious candidates for project management methodologies and are not discussed in them, they have become particularly relevant and pervasive in the horizontal and political expectations within the management of transformational eGovernment systems and projects. The interest in horizontal solutions and treating governments as single enterprises, by definition assumes integration and interoperability of services as the means to achieve this goal. And, in order to justify these predictably costly and difficult measures, promises of savings are required to attain political support and citizen engagement.

7a. TRANSFORMATIONAL eGOVERNMENT CHALLENGE

- Proliferation of information, and the challenge to judiciously access and manage information

The information age is impeding transformational eGovernment project management because of the massive and potentially increasing quantity of exponentially produced data that must be sorted out to effectively implement system solutions. The inter-connectedness of information and system requirements is so overwhelming that transformational eGovernment projects suffer from the weight of irrelevant information and often miss the relevant information. Mining through this data produces a 'spin and churn' that is frequently completely non-productive; and this along with the lack of authoritative control to wind through the layers of information and check high-powered stakeholders, can derail the project and exacerbate the 'spin and churn'.

Project management in transformational eGovernment applications reaches across departments into the business rules, organizations, policies, governance bodies, procedures, regulations and security arrangements, and as such, requires information and subject matter expertise to assess these influences and elicit the change required. Success in a cross transformational eGovernment environment demands access to and an understanding of the information located in different organizations; and recognition of the systems, organizational, and cultural barriers that prohibit access.

Information is so widely spread that no one has access to the complete body of knowledge required to implement a transformational eGovernment system project. Everyone has a piece of information; no one has the full package so the 'spin and churn' becomes the order of the day. There is no transformational eGovernment wide enterprise content management mandate or interest. There is no mechanism or technology to have a government wide perspective, let alone a government wide data collection and retrieval facility. There is no holistic view to manage or search government data across all the various departmental receptacles including program records, legacy systems and portals, which is where the majority of the government information resides.

7b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

Project management methodologies address the importance of a project management information system (PIMS) which consists of the tools and techniques used to gather, integrate and disseminate the outputs of project management processes. However, PIMS needs to be used to support all aspects of a transformational eGovernment project form initiating through closing, and it should include both manual and automated systems. This would treat information as a product of the project management processes and it would include interdependent content information that comes from the various affected organizations and interests and whose understanding is critical to the project success. This approach to international project methodologies would overcome the notion that once the project is defined and active, the content information required to achieve success is knowable, accessible, static and manageable.

8a. TRANSFORMATONAL eGOVERNMENT CHALLENGE

- Lack of a comprehensive holistic approach to project management as the driving force.

In transformational eGovernment, the intractability of project management is the structure of the project organization and its associated accountability framework. Transformational eGovernment project management is weakened by widespread matrix operations and powerful departmental fiefdoms, and is even further impaired as it attempts to cross from one department to another in an enterprise wide project. Organizational loyalties interfere with and contaminate transformational eGovernment wide projects.

Project management often plays the role of arbitrator, as it is often the agent that brings the disparate parties together to deliver a solution that was not driven by or wholly acceptable to any party. This is usually the case with citizen centric applications as they cross the program interests of each of the contributing departmental organizations. Transformational eGovernment project management needs to drive the solution to change the business processes of the affected

departments and turn the solution into a government wide enterprise. Transformational eGovernment projects need to be driven ahead as obstacles constantly arise, allowing derailment unless the project manager has the authority and influence to 'will' the project forward. It also needs to drive technology as a principle element that makes project management effective, and implement a method as the way to effect the change that is ultimately brought about as the measure of success.

The project management discipline must become part of the project solution, and its contribution must move beyond the structured and repeatable processes that emanated from the manufacturing sector. It must be based upon business imperatives, organizational readiness, infrastructure (size and scaling), architecture and performance.

8b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

International project management methodologies do not address the implications and responsibilities of transformational eGovernment project management as a potential driving force within a horizontal environment, nor do they acknowledge the comprehensive and holistic impact project management may have upon the operation and direction of the organization.

The methodologies describe the need to establish a project charter that appoints a project manager and provide the authority to manage project scope, costs, resources, risks, and schedules. But the methodologies do not recognize that transformational eGovernment project management must cope with these issues as important but basic, minimum, and traditional management concerns. Transformational eGovernment project management superimposes responsibility and accountability requirements on the project manager that are far above traditional management issues. For example, as the literature review and empirical findings of this thesis corroborate, transformational eGovernment project management must adequately treat a compendium of ten transformational eGovernment challenges and barriers.

Transformational eGovernment project managers must be provided with more effective project management policies, processes, organizational structures, information management tools that enable them to address: the traditional project issues; the compendium of transformational eGovernment challenges and barriers and other restraints; and the evolving role of the project manager a results driver versus a process administrator.

In 2012 high transformational eGovernment project failure continues unabated (Aikins, 2012). The literature review and the empirical findings of this thesis point to enhanced project methodologies and more effective project management to reduce the failure rate.

9a. TRANSFORMATONAL eGOVERNMENT CHALLENGE

- Limited access to vital subject matter expertise

Within transformational eGovernment, knowledge is either so vastly spread or not available that it is difficult for the project manager to understand the implications of systems design. The knowledgeable personnel are difficult to locate and approach given hierarchical and organizational limitations, and they are frequently reassigned and no longer accessible. Pushing 'high-flying' civil servants through short assignments and assessing them on individual accomplishments discourages a 'joined-up' approach, collaborative style and the building of networks. During recent years, the (Canadian) government's tendency to appoint generalists and use management positions as a training ground eliminates corporate knowledge and an understanding of the impact and far-reaching organizational influences of system development.

Furthermore, the skill set to work in a collaborative environment, understand citizen's interests, negotiate rather than predict solutions, challenge the status quo, and 'tease' out solutions that are balanced between the private and public sector and technology and organizational interests is a skill set not prevalent within government circles, let alone within our society. Within the Government of Canada for example, there is also a scarcity of the technical skills required to deploy enterprise wide solutions; hence, many projects are populated with more contractors than employees. Civil servants are skilled in briefing Ministers and reporting on progress, and not on policy formulation that drives delivery governance processes and change that provides incentives to implementation. The challenge of collective intelligence is to transform the government's role from one that is based on independence to one where interdependence becomes a guiding principle.

9b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

International project management methodologies describe the human resource planning processes that are required to determine and acquire the resources that are required to perform project activities. The focus on these resources is primarily in the design and staffing of the project team available from a pool of resources. But, the methodologies do not focus on the subject matter expertise required from the client perspective as historically, it had been assumed that the group hosting the project were knowledgeable and the prime users or drivers of its deliverables. In a horizontal and collaboratively based environment, this is not necessarily the case and yet it is critical to the effective management of the project.

10a. TRANSFORMATONAL eGOVERNMENT CHALLENGE

- Organizational environment not presupposed to enterprise wide transformation

Departments do not act as integrated units of a government enterprise; they are vertically based with individual objectives and resource rewards mechanisms. Accountability of each department is to its Minister and senior officials, and to the government acts for which it was created. This accountability is reflected in the management of information that is reflected in the enterprise wide information management regime - which is the ultimate goal, not yet achieved.

Departmental interests often thwart the objective of government transformation, as there is currently no way yet found to manage the information needed to define, measure, and influence the transformation. There is competition between project and organizational priorities, and project priorities lose out to the much larger and more important and long lasting organizational interests. Minor organizational changes and a shift in focus can severely retard project development.

Though projects often cross organizational divides, the culture, priorities and reward mechanisms do not. The organizational 'silos' remain intact in terms of reporting relationships and career opportunities and interest in supporting crosscutting organizational projects remains at a level of 'lip service' at best.

10b. EFFECTIVENESS OF PROJECT MANAGEMENT METHODOLOGY

Project management methodologies are generally premised upon one key user organization and one key implementation location per project, albeit they recognize numerous external interests. And they do not presuppose or support the management of a project across an entire government as if it were a single enterprise. In fact, even though the horizontal collaborative working environment may consider the government as a single enterprise, the business processes and organizational and personnel practices are not yet fully in concert with this approach.

In summary, there are a number of references in project management methodologies to the challenges raised in eGovernment, but they do not adequately to support the complex demands of eGovernment transformational projects. The comparison highlights that there were not specific processes or knowledge areas in the project management methodology that specifically targeted or addressed any of the transformational eGovernment challenges and barriers, albeit project management methodologies make tangential references to challenges such as stakeholder management, project information, lessons learned, and the role of the project manager.

Clearly the project management methodology does not provide an adequate means to cope with the compendium of challenges and barriers to transformational eGovernment. This research identifies and recommends modifications. And because of the scope of the challenges and barriers and their influence throughout the life of transformational eGovernment projects, they should be identified and managed at the earliest possible point in time; namely the project initiation and monitored throughout the life of the project.

The next step in Research Findings was to examine the project management methodology with the objective to strengthen its information base, structure, tools, and techniques and thereby become more effective in supporting eGovernment transformational initiatives. This examination reviewed the full range of activities but it focused on the project initiation process. This is the theory based section within project management methodologies; it sets the tone to understand the nature and scope of a project and it guides the management of the interdependent planning, executing, controlling and closing processes (Kerzner 2001). It concentrates on internal and external environment and organizational project elements.

The following three proposals each attempt to strengthen the project management initiation process based upon a series of informational enhancements.

5.2 Informationally Enhanced Project Management Proposals – 1, 2 & 3

The author developed a series of proposals to address the limitations and weaknesses within the generic project management methodology to address and manage eGovernment. In order to develop these proposals, the compendium of ten transformational challenges and barriers was applied to the project management methodology to determine its effectiveness, and it was used to design proposals to address the found weaknesses and strengthen the project management methodology. (The value of this exercise was to assess the effectiveness of the project management methodology to manage the eGovernment challenges – the compendium of ten was examined as they were the product of this research; others could also be included as a final list of ten is not as critical as the effectiveness of the project management methodology.) Three proposals were developed; each building upon knowledge attained through consultation with expert personnel, and each moving towards a workable, viable solution. Chapter 4.3.2 introduced the three informationally enhanced project management proposals; the following describes the outcome of the development and testing of these proposals with the eGovernment Consultation Committee and through ongoing international discussions. The following is a summary of the findings from each of the three proposals targeted to improve the project initiation process within the project management methodology:

5.2.1 Proposal # 1 Quadrant Template (Appendix V)

Proposal # 1 - Quadrant Template Project Initiation Enhancements (Appendix V)

This proposal correlated the compendium of ten transformational eGovernment challenges and barriers to the project management initiation, as described in generic project management methodology to determine its effectiveness and capacity to manage these challenges.

In project management methodology, the project initiation process generally includes the identification of stakeholders and the preparation of the project charter. Based upon the completion of this work and approval of the charter, the methodology advances to the planning process where the overall project plan and all ancillary plans are developed. Upon an examination and heuristic attempt to correlate the eGovernment challenges to the project management methodology, a framework was designed to consolidate the general project management methodology areas of integration, scope, time, cost, quality, human resources, risk, communication, and procurement into four comprehensive domains. These domains were entitled management domains to reflect their attributes of consolidation cohesiveness. These four domains enabled the design of the quadrant template as shown:

Quadrant Template:

a. Integration and Governance;

b. Delivery (Time, Cost, Scope, Quality);

c. Risk and Uncertainties; and,

d. Corporate Support (Human Resources, Communications, and Procurement)

In the initiation process, each of the ten eGovernment challenges was compared to the four management domains with the intent to describe the information that was required to plan, execute, and control those processes that were consolidated in each domain. The detail of this analysis is outlined in Appendix V; these findings are duplicated below:

eGovernment challenges	
1. Stakeholders	
	a. Integration and Governance • Prepare a 'signed off' stakeholder accountability and sponsorship report that outlines and weighs stakeholder interests, influence, impact and responsibility with respect to the project planning, building and operations • Design a stakeholder governance structure that reflects stakeholder contribution and accountability
	b. Delivery (Time, Cost, Scope and Quality) • Identify specific stakeholder commitments to monitor the project quadrant (time, cost, scope and quality)
	c. Risk and Uncertainties • Establish risk tolerances for stakeholders interests and impact and identify the preferred risk management approaches
	d. Corporate Support (Human Resources, Communications, and Procurement) • Prioritize and classify individual stakeholder interests and reporting requirements (Human Resources, Communications and Procurement)
2. Challenge to blend technology, people and processes	
	a. Integration and Governance • Develop model to design appropriate balance of resources and impacted processes, and update throughout life of project • Complete an assessment of existing and emerging technology • Review the government and private sector workforce and complete a best practices evaluation
	b. Delivery (Time, Cost, Scope and Quality) • Devise a project delivery model that integrates and coordinates through technology, people and processes the projects interdependent requirements
	c. Risk and Uncertainties • Develop a government wide framework to integrate technology (desktop, service centres, networks), government wide processes (information management, human resources, finance, procurement), program delivery processes, and the public and private sector resource bases • Identify the risks associated with the government wide framework

	d. Corporate Support (Human Resources, Communications, and Procurement) • Classify corporate constraints and ways in which the organisation can contribute to balance of technology, people and processes through financial and resource planning legislative and mandate constraints and project product programs • Identify corporate capacity with respect to human resources, financial management and procurement vehicles
3. Outdated business models	
	a. Integration and Governance • Develop a citizen centric business model that accommodates intra-governmental legislative mandates and societal goals, and recognises eGovernment environment of horizontal, transformational and unprecedented requirements • Ensure that the model reflects central agency policies and standards, a central service for IT infrastructure and a departmental commitment to application delivery
	b. Delivery (Time, Cost, Scope and Quality) • Recognise the circumstances and environment of an eGovernment project that is more organic and fluid, and requires the research and validation of the funding and approval criteria within the business model • Create a business models that consolidates network, desktops and data centres • Shift the Internet from publishing environment to a community participating environment
	c. Risk and Uncertainties • Identify specific eGovernment risk management approaches by considering government wide activities with citizens, businesses and employees that are conducted within a government policy and legislative framework
	d. Corporate Support (Human Resources, Communications, and Procurement) • Identify corporate processes to ensure communications, human resources and procurement processes are addressed
4. System development models	
	a. Integration and Governance • Develop a model framework that incorporates intergovernmental vertical legislative mandates, enterprise wide objectives and business product requirements
	b. Delivery (Time, Cost, Scope and Quality) • Work to integrate and technology enable systems development and project management methodologies to allow for flexibility in evolving requirements, and termination of separation of requirements identification by internal/ employee group and construction by external/private sector group. • Create technology enabled governance oversight mechanism by stakeholders community to report upon cost, scope, schedule/time and quality

	c. Risk and Uncertainties • Identify risk management practices for consideration within systems development and project management frameworks
	d. Corporate Support (Human Resources, Communications, and Procurement) • Identify potential impact on the corporate work load to ensure mechanisms are in place to proceed with systems development activity including developing contracting mechanisms to recruit personnel and purchase technology
5. Lessons learned	
	a. Integration and Governance • Establish a governance regime to identify, assess and incorporate lessons learned
	b. Delivery (Time, Cost, Scope and Quality) • Conduct review of best practices from other projects (literature review of lessons learned) to establish benchmarks to guide how project is managed and effectively implemented
	c. Risk and Uncertainties • Highlight comparable historical risks that have occurred and examine associated mitigating measures
	d. Corporate Support (Human Resources, Communications, and Procurement) • Review best practices from previous project based Human Resources, Communications and Procurement experiences
6.Unreasonable promises	
	a. Integration and Governance • Assess promises of cost effective enhanced functionality and develop discounted delivery strategy (promise low, deliver high) • Establish a stakeholder participation framework to validate key expectations through requirements traceability matrices, proof of concepts, pilots and operational readiness reviews
	b. Delivery (Time, Cost, Scope and Quality) • Develop value based promises and expectations (modernization and technology enabled) as opposed to performance measures
	c. Risk and Uncertainties • Establish risk review program and relate to project value/modernization/societal objectives. • Conduct review of mis-promised objectives and assess impact of overpromising/under delivering
	c. Risk and Uncertainties • Establish risk review program and relate to project value/modernization/societal objectives. • Conduct review of mis-promised objectives and assess impact of overpromising/under delivering
	d. Corporate Support (Human Resources, Communications, and Procurement) • N/A

7. Unwieldy information	
	a. Integration and Governance • Develop a governance framework to oversee and direct project customer relationship management, product direction and project service implications
	b. Delivery (Time, Cost, Scope and Quality) • N/A
	c. Risk and Uncertainties • N/A
	d. Corporate Support (Human Resources, Communications, and Procurement) • N/A
8. Lack of holistic approach to project management	
	a. Integration and Governance • Transform organisation to integrally imbed project management into its identity (similar to financial management practices); organisational reform gives project manager credibility to step between boundaries.
	b. Delivery (Time, Cost, Scope and Quality) • Implement project management indoctrination across business lines to encourage acceptability, growth and maturity of project management discipline, arbitrator and delivery agent role
	c. Risk and Uncertainties • Identification of risk areas up development stream and along implementation process to assess risk areas at the boundaries and peripherals of the project
	d. Corporate Support (Human Resources, Communications, and Procurement) • Assess the impact on resource sharing (people) and procurement
9.Access to subject matter expertise	
	a. Integration and Governance • Develop framework to incorporate subject matter expertise relative to client demand and satisfaction, technology directives, project performance and manageability, policies and standards and governance
	b. Delivery (Time, Cost, Scope and Quality) • Identify quality requirements from subject matter experts to guide and develop project scope and quality parameters
	c. Risk and Uncertainties • Projected risk areas shared from experience of subject matter experts
	d. Corporate Support (Human Resources, Communications, and Procurement) • N/A

10. Government as single enterprise	
	a. Integration and Governance • Develop a governance framework to assist with increasing ministerial accountability, public concern with government services and products, and increased need to homogenize government wide activities conducted by individual ministries
	b. Delivery (Time, Cost, Scope and Quality) • Identify links to corporate systems and objectives • Commit to modernise eGovernment by acting as a single enterprise using approaches and shared internal services, wherever possible
	c. Risk and Uncertainties • Identify breath of project as it affects the enterprise wide application, identify key areas to make it work and common enterprise wide processes that could be impacted by the project (like financial and personnel activities)
	d. Corporate Support (Human Resources, Communications, and Procurement) • Incorporate government functional communities (CIOs, IM leaders, Service leaders, Security Domain leaders)

The mapping of the compendium of ten transformational eGovernment challenges and barriers with the domains was replete with complexity, duplication, and repetition. The data analysis from the mapping was not able to identify new and useful specific information that would contribute to transformational eGovernment project management. The author's research results, along with discussions among members of the eGovernment Consultation Committee concluded that the research proposal was inoperative because of an ineffective design.

Nonetheless, the research completed provided value for this thesis research and to the eGovernment Consultation Committee. It was a collective learning experience to identify and evaluate the quality of information required in terms of data type, accessibility, format, and relevancy to help manage the ten transformational eGovernment challenges and barriers throughout the information life cycle. It was useful to highlight the need for this information requirement to be addressed in the project management initiation process described in general project management methodology.

The author's review and assessment with the eGovernment Consultation Committee confirmed that the research design and execution did not yield the desired results. However, it did serve to better articulate the weak areas in the project management processes that contribute to the ineffective project management within transformational eGovernment environment.

5.2.2 Proposal # 2 Government of Canada Case (Appendices VIII and IX)

Proposal # 2 – Government of Canada Case – Inputs/Outputs Project Initiation Enhancements); and 3 Canadian Case Studies Government of Canada Case – Test 1, 2 & 3 (Appendices VIII and IX)

This proposal learned from experiences in Proposal #1 and thereby addressed the weakness in the generic project management methodology approach. This entailed identifying, collecting, and managing project information critical to the ten transformational eGovernment challenges and barriers uncovered during the life-time of an eGovernment transformational project.

The findings from Proposal # 1 suggested that the ability to support the effective project management of transformational eGovernment projects was based upon the capacity to create critical output documentation. Since throughout the planning and execution processes of eGovernment transformational projects, informational requirements evolve, they must be addressed and managed in terms of timing, content, and format. These findings confirmed that nowhere is this information management more important to the project management methodology approach than in the integration knowledge area which highlights the need for project information to be provided to eGovernment project stakeholders, including the project manager.

The Consultation Committee confirmed that information needed for the management of transformation eGovernment projects is not as readily available as it is for more traditional and legacy government projects because it does not readily respond to narrow transactional type information bytes. Rather, its information power emanates from different phenomena: such as theoretical eGovernment hypotheses that mesh with strategies surrounding project integration and interoperability; and relations with employees, citizens, businesses. Key performance indicators and the support information needed for these phenomena are not always defined.

To satisfy the Input/Output model and data protocols the required data to be defined and the means to access and manipulate it had to be available so that required project management information could be produced in various forms of hard and soft copy presentations. During the review of the potential information that had to be collected for each transformational eGovernment challenge, it was concluded that a project management system, even informationally enhanced (and potentially technologically supported), would be strained to address the ten transformational eGovernment challenges. Because the data inputs could not be reasonably identified and collected, the corresponding output could not be effectively created.

Information for some of the ten challenges and barriers within the compendium could be developed: for example; information for some aspects of stakeholder management; information

for lesson learned; information related to organizational independence; and information supporting business modeling. Data for these eGovernment outputs could be identified, accessed, and theoretically weighted and ranked; and information could be derived.

Whereas information for some of other ten challenges could not be feasibly developed: for example; information to blend technology, people and processes; information for changing system development models; information that responded to the promises of interoperability, integration and savings; information needed to support project management as a driver; and the information that enabled access to subject matter expertise. Thus, for these eGovernment challenges the Input/Output model and data protocols could not practicably apply. Hence, they were determined unsuitable for further research involving the enhancement project management methodology.

Therefore, for the development of the next proposal, the author proposed that since addressing all ten transformational eGovernment challenges and barriers was unlikely due to the inability to collect data and manage data, perhaps there was a higher probability of success if the enhanced project management methodology could at least address the challenges more traditionally understood, and had within their purview, accessibility to better empirical data. Therefore, to continue to develop thesis proposals to at least improve some of the challenges, the author proposed to test six out of ten – the four more 'ethereal' in terms of data collection were set aside, to test if the more empirically based challenges could be improved.

