THE EVALUATION AND THE EFFECTIVENESS OF PROJECT MANAGEMENT IN TRANSFORMATIONAL E-GOVERNMENT PROJECTS

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Abstract

This paper forms part of an ongoing research of a PhD degree to describe, critically evaluate and examine the underlying barriers and challenges in large e-Government initiatives. The paper invites technology to be incorporated and inculcated into the art and science of project management, and be part of a passable solution as opposed to being distinct and separate from it. The tools used have to increase the novelty (art and science) of project management through human interaction, and empower the project manager and aiding his capacity in delivering the expected outcomes.

Due to inadequate implementations of project management procedures and processes, many large information technology systems (ITS) projects failed. This becomes a characteristic and encompasses e-Government project initiatives, due to ambitious program changes, major innovations, large transformations, enterprise wide solutions, collaboration across organizations' governments and private sectors, and the implementation of unprecedented (or ambitious) solutions.

This research paper critically analyses and summarises a list of e-Government challenges and barriers arising from an e-Government survey administered on behalf of the World Information Technology and Services Association (WITSA) which represents the national technology associations in 70 countries. It compares these challenges to the Project Management Body of Knowledge (PMBOK), which is the North American standard in project management methodology. In addition, it highlights the weaknesses in PMBOK to address these challenges and offers a technology-enabled enhancement to the Project Initiation Phase, the area identified as being particularly weak and inadequate in addressing e-Government initiatives and requirements.

Keywords: *e-Government, citizen, Project Management, Requirements, Sociotechnical, Information Technology Systems (ITS)*

1 Introduction

This paper discusses and evaluates the practice of project management (PM) in projects. Many recent e-Government projects have not progressed around the world to the degree originally anticipated, nor have it been the driving force hoped for in order to revitalise and modernise the public service (BCS Thought Leadership, 2005; Roy, 2006; Bélanger and Carter, 2006; Bélanger and Hiller, 2005). Though some countries, especially Canada (Desautel, 2005; Jorgenson and Cable, 2002; Fraser, 2006) has been extremely successful in recognising internationally, as number one in the world by Accenture for five years in a row; despite the public service, in some ways, remains pretty much the same as it was almost 9 years ago when e-Government (or Government On-Line) was first initiated in Canada in 1999. Because of this, and an international push for e-Government developments, there has been much analysis as to why it has or hasn't 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 et al., 2002).

This paper does not claim that it will cover all the issues led to e-Government projects failure. But it addresses lessons and insight to practical applications of some e-Government transformations and will provide direction for future e-Government transformations.

1.1 Background

On the WITSA website (www.witsa.org), a report released in October 2006 acknowledged that the WITSA members (representing 67 countries) and their Washington, D.C. Secretariat recognized that e-Government 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 e-Government market, or advancing and realizing its success. Regardless of your position on the e-Government continuum, all can benefit from having access to the experiences and knowledge already gained from international colleagues, and in a deeper understanding of the barriers and challenges that impact the successful implementation and progress of e-Government initiatives. Based upon this insight, in November 2005, the World Information Technology Services Alliance (WITSA) Secretariat initiated the development of an e-Government survey that would serve to collect, and act as the medium to share e-Government knowledge. In May 2006, the survey was launched in Austin, Texas at the WITSA Public Policy Committee Meeting, and the results released in Athens, Greece in October 2006.

Based upon an analysis of the survey results supported by a number of intense conversations and follow-up analysis with individual countries, a second survey was conducted in October 2007 to seek agreement that a revamped project management methodology and the use of technology within the project management field itself could be developed as one solution to potentially address some of the challenges and barriers identified as hindering success and international progress within the e-Government field. The results of this second phase of the e-Government project were reported in Cairo, Egypt in November 2007. A number of the WITSA countries will be involved in the testing a revised project management methodology designed to address more directly the need of e-Government projects (Bertot, 2003; Carter and Belanger, 2005)

1.2 Purpose, Aims and objectives

The attached framework (see Appendix A) of the 'PMBOK Plus Initiation Template' is the proposed framework front-end addition to the Project Management Body of Knowledge (PMBOK). The objective of this framework is to highlight and address the weaknesses identified in managing e-Government projects and provide the Project Manager with improved technology and 'human computer interaction' in delivering on his responsibilities. This template will be reviewed and hypothetically tested by a number of (WITSA) countries over the next couple of months.