Thus, Proposal #2 was developed to test the following six challenges by conducting an analysis of what information would have been required for three Government of Canada major eGovernment projects (cases); and if this data could be collected, what would have been its impact on the effective management and success of these projects. The six challenges selected were as follows: stakeholders; business models; lessons learned; information management; organizational interdependencies/blending people technology, people and processes; and governance/enterprise-wide transformation. The four challenges set aside were system development models; promises of interoperability, integration, costs and resource savings; project management as the driver; and access to subject matter expertise.

Six transformational eGovernment challenges and barriers were selected, and the input data identified for each of the three Government of Canada Cases. The requirements for the data input for each of the six eGovernment challenges is reported in detail in 'Proposal #2 – Government of Canada Cases – Test 1, 2 & 3' (Appendix VI & VII). The case names and description is provided below:

Case #1 - The Government of Canada Canadian Winter Olympics 2010 eGovernment application to provide Spectrum (Broadcast) telecommunications management and the telecommunication licenses to all the international broadcasters involved in broadcasting the Olympic Games through the use of Internet based technology;

Case # 2 – The Government of Canada National Research Council 2000 eGovernment initiative to provide enterprise resource planning systems (finance, personnel, operations, business intelligence) driven by employee/user Internet access and inquiries at a national level; and,

Case #3 – The Government of Canada Treasury Board Secretariat Secure Channel, Government On Line 2002 initiative to provide multi-channel, one-stop access to eGovernment services in a safe and secure environment.

For each of the three cases, data protocols were established to collect, manage, and analyze data input and product output. These protocols were applied specifically to each case to create case profiles that included case description and particulars of each of the ten transformational eGovernment challenges and barriers as they applied to the individual case .The details of the data input and product output are provided in Appendices VIII and VIX.

But in the final analysis, the volume and type of data input was overwhelming and beyond the scope of a single researcher. Since the capacity to accumulate the appropriate data precluded the use of Input/Output model, the goal of obtaining reliable output information became unachievable. As well, the informational evidence created did not contribute to assessing the feasibility of using project management to address transformational eGovernment barriers and challenges. In fact, it moved the analysis into a 'dumbed down' effort of filling in blanks while suffering a loss in focus to the ultimate proposal objective. (According to this author, this result was representative of too many current project management guides and software support that are afflicted with this failing.)

5.2.3 Proposal # 3 Project Concept Document

Proposal # 3 – Project Concept Document – Project Initiation Enhancements) (Appendices X and XI)

This proposal objective is to enhance project management methodology and thereby improve transformational eGovernment project management by developing a concept document which responds to the transformational eGovernment challenges and barriers in a manner that empowers the project charter to guide the deployment of eGovernment projects.

This research work on proposal #3 built on research proposals #1 and #2 by recognizing the need for quality information, and by ensuring that the research subject would be scoped to a manageable size and a measureable degree of complexity.

The overarching objective and theme of this research is to point to a solution that responds to the eGovernment challenges and complexities that were exposed and documented in the thesis research survey and the ensuing follow-up activities (consultation and international fora). Project management methodology with its process steps and activities endeavours to cover the complete project spectrum. By this broad and detailed approach, it is intended that all project challenges and complexities would be resolved. However, according to the author and international experts, there is a preponderance of experience that finds the project management methodology wanting, or often the use of them is suspect (Kerzner, 2001). It is this researcher's contention that it is less effective in the transformational eGovernment milieu with the myriad of government specific issues.

There is considerable discussion within the 'world' of project management methodology as regards: the role of the project manager; the project management place within the project initiation process, and the creation of the project charter. Proposal #3 and the advice of the experts' calls for earlier project management involvement and advocates more meaningful up-front-work before the major effort of project planning begins (Kerzner, 2001).

The concept document will provide transformational eGovernment project management with the early information needed to identify the changes to business processes that will respond to the compendium of transformational eGovernment challenges and barriers. As Jaklic and Stemberger (2009) discuss business process change, process integration is essential to eGovernment implementation success.

This researcher embraces the early involvement of project managers - the ones in a position to best assess the project feasibility and to identify the elements and support required for its success. However, this innovation though laudable only tilts at the short-comings of project management methodology particularly with respect to transformational eGovernment projects and initiatives.

Proposal #3 targets to strengthen project management methodology by changing its emphasis from a delivery method that guides activity from a project manager perspective. Instead, the focus of strengthening project initiation is to respond to the plethora of systems, processes, and practices that need to be aligned with cultural expectations, and the growing real and perceived benefits to citizens in an eGovernment transformational environment. The driver for the focus of project initiation is the proposition that every transformational eGovernment project must come to

grips, to some degree, with the synergistic force of the compendium and the impact of each of the ten research identified eGovernment challenges and barriers.

The first iteration of 'coming-to-grips' with the challenges must be completed before an effective project charter can be created. This work is reflected in the transformational eGovernment project concept proposal that includes an assessment of the projected impact on the synergistic feature of the compendium and of the impact of each of the transformational eGovernment challenges and barriers. In fact, it is this work that endows the charter with the strategic and operational power that is needed to guide the eGovernment project to successful fruition.

Proposal # 3 identified and documented, at a high level, the conditions for success by reviewing the information required for each transformational eGovernment challenge. The attached 'Project Concept Document – Information per eGovernment Challenge (Appendix VIII) describes the information required per challenge in order to set up the output required to meet transformational eGovernment needs. Appendix IX outlines in a table format a description of each transformational eGovernment challenge developed from the survey and follow-up analysis on the left, with a description on the right of the information required to manage and address this challenge. For example, the challenge to manage evolving stakeholder's interests and influence requires initially, the documentation of his/her interest and the relationship to the project to ascertain influence commensurate with his/her system use and resource contribution. The required enhancement in the project management methodology would be to collect and manage throughout the life of the project the evolving interests and changing influences so that the project manager and team members are aware of to whom to account (and whom to dismiss) as this information is often not available (and rarely overtly), and changes throughout the life of the project, making it always more difficult for the project manager to proceed, let alone 'forge' ahead. A summary response to this proposal for each transformational eGovernment challenge and barrier using this approach is provided below:

1. Develop an individual stakeholder profile including interests, resource contribution and relationship to and responsibility for the project and final product;

2. Identify and document the affected organizational processes, and the associated organizational units, affected personnel and impact on their responsibilities;

3. Document the project elements to meet the business model criteria that recognize the Internet as participatory citizen engagement and transformational government wide innovative solutions;

4. Operate with predisposition to document system development criteria that assumes 'save and reuse' expectations; assume working environment recognizes government wide operation and that requirements are often negotiated; ensure private/public sector relationship (builder/user) understands interests of both parties, and success is through collaboration and progressive elaboration (attitudinal/issue/managing expectations);

5. Document, share and review lessons learned;

6. Develop relevant/transformationally based (mission related/effectiveness of the approach) reasonable performance measures;

7. Include in an enterprise wide governance framework the responsibility for content and access to information;

8. Define the project manager responsibilities to manage the external and internal relationships, incorporate support services, and have the Governance support to 'push' the project into reality;

9. Include identification of and access to subject matter expertise in the project manager's authority; and,

10. Include recognition of government wide organizations in project manager responsibilities to cross boundaries to obtain subject matter expertise, locate information, identify barriers and legitimately 'will' the project forward.

This approach clearly outlines the importance of additional critical information in order to manage each transformational eGovernment challenge and barrier which initially may not be known or accessible to the project manager and team.

Based upon the consensus that the project concept document should address the above synergistic ten challenges, the 'Proposal # 3 - Project Concept Document – Data Entry Requirements' (Appendix IX) outlined the data input required in the methodology to produce the project concept document. This input data was based directly on the outcome expected from the project concept document in order to initiate and effectively manage the interrelated challenges throughout the life of the project.

The results of the analysis to produce a concept document within a fluid, changing and inter-dependent government environment challenged for the third time within the development of the three proposals, the feasibility of collecting, tracking and analyzing data that would be helpful to the project manager or governance committee to secure transformational eGovernment success.

The project concept approach though emerges as the best proposal to focus on the synergistic aspect of the compendium of ten transformational eGovernment challenges, and comes the closest to being a useful tool to the project manager and the project. Perhaps if the project concept document was developed as a guideline within project management methodology or incorporated as part of the project charter, it might have some 'legs'. But in an informationally enhanced and potentially technology enabled solution, the data complications overtook and subsumed its value. Further research is required to consider the full impact of incorporating the ten transformational eGovernment challenges (even additional or different ones) within a project concept document and/or the project charter, and the remaining implications within the project management methodology.

The author along with the eGovernment Consultation Committee concluded from all three proposals that there is a gap in the informational and technological support to project managers and transformational eGovernment projects – some comes from inadequate reflection or understanding of the project in advance; some comes from changing circumstances and needs throughout the project; some comes from political, organizational or technological pressures that influence system design; and some comes from a lack of attention or understanding to the implications of managing eGovernment projects that current support tools do not effectively address.

The conclusion of this research is that eGovernment could be more successful internationally and make more transformational progress if the transformational eGovernment challenges and barriers and their impact on project management were understood, articulated, discussed, and appreciated; as well as being incorporated and inculcated into the project management process. This thesis concludes with the identification of the need and interest to work through conferences, publications and additional research projects to raise the level of understanding of private and public sector officials and academics to appreciate the transformational eGovernment findings, and to continue to challenge the adequacy of project management tools in an eGovernment environment.

5.3 Chapter Summary

The Research Findings in Chapter 5 outline the key results and outcome of this research. It highlights the critical ten transformational eGovernment challenges, not otherwise reported as a unique synergistic set of interrelated challenges that inhibit eGovernment success, nor summarized nor discussed *en masse* in the literature review (Aikins, Preface, 2012). It introduces project management as the potential powerful catalyst and enabler to the management of transformational eGovernment projects if it were informationally enhanced and designed to

respond to the unique requirements and complexities of transformational eGovernment projects. This chapter also summarizes the work of comparing each of the ten eGovernment challenges to the international project management methodologies and it indicates where there are references in the literature, even if only tangentially and not exactly as identified in the research findings. This chapter offers potential improvements to project management methodologies through informational enhancements that could allow the methodologies to meet the task of supporting eGovernment transformational projects, and contribute to international transformational eGovernment success.

Based upon the requirements identified through comparing the compendium of eGovernment transformational challenges and barriers to the project management methodology, this chapter summarizes the three proposals developed to strengthen the project initiation process (the theory based section) in the project management methodology. The first proposal is the Quadrant Template; the second is the Government of Canada Test Cases; and last is the Project Concept document. All three proposals focused on addressing and collecting information requirements to meet the transformational eGovernment challenges. Each proposal validated the ineffectualness of project management methodologies in meeting transformational eGovernment needs, and all examined the potentiality for improvements, but the concept document proposal held out the most promise.

6.0 CHAPTER 6 - EVALUATION AND ORIGINAL CONTRIBUTION

The research conducted for this thesis emanated from the practitioner's knowledge and interest in analyzing underlying problems that seemed to have eluded so many countries in advancing transformational eGovernment. The research was also undertaken with an interest to learn from the academic discipline the approach to conduct research, and share these findings with academics and practitioners alike.

The strength of this thesis was based upon the literature review supplemented by the practitioner's knowledge of international contacts and organizations to analyze, study, articulate problems, and test solutions to address the lack of eGovernment progress and the difficulties in advancing transformational eGovernment. The practitioner, business, and academic roles provided the gate-way to delve into these problems with countries and organizations from around the world. In addition, it facilitated the opportunity to work together in identifying the problems, and in designing solutions that would be practical, relevant and implementable by both government and private sector officials.

The thesis contribution according to the guidelines outlined by David Whetten (1989) was made by describing informational enhancements that could be introduced into the generic project management methodologies to enable transformational eGovernment to overcome or reduce the transformational eGovernment project management failure rate. These enhancements were developed by testing three project management proposals against the compendium of transformational eGovernment challenges and barriers that were identified in the thesis research findings through the literature review; the survey findings; the survey follow-up and analysis; and the validation of findings by international transformational eGovernment experts.

The thesis original contribution framework was based on the thesis finding that transformational eGovernment is progressing slowly and ineffectually. (Roy, 2006; Aikins, 2012a, Movahedi, Tan, and Lavassani, 2011) and that there is a compendium of transformational eGovernment challenges and barriers that if overcome, would improve transformational eGovernment progress. The thesis original contribution is further advanced by proposed informational modifications to the generic project management methodologies to ameliorate the negative impact of the transformational eGovernment challenges and barriers.

Thus, the compendium of transformational eGovernment challenges and barriers and the associated informational enhancements to generic project management methodologies are at the core of contribution framework, as further explained.

First, there is value-added contribution to transformational eGovernment current thinking with respect to the compendium of transformational eGovernment challenges and barriers in that individual challenges and barriers have been more fully described, validated, and assessed as to their impact on transformational eGovernment. As well each of the challenges and barriers has been deployed to assess the effectiveness of the generic management methodologies.

Second, of greater value-added contribution to the current thinking is the concept of the synergistic impact of the holistic compendium of challenges and barriers being greater than the sum of the individual challenges and barriers. The contribution to value-added thinking is further advanced by the hypothesis that transformational eGovernment project management can be made to address the compendium by making and implementing informational enhancements to generic project management methodologies.

Third, the value-added contribution to existing transformational eGovernment practices is that solutions are proposed for the thesis findings of deficiency in transformational eGovernment project management. Beyond this, the implementation of the thesis validated findings could alter or contribute to current research practice by directing its focus to investigating ways to strengthen transformational eGovernment project management by contributing to the dearth of literature on the impact of project management on transformational eGovernment success.

In addition to the contributions discussed above, the thesis findings could be extended to the public sector policy makers, decision makers, and project managers by adopting the solution to transformational eGovernment project management that was developed during the thesis execution chapter. The solution would be extended to transformational eGovernment practice by incorporating it into the generic project management methodologies primarily at the project initiation stage but throughout the life of the project as covered by the generic methodologies.

By incorporating the solution into the generic project management methodologies wide-ranging benefits would accrue.

First, the most direct beneficiaries would be the thesis stakeholders (survey respondents, advisory committee members). They could further test research findings and the research solution, but now they could do so under the auspices of generally accepted best practices.

Second, public sector policy makers and decision makers would benefit by sharing in and assessing the results of continuing tests of this thesis findings of a compendium of eGovernment challenges and barriers and the proposed solutions to them. These policy and decision makers could develop and assess transformational eGovernment policies by applying them to projects

that had a higher probability of success and thereby have the opportunity to assess their policies and decisions without having to factor out the impact of project management failure.

Third, transformational eGovernment project managers would benefit because they would now be equipped with a project management concept initiation document that enhances the generic management methodologies that they use as a management guideline and source of best practice. More specifically, transformational eGovernment project managers are provided with a management process that addresses the synergistic impact of the compendium of challenges and barriers with a tried and tested solution to improved project management.

6.1 Evaluation Methodology and Limitations

- The researcher as participant

  The author is knowledgeable with the material and appreciates the requirements and responsibilities involved in managing and delivering eGovernment projects. The author is not an outsider but an unbiased interpretative agent.

  Because the author is not an outsider, it may be concluded that the lack of objectivity impacts the validity of the findings. However, the capability of a seasoned practitioner to interpret and understand the world wide eGovernment barriers and to articulate in a manner that is understood within the ICT and digital industry is interpreted as strength in this particular analysis. Without the knowledge of eGovernment issues and the collegial relationships with international ICT organizations, this undertaking would not have progressed. An external researcher would not have been able to 'finesse' the discovery and examination of these issues, nor would the researcher have had the credibility to collaborate and converse with the WITSA 67 countries, United Nations, and the World Bank. In addition, the efficacy of this research has been constantly re-confirmed by international organizations, academics, and think-tanks through ongoing liaison by the author.

- Survey Instrument

  The author's WITSA survey instrument and follow up interviews were qualitative in nature with the objective of gaining an in-depth understanding of the humanistic and other reasons for transformational eGovernment failures.

  The WITSA survey was designed by the author and supported by ICT officials working in the eGovernment industry. It was designed to not only identify and cull out the problems

that impede eGovernment from an academic perspective, but also to generate a hypothetical solution that could be embraced by all participating countries.

The analysis of the findings was completed by the author and often required follow-up and 'teasing' out the understanding so that the problems could be articulated. This was complicated because of language barriers, cultural settings, and country specific priorities. In addition, it was influenced by differing interpretations as to the definition and interpretation of what eGovernment was, and what it could be since there has been such a wide range of interpretation on the definition and objectives of eGovernment (OECD 2001). As far back as 1999 (Government of Canada, 1999), it was described as improvements to service delivery through the use of the Internet. This was not meant to be limited to the creation use of websites and online transactions but to reform and modernize the public sector through the use of the Internet (Roy 2006). But varying opinions in terms of what was possible and measurable were exacerbated by the position of the country respondent on the eGovernment continuum; emerging to transformational, and developed to undeveloped.

In addition, the first and primary survey received 36 responses (53%). The data collection was based upon an on-line system designed by LJMU personnel. Additional efforts in communication, follow up, introduction, and improvements to the survey design and delivery itself would have raised the response level. For example, in light of the vast variance in eGovernment experience, it might have been more effective to have 'telephone interviews' instead of a written survey. However, the small focused surveys were valid in identifying the challenges to transformational eGovernment effectiveness

- Respondents

The WITSA respondents were usually the head (the most senior position) in each country's national technology association. They represented the private sector and their interest was to be helpful to government officials to advance eGovernment while promoting the use of their countries technology resources and companies. Perhaps these positions were too political to be familiar with the day-to-day 'coal face' challenges of implementing eGovernment but the author's subject matter expertise hopefully mitigated against these political data distortions.

- Research Scope

Upon the completion of this nascent research, it is evident that many other lines of inquiry could have been developed throughout the process to strengthen this analysis, and the relevancy of its findings.

In addition, a separate line of inquiry examining in greater detail the criteria and evaluation approach to international findings from the United Nations, Accenture, and Brown's University would have strengthened this research.

Also, closer ties with IBM to determine 'what could be feasible' in assessing project management enhancements including perhaps some technology enabled features would have been helpful. In addition, the development of a relationship with Project Management Institute (PMI), USA to share and discuss findings throughout the process would have been useful to assess the extent of generic project management methodology informational enhancements.

- 'Insitu' Testing

  The testing of project management proposed solutions could have been improved if they had been tested during execution or applied retrospectively to an eGovernment project. This would have quantified the additional value or impact of applying that particular solution to one or more of the ten identified eGovernment challenges. However, though laudable, this is unlikely due to the 'pressure cooker' environment of eGovernment.

- Researcher skill set

  The researcher/author has learned much throughout this academic exercise, and if the research were to be undertaken today, the approach and instruments would have been revised to create more substantive findings and testing of alternate solutions. In addition, the literature review would have been more targeted, and more in-depth with better information management on the relevance and significance of each of the references; i.e. to better manage and collate the documentation findings for effective access and cross referencing.

6.2 Original Contribution

Over the past decades, as a transformational eGovernment practitioner in the Government of Canada Federal Government, Independent eGovernment Consultation, and as a professor at the University of Ottawa, Canada, the author has experienced the operational practice and the academic theory (Roy, 2006; OECD 2001, Oxford Institute, 2007) surrounding eGovernment. Academic theory has long promised that harnessing information and communications technology to the business of government would resolve many of its social, economic, and even political problems. And operational practice is now accepting the practicality of moving ICT beyond

customer facing processes to back office structures and practices as the appropriate approach to achieve that promise (Weerakkody, et al., 2011).

However, progress remains slow and halting and this directly affected hands-on interface with the eGovernment theory and practice (Roy, 2006; Aikins, 2012a). It highlighted many of the eGovernment issues and challenges and it crystallized many of the disparities between eGovernment theory and practice. It led to the author's research into eGovernment.

This embryonic research effort began with information sharing and collaboration with fellow eGovernment practitioners, vendors and consortiums, special interest groups, and international organizations. This collaboration was focused on identifying and documenting a holistic assessment of the challenges and complexities impeding the operational implementation of eGovernment. This research work was enhanced by receiving an IBM student fellowship in 2007/2008 and the expression of intent by IBM in building a solution commensurate with problems and complexities. This initial research turned to in-depth eGovernment collaboration with international organizations such as the World Bank, the United Nations, and the World. Information Technology and Services Alliance (WITSA).

This research purports as an original contribution that individual transformational eGovernment challenges and barriers that have prohibited transformational eGovernment success that have not, heretofore been articulated to this degree or their individual and collective impact and significance documented in the literature. The literature does not provide a comprehensive understanding of each of the transformational eGovernment challenges and barriers that are identified in this thesis. Kamal, Weerakkody, and Irani (2011) confirm that there is a dearth of literature on the role of stakeholders and this supports that transformational eGovernment challenges and barriers have not been articulated to this degree in the literature.

Transformational eGovernment barriers are discussed in the literature. But there is little evidence, recognition, or documentation of a holistic and interrelated set of transformational eGovernment related challenges beyond the list of 'usual barriers suspects' cited as the common list that impede eGovernment adoption and systems development. There is no sense of the synergistic aspect of the impact of a compendium being greater than the sum of the individual challenges and barriers.

The list of ten transformational eGovernment challenges is offered as barriers over and above the 'usual suspects' cited as the common factors that impede eGovernment adoption and systems development. Sharon Dawes (2009) offers the following as the most common barriers: the purpose and role of government, societal trends, changing technologies, information

management, human elements, and interaction and complexity; Ebrahim and Irani (2005) offer IT infrastructure, security and privacy, IT skills, organizational issues and operational cost.

In addition to addressing the ten individual challenges, this research addressed the need and importance to recognize the devastating and crushing impact of the compendium itself as a holistic and interrelated set that needs to be addressed as well; to manage not only the individual 'parts,' but the 'whole' as well.

The result of this research was the recognition that sustainable transformational eGovernment is an ideals concept: a concept that has yet to holistically and comprehensively master the challenges and complexities that thread through eGovernment. Therefore, the thesis contribution from the research is described as the:

- Need for an informationally enhancement project management methodology by the proposed creation of a project initiation concept paper;
- Identification of interrelated compendium of transformational eGovernment challenges and barriers;
- Description of the individual ten transformational eGovernment challenges and barriers; and,
- Reduction in the gap between transformational eGovernment theory and practice.

A description of each of the contributions above is provided below:

6.2.1 Need for an informationally enhanced project management methodology by the proposed creation of a project initiation concept document

The original contribution of this thesis is the creation of a project initiation concept document that is to be incorporated in an expanded generic project management methodology in the initiation processes. But the route to arrive at this original contribution included conceiving, designing, and testing two other proposals; the results from the research of these proposals fortified the research work on the concept paper, the third and final proposal.

1. The first of the two eGovernment proposals was described as the 'Quadrant Template' (Appendix V), and it was a consolidation of the generic project management methodology processes and activities against the survey generated ten transformational eGovernment challenges and barriers. It was based upon the author's administered survey; followed up by individual respondent analysis; reviewed with the eGovernment Consultation

Committee, and supported by international discussions to enhance the project management methodology to improve the management and delivery of eGovernment projects.

This proposal assessed the effectiveness of the project management methodology to manage and deliver upon the research generated ten transformational eGovernment challenges and barriers with the view of identifying improvements to the methodology. Ultimately the analysis work in this proposal succumbed to complexity and repetition and it was concluded that its design was ineffective. However the design work led to a second proposal which focused on a rigorous management of project information during the project initiation processes.

2. The second eGovernment proposal to enhance the project management methodology was entitled 'Government of Canada Case – Inputs/Outputs' (Appendix VI) This proposal consisted of the creation of a data model that was constructed from routines and processes for managing data inputs, processes, and outputs; together with the data analysis needed to support the key transformational eGovernment project management challenges and barriers. Further, the proposal documents needed to maintain a technology capacity to manage the dynamic information required to monitor, control, and improve the management of the project, over time. The research work to arrive at the data model and the supporting technology included: confirmation of the research findings; development of a project management framework to manage the information needed to respond to the findings; collaboration and validation with eGovernment practitioners and ICT personnel; and documentation of results from the analysis of a group of three eGovernment test cases. However, the requirement to manage the detail in this proposal grew beyond the capacity of a single researcher. Nonetheless, the experience gained in this proposal was meshed with the experience gained from proposal #1, and all this was include in the third proposal.

3. The third proposal was an eGovernment concept document proposal (Appendix VIII) that was to enhance project management methodology. It began with recognizing the impact of the complexity and repetition in comparing the compendium of research generated ten transformational eGovernment challenges and barriers with the processes and activities in the generic project management methodologies. As well, it reflected the onerous need for information specifics and difficulty in providing technical support for managing the detail when completing the challenges/project management methodology comparison.

Experience at this point confirmed and scoped the research domain to the proposal of a project concept document to enhance the project initiation phase of the project management methodologies to address and manage the individual, as the group, the compendium of ten transformational eGovernment and barriers.

The project management initiation phase generally deals with only two areas – project integration and communications; and from this results the preparation of a project charter and the identification of stakeholders that are the starting points for the concept paper.

The proposed concept document enhancement provides a more comprehensive and rigorous management approach which is tailored to needs of transformational eGovernment challenges and barriers.

In summary, Proposal # 1 focused on data collection; Proposal # 2 on technology support; Proposal # 3 blends the two and proceeds in a more qualitative manner.

The concept paper document enhances eGovernment project management within the project management methodology by expanding the initiation process and integration area to include comprehensive definition, description and criteria.

The expansion results in a more comprehensive project initiation approach that includes:

- The (in context) definition of each transformational eGovernment challenge;
- Confining the scope and analysis of the transformational eGovernment challenges to the project initiation processes:
- The information area requirements associated with each challenge;
- The technological capacity needed to provide the information; and
- The role of the transformational eGovernment project manager and other stakeholders in preparing and monitoring the project initiation process within the enhanced project management methodology.

6.2.2 Identification of interrelated and synergistic compendium of transformational eGovernment challenges and barriers

The contribution of this research was to identify an informally enhanced project management methodology to support eGovernment, and for the first time, to document a single interrelated

synergistic set or compendium of challenges and barriers that impede the progress toward transformational eGovernment.

Other eGovernment research addresses some challenges and barriers in a singular or individual fashion (that touches on the challenges but does not comprehensively describe its impact or importance) but there is no literature found that identifies this particular comprehensive and interrelated compendium of impediments to transformational eGovernment.

6.2.3 Identification and description of the individual ten transformational eGovernment challenges and barriers that are lightly referred to in the literature

The third original contribution is the discovery and validation of ten individual transformational eGovernment challenges and barriers (raised in previous chapters) that are not extensively documented within the literature nor whose impact is understood. These transformational eGovernment challenges and barriers are described in the thesis compendium of challenges. But there is insufficient attention and analysis recorded in the literature even though each of the challenges is addressed, albeit in some instances only tangentially. The research with eGovernment practitioners, suppliers, and clients (businesses, employees, citizens, and other governments) has brought these limitations to light.

For example, the findings related to outdated business models that reward traditional applications; system development models affected by political realities and a new relationship with the private sector; challenge to continuously adapt to and blend technology, people and processes; and, lack of a comprehensive holistic approach to project management as the driving force are sparse.

The identification, description and validation of these challenges represent the third original contribution of this research.

6.2.4 Reduction in the gap between eGovernment theory and practice

While the examination and use of published literature contributed immensely to the research process and to the accumulated body of research knowledge, this author's research included knowledge contributions from close collaboration with individual countries and international organizations practicing and theorizing about eGovernment.

Throughout the research period, the author continually validated and improved upon the description of compendium of eGovernment barriers and challenges to success, and in the

design and examination of potential solutions through discussions with eGovernment officials and private sector experts (Appendix I) and international presentations (Appendix X). This included fact finding and follow-up collaboration on the research findings on the identification of the challenges and barriers as well as the value and opportunities within project management methodologies to address its limitations.

This collaboration not only contributed to the research body of knowledge but helped to close the gap between the proponents of eGovernment academic theory and the stakeholders of eGovernment development, operations, and use. This research practically addressed two of the more recognized problems and complexities of eGovernment (stakeholders and lessons learned). It made an assessment of the project management methodology against the findings from the literature review and the follow-up collaboration identified significant project management short comings. It resulted in a proposal to enhance project management in narrowing the knowledge gap between eGovernment and project management practices and theory.

6.3 Chapter Summary

Sustainable eGovernment transformation remains an elusive target and has yet to significantly enhance government's role in society (Aikins, 2012). The paradigm of efficiency, client-centricity, and service 'seduction' has not been introduced throughout the transformational eGovernment milieu: practitioners; technology enablers; decision-makers; clients (employees, citizens, and other governments); and all other eGovernment stakeholders. There still remains a yawning gap between transformational eGovernment theory and operation.

This research contributes to closing the theoretical/operations gap and promulgating the eGovernment transformational paradigm throughout eGovernment, world-wide. It increases government's body of knowledge; focuses the knowledge holistically on eGovernment challenges and barriers; and it shares the knowledge to practitioners and theorists alike.

This chapter outlines the limitations of the research along with proposed additional research lines of inquiry to supplement aspects of this limitation. It offers a proposed summary for consideration of a set of original contributions. This set of four is made up of:

- an enhancement of eGovernment project management practice by the proposed creation of a project initiation concept document;
- a validated compendium of ten transformational eGovernment challenges and barriers;

- the discovery and validation of un-documented challenges and barriers, that are now included in the compendium; and,
- a reduction in the gap between eGovernment theory and practice via project management.

This thesis research adds to the world wide eGovernment body of knowledge and it brings a more consolidated, academic/practitioner approach to further research and development of transformational eGovernment.

7.0 CHAPTER 7 – CONCLUSION AND FUTURE WORK

eGovernment has not been the success originally envisioned around the world when initiated over ten years ago (Roy, 2006; Aikins, 2012). Even in Canada, where eGovernment was rated number one in the world for five years (Accenture, 2005), the revolutionary changes to Government administration and democracy have not materialized. Many champions of technology in government and industry alike are convinced that we have only begun to scratch the surface of digital innovation (Roy, 2006). eGovernment's first decade has arguably been much more transitional than transformational (Roy, 2006). And around the world, progress has been even less (Aikins, 2012). Why has eGovernment not attained the promised success?

This research analyses the challenges and barriers to advancing transformational eGovernment around the world and explores the feasibility of improved project management. It uncovers impediments not previously documented, provides a holistic synergistic compendium of ten challenges that impede eGovernment success, and assesses the feasibility of using project management to address some of these impediments and advance eGovernment progress

7.1 Summary of Chapter I - Introduction

The introduction introduces the research problem, its purpose and importance, the hypothesis to be tested, and the research approach to undertake its development and analysis.

7.2 Summary of Chapter 2 - Literature Review

The literature review uncovered compelling and reflective material with respect to eGovernment; how it progressed in various situations; how it applied to different levels of government; and how it was undertaken and managed in different countries.

The literature did identify project management techniques that were included in existing generic project management methodologies and that applied to the traditional project management issues such as scope, cost, schedules, risk, and communications, as well as the usually cited ICT system impediments.

In addition, this chapter summarized the international country wide ranking systems to rate eGovernment success around the world [Accenture 2005; United Nations 2010; West, D. (Brown's University) 2006]. It also examined the project management methodologies and the ongoing difficulties in managing and delivering on large, complex IT systems – but did not

uncover specifically the opportunities to strengthen and enhance project management methodologies to address eGovernment success.

7.3 Summary of Chapter 3 - Research Design

The research design chapter outlined the approach to conduct the research; namely, the use of an international survey and its follow up and validation to identify transformational eGovernment challenges and barriers; the commitment to examine the generic project management methodologies as a solution; and the interest in examining informational enhancements to the generic project management methodologies to improve eGovernment success. In addition, this chapter focused on the identification of corroborating evidence for each of the survey findings identified challenges and barriers.

The chapter also outlined the application of mixed methods research (Creswell, 2006a) as the most relevant research methodology because it enabled the author to use quantitative and qualitative data; it promoted a wide array of research techniques; it encouraged collaboration; it allowed the author to engage different parties; and it permitted the author to participate in the research activity and bring to bear the author's academic and practical knowledge and experience on the research subject.

7.4 Summary of Chapter 4 - Research Execution

The research execution chapter focused on the author's approach to conduct, design and administer the survey and its follow up analysis and validation to an international organization, and the approach to examine options to strengthen the generic project management methodologies in addressing the eGovernment challenges by developing three proposals to enhance project management; and ultimately recommending the last one, the development of a project concept document to the project management initiation process as the most relevant and feasible.

This chapter also included corroborating evidence in the literature based upon the survey and associated generated findings namely; the importance of stakeholder management, the difficulty in adapting technology, people and processes; the proliferation of information; constantly improved system development models and evolving relationships with the private sector; access to subject matter expertise; and the challenges in completing and having access to lessons learned. However, the literature review did not uncover analysis on outdated business models; question the promises of interoperability, integration and savings; consider project management as a holistic driver of eGovernment solutions; nor did it address the unique challenges of dealing

within government/enterprise wide applications. And this author did not locate a composite summary of the ten specific findings in this research on the challenge and barriers that have eluded international transformational eGovernment success.

7.5 Summary of Chapter 5 - Research Findings

The research findings of a synergistic compendium of ten challenges and barriers that impeded transformational eGovernment were identified (and summarized below), and tested against the three project management enhanced proposals. Analysis of the test results from the three proposals concluded that the project concept document was the most appropriate proposal. This conclusion was supported by additional testing, analysis, further examination, and research into the proposal's feasibility and its measured levels of success.

The compendium of the ten eGovernment challenges and barriers was uncovered as a result of the design and delivery of the author's survey administered to an international organization. These challenges were matched against the effectiveness of project management as the enabling tool to drive and successfully implement transformational eGovernment since project management had been declared a major contributor to eGovernment failure.

Project management processes from the generic project management methodologies were used to match against the ten survey-generated challenges. And within generic project management methodologies the project initiation processes were determined to be the most appropriate one selected. The purpose of the match was to determine and document the strengths and weaknesses of project management with respect to coping with the challenges and complexities of eGovernment.

Each of the ten challenges and barriers was compared to the generic project management methodologies, and three sets of informationally based improvements to the project management initiation process were tested for feasibility and practicality. The last proposal which was the inclusion of project concept document as part of the project management methodologies, project initiation process was determined to be the most effective and most likely to be developed.

Never before has this specific composite and set of holistic compendium of challenges and barriers that impede the progress of transformational eGovernment been presented. The thesis research findings identified the following ten critical transformational eGovernment challenges and barriers:

1. Requirement to manage diverse and conflicting stakeholder interests within a governance framework;

2. Challenge to continuously adapt to and blend technology, people and processes;
3. Outdated business models that reward traditional applications;
4. System development models affected by political realities and a new relationship with the private sector;
5. Lack of access to lessons learned and a body of knowledge for government wide projects;
6. Promises of interoperability, integration, and cost and resource savings;
7. Proliferation of information and the challenge to judiciously access and manage information;
8. Lack of a comprehensive holistic approach to project management as the driving force;
9. Limited access to vital subject matter expertise; and,
10. Organizational environment not presupposed to enterprise wide transformation

The research examined project management methodologies as a tool to mitigate these challenges and promote eGovernment progress. The findings were that the methodology did not contain the processes or knowledge areas that specifically and directly responded to the transformational eGovernment challenges and barriers. It studied the feasibility of designing an informationally enhanced project management methodology to drive citizen centric service delivery to transform and modernize government services and government operations.

The research findings are not conclusive as they have not yet been fully tested. However, they do lead to the conclusion that if the project concept document is embraced and each of the ten challenges is analyzed and assessed within the initial project initiation process, transformational eGovernment success is more likely.

7.6 Original Contribution

This chapter's introduction first describes the thesis research limitations and then the thesis theoretical contributions were discussed.

The research limitations were focused on the additional research work that was required to test the thesis proposed solution, the transformational eGovernment project initiation concept document, by including it in the generic project management methodologies.

The thesis contribution section draws on the chapter introduction information to fully describe specific original contributions by identifying a compendium of transformational eGovernment challenges and barriers and by proposing enhancements to project management methodologies. More broadly the thesis provides value-added contributions to eGovernment current thinking, existing transformational eGovernment practices; and present policy and decision-making arrangements and mechanisms.

The thesis original contribution section described the following four specific original contributions and then it outlined how each individual contribution affected the slow progress of transformational eGovernment that was being researched throughout the thesis:

- Need for an informationally enhancement project management methodology by the proposed creation of a project initiation concept paper;
- Identification of interrelated compendium of transformational eGovernment challenges and barriers;
- Description of the individual ten transformational eGovernment challenges and barriers; and,
- Reduction in the gap between transformational eGovernment theory and practice.

7.7 Future Work

The transformational eGovernment success through enhanced project management that is outlined in the thesis can be further developed by future research in the following areas:

- Corroborate the impact of project management on transformational eGovernment success

Further work is required to determine the culpability and impact of project management in transformational eGovernment success and failure. Though a few private sector studies and academic literature attributes approximately up to an 85% failure rate in eGovernment due to project management, an additional academic and private/public sector focused literature review is required as corroborating evidence to support this statement, and understand in more detail the precise aspect of project management that falls short of contributing to project success.

In addition, further work is required to determine the relevance and suitability of current project management methodologies to meet the needs of transformational eGovernment systems. This

examination would include the identification of the governance environments that requires and benefits from the step-by-step planning process for project management and product development. In addition, it would address the project manager and stakeholder/user needs to adopt a more results driven systems thinking approach to project management and outcome and system success. These are only two elements that could be examined through the lens of project management in the 21st century; this work would further develop this concept and examine the relevancy and currency of the most commonly used project management methodologies.

- Test 'insitu' the impact of the project concept initiation document enhancement to project management methodologies on eGovernment applications

Further work is required to test the effectiveness of the project concept initiation document enhancement on actual eGovernment applications. This could be achieved by setting up a base rating of the effectiveness of existing eGovernment applications by eGovernment experts. These experts would participate in the design of the criteria, and develop a standardized measurement of success and failure.

These eGovernment experts would conduct two reviews; the initial review would be to assign a rating based upon the standardized measurement developed above to each eGovernment application selected. They would then conduct a secondary review and produce a rating based upon the incorporation of the project concept document had it been in effect. In this way the eGovernment application would be retrospectively examined with the proposed enhancement applied to an actual eGovernment project (post implementation).

A comparison between the two ratings would be a proxy for the potential impact had the enhancement been applied during project implementation i.e. 'insitu'. This approach is recommended as the incorporation of a non-tested project conception document enhancement to a 'live' system is not feasible, nor recommended.

- Corroborate the relevance and impact of the individual and composite eGovernment challenges and barriers, and the feasibility of project management enhancements to address them

Further work is also required to update and test the current validity of the synergistic compendium of 10 transformational eGovernment challenges and barriers outlined in this thesis. This compendium would benefit by an assessment by current eGovernment project managers and interested international parties to corroborate and update these findings and their applicability to evolving eGovernment environments. This examination could take place by conducting a focused literature review and survey and/or structured interviews probing in detail the challenges and

barriers that hinder success in today's complex organizational, systemic and political environment. It would also re-examine the appropriateness and flexibility of project management methodologies as a mitigating agent and whether other solutions may be entertained; for example policy and procedural improvements or changes to the system development methodologies.

- Conduct a case study analysis of country-wide transformational eGovernment project failures.

This field of research would also benefit by the development of a lessons learned repository of the key factors and results of a number of country-wide transformational eGovernment project failures. This could be achieved by developing a case study summary for critical and representative projects, interviewing key players, and the examination of documentation.

7.8 Concluding Statement

The conclusion from this research is that the generic project management methodologies, originally designed to address the industrial and manufacturing age (Kerzner, 2001), does not adequately respond to the needs of today's discipline, various organizational and cultural environments, and the pervasive information age. Along with the specific demands of eGovernment and horizontal and collaborative working relationships, projects now pervade and change the business rules, organizations, policies, governance, regulations, privacy and security arrangements. The need to work across organizations and jurisdictions, and create solutions that are a product of progressive elaboration and negotiation is a more critical dimension to project management. Project management has not yet evolved to a state where it can become a force in the solution. It does not bring value from technology, and does not facilitate radical changes to organizational arrangements, reengineered business processes, or more client focused human resource behavior. This failing introduces the possibility of considering the use of an informationally enhanced project management methodology to potentially address some of these issues, especially the management and integration of the information content (Sarantis and Charalabidis, 2011; Shah, Khan, and Khalil, 2011; Aikins, 2012). And this failing also highlights the need for technological support within the project management discipline which is beyond the scope of this research.

The research survey, data corroboration and analysis, and testing of project management solutions identified a synergistic holistic compendium of key eGovernment challenges and barriers that are not being responded to nor coped with by existing project management methodologies. Test results from three proposed project management enhancements concluded with a thesis recommendation that project management methodologies be enhanced through the

incorporation of a project initiation concept document that focuses on the compendium of barriers, augments and strengthens project management capacity, reduces project failure rates, and reinvigorates transformational eGovernment.

The creation of a project concept document in the project management initiation process proposed here will ameliorate these project management failings, and provide a proactive transformational eGovernment approach. Designing an informationally enhanced project initiation concept document process that identifies and manages the key challenges and barriers to transformational eGovernment will contribute to the success of eGovernment projects.

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APPENDIX I

eGOVERNMENT CONSULTATION COMMITTEE

- Canadian eGovernment Executive Advisory Group
  - Government of Canada executives (Ottawa/Vancouver, Canada)
  - CGI, IBM, Bell, Accenture executives (Ottawa/Vancouver, Canada)
  - Independent Consultants (Ottawa, Canada)
  - Retired executives (Ottawa, Canada)

- World Information Technology and Services Alliance
  - Secretariat (Washington, USA)
  - Members (67 countries)

- United Nations
  - Centre for Electronic Governance at United Nations University – International Institute for Software Technology (Macau, China)

- World Bank
  - eDevelopment Thematic Group, Global ICT Department, World Bank (Washington, USA)

August 9, 2006

APPENDIX II

WORLD INFORMATION TECHNOLOGY AND SERVICES ALLIANCE
eGOVERNMENT SURVEY

Introduction:
Thank you for contributing to this international e-government questionnaire by sharing your perspective, responding to the following questions, and for welcoming inquiries from your WITSA colleagues from around the world to learn and benefit from your experiences. This questionnaire is divided into 2 parts. Part I addresses the basic elements of your country's approach, experiences and progress in e-government. Part II provides you with the opportunity to offer case studies and contact information to celebrate your successes internationally and to share with your WITSA colleagues. Please note that there are ratings for most questions, and the opportunity to provide additional comments throughout the questionnaire.
Purpose:
The purpose of this questionnaire is to create a network of contacts and e-government solutions for WITSA members to learn from your country's expertise in pursuing individual e-government solutions. It also offers you the opportunity to celebrate your country's individual successes in e-government with your WITSA colleagues and international e-government centres. In addition, it examines the underlying problems and challenges in advancing e-government around the world.
PART I **E-GOVERNMENT EXPERIENCES AND COUNTRY APPROACH**

1. Contact information:
a. Country name:
b. Your name:
c. Title/Role:
d. Phone number:
e. Email:
2. E-government strategic information:
a. Does your country have an e-government policy? 1. No policy 2. Limited policy 3. Fully developed policy Please describe
b. Have there been any substantial (measurable) improvements as a result of your e-government actions? Yes No If yes, please describe
c. Which of the following best represents your country's primary interests or motivations in pursuing e-government? (Please rate each of the following in order of importance if possible; # 1 indicates the most important and # 9 the least important.)
i. Reduce costs and number of personnel ii. Improve government efficiencies iii. Provide citizen centric services iv. Proceed with public service modernization

v. Offer promises of interoperability and integration

vi. Take advantage of technology advancements

vii. Demand for 24/7 services through the Internet

viii. Shared infrastructure and security between programs and departments

ix. Other – Please describe

d. Does your country have a definition of e-government?

Yes /No If yes, please describe

e. Does your country have a strategic approach for e-government applications?

Yes/No If yes, please describe

f. Is your national association involved in any e-government research with government departments?

Yes/No If yes, please describe

g. What are your country's e-government priorities or which areas are most important to your strategy? (Please rate each of the following)

1. No priority 2. Medium Priority 3. High priority

i. Citizen's information and transactional capacity

ii. Business information and transactional capacity

iii. Applications in the following sectors

Health Employment Education Tourism Financing Benefits Administration Transportation Taxation Voting E-commerce Other sectors – Please describe

iv. Issuance of certificates and permits

v. Other motivations – please describe

h. What year did your country initiate e-government and why?