2 Literature Review

In addition to the North American E-Government projects and despite the different PM methodologies, the rate of e-Government teething and failures in the UK for the last five years is high too (Gubbins, 2002). For example, prior to Christmas 2003, thousands of cash-strapped families were left out of pocket after another glitch by the Inland Revenue (IR) system. The IR has admitted that some claimants went for nine days at the end of December 2003 without their benefits because of a glitch. This finding emerged recently as the problem was caused by an automated bank transfer that went wrong which resulted in several thousand families did not receive the tax credit as expected on December 29th, 2003. The problem with the bank automated payments to number of recipients was resolved and everyone received their money by January 6th, 2004. This IR glitch led to many families racked up by bank charges on overdrafts. December's glitch was just the latest in a long line of problems by the IR in paying the Child Tax Credit since its launch in April 2003.

At the beginning of its launch, almost a million families out of 5.75 million eligible did not receive payments in the first month. Two months later, half a million were still waiting. In addition, thousands did not receive the correct amount. Also, the Inland Revenue (IR) was the latest to react to what it says are unwarranted claims of IT glitches (Parliamentary Correspondent, 2005). In the IR case, the media and politicians blamed a software problem for a five-year delay in issuing reminders about topping up National Insurance contributions. But the IR insists that the real cause is a policy decision by the former Benefit Agency. The claims that the backlogged Tax Credits system was having further problems because it was incompatible with core IR systems have been dismissed by both the department and end-users. The IR stories seem to reflect a growing trend. It is too convenient to blame technology. E-Government projects are not done in isolation, they are apart of wider business and organisation transformation projects with political deadlines as well as project deadline to be met.

PM in the public sector spell out the danger of loss of public confidence, as public sector IT/IS is not just about technology, but about convincing the people on the ground that it is worth them changing the way they work to fit in with it. In another case, Saran (2004) reported that the termination of £90m of EDS contract to develop a national e-mail system for 1.2million NHS has hit the national and professional newspapers. This coincides with the Home Office -Prison Service system problems resulted in £7m salary error (Arnott, 2003).

Recently, Glick (2005) looked at some of the event in 2004 including the foolish mistakes of the Child Support Agency (CSA) system and the department for Work and Pension PC network crash. The e-University system is another spectacular example of PM failure in the public sector (Green, 2005), most of the failures in the public ITS projects can be avoided if more thinking, better planning and rigorous PM put in it (Oates, 2005; Spiegel, 2004).

3 Approach, Discussion and Analysis

In order to identify such instances, we performed a qualitative study comparing e-Government challenges and approaches between a numbers of countries. This comparison was conducted through the use of a survey administered in 2006 to the World Information Technology and Services Alliance (WISTA), which is an organization representing the National Technology Associations in 67 countries. The survey based upon 20 participating countries and follow-up by in-depth interviews includes a number of reasons identified for the lack of e-Government successes ranging form the unanticipated organisational opposition, and difficulties in communicating requirements and obtaining information from different organisations.

3.1 Major e-Government Challenges

An e-Government survey was administered to WITSA in May 2006 to determine the key problems and challenges inhibiting the success of e-Government around the world (CEG, 2000). In October 2006, the results of this survey were delivered to WITSA in Athens. Based upon an interest to provide practical solutions to advancing the success of e-Government, a series of observations and follow-up one-to-one consultations were held with a number of WITSA countries. This results in the development of a list of the following 10 e-Government challenges that could potentially be addressed through improved project management practices.

This paper will not address the major challenges listed below, but aims to derive sparkles for thoughts of most common issues to many e-Government projects:

- Requirements framework to manage diverse and conflicting stakeholder interests, culture, mandates within an enterprise-wide governance domain (Al-Karaghouli, AlShawi, and Fitzgerald, 2000; Mumford, 1985).
- Need to continuously adapt to and blend changing technology, a mobile workforce and increasingly bureaucratic work processes (Andersen, 2001; Anttiroiko, 2002).