Please describe

i. Where are you on the e-government continuum?

Planning Initiating Emerging Implementing Transforming

3. Experience with e-government:

a. What have been your positive experiences or most rewarding results with e-government? Please describe

b. What have been your negative experiences or more unsatisfactory results with e-government? Please describe

c. Please rate each of the following reasons in order of importance if possible, for your successes in advancing e-government - # 1 indicates the most important and # 8 the least important.

i. Visible political support

ii. Bureaucratic support and dedicated funding

iii. Government interest to address citizen's interests

iv. Government interest to modernize and transform public service

v. Government interest to take advantage of Internet technologies

vi. Promises of cost savings, interoperability, efficiencies and 24/7 service

vii. Horizontal governance structures

viii. Other – please describe

d. Please rate each of the following reasons in order of importance if possible, that inhibited the progress of e-government - # 1 indicates the most important and # 13 the least important;

i. Complexity of transformative and innovative solutions

ii. Lack of skilled technological staff and leadership qualifications

iii. Outdated business and financing models

iv. Outdated systems development methodologies

v. Significant organizational or bureaucratic opposition

vi. Focus on technological drivers instead of business drivers

vii. Extent of government interdependencies and collaborative partnerships

viii. Expectations for public service reform and modernization

ix. Relationships with private sector and numerous stakeholders

x. Movement to citizen centric applications

xi. Lack of political support and adequate funding

xii. Lack of professional project management resources

xiii. Other – Please describe

e. What are your country's major lessons learned and best practices?

Please describe

f. What was the hardest part in implementing e-government?

Please describe

g. What advice would you offer your WITSA colleagues if they faced these same issues? Please describe

h. How do you assess or quantify e-government success? Please describe

i. Would you agree or disagree with the following factors creating additional challenges in implementing e-government solutions? (Please rate each of the following)

1. Disagree 2. Moderately Agree 3. Agree

i. Complicated working environment, partnerships and governance structures

ii. Requirement for an holistic approach across agencies and jurisdictions

iii. Outdated business models and system development methodologies that don't recognize progressive elaboration and negotiation elements

iv. Pressure to over-promise savings, efficiencies and interoperability benefits

v. Lack of single organizational driver or accountability point

vi. Requirement for employee and citizen participation

vii. Importance of executive and political support and champions

viii. Issues of citizen access and security

ix. Expectations to modernize and streamline bureaucracy

x. Interest in applying ERP (Enterprise Resource Planning) technologies and shared services

xi. Other – Please describe

j. What recommendations would you offer to facilitate the progress of e-government in your country and around the world?

PART II

CASE STUDY INFORMATION AND GOVERNMENT CONTACTS

4. E-Government Success Stories/Applications:

Please describe in one page per application, up to three e-government success stories or systems solutions in operation in your country. All citizen and business sectors are welcome including those in health, employment, education, tourism, financing, families, benefits, administration, transportation, taxation, voting, e-commerce and issuance of certificates/permits.

Your input will form the basis of the WITSA e-government repository to be developed from this questionnaire. This repository will be used by the WITSA members as a source of information and contact network to learn from your experiences and success.
a. System name: Description: Contact (Name/title/phone/email): Benefits: Challenges: Lessons Learned:
b. System name: Description: Contact (Name/title/phone/email): Benefits: Challenges: Lessons Learned:
c. System name: Description: Contact (Name/title/phone/email): Benefits: Challenges: Lessons Learned:

5. Experience with e-Government:
a. Any there any areas in e-government research and solution analysis that you would like to see examined more fully?
b. Would you be interested in working with me on the next step of this analysis to examine the underlying problems in implementing and advancing e-government from your perspective, and in identifying and testing potential solutions?
c. How could WITSA assist you in your e-government efforts?
d. Are there any other comments that you would like to make to contribute to this analysis?
6. Survey Delivery
a. This survey was developed and delivered by Liverpool John Moores University using The Neptune Framework. How would you rate:
i. the ease of use in completing and administering the survey? Positive Neutral Negative
ii. the reliability of the survey? (for example, if it was always available? Positive Neutral Negative

iii. the responsiveness of the survey? (were your requests and submissions dealt with promptly)

Positive Neutral Negative

b. This survey was delivered using The Neptune Framework, a set of technologies that allow for adaptable, autonomic e-government solutions to be produced.

i. Are you aware of the term 'Autonomic Software'?

Yes No

ii. Would you be interested in learning more about The Neptune Framework and solutions offered by Liverpool John Moores University?

Yes No

c) Do you have any further comments about the design and delivery of this survey?

Thank you very much for your time, effort and reflections in completing this questionnaire. I welcome all your comments and recommendations to improve the advancement of e-government, and look forward to carefully reviewing and responding to your input and suggestions.

Warm regards,

Shauneen Furlong
BA (Phil); MBA (Econ); MBA (Project Mgt); PMP; PhD Candidate (Comp Sc)
Principal Consultant
Territorial Communications Ltd.
Ottawa, Canada

SFurlong@territorialcommunications.com

APPENDIX III

WITSA REPORT OCTOBER 2006

To: **Members of the World Information Technology and Services Alliance (WITSA)**

From: **David Olive, Shauneen Furlong**

CC: **Anders Halvorsen, A. Taleb-Bendiab and Philip Miseldine (LJMU)**

Key Findings - WITSA eGovernment Survey, Athens, October 2006

Dear Colleagues,

I am pleased to submit the key findings from the WITSA eGovernment Survey at the October 2006 WITSA Public Policy Committee meeting in Athens, Greece. Those of you who responded and contributed are to be congratulated for your thoughtful comments and insights. We will be contacting all who expressed an interest in working on the next phase of this project to further examine barriers to eGovernment and potential mitigating solutions.

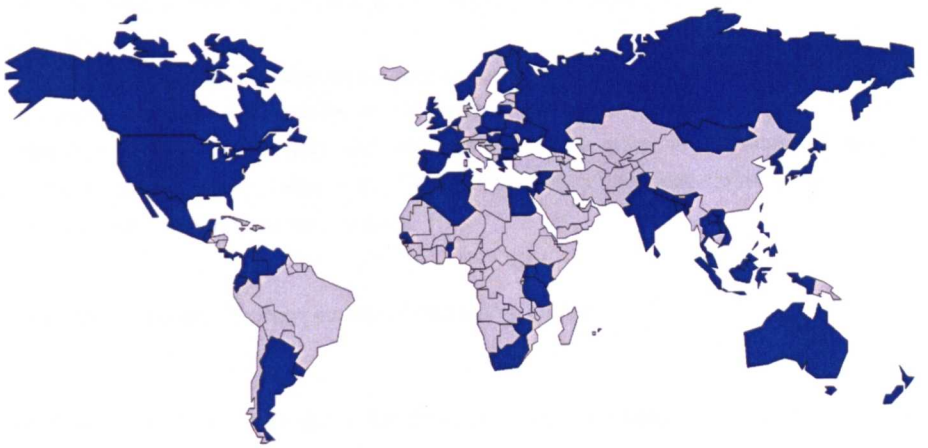
Based upon our original objectives to provide an eGovernment comparison of WITSA countries, to share knowledge and experience, and to identify the major barriers, we have prepared the attached summary of our key findings.

I welcome your thoughts on contributing to the next phase of this project, and how WITSA and additional analysis could assist your country to accelerate its eGovernment modernization and transformational goals.

Warm regards,

David Olive
General Manager
Fujitsu Limited
Washington, USA

Shauneen Furlong
Principal Consultant
Territorial Communications Ltd.
Ottawa, Canada



WITSA eGovernment Survey: Key Findings

October 2006

S. Furlong, P. Miseldine, A. Taleb-Bendiab.

Executive Summary

The WITSA members and their Washington, DC Secretariat deserves kudos for its recognition that eGovernment developments are vital to each country's progress in revitalizing their public sector institutions and practices to compete and survive in the 21st century. Around the world, almost all public sector institutions are struggling with either entering the eGovernment market, or advancing and realizing its success. Regardless of your position on the eGovernment continuum,
all can benefit from having access to the experiences and knowledge already gained from international colleagues. Based upon this insight, the WITSA Secretariat in Washington initiated in November 2005, the design of an eGovernment survey that would serve to collect, and act as the medium to share, eGovernment knowledge. In May 2006, the survey was launched in Austin, Texas at the WITSA Public Policy Committee Meeting, and now the results are being released at the next meeting in Athens, Greece.

Of the 67 WITSA member countries, 36 countries responded to the survey.

In summary, the problems and experiences are similar. Most countries have faced similar challenges irrespective of their position on the eGovernment implementation scale, and most have impressive advancements, and designed and implemented country-specific workable solutions. This information reinforces the need to share experiences and knowledge as 'standing upon one another's shoulders' is a way to leap ahead, and modernize your bureaucracies. It also provides comfort that all face similar problems regardless of your individual circumstances. Both developed and underdeveloped countries have similar challenges in managing cultural change with their organizations, implementing citizen-centric solutions, and adequately modernizing and transforming their public sector institutions.

During the next phase of this analysis, we will further probe the eGovernment barriers and challenges. With the support of your local government officials, we will examine potential solutions to address a few of the myriad of problems identified. We hope to test our solutions on improved systems development methodologies, engage public sector officials to drive technology and cultural change, and look for technical solutions that reduce resource consumption.

Background

Survey History

In November 2005, WITSA announced its intention to conduct a WITSA based eGovernment survey as the means to help their 67-member countries advance in eGovernment, and learn from the experiences and knowledge gained from their WITSA colleagues. An eGovernment Advisory Committee comprised of the following 15 countries and contacts was created to design the survey.

Committee

The members of the eGovernment Advisory Committee are as follows:

Country	Member
Argentina	Jorge Cassino
Australia	Fiona McAlister
Canada	Bill Munson
Ecuador	Carlos Vera
Kenya	Jacob Wanabule
Macedonia	Vasko Kronevski
Malaysia	Ong Kian Yew
Morocco	Jamal Benhamou
Nepal	Bhim Dhoi Shrestha
Philippines	Dittas Formoso
Singapore	Chong Yoke Sin
South Africa	Adrian Schofield
Uganda	Rogers Charles Musisi
United Kingdom	Nick Kalisperas
United States	Jennifer Kerber

The eGovernment Advisory Committee worked between November 2005 and May 2006 to review and develop the final survey that was launched at the Public Policy Committee meeting in Austin, Texas in May 2005. This survey was developed with Shauneen Furlong, Territorial Communications, Canada, and with John Moores Liverpool University, UK.

The initial reply date of June 30, 2006 was extended to September 30, 2006.

Survey Delivery

Due to the global location of the intended respondents, it was decided that the survey be delivered online through a protected web site, designed and implemented by Philip Miseldine at Liverpool John Moores University, UK. Using the questions set forth by the committee, a survey was developed that gave users a centralised location to enter their responses in their own time, as it was apparent that some responses might take time to properly formulate, and thus could not be completed in a single session. Survey responses were therefore protected by a username and password, and could be resumed at the discretion of the respondent.

During the development of the survey, a requirement was set that the questions asked could change as further ratification of their content was needed. The survey was developed using The Neptune Framework (http://www.goneptune.com), a software framework designed specifically to produce dynamic, easy to administer software. The Neptune Framework was used to encode the decision model produced by the questions required in the survey, and when at such time questions required modification, it was shown that this could be achieved with the minimum of expense in both time and effort.

The Neptune Framework is an ongoing academic research project by Philip Miseldine at Liverpool John Moores University.

Objectives

The original objectives in designing the WITSA eGovernment Survey were to:

1. Provide a comparison of the eGovernment progress of the WITSA countries;

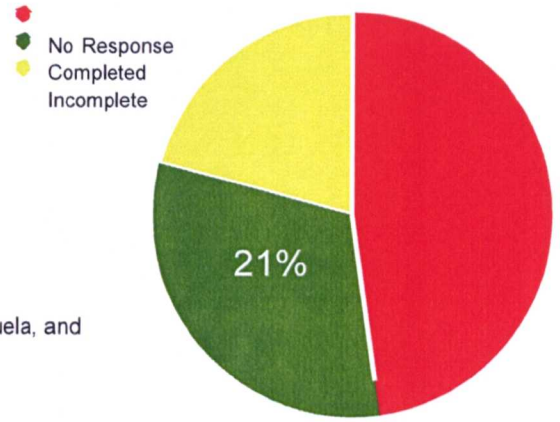
2. Identify the major eGovernment barriers and country-specific motivations; and

3. Develop an international network of eGovernment solutions and contacts to assist developing countries to learn and benefit from the experience of other WITSA member countries

Analysis

Response Rate

Out of the total 67 WITSA country members, 36 countries responded (54%). Of those, the following 22 provided completed questionnaires (61%):

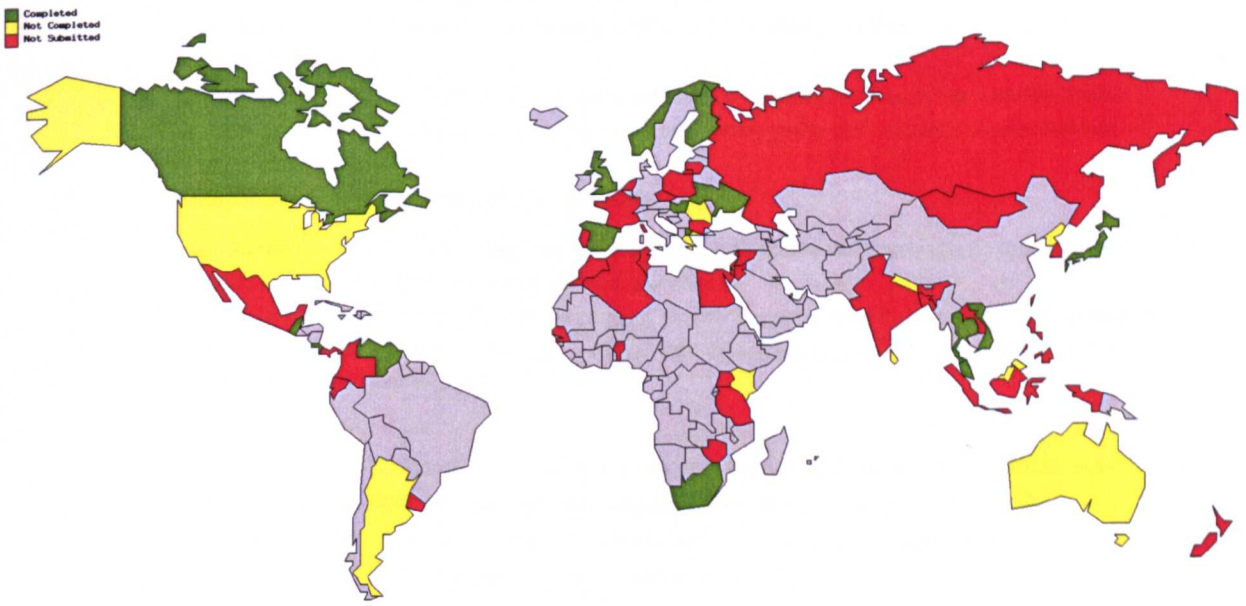


Bermuda (2 submissions), Canada, Costa Rica, Finland, Guatemala, Japan, Hong Kong, Hungary, Macedonia, Norway, Netherlands Antilles, South Africa, South Korea, Singapore,

Spain, Thailand, Trinidad & Tobago, Ukraine, United Kingdom, Venezuela, and Vietnam.

The remaining 14 countries provided incomplete data or were unable to transmit:

Argentina, Australia, Greece, Lithuania, Kenya, Korea, Malaysia, Nepal, Palestine, Romania, Sri Lanka, Taiwan, Thailand, and United States.



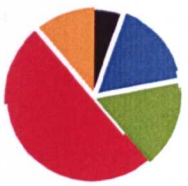
Map showing response rates

Key Findings

Substantial improvements due to eGovernment actions:

- 17 countries stated there were substantial improvements, and
- 5 stated that there were none.

Place Along the EGovernment Continuum*:



- Planning: one country,
- Initiating: three countries,
- Emerging: three countries,
- Implementing: nine countries,
- Transforming: two countries.

Planning Initiating Emerging Implementing Transforming

Positive Experiences and Motivations:

- Most countries had evidence of substantial improvements from eGovernment primarily in the area of improved access, Internet penetration, broadband coverage, and their position on the UN rating scale;
- Most had positive experiences in eGovernment in call centres, websites for citizens and Internet connections, and identified applications, such as filing taxes, finding information, integration of ministries, securing transparency, expanding electronic participation of citizens, vehicle registration and payment of fines;
- One country stated explicitly that one of the most positive experiences was in the breaking down of organizational silos, and for its force 'to turn government inside out'. Another responded that people have a passion for a
  'knowledge-based society through eGovernment';
- EGovernment success can be quantified by knowledge gained, the rating position on the UN scale, lowering costs, and meeting previously defined objectives;
- The reasons for eGovernment success is primarily due to the government's interest to modernize and take advantage of Internet technology, political and bureaucratic support, and the government's commitment to address citizens'
  interests:
- Most countries stated reasons for pursuing eGovernment were due to interests to modernize public services, focus on citizen services, use technology advancements, and provide services 24/7;
- The eGovernment priorities in most countries were citizen and business information and transactional capabilities, administration, ecommerce and taxation.

The recommendations to facilitate progress were:

- To ensure political support, develop cluster groups, understand the processes and client interests, break down silos and administrative resistance, ensure availability of qualified personnel, involve the private sector, and develop a well- thought out plan communicated to all stakeholders.

The lessons learned included:

- The need to keep projects small;
- To approach implementation as personal change and not just application of technology;
- The importance of moving quickly and offering value;
- Having a national plan and skilled people;
- Focusing on business processes not technology solutions; and,
- Ensuring coordination.

Negative Experiences and Barriers included:

- Getting the infrastructure in place;
- Keeping content relevant;
- Legal entities unable to submit information concerning taxes and statistics through the Internet;
- The challenges of change management in risk-adverse environments;
- The vulnerability to electoral cycle;
- The lack of take-up; and,
- The delay of implementation.

The reasons that inhibited eGovernment progress were:

- The complexity of transformative and innovative solutions;
- The lack of skilled staff and political support;
- Organizational opposition: and
- Government interdependencies.

The hardest part of using eGovernment was:

- Cultural change;
- Shift to citizen centricity;
- Availability of funding;
- Public promotion and side effects (digital divide) of eGovernment;

- Creating trust between government and solution providers;
- Lack of a legal framework;
- Co-ordination of efforts of various institutions;
- Implementing the portals and maintaining the content;
- Breaking down the silos; and,
- Satisfying users.

The following factors created additional challenges in eGovernment:

- Complicated work environment;
- Outdated business models and system development methodologies;
- Lack of a single organizational driver;
- Partnership and governance structures;
- Pressure to over-promise savings;
- The need for an holistic approach; and
- The requirement to engage citizens and address security issues.

Case Studies:

- The following 13 countries provided case studies: Antilles, Bermuda, Costa Rica, Finland, Macedonia, the Netherlands, Norway, Romania, Singapore, South Korea, Trinidad and Tobago, Ukraine and the United Kingdom.
- The case studies included eGovernment portals, Taxes, Payments, Procurement, Transportation, Information, and Registration systems.

Involvement of National IT Associations, WITSA and Additional Analysis:

- The national IT associations in most countries are involved in eGovernment (19 of 22)

The advice offered to other WITSA colleagues suggests that eGovernment:

- Is a long road but worth the effort;
- Requires a passionate sponsor;
- Securing a national consensus on eGovernment;
- Needs to focus on the business not technology; and,
- Must communicate with and obtain buy-in from all stakeholders.

- In addition, one country warned others of the maxim that one dollar used is one dollar lost, suggesting that in public service environments that influence productivity and investments, this one-to-one relationship may not be valid.

Most suggested WITSA could help their efforts in advancing eGovernment by:

- Providing case studies from other countries;
- Networking around the world;
- Providing examples and information on the development in other countries.
- Nine countries, including Antilles, Bermuda, Costa Rica, Guatemala, Macedonia, the Netherlands, Romania, Singapore, and Ukraine expressed an interest in participating in additional analysis.

Conclusions

Findings

In summary, the problems and experiences in implementing eGovernment are similar. Most countries have faced comparable challenges despite their position on the eGovernment implementation scale, and most have impressive advancements and have designed and implemented country-specific workable solutions. This information reinforces the need to share experiences and knowledge as 'standing upon one another's shoulders' is a way to leap ahead and modernize bureaucracies. It also serves as a comfort that all face similar problems regardless of individual circumstances as both developed and underdeveloped countries have similar challenges in managing cultural change with their organizations, implementing citizen-centric solutions, and adequately modernizing and transforming their public sector institutions.

Recommendations

During the next phase of this analysis, we will further probe the eGovernment barriers and challenges. With the support of y our local government officials, we will also examine potential solutions to address a few of the myriad of problems identified. We hope to test our solutions on improved systems development methodologies, engage public sector officials to drive technology and cultural change, and look for technical solutions that reduce resource consumption. Once we consult with

the participating countries to determine the level of interest and accessibility, we will develop more specific recommendations
and propose an implementation strategy.

Survey Future

Opportunities exist using the technology employed with the survey, namely The Neptune Framework, to allow deep analysis of trends to help identify beneficial relationships between respondents. A country that specifies having a problem in an area that another country has indicated it has had success in, is an example of the type of relationships that could yield benefit to both parties.

In addition, due to the protected nature of the survey, respondents who have been identified as having successfully completed the survey may be given the opportunity to view an aggregate "live" view of the data collected so far, using this document as a basis. In this way, incentive can be introduced to those seeking a completion of the survey.

APPENDIX IV

COMPARISON OF THE eGOVERNMENT CHALLENGES TO A SAMPLE GENERIC PROJECT MANAGEMENT METHODOLOGY

Introduction

The comparison of the eGovernment challenges to the project management methodology is based upon the use of the following sample generic international methodology: 'Project Management Body of Knowledge' (PMBOK), Project Management Institute, USA, 2000.

PMBOK is based upon a traditional industrial and manufacturing approach to managing projects and was not designed to support the design and implementation of enterprise wide, transformational, unprecedented eGovernment projects. The PMBOK approach offers a linear and iterative approach to following a 'how-to guide' that is based upon 5 process groups, 9 knowledge areas and 42 processes further broken down by inputs, tools and outputs for each process activity. The five process groups are Initiating, Planning, Executing, Controlling and Human Resources, Communications, Risk and Procurement. It is primarily used to manage and measure progress but does not actively support the requirements of the project manager and team to advance and move the project into place.

Once the identification of the eGovernment challenges was identified, and confirmed with the WITSA members, a comparison was completed assessing the effectiveness of the PMBOK methodology to address these requirements. The detailed summary of this comparison is provided below. It describes the relevant area, if within PMBOK and its effectiveness in serving the eGovernment project management needs. It also offers a description at to what enhancements would be required within the PMBOK approach to satisfy these requirements. All these enhancements apply to the PMBOK initiation process.

1a. eGOVERNMENT CHALLENGE

Requirement to manage diverse and conflicting stakeholder interests within a governance framework

Stakeholder interests in terms of the Government of Canada are always conflicting because eGovernment applications are always developed with one or more departments and central agencies. Each of these departments and agencies has a unique legislative mandate, accountability regime, culture, history and background, and more recently, security requirements.

There is no common Government of Canada mandate nor procedure or policy to share and manage the information required to support government wide applications.

Because of the horizontal environment of current government bureaucracies, governance structures often include and sometimes are driven by third-party collaborators as new citizen centric solutions do not necessary form part of the traditional bureaucratic hierarchical structure. In some cases, Central Agencies and Chief Information Officers play the role of delivery agent for solutions not normally within their program responsibilities or sphere of ownership. But, they often have no stake in the outcome (i.e. no skin in the game), which perverts their participation, as their authority is not commensurate with their responsibility. Within the governance model there needs to be a balance to establish these relationships so that the stakeholders' interests guide and aid the design process to enhance action, without impeding development.

Since government wide system applications affect so many players, the horizontal government focus requires engaging all parties (departments, central agencies, citizens, users, employees, and political interests) irrespective of their particular angle or influence in the project deliverables, which ultimately results in adjusting the product to, at least marginally, address their interests. Prior to eGovernment applications or solutions that crossed government-wide relationships, marginal interests did not command the attention or influence that they do today.

1b. REFERENCES IN PMBOK 2000 Edition

Within the PMBOK material, both in the knowledge areas and in the project processes and project life cycle, the importance of managing stakeholders and identifying their particular interests and influence is acknowledged. In the introductory material on project phases and project life cycle, it is stated that the project management team must identify the stakeholders, determine their requirements, and then manage and influence those requirements to ensure a successful project. This documentation highlights the importance of recognizing all stakeholders irrespective of their interests. Managing stakeholder expectations may be difficult because stakeholders often have very different objectives that may come into conflict. In the Project Integration Management – Project Plan Development (4.1.2) knowledge area, the tools and techniques highlight the importance of gathering and taking advantage of stakeholder skills and knowledge.

Though the difficulty of managing stakeholder interests is acknowledged in PMBOK, there is an underlying assumption that once defined and categorized, the conflicting interests can be managed, and focusing on the product, prime user and task at hand, is all that is required to address this issue. In the project life cycle preparatory analysis, and in the project plan development, it is assumed that once identified, the stakeholder knowledge can be classified,

categorized and managed. This treats stakeholder management as an effort to fully understand the requirements in the context of the application area, and assumes eGovernment to be a commonly understood government wide mandate. This is not necessarily the case for transformational eGovernment. The government does not act as a single enterprise nor is it persuaded to operate within a horizontal mandate. The drivers are individual departments and executives focused on particular interests and personal rewards. To date, the motivation to operate within a horizontal environment is overshadowed by the benefits and ease of servicing one ministerial position.

PMBOK also underestimates the capriciousness of stakeholder interests and assumes these interests are static, definable, as well as controllable. In designing systems that respond to a need or in updating an existing system, these relationships and expectations may be reasonable. But this is not necessarily the case when transformational eGovernment is managed by third parties, for example, Central Agencies and Chief Information Officers, who often have no direct vested interest in the outcome. Deferring the management to a third party may be expedient due to the political sensitivities of giving control to one department over the other, but it does not contribute to delivering a service when the host is not personally engaged or accountable. The interests of delivering tax programs for example, is paramount to the Revenue Agency, and only peripherally, and from a policy perspective of interest to the third party. This perverts the identification of needs and often results in diffidence to or at least placating stakeholders and their marginal peripheral interests.

Often, in a transformational eGovernment environment that has facilitated the creation of horizontal solutions, the user requirements are not driven from a citizen need or improvements to what existed before. Sometimes, they are designed and negotiated from negotiations among numerous organizations or created a need or service where one did not exist before. This is common in citizen centric applications that require different organizations to work together to produce a service that was not offered in the past, and only possible because of the Internet and advances in technology.

It is also valuable to note that throughout the PMBOK methodology, it does not highlight the testing or revisiting of stakeholder requirements and the corresponding resulting system alterations. In the political environment that surrounds eGovernment projects, user requirements are high jacked to prove or market success, or demonstrate financial viability in order to expedite a political interest. This shift in user requirements does not emanate from stakeholder interests, but rather highlights the influence of one party over the other – and this may not necessarily be the party most dedicated to the original user requirements.

In Project Human Resource Management – Tools and Techniques for Organizational Planning (9.1.4) and Project Communications Management – Inputs to Communications Planning (10.1.2.1) 'The identification of stakeholders and the needs of the various stakeholders should be analyzed to ensure that their needs will be met' so that reporting structures can be developed to respond to the various stakeholder interests. This reinforces the need to manage stakeholder interests but does not contribute to managing their conflicting demands or to creating a new service where none of the existing stakeholders is singularly responsible.

1c. POTENTIAL PMBOK ENHANCEMENT

An information enhanced version of PMBOK could categorize and 'weigh' the stakeholders influence. It could relate their interests to reporting requirements. It could monitor and incorporate changes to their interests and changing degree of influence. It could provide 'intelligence' to the project manager on the implications of accommodating changing interests; i.e. impact on other interests and additional time, cost, and reporting requirements. It could highlight to the governance committees the complexities and interdependence of stakeholder interests and the impact on project success and accountability without impeding development. It could highlight, for example, the gap between the interest in considering the Government of Canada as a single enterprise versus the reality of managing different and competing departmental interests. It could also relate interests of the delivery agent (responsible department) with the product – for example, to highlight the inappropriate assignment of accountability to a third party not directly involved in the product line.

2a. eGOVERNMENT CHALLENGE

Challenge to continuously adapt to and blend technology, people and processes

Today's system environment is more organic that it was in the past; previously, system solutions were applied to a corporate services environment - improved financial or personnel systems that were generally outside of the department's program operations and that were designed to monitor, report upon and assess company performance. Now, systems are at the core of company performance - not on the periphery. And, they are significantly affected by evolving priorities and circumstances, and are more integrated with the operational environment including technological developments, the capacity of the resource experts, and constantly changing and evolving business processes.

2b. REFERENCES IN PMBOK 2000 EDITION

The PMBOK methodology addresses the steps required to manage a project, and as such, does not address the issues resulting from the requirement to blend technology, people and processes. Managing projects, at least from a PMBOK perspective, has not traditionally been focused on the need to revise business processes nor extended to the same degree into the workplace based upon the implementation of a new system or ramifications within an organization resulting from a new project. Also, it does not consider technological implications in implementing new solutions. However, in the PMBOK documentation, the concept of 'progressive elaboration' is introduced as the term to describe the activity that recognizes the iterative process of better understanding project requirements that are 'made more explicit and detailed as the project team develops a better and more complete understanding of the project.' These concepts acknowledge the relationships between understanding the requirements and appreciating the context within which they operate, and what becomes eventually possible through negotiation and progressive elaboration.

PMBOK does not specifically address the impact of a project within an organization or its resulting changes to business processes. Nor does it address the need to maintain an understanding of the reciprocal impact upon people, processes and technology that occurs within projects, and specifically within eGovernment projects where the Internet and citizen based services alter the working environment and the government's relationship with its citizens.

2c. POTENTIAL PMBOK ENHANCEMENT

An informationally enhanced version of PMBOK could highlight the impact of systems and projects on organizational business processes and the issues associated with personnel revising their workplace practices. It could assist in mapping and managing the business process changes resulting from the implementation and evolution of the project. It could also relate the organizational objectives to those particular practices, and identify potential technology enabled support; for example, offer an automated checklist to the project manager to recognize the organizational and personnel impact. It revisits the changes and implications along the project implementation process as they are not static and are adjusted as the project evolves. Ultimately, technology could be designed to contribute to the core performance as these systems form the new basis of the organization's capacity to meet its mandate.

3a. eGOVERNMENT CHALLENGE

Outdated business models that reward traditional applications

Outdated business models do not recognize that collaborative and unprecedented solutions do not meet the criteria for performance measurement targets, accurate costing and resource utilization, and work plan deliverables whose solutions are not known until they are negotiated well into the implementation stage. Current business models are mandated for the status quo where innovation cannot flourish. Promises of cost and resource reductions along with improved efficiency and effectiveness (more probable in enhancement in corporate applications as opposed to unprecedented eGovernment projects) gains the funder's attention more than promises of transformation and innovation.

3b. REFERENCES IN PMBOK 2000 EDITION

The PMBOK methodology commences once the projects have been approved. In some cases, 'when an organization identifies an opportunity to which it would like to respond, it will often authorize a needs assessment and/or a feasibility study to decide if it should undertake a project. The project life cycle definition will determine whether the feasibility study is treated as the first project phase or as a separate, standalone project.' In the event that the feasibility study is considered a project, or part of a subsequent project, it would employ the PMBOK methodology.

As a precursor to a project, the feasibility study does invoke business model approaches and criteria that influence the approval process. Generally speaking, the approval criteria favours those projects that are low risk, have a good chance of success, are 'tried and true', and satisfy enough stakeholders interests to make the costs and effort worthwhile. These models favour improvements to status quo applications as their success and seeming value is easier to assess and articulate than a non-traditional innovative eGovernment solution that challenges the status quo. The transformational eGovernment project may in fact have a higher societal benefit but since it may be a higher risk with an unsure and unprecedented approach, along with potentially unavailable or unskilled workers, dubious performance measures and citizen take-up, it does not meet the traditional business model criteria for government funding. Therefore, it is not as easily supported by the governance committees, and not funded as readily as the more corporate banal applications. This approach may be of comfort to government funders and service political safety interests, but it does little to advance the public service transformation and need to modernize program and service delivery.

3c. POTENTIAL PMBOK ENHANCEMENT

If the feasibility analysis and project approval process could become part of the overall project management methodology, technological improvements could be developed to help support a shift in the business model criteria to fund the more controversial eGovernment projects. This could involve changing the criteria from performance specificity and delivery measures to rewarding more innovative and transformational based applications.

4a. eGOVERNMENT CHALLENGE

System development models affected by political realities and a new relationship with the private sector

System development models do not recognize the 'stop and start' reality of projects affected by political cycles and funding priorities, and the need to provide for system development fragments to be reused instead of continuously 'starting over'. Though cancelling projects is naturally due to changing systems objectives, probably more important is the waste of precious resources and time, and the inability to recover and reuse these efforts.

Previously, systems were designed based upon government users documenting system requirements and private sector consultants designing systems to meet these requirements. In eGovernment and other government wide projects, system requirements cannot be developed without the participation of the private sector as they cannot be developed without professional advice in terms of what is feasible and possible.

4b. REFERENCES IN PMBOK 2000 EDITION - Not available

Managing information and technology systems and managing projects needs to be more effectively coordinated. The separate effort of managing a system project using PMBOK, and managing a system application using other methodologies (for example, Microsoft Project Manager) duplicates the work, and neither approach seems up to the task. Even operating together, these two methodologies do not address the needs of the project manager to manage these systems within an eGovernment partnership based working environment. The relationship between the effort to build and design the system (usually the private sector) with the group directing and implementing the system (usually within the public sector) needs to be examined and products need to be designed to meet these relationships and requirements. For example, system development systems were traditionally designed to fulfill a need articulated by the user and built based upon specifications by one organization for the other. This required the capacity to specify requirements to the degree required to build, and generally not waver on those

requirements until the system was built. This model worked where systems were building upon or improving something that already existed. The requirements were clear; the user understood what was required and how it would be used, and the project managers were able to explain to the system developers what was required.

Current large and partnership based systems and transformational eGovernment solutions do not necessarily meet these criteria. The requirements often cannot be articulated until the partnership consortium can negotiate what will be delivered, how it will be delivered, who will use it, and who will manage it. In innovative and transformational projects where requirements did not exist in the past, and a single owner and driver is not immediately evident, this specificity may not be possible until the business owners and users gain experience as to what can be produced. This experience is only gained by working through the options and designing what is possible and feasible based upon a compromise of interests, technology and capacity. This negotiated effort could be enhanced by technology enabled tools that allow more flexibility in the system design models and more direct management value from the project management methodologies.

Highlighting the weaknesses in traditional system development models and the lack of consistency and overlap with project management methodologies confirms the need to create a project management approach that blends and compliments system development models, and recognizes the actual system development design and project management relationships.

4c. POTENTIAL PMBOK ENHANCEMENT

PMBOK could be expanded to subsume system development approaches that meet partnership and transformational solutions. Technology could be provided to assist the management of information based projects, which would address the system elements and project management environment, and contribute to the negotiated effort of finding and delivering a project based solution.

System development and the identification of requirements has become a more 'moving target'. The relationship between government officials who express their requirements and the private sector capacity to lock them down is strained. The scope and requirements shift is due to changing political interests, funding levels, relationships, accountability regimes, resource availability, and individual influences just to name a few, and this is becoming increasingly difficult for the private sector to carry the cost of chasing requirements.

5a. eGOVERNMENT CHALLENGE

Lack of access to lessons learned and a body of knowledge for government wide projects

Project managers are designing and implementing system solutions that are often unprecedented and government wide, and yet they have no practical access to the knowledge nor benefit from and apply the experience gained from other project managers in similar circumstances. The problem is that the practitioner is operationally aloof from harnessing transformational eGovernment experience and there is no stakeholder oversight to ensure that a 'lessons learned' procedure is carried out, and there is no way to harness previous experience. There is no demand for project managers to conduct lessons learned and record reflections, and there is no way to store and access this information. There is no process to do this; nor is there a reward to do this.

5b. REFERENCES IN PMBOK 2000 EDITION

Within Project Integration Management (PMBOK Section 4.3.3) acknowledges the importance of documenting lessons learned, the causes of variances and the reasoning behind corrective action chosen 'so that they become part of the historical database for both this project and other projects of the performing organizations.' Though this is acknowledged to be of value, few projects undertake the effort to document lessons learned. Managing large scale horizontal eGovernment projects, the value in accessing lessons learned repository is much greater than evaluating lessons learned from the project itself and contributing to an historical database. Its ultimate value is in providing access to other projects to share knowledge and experience gained. Developing a lessons learned database as an input and guide to managing projects may not be part of the current PMBOK methodology but it is part of managing projects, and would be of immense value to the project manager and team implementing unprecedented and transformational eGovernment applications.

In Project Quality Management, even though the Integration, Cost, Scope and Time Management sections highlight the importance of documenting lessons learned for that particular project, this information does not form an input to Quality Management nor Human Resource Management. In Project Communications Management, lessons learned are identified as an output product from administrative closure, though as stated before, documenting lessons learned has not been a priority.

5c. POTENTIAL PMBOK ENHANCEMENT

A key feature where additional information could benefit the project manager is in having access to the experience and knowledge attained from actual 'on-the-ground' applications. PMBOK could be expanded as a methodology supporting the overall project management and implementation of new solutions, and contributing to building a repository of experience could be of immense value towards the successful implementation of future projects. This approach could encompass the need to access and document experiences from individual projects for a historical database but more importantly, targeted as the agent to influence the design and implementation of future projects.

6a. eGOVERNMENT CHALLENGE

Promises of interoperability, integration, and cost and resource savings.

The eGovernment environment is predicated upon a collaborative and partnership based environment that requires sharing both work and accountability responsibilities, and it is usually argued (and ultimately funded) under a banner of promised cost savings and resource reductions.

Interoperability is dependent upon stored data that is common and similarly structured; and most of the organizational information in government is unstructured, is stored in different formats, and is knowledge based i.e. words not numbers so its retrievability is more complex. There is no method for determining which piece of information is the authoritative piece and when it loses its validity as is easily acknowledged from the prolific hits and irrelevant sites produced from a Goggle search.

6b. REFERENCES IN PMBOK 2000 EDITION - Not available

Project Management (Standish Group 2003, British Computer Society 2004) is often cited as the 'guilty party' responsible for not achieving systems success. Though these particular objectives of interoperability, integration and savings are not obvious candidates for a project management methodology and are not discussed in PMBOK, they have become particularly relevant and pervasive in the horizontal and political expectations within the management of eGovernment systems and projects. The interest in horizontal solutions and treating governments as single enterprises, by definition assumes integration and interoperability of services as the means to achieve this goal. And, in order to justify these drastic costly and difficult measures, promises of savings are required to attain political and citizen engagement.

6c. POTENTIAL PMBOK ENHANCEMENT

The PMBOK methodology could be strengthened to provide project managers and governments the tools to achieve interoperability and integration. (Achieving cost savings is another matter, and perhaps not reasonable in the short term due to the high costs required to design and implement new systems.) Using technology to have access to the information required to deliver on interoperability and integration would be extremely helpful to the project manager. Having automated access to an understanding of the systems and processes required to accomplish interoperability and their interrelationships, as well as the business processes and systems to achieve integration would contribute greatly to eGovernment progress and ultimate success.

7a. eGOVERNMENT CHALLENGE

Proliferation of information, and the challenge to judiciously access and manage information

The information age is impeding project management because of the massive and potentially increasing quantity of exponentially produced data that must be sorted out to effectively implement system solutions. The inter-connectedness of information and system requirements is so overwhelming that projects suffer from the weight of irrelevant information and often miss the relevant information. Mining through this data produces a 'spin and churn' that is frequently completely non-productive; and this along with the lack of authoritative control to wind through the layers of information and check high powered stakeholders, can derail the project and exacerbate the 'spin and churn' to astronomical heights.

Project management in eGovernment applications reaches across departments into the business rules, organizations, policies, governance bodies, procedures, regulations and security arrangements, and as such, requires information and subject matter expertise to assess these influences and effect the change required. Success in a cross government environment demands access to and an understanding of the information located in different organizations; and current system and organizational and cultural barriers prohibit access.

Information is so widely spread that no one has access to the complete body of knowledge required to implement the system project. Everyone has a piece of information; no one has the full package so the 'spin and churn' becomes the order of the day. There is no government wide enterprise content management mandate or interest. There is no mechanism or technology to have a government wide perspective, let alone a government wide data collection and retrieval facility. There is no holistic view to manage or search government data across all the various receptacles including program records, legacy systems and portals, which is where the majority of the government information resides.

7b. REFERENCES IN PMBOK 2000 EDITION

The PMBOK methodology addresses the importance of a project management information system (PMIS) in section 4.1.2.3. 'A PMIS consists of the tools and techniques used to gather, integrate and disseminate the outputs of project management processes. It is used to support all aspects of the project form initiating through closing, and can include both manual and automated systems.' This addresses information as products of the project management processes and not as interdependent content information that comes from the various affected organizations and interests and whose understanding is critical to the project success. The PMBOK PMIS assumes that once the project is defined and active, the content information required to achieve success is knowable, accessible, static and manageable.

7c. POTENTIAL PMBOK ENHANCEMENT

PMBOK as a broader project management methodology could benefit from the aid of additional information and support in managing the interrelationships, location and access of information as it pertains to all facets of project management including the horizontal and user related content information as well as the process related information required to manage the project itself. This content information would also assist in assessing the implications of changing and evolving requirements, use and stakeholder and governance committee reporting requirements.

8a. eGOVERNMENT CHALLENGE

Lack of a comprehensive holistic approach to project management as the driving force.

In government, the scourge of project management is the organization and its associated accountability framework. Project management is weakened by widespread matrix operations and powerful fiefdoms, and is even further impaired as it attempts to cross from one department to another in an enterprise wide project. Organizational loyalties interfere with and contaminate government wide projects.

Project management often plays the role of arbitrator, as it is often the agent that brings the disparate parties together to deliver a solution that was not driven by either party. This is usually the case with citizen centric applications as they cross the program interests of each of the contributing organizations. Project management needs to drive the solution to change the business processes of the affected departments and turn the solution into a government wide enterprise. Projects needs to be driven ahead as obstacles constantly arise, allowing derailment unless the project manager has the authority and influence to 'will' the project forward. It also needs to drive technology as the principle element that makes project management effective, and

implement a method as the way to effect the change that is ultimately brought about as the measure of success.

The project management discipline must become part of the project solution, and its contribution must move beyond the structured and repeatable processes that emanated from the manufacturing sector. It must be based upon business imperatives, organizational readiness, infrastructure (size and scaling), architecture and performance.

8b. REFERENCES IN PMBOK 2000 EDITION – NOT AVAILABLE

PMBOK does not address the implications and responsibilities of project management as a potential driving force within a horizontal environment, nor does it acknowledge the comprehensive and holistic impact project management may have upon the operation and direction of the organization.

In Project Integration Management (4.1), the first phase in project development, the project manager's authority and appointment is not necessarily outlined unless included in Project Plan which may include the Project Charter along with a scope statement, cost estimates and other descriptive information. However, the actual requirement for the Project Charter is described in the second phase, Project Scope Management (5.1). The Charter is to be developed by a manager external to the project, and identifies and assigns the Project Manager, and it formally authorizes the project and gives the Project Manager the authority to act.

8c. POTENTIAL PMBOK ENHANCEMENT

The PMBOK scope and tools for overall responsibility for project success could be expanded to recognize the project manager as the holistic driver, negotiator and consensus builder. In this capacity, he needs authority and information on the delicate interests both overt and unarticulated on the issues and complications that could derail or promote project success. Technology support and an expansion to and recognition of the scope and responsibilities of project management could contribute to project success.