- Traditional business models that reward outdated government transactional based work routines and supporting applications (Atkins and Leigh, 2003).
- System development models affected by political realities and a heavy reliance on private sector resources and skill sets (Bentley, 2002; Avison and Fitzgerald, 2003).
- Lack of legislative requirements to incorporate lessons learned from a body of knowledge for government wide projects (Bentley, 2002).
- Promises of cost effective enhanced functionality because of system interoperability and work processes integration, and resource and cost savings (Brown, 2000).
- To judiciously collect a range, access the enormous and increasing volume and fluidity of structured information, and to derive effective information towards driven management regime (BVPL, 2003; Bygrave, 2003).
- Lack of results driven comprehensive holistic project management approach and methodology that have grounded e-Government objectives as the driving force (CITU, 2000).
- Scarce vital subject expertise within government organisations and limited access to private sector expertise (CITU, 2000), and;
- Organizational environment not presupposed to enterprise wide transformation (CEG, 2001; Cok, 2003).

This list of e-Government challenges along with assessments of their treatments within the current PMBOK methodology were presented to WISTA in Cairo in November 2007 and confirmed their support and interests in modernising project management practices to better-support an e-Government environment.

Based upon the support of the WISTA members in enhancing PMBOK as a potential solution to improve the management and delivery on e-Government projects, an analysis was completed using the PMBOK guide to identify specific improvements that could be suggested in each of the processes and knowledge areas to address the e-Government weaknesses. This analysis resulted in the creation of the following 'PMBOK Plus Initiation Template' as the initiating process appeared particularly weak in addressing the e-Government challenges.

3.2 Current PMBOK Approach

PMBOK is based upon a traditional industrial and manufacturing approach to managing projects. This includes a linear and iterative approach to following a 'How To' Guide that is based upon 5 process groups, 9 knowledge areas and 44 processes further broken down by inputs, tools and outputs for each process activity. The process groups and knowledge areas are outlined below. The five process groups are Initiating, Planning, Executing, Controlling and Monitoring, and Closing. The nine knowledge areas are Project Integration, Scope, Quality, Human Resource, Communications, Risk, and Procurement (Hiller and Belanger, 2001). Research Methodology

Creating citizen centric solutions requires managing and using technology to blend the legacy structures, achieving any cost and time savings, responding to the citizenry demands, recognizing the lack of tools and skilled resources, and evolving governments from paternalistic and hierarchical structures and servitude exchange relationships to collaborative and networked hybrids. But, one theme that seemed to override all others was a missing technology based project management methodology that could address the cultural dimensions and contribute to the design and implementation of the e-Government solutions.

3.3 Project Initiation Framework

The following nine signposts below, briefly explain the proposed outputs through enhancements to the Project Initiation Phase in addressing and identifying the ten e-Government challenges mentioned previously in section 5.1. The proposed framework and the different stages of enhancements lead to the Project Management Initiation Phase, are briefly addressed in Appendix A).

- Stakeholders Management: This stage aims to 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 (Al-Karaghouli, AlShawi, and Fitzgerald, 2003; Macaulay, 1996). Also, to design a stakeholder governance structure that reflects stakeholders' contributions and accountability to the PM.
- Blend Technology, People and Processes. This will involve the development of a model to design appropriate balance of resources and impacted processes, and update through out life of project. Also, to complete an assessment of existing and emerging technology. In addition, to review the government and private sectors workforce and implement a best practice evaluation.
- Outdated Business Models: The aim of this stage is to develop a citizen centric business model that accommodates intragovernmental legislative mandates and societal goals, and recognizes e-Government environment of horizontal, transformational and unprecedented requirements (Al-Karaghouli, AlShawi, and Fitzgerald, 2003 & 2005). Also, to ensure that the model reflects central agency policies and standards, a central service for IT infrastructure and a departmental commitment to delivery on-time and on-budget.
- Lessons Learned: To establishing a governance regime in order to identify, assess and incorporate lessons learned (Ho and Ni, 2004).
- Unreasonable Promises: To assess promises of cost effective enhanced functionality and develop discounted delivery strategy (promise low, deliver high). An urgency to establishing a stakeholder participation framework to validate key expectations through requirements identification, traceability matrices, proof of concepts, pilots and operational readiness reviews.
- Unwieldy Information: This aims to developing a governance framework to oversee and direct project customer relationship management, product direction and project service implications.
- Lack of Holistic Approach to Project Management: Transform organization to integrally imbed project management into its identity (similar to financial management practices); organizational reform gives project manager credibility to step between boundaries.
- Access to Subject Matter Expertise: By developing a framework to incorporate subject matter expertise relative to client demand and satisfaction, technology directives, project performance and manageability, policies and standards and governance.
- Government as Single Enterprise: Aims to developing a governance framework to assist with increasing ministerial accountability, public concern with government services and products, and increased need to homogenise government wide activities conducted by individual ministries.