The proposed enhancement is the creation and ongoing use of a Project Concept document followed by a 'Project Charter'. Both these documents could be developed and maintained through the creation of 'smart' templates i.e. documents that are programmed to determine what users need to do and to give those users help along the way. And they could retain, update and report upon information that is technologically linked to other project documents. The 'Project Charter' would then be prepared with the Project Manager and would clearly outline his

responsibilities, access to resources, and authority to act and work across organizational boundaries and 'drive' the project forward.

9a. eGOVERNMENT CHALLENGE

Limited access to vital subject matter expertise

Within governments, knowledge is either so vastly spread or not available that it is difficult for the project manager to understand the implications of systems design. The knowledgeable personnel are difficult to locate and approach given hierarchical and organizational limitations, and are frequently reassigned and no longer accessible. Pushing 'high-flying' civil servants through short assignments and assessing them on individual accomplishments discourages a 'joined-up' approach, collaborative style and the building of networks. Over the last of couple of years, the government's tendency to appoint generalists and use management positions as a training ground eliminates corporate knowledge and an understanding of the impact and far-reaching organizational influences of system development.

Furthermore, the skill set to work in a collaborative environment, understand citizen's interests, negotiate rather than predict solutions, challenge the status quo, and 'tease' out solutions balanced between the private and public sector and technology and organizational interests is a skill set not prevalent within government circles, let alone within our society. Within the Government of Canada, there is also a dearth of the technical skills required to deploy enterprise wide solutions; hence, most projects are populated with more contractors than employees. Civil servants are skilled in briefing Ministers and reporting on progress, and not on policy formulation that drives delivery governance processes and change that provides incentives to implementation. The challenge of collective intelligence is to transform the government's role from one based on independence to one where interdependence becomes a guiding principle.

9b. REFERENCES IN PMBOK 2000 EDITION

In Section 7.1.1, PMBOK describes the inputs required to resource planning to determine what resources are required to perform project activities. The focus on these resources is primarily in the design and staffing of the project team available from a pool of resources. But, it does not focus on the subject matter expertise required from the client perspective as historically, it had been assumed that the group hosting the project were knowledgeable and the prime users or drivers of its deliverables. In a horizontal and collaboratively based environment, this is not necessarily the case and yet it is critical to the effective management of the project.

9c. POTENTIAL PMBOK ENHANCEMENT

PMBOK's scope could be expanded to recognize the importance and difficulties in having access to the subject matter expertise within the client area for the project team when and as required. Though these personnel do not form part of the project team, they do influence the success of the project, and in an informationally enhanced environment, a project management methodology could include the facility to identify, manage, and have access to this expertise as required.

10a. eGOVERNMENT CHALLENGE

Organizational environment not presupposed to enterprise wide transformation

Departments do not act as units of a government enterprise; they are vertically based with individual objectives and resource rewards mechanisms. Accountability of each department is to its Minister and senior officials, and to the government acts for which it was created. This accountability is reflected in the management of information that is reflected in the enterprise wide information management regime - which is ultimately non-existent.

Departmental interests often thwart the objective of government transformation, as there is currently no way to manage the information needed to define, measure, and influence the transformation. There is competition between project and organizational priorities, and project priorities lose out to the much larger and more important and long lasting organizational interests. Minor organizational changes and a shift in focus can severely retard project development.

Though projects often cross organizational divides, the culture, priorities and reward mechanisms do not. The organizational 'silos' remain intact in terms of reporting relationships and career opportunities and interest in supporting crosscutting organizational projects remains at a level of 'lip service' at best.

10b. REFERENCES IN PMBOK 2000 EDITION – Not available

PMBOK is generally premised upon one key user and one key implementation location per project albeit it recognizes numerous external interests. And, it does not presuppose or support the management of a project across an entire government as if it were a single enterprise. In fact, even though the horizontal collaborative working environment may consider the government as a single enterprise, the business processes and organizational and personnel practices are not yet fully in concert with this approach.

10c. POTENTIAL PMBOK ENHANCEMENT

The PMBOK scope could be expanded to recognize the interdependencies and breadth of a government enterprise, and could use technology to help tag and identify the relationships and associated transformational eGovernment activities.

APPENDIX V

PROPOSAL # 1 – QUADRANT TEMPLATE

e-Government challenges	
1. Stakeholders	a. Integration and Governance
	• Prepare a 'signed off' stakeholder accountability and sponsorship report that outlines and weighs stakeholder interests, influence, impact and responsibility with respect to the project planning, building and operations • Design a stakeholder governance structure that reflects stakeholder contribution and accountability
	b. Delivery (Time, Cost, Scope and Quality) • Identify specific stakeholder commitments to monitor the project quadrant (time, cost, scope and quality)
	c. Risk and Uncertainties • Establish risk tolerances for stakeholders interests and impact and identify the preferred risk management approaches
	d. Corporate Support (Human Resources, Communications, and Procurement) • Prioritize and classify individual stakeholder interests and reporting requirements (Human Resources, Communications and Procurement)
2. Challenge to blend technology, people and processes	
	a. Integration and Governance • Develop model to design appropriate balance of resources and impacted processes, and update throughout life of project • Complete an assessment of existing and emerging technology • Review the government and private sector workforce and complete a best practices evaluation
	b. Delivery (Time, Cost, Scope and Quality) • Devise a project delivery model that integrates and coordinates through technology, people and processes the projects interdependent requirements
	c. Risk and Uncertainties • Develop a government wide framework to integrate technology (desktop, service centres, networks), government wide processes (information management, human resources, finance, procurement), program delivery processes, and the public and private sector resource bases • Identify the risks associated with the government wide framework

	d. Corporate Support (Human Resources, Communications, and Procurement) • Classify corporate constraints and ways in which the organisation can contribute to balance of technology, people and processes through financial and resource planning legislative and mandate constraints and project product programs • Identify corporate capacity with respect to human resources, financial management and procurement vehicles
3. Outdated business models	
	a. Integration and Governance • Develop a citizen centric business model that accommodates intragovernmental legislative mandates and societal goals, and recognises eGovernment environment of horizontal, transformational and unprecedented requirements • Ensure that the model reflects central agency policies and standards, a central service for IT infrastructure and a departmental commitment to application delivery
	b. Delivery (Time, Cost, Scope and Quality) • Recognise the circumstances and environment of an eGovernment project that is more organic and fluid, and requires the research and validation of the funding and approval criteria within the business model • Create a business models that consolidates network, desktops and data centres • Shift the Internet from publishing environment to a community participating environment
	c. Risk and Uncertainties • Identify specific eGovernment risk management approaches by considering government wide activities with citizens, businesses and employees that are conducted within a government policy and legislative framework
	d. Corporate Support (Human Resources, Communications, and Procurement) • Identify corporate processes to ensure communications, human resources and procurement processes are addressed
4. System development models	
	a. Integration and Governance • Develop a model framework that incorporates intergovernmental vertical legislative mandates, enterprise wide objectives and business product requirements
	b. Delivery (Time, Cost, Scope and Quality) • Work to integrate and technology enable systems development and project management methodologies to allow for flexibility in evolving requirements, and termination of separation of requirements identification by internal/ employee group and construction by external/private sector group. • Create technology enabled governance oversight mechanism by stakeholders community to report upon cost, scope, schedule/time and quality

	c. Risk and Uncertainties • Identify risk management practices for consideration within systems development and project management frameworks
	d. Corporate Support (Human Resources, Communications, and Procurement) • Identify potential impact on the corporate work load to ensure mechanisms are in place to proceed with systems development activity including developing contracting mechanisms to recruit personnel and purchase technology
5. Lessons learned	
	a. Integration and Governance • Establish a governance regime to identify, assess and incorporate lessons learned
	b. Delivery (Time, Cost, Scope and Quality) • Conduct review of best practices from other projects (literature review of lessons learned) to establish benchmarks to guide how project is managed and effectively implemented
	c. Risk and Uncertainties • Highlight comparable historical risks that have occurred and examine associated mitigating measures
	d. Corporate Support (Human Resources, Communications, and Procurement) • Review best practices from previous project based Human Resources, Communications and Procurement experiences
6.Unreasonable promises	
	a. Integration and Governance • Assess promises of cost effective enhanced functionality and develop discounted delivery strategy (promise low, deliver high) • Establish a stakeholder participation framework to validate key expectations through requirements traceability matrices, proof of concepts, pilots and operational readiness reviews
	b. Delivery (Time, Cost, Scope and Quality) • Develop value based promises and expectations (modernization and technology enabled) as opposed to performance measures
	c. Risk and Uncertainties • Establish risk review program and relate to project value/modernization/societal objectives. • Conduct review of mis-promised objectives and assess impact of overpromising/under delivering
	c. Risk and Uncertainties • Establish risk review program and relate to project value/modernization/societal objectives. • Conduct review of mis-promised objectives and assess impact of overpromising/under delivering
	d. Corporate Support (Human Resources, Communications, and Procurement) • N/A

7. Unwieldy information	
	a. Integration and Governance • Develop a governance framework to oversee and direct project customer relationship management, product direction and project service implications
	b. Delivery (Time, Cost, Scope and Quality) • N/A
	c. Risk and Uncertainties • N/A
	d. Corporate Support (Human Resources, Communications, and Procurement) • N/A
8. Lack of holistic approach to project management	
	a. Integration and Governance • Transform organisation to integrally imbed project management into its identity (similar to financial management practices); organisational reform gives project manager credibility to step between boundaries.
	b. Delivery (Time, Cost, Scope and Quality) • Implement project management indoctrination across business lines to encourage acceptability, growth and maturity of project management discipline, arbitrator and delivery agent role
	c. Risk and Uncertainties • Identification of risk areas up development stream and along implementation process to assess risk areas at the boundaries and peripherals of the project
	d. Corporate Support (Human Resources, Communications, and Procurement) • Assess the impact on resource sharing (people) and procurement
9.Access to subject matter expertise	
	a. Integration and Governance • Develop framework to incorporate subject matter expertise relative to client demand and satisfaction, technology directives, project performance and manageability, policies and standards and governance
	b. Delivery (Time, Cost, Scope and Quality) • Identify quality requirements from subject matter experts to guide and develop project scope and quality parameters
	c. Risk and Uncertainties • Projected risk areas shared from experience of subject matter experts
	d. Corporate Support (Human Resources, Communications, and Procurement) • N/A

10. Government as single enterprise	
	a. Integration and Governance • Develop a governance framework to assist with increasing ministerial accountability, public concern with government services and products, and increased need to homogenize government wide activities conducted by individual ministries
	b. Delivery (Time, Cost, Scope and Quality) • Identify links to corporate systems and objectives • Commit to modernise eGovernment by acting as a single enterprise using approaches and shared internal services, wherever possible
	c. Risk and Uncertainties • Identify breath of project as it affects the enterprise wide application, identify key areas to make it work and common enterprise wide processes that could be impacted by the project (like financial and personnel activities)
	d. Corporate (Human Resources, Communications, and Procurement) • Incorporate government functional communities (CIOs, IM leaders, Service leaders, Security Domain leaders)

APPENDIX VI

PROPOSAL # 2 - GOVERNMENT OF CANADA CASES – INPUTS/OUTPUTS

A. PROJECT DESCRIPTION

Inputs

Project purpose

Project owner

Contact Information/Role

Sponsor

Stakeholder requirements (High level)

Cost and schedule

Project Manager Skill Set

Expected Project Outcomes

{NOTE: THE FOLLOWING FIVE DATA ELEMENTS CONSTITUTE THE COMPLETE PROJECT INITIATION INFORMATION REQUIRED IN PMBOK}

*Product description:

*Relationship between the service and business need

*Reference to Organizational Strategic Plan

*Project Selection Criteria – describe the proposed merits and performance measures

*Historical information – document relationship to previous projects/performance results

Outputs

Project Charter – authorization to proceed

Project Manager identified and assigned

*

Constraints

Assumptions

B. eGOVERNMENT CHALLENGES (10 reduced to 6)

1. GOVERNANCE

eGovernment Challenge # 1

Purpose:

Document governance structure (approval, committee formats, resource contributions, change requests, funding, and membership)

Identify government/enterprise wide governance impact

Document project management comprehensive responsibilities and accountability, and arena of influence and relationship with governance committee

Identify areas of subject matter expertise relative to client demands, technology and policy directives and project performance

Inputs

Approval Structure

Appointment and authority of project manager

Subject matter expertise and location

Outputs

Governance Structure

Project Manager Authority

Subject Matter Expertise

2. STAKEHOLDER INTERESTS

eGovernment Challenge # 2

Purpose:

Develop weighted stakeholder interests matrix to identify and track interests and relationship to project success

Inputs

Stakeholder Name

Relationship of each stakeholder to the project

Interests of stakeholders

Stakeholder responsibilities

Stakeholder resource commitment

Accountability

Weighting (H,M,L)

Outputs

Relationship

Interests

Responsibilities

Participation

Resource Commitment

Accountability

Impact

3. INFORMATION MANAGEMENT

eGovernment Challenge # 3

Purpose

Identify governance framework to direct customer relationship management

Identify location and accessibility of required/disparate information sources

Inputs

Business Case

High level requirements

Information required from new processes and transactions

Outputs

Information Management Regime

Event reporting system

4. LESSON LEARNED

(eGovernment Challenge #4)

Inputs to Lessons Learned

Purpose is to:

Document regime to identify, assess and incorporate lessons learned

Highlight historical success/experiences/best practices

Document and access knowledge centre by project, type, experience, and business line

Previous Events

Historical Information

Commitment to record lesson learned from planning and development

Commitment to record lessons learned from operational results

Outputs for Lessons Learned

Organizational assets repository

5. ORGANIZATIONAL INTERDEPENDENCIES

eGovernment Challenge # 5

Purpose

Document organizational requirements and deliverables impact on organizational mandate,

on business processes, on personnel, to other organizations, and on enterprise/government wide transformational project

Document organizational constraints

Document organizational resource capacity/contribution

Inputs

Technology Description

Weighting

People Description

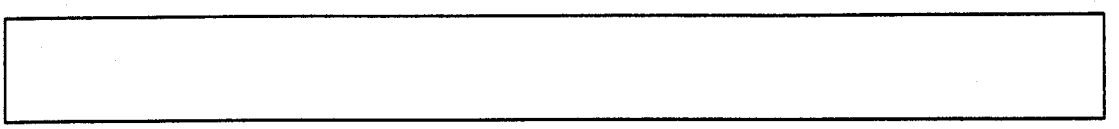
Weighting

Process Description

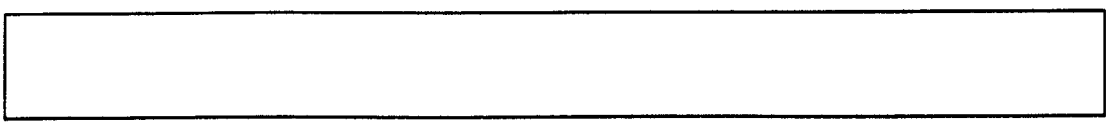
Weighting

Outputs

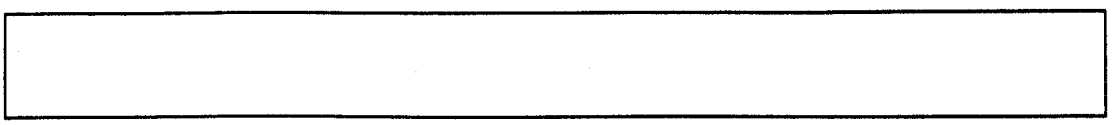
Manage core entity activities



Response to evolving priorities



Integrate operations



Entity reporting

Harness technical development

Include subject matter expertise

6. INNOVATIVE BUSINESS MODEL

eGovernment Challenge # 6

Purpose:

Identify relationship to organizational mandate

Document anticipated and potential project merits and values (other than traditional cost, time and transactional measures)

Document system and delivery promises, as well as feasibility of interoperability, integration, cost and resource savings

Document relationship with system designers, and responsibility for start and stop of systems development activities

Identify opportunities to reuse process fragments and analysis

Inputs

Stakeholder Centric

Transformative and innovative description/Status Quo

Weighting

Policy and standards

Transformative and innovative description/Status Quo

Weighting

Fluid and organic approach

Transformative and innovative description/Status Quo

Weighting

Community profile

Transformative and innovative description/Status Quo

Weighting

Communication aspects

Transformative and innovative description/Status Quo

Weighting

Research and validation

Transformative and innovative description/Status Quo

Weighting

Transactional performance measurement

Transformative and innovative description/Status Quo

Weighting

Project value, promises, expectations

Transformative and innovative description/Status Quo

Weighting

Viability

Transformative and innovative description/Status Quo

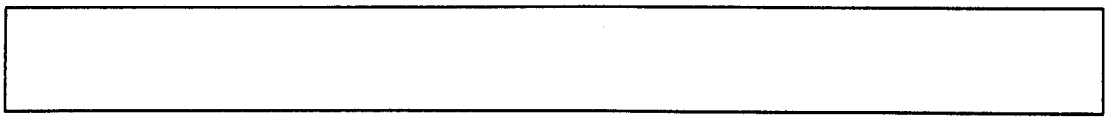
Weighting

Outputs

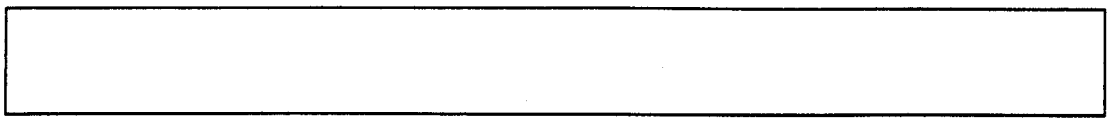
Stakeholder centric –Transformative & Innovative and Status Quo

Policy and standards–Transformative & Innovative and Status Quo

Fluid and organic approach–Transformative & Innovative and Status Quo



Community profile –Transformative & Innovative and Status Quo



Communications aspects–Transformative & Innovative and Status Quo

Research and validation–Transformative & Innovative and Status Quo

Transactional performance measurement –Transformative & Innovative and Status Quo

Project value, promises, expectations –Transformative & Innovative and Status Quo

Viability –Transformative & Innovative and Status Quo

APPENDIX VII

PROPOSAL # 2 - GOVERNMENT OF CANADA CASES - TEST 1, 2 & 3

	Project Introduction Descriptic	GoC Canadian Olympics 2010 Test Case #1	GoC National Research Council NRC SAP-ERP-Test Case #2	GoC Treasury Board Secretariat Secure Channel -Test Case # 3
1	**Project purpose**	To provide Spectrum management, the telecommunication licenses to broadcast the Olympic Games	To provide enterprise resource planning systems on a national basis	To provide multi-channel; one stop access to E-gov services in a safe and secure environment
2	**Project owner**	Industry Canada	National Research Council	GoC-PWGSC
3	**Contact information/Role**	Senior Project Manager Relationship to organizational mandate To manage all Spectrum use (telecommunication licenses) within Canada	Senior Project Manager Relationship to organizational mandate To provide resource planning systems	Senior Project Manager Relationship to organizational mandate To provide secure single access to GoC services
4	**Sponsor**	Ministerial mandate and commitment to provide world class telecommunications facilities to the 2010 Olympic Games	National Research Council President	GoC-Treasury Board Secretariat and the Department of Government Services and Public Works

	Project Introduction Descriptic	GoC Canadian Olympics 2010 Test Case #1	GoC National Research Council NRC SAP-ERP-Test Case #2	GoC Treasury Board Secretariat Secure Channel -Test Case # 3
5	**Stakeholder requirements (High level)**	To have secure telecommunications broadcast facilities	To provide integrated eGovernment business systems	To provide businesses, citizens, and employees with browser-multi-channel access to one entry point to eGov services.
6	**Cost and schedule**	2 years (2008) to meet February 2010 - $30M	2 years (1997/1998) $25M	5 years (1999/2003) $2.0B
7	**Historical information**	Beijing and Turin Olympics	Previous financial personnel and procurement systems	Previous government systems that provided services to businesses, citizens, and employees
8	**Project Selection criteria**	Ministerial mandate	System integration, reliability and scope	The provision of on line; real time government services
9	**Project Manager skill set**	Applications area of telecommunications and Government wide project management experience Generally accepted project management and practice General management knowledge and practice	Earned value management experience eGovernment experience Project management accreditation	Earned value management experience eGovernment experience Project management accreditation General management knowledge and practice

	Project Introduction	Descriptic	GoC Canadian Olympics 2010 Test Case #1	GoC National Research Council NRC SAP-ERP-Test Case #2	GoC Treasury Board Secretariat Secure Channel -Test Case # 3
10	**Expected Project Outcomes**		a. Sustained Industry Canada reputation for provision of Spectrum management for the Olympic Games Satisfied user stakeholders Improved Spectrum management service delivery to Broadcaster and Policing agencies through the integration of new technology, new technology and newly skilled personnel b. Project Description Outputs ►Project Description ►Project Charter ►Appointment of project Manager c. Expected project Outcomes	a. Replacement of all legacy systems User access to corporate data/information Integration of personnel, finance and procurement activities b. Project Description Outputs ►Project Description ►Project Charter ►Appointment of project Manager c. Expected project Outcomes	a. Replacement of all legacy systems User access to corporate data/information Integration of personnel, finance and procurement activities b. Project Description Outputs project description project charter, Appointment of project manager Expected project outcomes

	eGOVERNMENT Challenge # 1 Governance	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1	**Input: Approval structure**	Inter departmental Project Steering committee chaired by Industry Canada Intra departmental Advisory Committee	Departmental Project Steering Committee Vendor Advisory Board	Private sector consortium representatives; Government Central Agencies; Government departments. Employee unions; Citizen advisory groups
2	**Input: Appointment and authority of project manager**	Projectized authority (complete control) Development of project management plan and team	Projectized authority (complete control) Business Case Approval High Level Business Requirements	Projectized authority (resources/schedule) Stakeholder commitment Business Case Approval; start-up contracts
3	**Input: Subject matter expertise and location**	Assigned by the Steering Committee and being accessible to the Project Management Team	Corporate specialists in Human Resources, Finances and Material Management Business Operations Management	Representatives from government central agencies; expertise from government departments
4	**Output: Governance Structure**			

5	Output: Project Manager Authority			
6	Output: Subject Matter Expertise			

eGOVERNMENT Governance	Challenge	#	1

Characteristics	Canadian Olympics 2010 – Sample	Report	Print
Input: Approval structure	Inter departmental Project Steering committee chaired by Industry Canada Intra departmental Advisory Committee		
Input: Appointment and authority of project manager	Projectized authority (complete control) Development of project management plan and team		
Input: Subject matter expertise and location	Assigned by the Steering Committee and being accessible to the Project Management Team		

eGOVERNMENT Governance	Challenge # 1		
Characteristics	**Canadian Olympics 2010 – Sample**	**Report**	**Print**
Output: Governance Structure			
Output: Project Manager Authority			
Output: Subject Matter Expertise			

	eGOVERNMENT Stakeholder Interests	Challenge # 2	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1	Stakeholder Name		Industry Canada	Nat'l Research Council-CS	Secure channel -PWGSC

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1.1	**Relationship of each stakeholder to the project**	Service provider	Service provider	Service provider
1.1.1	**Weighting**	High	High	High
1.2	**Interests of stakeholders**	Spectrum mgt (telecommunications broadcast licenses) service	Provide ERP services	Egovernment enterprise integration
1.2.1	**Weighting**	High Medium	High Medium	High Medium
1.3	**Stakeholder responsibilities**	Provide uninterrupted broadcast service	Corporate system services to all NRC organizations	To provide requirements; testing and evaluation; approval and sign-off
1.3.1	**Weighting**	High	High	High

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1.4	**Stakeholder participation**	Provision of licenses and interference resolution	Develop and implement ERP	Requirements; test; implement; use and evaluate
1.4.1	**Weighting**	High Medium	High Medium	High Medium
1.5	**Stakeholder resource commitment**	People, financial, equipment	Information, human resources, finance, equipment	Resources; expertise; advice
1.5.1	**Weighting**	Medium	Medium	Medium
1.6	**Accountability**	Uninterrupted broadcast service	Uninterrupted ERP services	Multi-channel, single access to government services; securely
1.6.1	**Weighting**	High	High	High

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1.7	**Inter-stakeholder impact**	Olympic committee, safety and security agencies, Olympic athletes, Canadian public, world wide audiences	NRC corporate services and line operation, Govt of Canada - TBS and Receiver General and	government central agencies and departments; government employees; businesses; citizens
1.7.1	**Weighting**	Medium Low	Medium Low	Medium Low
2	**Stakeholder Name**	**Broadcasters**	**TBS and Receiver General**	**TBS and PWGSC**
2.1	**Relationship of each stakeholder to the project**	Provide broadcast services	Provide policies, direction and guidelines for ERP services	Policy; Process; Technology
2.1.1	**Weighting**	High	High	High
2.2	**Interests of stakeholders**	Telecommunications and transmission of games	eGovt oversight, HR and financial control	Security services; Network services; Operations services; broker services

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
2.2.1	**Weighting**	High Medium	High Medium	High
2.3	**Stakeholder responsibilities**	Adhere to Industry Canada spectrum mgt regime	Ensure goal of gov't requirements are addressed	Government wide telecommunications network ; authentication; authorization; administration
2.3.1	**Weighting**	High	High	High
2.4	**Stakeholder participation**	Transmission of games activities	Business case approval and scope and schedule approvals	Expand government capacity in authentication and security, auditing, brokering, payments beyond the GC
2.4.1	**Weighting**	Medium	Medium	Medium Low
2.5	**Stakeholder resource commitment**	Equipment, financial, people	Finance	authority to proceed; finance;

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
2.5.1	Weighting	Medium	Low	High
2.6	Accountability	Complete games coverage	To ensure eGovt policy and direction oversight	Meet business, citizens, and employee expectations for the whole-of - government services
2.6.1	Weighting	Medium	High Medium	High
2.7	Inter-stakeholder impact	Canadian public, world wide audiences	NRC corporate services, NRC business and citizen users	Canadian and international business; Canadian citizens; GC employees
2.7.1	Weighting	High	High Medium	Medium
3	**Stakeholder Name**	**Public**	**Line Operations**	**GC-departments**

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
3.1	**Relationship of each stakeholder to the project**	View telecommunications broadcasts	Service user	Service providers
3.1.1	**Weighting**	Low	Medium	High Medium
3.2	**Interests of stakeholders**	Unfettered games coverage	Use of ERP to manage the cost and schedules of line operations of research projects	Client-centric service delivery; improve service quality; improve cost /value effectiveness
3.2.1	**Weighting**	High Medium	High Medium	Medium
3.3	**Stakeholder responsibilities**	N/A	Eliminate legacy systems and use the NRC ERP	Ensure that department business models and front-end client interfaces are integrated with secure channel objectives
3.3.1	**Weighting**	N/A	High Medium	High Medium

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
3.4	**Stakeholder participation**	View the Games	To adapt and enhance current operations and procedures to manage the ERP govt solutions	Identify and authorize clients ; comply with TBS and departmental legislative requirements
3.4.1	**Weighting**	High	Medium	Medium
3.5	**Stakeholder resource commitment**	N/A	Reallocation of HR operational activities	Incorporate departmental systems, procedures, and processes
3.5.1	**Weighting**	N/A	High Medium	High Medium
3.6	**Accountability**	None	Adhere to the ERP solution by modifying business operations	Improved user satisfaction and confidence in departmental services
3.6.1	**Weighting**	N/A	Medium	Medium

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
3.7	**Inter-stakeholder impact**	Citizen satisfaction	Corporate services, citizens, line operations personnel	Impact on business, citizen, and employee secure and private access to government services
3.7.1	**Weighting**	Medium	High Medium	High Medium
4	**Stakeholder Name**	**Safety Units**	**Citizens**	**GC employees; Canadian citizens; national and international businesses.**
4.1	**Relationship of each stakeholder to the project**	Spectrum use	User of NRC services	Use of GC services;
4.1.1	**Weighting**	High	Medium	High Medium

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
4.2	**Interests of stakeholders**	Maintain priority of spectrum use	NRC user research projects	To ensure that GC services are provided on a single access, multi-channel basis in a secure and private manner
4.2.1	**Weighting**	High	High Medium	Medium
4.3	**Stakeholder responsibilities**	Safety response	Conduct NRC projects in response to NRC funding	To use the secure channel facilities rather than contact individual departments through their still existing legacy systems
4.3.1	**Weighting**	High	High	Medium
4.4	**Stakeholder participation**	Safety response	Submit projects for evaluation and approval	To follow the secure channel best practices and processes in a high availability internet environment

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
4.4.1	Weighting	High	Medium Low	Medium Low
4.5	Stakeholder resource commitment	People	Research expertise, plans and objectives	educational effort; internet access equipment-browsers; behavioral changes
4.5.1	Weighting	Medium	High Medium	High Medium
4.6	Accountability	Priority response	Report on progress to NRC	Secure channel uptake; quality assurance
4.6.1	Weighting	High	Medium Low	Medium Low
4.7	Inter-stakeholder impact	Spectrum users	NRC line operations, other user research programs	Federal depats; provincial ministries; non-profit organizations; private sector companies

	eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
4.7.1	Weighting	High Medium	High Medium	Medium Low

eGOVERNMENT Challenge # 2 Stakeholder Interests	Canadian Olympics 2010 - Sample		Canadian Olympics 2010 - Sample		Report	Print
Characteristics	Industry Canada	Broadcasters	Public	Safety Units		
Relationship	Service provider, High	Provide broadcast services, High	View telecommunications broadcasts, Low	Spectrum use, High		

Interests	Spectrum mgt (telecommunications broadcast licenses) service, High Medium	Telecommunications and transmission of games, High Medium	Unfettered games coverage, High Medium	Maintain priority of spectrum use, High
Responsibilities	Provide uninterrupted broadcast service, High	Adhere to Industry Canada spectrum mgt regime, High	N/A, N/A	Safety response, High
Participation	Provision of licenses and interference resolution, High Medium	Transmission of games activities, Medium	View the Games, High	Safety response, High
Resource Commitment	People, financial, equipment, Medium	Equipment, financial, people, Medium	N/A, N/A	People, Medium
Accountability	Uninterrupted broadcast service, High	Complete games coverage, Medium	None, N/A	Priority response, High
Impact	Olympic committee, safety and security agencies, Olympic athletes, Canadian public, world wide audiences, Medium Low	Canadian public, world wide audiences, High	Citizen satisfaction, Medium	Spectrum users, High Medium

	eGOVERNMENT Challenge # 3 Information Management	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1	**Input: Business case**	Outlines the mandate, the approach, expected outcomes, resources, strategy, success criteria	Outlines the mandate, the approach, expected outcomes, resources, strategy, success criteria	Mandates the development and implementation of the GOL infrastructure for PWGSC--an internet/intranet web portal and operations control center.
2	**Input: High level requirements**	License requirements Resolution requirements Stakeholder interests Shared information requirements Key delivery dates Key resource requirements Source and location and accessibility	Corporate service requirements TBS and Receiver General requirements Business and citizen interests Integration of corporate and operational systems Elimination and/or integration of legacy systems Government of Canada security requirements	Security services; network services; directory services; operations services; broker services

	eGOVERNMENT Challenge # 3 Information Management	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
3	**Input: Information required from new processes and transactions**	New reporting criteria New reporting tools Event transaction and process definition Work flows	New business models New interfaces with TBS and Receiver General Integration of corporate services and operational activities Automated work flows	Identify and authorize clients; legally support transactions; limit departmental exposure; guarantee privacy and security
4	**Output: Information Management Regime**			
5	**Output: Event reporting system**			

eGOVERNMENT Challenge # 3

Information Management

Characteristics	Canadian Olympics 2010 – Sample
Input: Business case	Outlines the mandate, the approach, expected outcomes, resources, strategy, success criteria
Input: High level requirements	License requirements Resolution requirements Stakeholder interests Shared information requirements Key delivery dates Key resource requirements Source and location and accessibility
Input: Information required from new processes and transactions	New reporting criteria New reporting tools Event transaction and process definition Work flows
Output: Information Management Regime	
Output: Event reporting system	

Report Print

	eGOVERNMENT Challenge # 4 Lessons Learned	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1	**Input: Previous events**	Winter and summer Olympics from Beijing and Turin	Use of NRC legacy systems	Individual Federal government service delivery systems;
2	**Input: Historical information**		Assessment by corporate services, line operations and business and citizen users	Organizational process assets--policies; procedures; templates; standards
3	**Input: Commitment to record lessons learned from planning and development**	Other Spectrum management events and exercises	Review of ERP work done by 14 other federal depts	Planning reports form work done by the GC largest departments
4	**Input: Commitment to record lessons learned from operational results**	Documented issues, risks, techniques, successes/best practices, failures	Documentation from ERP prototype and test cases	Central agency audits and evaluations of service delivery operations in the largest GC departments
5	**Output: Organizational assets repository**			

eGOVERNMENT Challenge # 4

Lessons Learned

Characteristics	Canadian Olympics 2010 - Sample
Input: Previous events	Winter and summer Olympics from Beijing and Turin
Input: Historical information	
Input: Commitment to record lessons learned from planning and development	Other Spectrum management events and exercises
Input: Commitment to record lessons learned from operational results	Documented issues, risks, techniques, successes/best practices, failures
Output: Organizational assets repository	

Report Print

	eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
1	**Characteristics**	**Manage core entity activities**	**Manage core entity activities**	**Manage core entity activities**
1.1	**Technology Description**	Enhanced/new technology to support Olympic event	Best of Breed E/gov ERP	Provide private and secure government services to business; citizens; and GC employees
1.1.1	**Weighting**	Medium	High Medium	High
1.2	**People description**	Increased training and skills to support Olympic event	Develop holistic skill sets to manage integrated ERP	Integrations of GC Central agency and department personnel
1.2.1	**Weighting**	High Medium	Medium	High Medium
1.3	**Process description**	New and streamlined processes due to more and different kinds of transactions to support Olympic event	Integrated business model to support integration NRC, TBS, Receiver General	Multi-channel access; security and privacy processes
1.3.1	**Weighting**	High Medium	Medium	High
2	**Characteristics**	**Respond to evolving priorities**	**Respond to evolving priorities**	**Respond to evolving priorities**
2.1	**Technology Description**	Enhanced/new technology to support Olympic event	new technology to support a new business approach to eGovt	Single access to integrated GC delivery services
2.1.1	**Weighting**	High	Medium	High Medium
2.2	**People description**	Increased training and skills to support Olympic event	Trained to business approach rather than the transaction approach to eGov	GoC employee expanded capabilities; and with other jurisdictions
2.2.1	**Weighting**	Medium	High Medium	High Medium

	eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
2.3	**Process description**	New and streamlined processes due to more and different kinds of transactions to support Olympic event		New service delivery capacity-authentication security -auditing-brokering
2.3.1	**Weighting**	Medium		High
3	**Characteristics**	**Integrate operations**	**Integrate operations**	**Integrate operations**
3.1	**Technology Description**	New systems and equipment to handle Olympic event	Egovernment integration of ERP systems based upon the business model that serves business, citizens and government employees	Integrate GoC departmental activities and broker the activities through one point of contact
3.1.1	**Weighting**	Medium	High Medium	High
3.2	**People description**	Increase the degree of specialization and review organizational units to handle workload for Olympics event	Providing personnel training and development that enables all users of the NRC-ERP to independently manage their eGov activities - reduce clerical support; reduce layers of management	Provided skill sets in technical architecture, quality assurance, user interfaces; applications; and operations.
3.2.1	**Weighting**	High	Medium	High Medium
3.3	**Process description**	Revise our processes to integrate license management with interference resolution	Develop the process to enable the NRC line managers to meet their client (business and citizens) expectations without depending on NRC corporate, TBS or the Receiver General	Process needed to allow citizens, businesses, and government employees to have secure and private multi-channel access to disparate government services
3.3.1	**Weighting**	Medium	High Medium	High

	eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
4	**Characteristics**	**Entity reporting**	**Entity reporting**	**Entity reporting**
4.1	**Technology Description**	Performance reporting systems	Reporting systems that flow from the ERP database without additional system intervention	Reporting facilities for security, directory, network, operations, and brokering
4.1.1	**Weighting**	High	Medium	High Medium
4.2	**People description**	New organization structure	Organization structure based upon the integrated business model, process and ERP system	Establish a delivery organization that includes GC central agencies and departments; privates sector contractors; and key use stakeholders
4.2.1	**Weighting**	Medium	High	High Medium
4.3	**Process description**	Dashboard and project reporting	Develop the process to enable the NRC line managers to meet their client (business and citizens) expectations without depending on NRC corporate, TBS or the Receiver General	Establish the appropriate integration of policy ; process; and technology
4.3.1	**Weighting**	High	Medium	High
5	**Characteristics**	**Harness technical development**	**Harness technical development**	**Harness technical development**
5.1	**Technology Description**	Enhanced systems	Develop and manage the Best of Breed eGovt ERP in support of the new business model	Enable systems to securely route information from department to department am0ng all levels of government
5.1.1	**Weighting**	Medium	High	High Medium

	eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
5.2	**People description**	Training	Change management and training regime to handle cultural shock, business process modification, and system processing demands	Training and development to manage interdepartmental systems, methods, and operations.
5.2.1	**Weighting**	Medium	High	High Medium
5.3	**Process description**	Automated processes	Implement and use automated processes that reflect the new business model and the process inherent in the NRC-ERP	Integrate technology with policy, process, and operations , to achieve service transformation
5.3.1	**Weighting**	Medium	Medium	High Medium
6	**Characteristics**	**Include subject matter expertise**	**Include subject matter expertise**	**Include subject matter expertise**
6.1	**Technology Description**	system and process understanding	Functional expertise in core corporate areas, line operations, interfaces with TBS and the Receiver General	Technical knowledge of services for security; directories; networks; and operations
6.1.1	**Weighting**	Low	High	Medium
6.2	**People description**	Technical and operational expertise	Technical expertise in ERP processing techniques	Expertise in service delivery, business systems, enabling infrastructure, and information management
6.2.1	**Weighting**	High Medium	High Medium	High Medium
6.3	**Process description**	N/A	Ensuring that the new ERP processes map to the new business model	processes to modify front-end client interfaces and business models to address integrated service delivery across all access channels

	eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample	NRC SAP-ERP # 2	Secure Channel # 3
6.3.1	Weighting	N/A	Medium Low	High Medium

eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample		Canadian Olympics 2010 - Sample		
Characteristics	**Technology**	**People**	**Process**	**Report**	**Print**
Manage core entity activities	Enhanced/new technology to support Olympic event, Medium	Increased training and skills to support Olympic event, High Medium	New and streamlined processes due to more and different kinds of transactions to support Olympic event, High Medium		
Respond to evolving priorities	Enhanced/new technology to support Olympic event, High	Increased training and skills to support Olympic event, Medium	New and streamlined processes due to more and different kinds of transactions to support Olympic event, Medium		
Integrate operations	New systems and equipment to handle Olympic event, Medium	Increase the degree of specialization and review organizational units to handle workload for Olympics event, High	Revise our processes to integrate license management with interference resolution, Medium		
Entity reporting	Performance reporting systems, High	New organization structure, Medium	Dashboard and project reporting, High		
Harness technical development	Enhanced systems, Medium	Training, Medium	Automated processes, Medium		
Include subject matter expertise	system and process understanding, Low	Technical and operational expertise, High Medium	N/A, N/A		

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
1	**Characteristics**	**Stakeholder centric**	**Stakeholder centric**	**Stakeholder centric**
1.1	**Transformative & Innovative Description**	New commitment in turn around times	The business model is based on NRC stakeholder needs - corporate services, line operators, business and citizen users, and interface with eGov central agencies (TBS/RG)	Business model must address the needs of citizens. Business, and GC employees for multi-channel access to integrated GC departmental services
1.1.1	**Weighting**	High	High	High
1.2	**Status Quo**		Existing service delivery model excludes integrated delivery functions and associated service delivery information	The existing model does not contain a common infrastructure that enables Canadians to conduct secure and private electronic business transactions
1.2.1	**Weighting**	Medium	Medium	
2	**Characteristics**	**Policy and standards**	**Policy and standards**	**Policy and standards**
2.1	**Transformative & Innovative Description**	Higher performance (turn around time for application levels)	Policies and standards are derived from the business model which is focused on stakeholder needs	Policies and standards must incorporate individual departments legislative requirements and ministerial commitments

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
2.1.1	**Weighting**	N/A	Medium	High
2.2	**Status Quo**	Applications and interference do not have the same urgency except for safety issues s	The business model's integration of policy and standards reflects a disparate approach to eGovt	Departments provide services to clients on a department by department basis
2.2.1	**Weighting**	Low	Medium	Medium Low
3	**Characteristics**	**Fluid and organic approach**	**Fluid and organic approach**	**Fluid and organic approach**
3.1	**Transformative & Innovative Description**	Event based	The business model provides for business and technical changes that lead to additional integration but that adhere to the policies and standards that flow from the model	The GC ' as an enterprise' business model incorporates departments and central agencies to operate on a user-pay basis
3.1.1	**Weighting**	Medium	High	High Medium
3.2	**Status Quo**	N/A	Inability to tailor the ERP system to changing stakeholder needs	Disparate and independent models do not address the 'whole-of-government' requirements
3.2.1	**Weighting**	N/A	High	
4	**Characteristics**	**Community profile**	**Community profile**	**Community profile**

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
4.1	Transformative & Innovative Description	N/A	A key element in the Business model is that the needs of the NRC business and citizen stakeholders are the major determinant of the model structure; albeit service the needs of service delivery arms are included in the model	the business model addresses ease of access; interdepartmental trust, client centricity; and government as an enterprise
4.1.1	Weighting	N/A	High	High
4.2	Status Quo	Ministerial guide to Canada's games	a key element in the Business model is that the needs of the NRC business and citizen stakeholders are the major determinant of the model structure; albeit service the needs of service delivery arms are included in the model	The existing model focuses on departmental independence and hording of GC information
4.2.1	Weighting	N/A	Medium	Medium Low
5	Characteristics	Communications aspects	Communications aspects	Communications aspects

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
5.1	**Transformative & Innovative Description**	Reputation and involvement of the public	The NRC end-user stakeholders-citizens and businesses are fundamental communication components of business model	Widespread and in-depth communications is needed among delivery agents, government regulators, GC employees, union citizens, and businesses.
5.1.1	**Weighting**	Medium	High Medium	High
5.2	**Status Quo**	N/A	The lack of ERP integration precludes the all the business functionality and associated information being assembled in formats that address the specific needs of each stakeholder	Independent communications by each department instead of the integrated enterprise approach
5.2.1	**Weighting**	N/A	Medium	Medium
6	**Characteristics**	**Research and Validation**	**Research and Validation**	**Research and Validation**
6.1	**Transformative & Innovative Description**	N/A	The business model is focused on NRC business and citizen stakeholders where the preponderance of the research and validation occurs	Business, technology, legal, and human resource expertise are the drivers in the Innovative business model.
6.1.1	**Weighting**	N/A	High	High

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
6.2	**Status Quo**	New equipment	The existing process precludes research and evaluation and interactively collaborating with stakeholders and delivery agents	Research and Validation is focused on independent departmental transaction activity
6.2.1	**Weighting**	Medium	Medium	Medium Low
7	**Characteristics**	**Transactional Performance measurement**	**Transactional Performance measurement**	**Transactional Performance measurement**
7.1	**Transformative & Innovative Description**	N/A	The business model identifies the appropriate transactional measurements by reference to stakeholder requirements and ERP integration facilities	The business model is based on user pay transaction use and it is compared with the level of performance from each
7.1.1	**Weighting**	N/A	High	
7.2	**Status Quo**	License application and interference resolution approval	The heavy focus on performance indicators that were not business model driven need to be modified to phase in the key performance indicators from the business mode	There is no user-pay that allocates costs to individuals. Businesses, GC employees, and trusted partners
7.2.1	**Weighting**	High Medium	Medium	Medium Low
8	**Characteristics**	**Project value, promises, expectations**	**Project value, promises, expectations**	**Project value, promises, expectations**

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
8.1	Transformative & Innovative Description	N/A	These attributes are based on the business model that reflects existing and changing stakeholder needs	The business model incorporates all stakeholder delivery agents and user stakeholders in an interactive, on-going approach so that changes in perspectives are accommodated.
8.1.1	Weighting	N/A	High	High
8.2	Status Quo	Delivery of licenses within performance targets	The attributes that were based on the project charter need to be upgraded to reflect the business model.	Without an integrated service delivery agent and without a single point of access the project value, promises, and expectations contain redundancy, gaps, and communications overlap.
8.2.1	Weighting	High Medium	Medium	High
9	Characteristics	**Viability**	**Viability**	**Viability**
9.1	Transformative & Innovative Description	N/A	The business model is a holistic representation of needs of the NRC stakeholders and the capacity for the NRC service delivery function to develop and maintain the ERP systems within requires resourcing constraints.	The technical, economic, legal, operational, and schedule aspects of the project are managed on an integrated, enterprise basis.