4 Discussion and Next Steps

Does project management nurture the business transformation environment? If business transformation is at the heart of e-Government as a key component to apply technology to government practices and operations; and if project management via PMBOK as the conduit to implement e-

Government does not mitigate the e-Government challenges, then how will this degree of transformation ever occur?

These findings conclude that based upon this review and analysis, the e-Government challenges are not adequately met by the PMBOK methodology. Additional analysis is planned to conduct a similar analysis using PRINCE2 project methodology (Bentley, 2002; Gray and Larson, 2003; www.prince2.com - Prince2 forum). A number of enhancements were proposed to use technology and broaden the application of the project management discipline through an invigorated PMBOK to more comprehensively manage the 'inception to fruition' phases of an e-Government project. The next step in this critical analysis is to examine the feasibility within the public sector of incorporating any required enhancements within the PMBOK methodology to strengthen the use of project management to support e-Governments' applications and contribute to the transformation and modernisation of the public sector environment within the 21st century. The 'Project Initiation Framework' (Appendix A) is still under development and will be finalized over the next couple of months. It was determined that in the design of the framework, the replication of the above PMBOK process groups and knowledge areas created unnecessary duplication. Also, it did not lend itself to specifically focusing on the e-Government project management and project manager weaknesses. Therefore, the categories below summarize the PMBOK categories into the following project management domains:

- Integration and Governance
- Delivery Quadrant (Scope, Time, Cost and Quality)
- Risk and Uncertainties
- Corporate Support (Human Resources, Communications, Procurement)

Once the Framework and evaluation criteria are finalized through workshops, they will be submitted to a group of e-Government executives to obtain their assessment of its capacity to improve upon the management and delivery of e-Government projects, as well to determine the effectiveness of an enhanced project management methodology in serving the progress of transformational e-Government.

5 Conclusion

The preliminary conclusion from this research is that current project management methodologies, designed to address the industrial and manufacturing age, do 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 e-Government 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 new dimension to project management. Project management has not yet evolved to a state where it can become part of the solution. It does not bring value from technology and does not facilitate organizational, business process or human resource change. Our findings provide some evidence that can be used to support our hypothesis that e-Government projects, their design and preferences are different across organizational environments and cultures, and require a revitalized approach to manage such large public projects.

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Appendix A

PMBOK PLUS – PROJECT INITIATION FRAMEWORK

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 Quadrant (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 through out life of project • Complete an assessment of existing and emerging technology • Review the government and private sector workforce and complete a best practices evaluation
	a. Integration and Governance • Develop model to design appropriate balance of resources and impacted processes, and update through out 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 Quadrant (Time, Cost, Scope and Quality) • Devise a project delivery model that integrates and coordinates through technology, people and processes the projects interdependability 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 organization 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 recognizes 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 Quadrant (Time, Cost, Scope and Quality) • Recognize 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 Quadrant (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 Quadrant (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 Quadrant (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 mispromised objectives and assess impact of overpromising/underdelivering
	c. Risk and Uncertainties • Establish risk review program and relate to project value/modernization/societal objectives. • Conduct review of mispromised objectives and assess impact of overpromising/underdelivering
	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 Quadrant (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 organization to integrally imbed project management into its identity (similar to financial management practices); organizational reform gives project manager credibility to step between boundaries.
	b. Delivery Quadrant (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 Quadrant (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 Quadrant (Time, Cost, Scope and Quality) • Identify links to corporate systems and objectives • Commit to modernize 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)