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
9.1.1	Weighting	N/A	High Medium	High
9.2	Status Quo	Traditional application (cost containment less relevant as must be met)	The traditional technical and financial drivers need to be modified to upgrade to the holistic business model	There is no consolidation nor sharing of costs and benefits among stakeholders,
9.2.1	Weighting	High	Medium	Medium Low

eGOVERNMENT Challenge # 6
Innovative Business Model

Canadian Olympics 2010 - Sample

Report Print

Characteristics	Transformative & Innovative	Status Quo
Stakeholder centric	New commitment in turn around times, High	, Medium
Policy and standards	Higher performance (turn around time for application levels), N/A	Applications and interference do not have the same urgency except for safety issues s, Low
Fluid and organic approach	Event based, Medium	N/A, N/A
Community profile	N/A, N/A	Ministerial guide to Canada's games, N/A
Communications aspects	Reputation and involvement of the public, Medium	N/A, N/A

Research and Validation	N/A, N/A	New equipment, Medium
Transactional Performance measurement	N/A, N/A	License application and interference resolution approval, High Medium
Project value, promises, expectations	N/A, N/A	Delivery of licenses within performance targets, High Medium
Viability	N/A, N/A	Traditional application (cost containment less relevant as must be met), High

eGOVERNMENT Challenge # 5 Organizational Interdependencies	Canadian Olympics 2010 - Sample		Canadian Olympics 2010 - Sample		
Characteristics	**Technology**	**People**	**Process**	**Report**	**Print**
Manage core entity activities	Enhanced/new technology to support Olympic event, Medium	Increased training and skills to support Olympic event, High Medium	New and streamlined processes due to more and different kinds of transactions to support Olympic event, High Medium		
Respond to evolving priorities	Enhanced/new technology to support Olympic event, High	Increased training and skills to support Olympic event, Medium	New and streamlined processes due to more and different kinds of transactions to support Olympic event, Medium		
Integrate operations	New systems and equipment to handle Olympic event, Medium	Increase the degree of specialization and review organizational units to handle workload for Olympics event, High	Revise our processes to integrate license management with interference resolution, Medium		
Entity reporting	Performance reporting systems, High	New organization structure, Medium	Dashboard and project reporting, High		
Harness technical development	Enhanced systems, Medium	Training, Medium	Automated processes, Medium		
Include subject matter expertise	system and process understanding, Low	Technical and operational expertise, High Medium	N/A, N/A		

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
1	**Characteristics**	**Stakeholder centric**	**Stakeholder centric**	**Stakeholder centric**
1.1	**Transformative & Innovative Description**	New commitment in turnaround times	The business model is based on NRC stakeholder needs - corporate services, line operators, business and citizen users, and interface with eGov central agencies (TBS/RG)	Business model must address the needs of citizens. Business, and GC employees for multi-channel access to integrated GC departmental services
1.1.1	**Weighting**	High	High	High
1.2	**Status Quo**		Existing service delivery model excludes integrated delivery functions and associated service delivery information	The existing model does not contain a common infrastructure that enables Canadians to conduct secure and private electronic business transactions
1.2.1	**Weighting**	Medium	Medium	
2	**Characteristics**	**Policy and standards**	**Policy and standards**	**Policy and standards**
2.1	**Transformative & Innovative Description**	Higher performance (turnaround time for application levels)	Policies and standards are derived from the business model which is focused on stakeholder needs	Policies and standards must incorporate individual departments legislative requirements and ministerial commitments

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
2.1.1	**Weighting**	N/A	Medium	High
2.2	**Status Quo**	Applications and interference do not have the same urgency except for safety issues s	The business model's integration of policy and standards reflects a disparate approach to eGovt	Departments provide services to clients on a department by department basis
2.2.1	**Weighting**	Low	Medium	Medium Low
3	**Characteristics**	**Fluid and organic approach**	**Fluid and organic approach**	**Fluid and organic approach**
3.1	**Transformative & Innovative Description**	Event based	The business model provides for business and technical changes that lead to additional integration but that adhere to the policies and standards that flow from the model	The GC ' as an enterprise' business model incorporates departments and central agencies to operate on a user-pay basis
3.1.1	**Weighting**	Medium	High	High Medium
3.2	**Status Quo**	N/A	Inability to tailor the ERP system to changing stakeholder needs	Disparate and independent models do not address the 'whole-of-government' requirements
3.2.1	**Weighting**	N/A	High	
4	**Characteristics**	**Community profile**	**Community profile**	**Community profile**

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
4.1	Transformative & Innovative Description	N/A	A key element in the Business model is that the needs of the NRC business and citizen stakeholders are the major determinant of the model structure; albeit service the needs of service delivery arms are included in the model	the business model addresses ease of access; interdepartmental trust, client centricity; and government as an enterprise
4.1.1	Weighting	N/A	High	High
4.2	Status Quo	Ministerial guide to Canada's games	a key element in the Business model is that the needs of the NRC business and citizen stakeholders are the major determinant of the model structure; albeit service the needs of service delivery arms are included in the model	The existing model focuses on departmental independence and hording of GC information
4.2.1	Weighting	N/A	Medium	Medium Low
5	Characteristics	Communications aspects	Communications aspects	Communications aspects

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
5.1	**Transformative & Innovative Description**	Reputation and involvement of the public	The NRC end-user stakeholders-citizens and businesses are fundamental communication components of business model	Widespread and in-depth communications is needed among delivery agents, government regulators, GC employees, union citizens, and businesses.
5.1.1	**Weighting**	Medium	High Medium	High
5.2	**Status Quo**	N/A	The lack of ERP integration precludes the all the business functionality and associated information being assembled in formats that address the specific needs of each stakeholder	Independent communications by each department instead of the integrated enterprise approach
5.2.1	**Weighting**	N/A	Medium	Medium
6	**Characteristics**	**Research and Validation**	**Research and Validation**	**Research and Validation**
6.1	**Transformative & Innovative Description**	N/A	The business model is focused on NRC business and citizen stakeholders where the preponderance of the research and validation occurs	Business, technology, legal, and human resource expertise are the drivers in the Innovative business model.
6.1.1	**Weighting**	N/A	High	High

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
6.2	**Status Quo**	New equipment	The existing process precludes research and evaluation and interactively collaborating with stakeholders and delivery agents	Research and Validation is focused on independent departmental transaction activity
6.2.1	**Weighting**	Medium	Medium	Medium Low
7	**Characteristics**	**Transactional Performance measurement**	**Transactional Performance measurement**	**Transactional Performance measurement**
7.1	**Transformative & Innovative Description**	N/A	The business model identifies the appropriate transactional measurements by reference to stakeholder requirements and ERP integration facilities	The business model is based on user pay transaction use and it is compared with the level of performance from each
7.1.1	**Weighting**	N/A	High	
7.2	**Status Quo**	License application and interference resolution approval	The heavy focus on performance indicators that were not business model driven need to be modified to phase in the key performance indicators from the business mode	There is no user-pay that allocates costs to individuals. Businesses, GC employees, and trusted partners
7.2.1	**Weighting**	High Medium	Medium	Medium Low
8	**Characteristics**	**Project value, promises, expectations**	**Project value, promises, expectations**	**Project value, promises, expectations**

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
8.1	Transformative & Innovative Description	N/A	These attributes are based on the business model that reflects existing and changing stakeholder needs	The business model incorporates all stakeholder delivery agents and user stakeholders in an interactive, on-going approach so that changes in perspectives are accommodated.
8.1.1	Weighting	N/A	High	High
8.2	Status Quo	Delivery of licenses within performance targets	The attributes that were based on the project charter need to be upgraded to reflect the business model.	Without an integrated service delivery agent and without a single point of access the project value, promises, and expectations contain redundancy, gaps, and communications overlap.
8.2.1	Weighting	High Medium	Medium	High
9	Characteristics	**Viability**	**Viability**	**Viability**
9.1	Transformative & Innovative Description	N/A	The business model is a holistic representation of needs of the NRC stakeholders and the capacity for the NRC service delivery function to develop and maintain the ERP systems within requires resourcing constraints.	The technical, economic, legal, operational, and schedule aspects of the project are managed on an integrated, enterprise basis.

	eGOVERNMENT Challenge # 6 Innovative Business Model	Canadian Olympics 2010 - Sample	NRC SAP-ERP #	Secure Channel # 3
9.1.1	Weighting	N/A	High Medium	High
9.2	Status Quo	Traditional application (cost containment less relevant as must be met)	The traditional technical and financial drivers need to be modified to upgrade to the holistic business model	There is no consolidation nor sharing of costs and benefits among stakeholders,
9.2.1	Weighting	High	Medium	Medium Low

eGOVERNMENT Challenge # 6
Innovative Business Model

Canadian Olympics 2010 - Sample

Characteristics	Transformative & Innovative	Status Quo
Stakeholder centric	New commitment in turnaround times, High	, Medium
Policy and standards	Higher performance (turnaround time for application levels), N/A	Applications and interference do not have the same urgency except for safety issues s, Low
Fluid and organic approach	Event based, Medium	N/A, N/A
Community profile	N/A, N/A	Ministerial guide to Canada's games, N/A
Communications aspects	Reputation and involvement of the public, Medium	N/A, N/A

Report Print

Research and Validation	N/A, N/A	New equipment, Medium
Transactional Performance measurement	N/A, N/A	License application and interference resolution approval, High Medium
Project value, promises, expectations	N/A, N/A	Delivery of licenses within performance targets, High Medium
Viability	N/A, N/A	Traditional application (cost containment less relevant as must be met), High

APPENDIX VIII

PROPOSAL #3 - PROJECT CONCEPT DOCUMENT INFORMATION PER eGOVERNMENT CHALLENGE

	Individual Stakeholder Profile
1. Requirement to manage diverse and conflicting stakeholder interests within a governance framework Stakeholder interests are always conflicting because eGovernment applications are usually developed with one or more departments and central agencies. Each of these departments and agencies has a unique legislative mandate, accountability regime, culture, history and background, and more recently security requirements.	- Interests - Relationship to and responsibility for the project and product - Resource contribution

2. Challenge to continuously adapt to and blend technology, people and processes Today's system environment is more organic that it was in the past; previously, system solutions were applied to a corporate service environment. Today's systems are at the core of company performance, not on the periphery. They are significantly affected by evolving priorities and circumstances, and are more integrated with the operational environment including technological developments, the capacity of the resource experts, and constantly changing and evolving business processes.	- Identify and document the affected organizational business process - Identify and document the associated organizational units, affected personnel and impact on their responsibilities
3. Outdated business models that reward traditional applications	
Most business models do not recognize that collaborative and unprecedented solutions do not meet the criteria for performance measurement targets, accurate costing and resource utilization, and work plan deliverables whose solutions are not known until they are negotiated and well into the implementation stage. Promises of cost and resource reductions along with improved efficiency and effectiveness gains the funder's attention more than promises of transformation and innovation.	- Document the project elements to meet the business model criteria that recognizes Internet as participatory citizen engagement, and as transformational government wide innovative solutions

4. System development models affected by political realities and a new relationship with the private sector Most system development models do not recognize the 'stop and start' reality of projects affected by political cycles and funding priorities, and the need for system development fragments to be reused instead of continuously 'starting over'. Though cancelling projects is generally due to changing systems objectives, it is critical to recognize the waste of precious resources and time, and the inability to recover and reuse these efforts.	- Operate with predisposition to document system development criteria that assumes 'save and reuse' expectations - Assume working environment recognizes government wide operation and that requirements are often negotiated - Ensure private/public sector relationship (builder/user) understands interests of both parties, and success is through collaboration and progressive elaboration (attitudinal issue/managing expectations)
5. Lack of access to lessons learned and a body of knowledge for government wide projects Project managers are designing and implementing system solutions that are often unprecedented and government wide, and yet they have no facility to access the knowledge or benefit from the experience gained from other project managers in similar circumstances. The problem is that there is no way to harness previous experience and no demand to conduct and access lessons learned.	- Document, share and review lessons learned

6. Promises of interoperability, integration, and cost and resource savings The eGovernment environment is predicated upon a collaborative and partnership based environment that requires sharing both work and accountability responsibilities, and it is usually argued (and ultimately funded) under a banner of promised cost savings and resource reductions.	- Develop relevant/transformationally based (mission related/effectiveness of the approach) reasonable performance measures
7. Proliferation of information and the challenge to judiciously access and manage information The information age exacerbates project management because of the massive and exponentially produced data that must be sorted out to effectively implement system solutions. The interconnectedness of information and system requirements is so overwhelming that projects suffer from the weight of information. Mining through this data to retrieve the relevant information produces a 'spin and churn' that can be non-productive; and this along with the lack of authoritative control to wind through the layers of information can derail the project.	- Include in enterprise wide governance framework the responsibility for content and access to information

8. Lack of a comprehensive holistic approach to project management as the driving force Project management often plays the role of arbitrator, as it is often the agent that brings the disparate parties together to deliver a solution that was not driven by either party. This is usually the case with citizen centric applications as they cross the program interests of each of the contributing organizations. Project management needs to drive the solution to change the business processes of the affected departments and turn the solution into a government wide enterprise.	- Define project manager responsibilities to manage external and internal relationships, incorporate support services, and have the Governance support to 'push' the project into reality
9. Limited access to vital subject matter expertise Within governments, knowledge is either so vastly spread or not available that it is difficult for the project manager to understand the implications of systems design. The knowledgeable personnel are difficult to locate and approach given hierarchical and organizational limitations, and are frequently reassigned and no longer accessible.	- Include identification of and access to subject matter expertise in project manager's authority

10. Organizational environment not presupposed to enterprise wide transformation	
Departments do not necessarily act as units of a government enterprise; they are vertically based with individual objectives and resource reward mechanisms. Accountability of each department is to its Minister and senior officials, and to the government acts for which it was created.	- Include recognition of governmental wide organization in project manager responsibilities to cross boundaries to obtain subject matter expertise, locate information, identify barriers and legitimately 'will' the project forward

APPENDIX IX

PROPOSAL # 3 –PROJECT CONCEPT DOCUMENT
DATA ENTRY REQUIREMENTS

PROJECT DESCRIPTION:

(Refer to Project Charter for details)

Project Name:

Project Description:

Project Sponsor:

Project Manager Appointment/Description of Authority:

eGOVERNMENT CHALLENGE # 1 - STAKEHOLDER MANAGEMENT

Individual Stakeholder Profile

-Interests

-Relationship to and responsibility for the project and product

-Resource contribution

eGOVERNMENT CHALLENGE # 2 - BLENDING TECHNOLOGY, PEOPLE AND PROCESSES

-Identify the affected organizational business process

-Identify the associated organizational units, affected personnel and impact on their responsibilities

eGOVERNMENT CHALLENGE # 3 - UPDATED BUSINESS MODEL

-Document the project elements to meet the business model criteria that recognizes Internet as participatory citizen engagement, and transformational government wide innovative solutions

eGOVERNMENT CHALLENGE # 4 - NEW APPROACH TO SYSTEM DEVELOPMENT

-Operate with predisposition to document system development criteria that assumes 'save and reuse' expectations

-Assume working environment recognizes government wide operation and that requirements are often negotiated

-Ensure private/public sector relationship (builder/user) understands interests of both parties and success is through collaboration and progressive elaboration (attitudinal issue/managing expectations)

EGOVERNMENT CHALLENGE # 5 – LESSONS LEARNED

-Document, share and review lessons learned

eGOVERNMENT CHALLENGE # 6 – REASONABLE PROMISES

-Develop relevant/transformationally based (mission related/effectiveness of the approach) reasonable performance measures

eGOVERNMENT CHALLENGE # 7 - INFORMATION MANAGEMENT

-Include in enterprise wide governance framework the responsibility for content and access to information

eGOVERNMENT CHALLENGE # 8 – PROJECT MANAGEMENT

-Define project manager responsibilities to manage external and internal relationships, incorporate support services, and have the Governance support to 'push' the project into reality

eGOVERNMENT CHALLENGE # 9 – SUBJECT MATTER EXPERTISE

-Include identification of and access to subject matter expertise in project manager's authority

eGOVERNMENT CHALLENGE # 10 – GOVERNMENT WIDE ENTERPRISE

-Include recognition of governmental wide organization project manager responsibilities to cross boundaries to obtain subject matter expertise, locate information, identify barriers and legitimately 'will' the project forward

APPENDIX X

OTHER DISSEMINATION

Nominations

- Nominated by *CIO Canada Governments' Review* (Vol. 5, Issue 3, April 2003) as being one of Canada's key e-government drivers
- IBM Fellowship, 2007/2008

Conference Presentations on eGovernment Research

- Macao, China, United Nations, March 2010
- Ottawa, Ontario, Conference Board of Canada, February 2010
- Ottawa, Ontario, Conference Board of Canada, January 2009
- Ottawa, Ontario, Project Management Institute (PMI), November 2008
- Ottawa, Ontario, Canadian International Processing Society (CIPS), November 2007
- Montreal, Quebec, eGovernment International Conference (ICEG), September 2007
- London, United Kingdom, eGovernment Summit, March 2007
- Ankara, Turkey, e-Turkey Congress and Awards, December 2006
- Athens, Greece, WITSA, October 2006
- Dubai, United Arab Emirates, GCC e-Government Forum, May 2006
- Liverpool, LJMU, School of Mathematics & Computing, (PG Net), 2006
- Turin, Italy, Torino Digital World, September 2005
- London, UK, eGovernment Workshop, Brunel University, September 2005
- Vienna, Austria, WCIS Contributory Conference on ICT & Creatively, June 2005
- Washington, USA, World Bank, June 2005

- Dubai, United Arab Emirates, GCC e-Government Forum, May 2005
- Toronto, Ontario, Conference Board of Canada, December 2004
- Dar es Salaam, Tanzania, East Africa eGovernment Working Group, November 2004

Publications

Peer Reviewed - Author:

[1] Furlong, S. (2008). *Applicability of autonomic computing to e-government problems*, Emerald Publishing, Transforming Government: People, Process and Policy, 2008, Vol.2, Iss.1: p.8.

[2] Furlong, S. (to be published 2012), *Project Management: An eGovernment Driver?* 'Handbook of Research on E-Government in Emerging Economies: Adoption, E-Participation, and Legal Frameworks,' IGI Global, University of Botswana, http://www.igi-global.com.

[3] Furlong, S. and Wafi A-K. (2010). *Delivering professional projects: The effectiveness of project management in transformational e-government initiatives*, Emerald Publishing, Transforming Government: People, Process and Policy, Vol.4, Iss.1, 2010.

[4] Furlong, S. and Al-Karaghouli, W. (2009). *Determination of the effectiveness of project management in serving the progress of transformational eGovernment*, 9th European Conference on e-Government (ECEG 2009).

Peer Reviewed – Co-Author:

[5] Ezz, I., Furlong, S., and Papazafeiropoulou, A. (2006). *Large Scale E-Government Projects: The Need for Transdisciplinary Collaborating Teams*, eGov06, Brunel University, UK, September 2006.

[6] Taleb-Bendiab, A., Liu, K., Miseldine, P., Furlong, S., Rong, W. (2006). *Process-aware e-government services management: reconciling citizen, business and technology dynamics*, European and Mediterranean Conference on Information Systems (EMCIS), July 2006, Spain, International Journal on Cases on Electronic Commerce (IJCEC), 2007.

[7] Taleb-Bendiab, A., Liu, K., Miseldine, P., Furlong, S., Rong, W. (2009). Chapter XXII, Process-Aware E-Government Services Management: Reconciling Citizen Business, and Technology Dynamics, UK, ICI Global, 2009.

Non Peer Reviewed:

[8] Furlong, S. (2005a). *Spotlight on Government: one of the Missing Keys to Drive E-Government's Success: Professional Project Managers*, AllPM.com, March, 2005 http://www.allpm.com/modules.php?op=modloadandname=Newsandfile=articleandsid=1350.

[9] Furlong, S. (2005b). *One of the Missing Keys to Drive E-Government Success-Project Project Managers*, PMI Gov-SIG Magazine-March 2005 edition, pp.4-6. http://www.pmi-govsig.org/magazines/GovSIG-Mag-March2005.pdf.

[10] Furlong, S. (2005c). *E-Government in Canada: Building Public Trust through Citizen-Centred Governance*, Inter-American Development Bank, World Bank, Robert A. Vitro, Editor, The World Summit on the Information Society (WSIS), The Knowledge Economy in Development: Perspectives for Effective Partnerships, Washington, D.C., June 2005, pp.61-69, http://www.iadb.org/publications/search.cfm?Topics=COandlanguage=Englishandsearch Lang=E

[11] Furlong, S. (2006a). *Applicability of Autonomic Computing to E-Government Problems*, PGNET 2006, Liverpool, UK, June 2006. http://www.cms.livjm.ac.uk/pgnet2006/Programme/index.htm

[12] Furlong, S. (2006b). *Applicability of Autonomic Computing to E-Government Problems*, ICEG (International Conference on eGovernment), Conference Proceedings, Pittsburgh, Ohio, USA October 2006. http://www.academic-conferences.org/iceg/iceg2006/iceg2006-home.htm.

[13] Furlong, S. (2006c). *Key Findings – World Information Technology and Services Alliance eGovernment Survey*, October 2006, Athens, Greece, October, http://www.yasni.co.uk/philip+miseldine/check+people (previously posted on www.witsa.org).

[14] Furlong, S., Computer World Canada, Opinion: Professional project managers critical to e-government success, 28 May 2008 http://www.itworldcanada.com/news/opinion-professional-project-managers-critical-to-e-government-success/00916.