

# ICT BUSINESS CASE APPROACH IN PUBLIC-SECTOR: A CASE STUDY OF THE AUSTRALIAN FEDERAL GOVERNMENT

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## Abstract

*Many private organisations and public sector agencies develop information and communication technology (ICT) business cases, and utilise them for better ICT investment decision making. The development of ICT business cases in private sector is relatively ad hoc and compact in size. In contrast, agencies in public sector are accountable to taxpayers for their use of public funds and to ensure that public money is spent efficiently and value for money is obtained. This accountability in the public sector has cultivated a norm of increased control over public agencies' spending and led to the requirement for a robust and evidence-based ICT business cases. So far, scant research has investigated the development and utilisation of ICT business cases in the public sector. To fill this gap, this research-in-progress proposes a study to take a closer look at ICT business case approach in the public sector and its related benefits and disadvantages perceived by ICT business case experts. Preliminary data was collected from archival data and interviews with ICT business case experts working at a professional services firm. Our preliminary findings show that a structured and complex two-pass ICT business case approach was adopted in the Australian Federal Government. This research-in-progress briefly outlines benefits and disadvantages which business case practitioners can adopt to enhance their related ICT business case approach.*

*Keywords: ICT Business Case, Public Sector, Benefits, Disadvantages, ICT investment*

# 1 INTRODUCTION

Investment in information and communication technology (ICT) requires the commitment of a significant amount of funds, both upfront for the initial setup and implementation, and over the remaining life of the system to ensure continued effective operations and support. Given the considerable financial commitment required, organisations have to ensure that some forms of tangible (e.g. reduced labour costs or improved productivity) and/or intangible (e.g. improved customer service) return on investment will be realised. Therefore, private organisations and public sector agencies often develop and utilise ICT business cases to facilitate their investment decision making and project implementation for ICT projects. For example, a survey of European private sector organisations that used ICT enabled business processes, suggested that 96% of firms used ICT business cases to make acquisition decisions on ICT investments (Ward et al. 2007).

Information systems researchers pay increased attention to the importance of business case development and utilisation in general and that of ICT business cases (Balaji et al. 2011; Maes et al. 2014). Prior research suggests that the use of business cases for ICT investments substantially reduce the uncertainty associated with the success of ICT projects, and help realise the value of these investments (Swanton & Draper 2010; Doherty et al. 2012). Notably, the use of ICT business cases in private sector is different from that in public sector, despite the fact that both private and public sectors use ICT business cases to justify and evaluate proposed ICT options, and obtain top management support for future ICT investments (Smith et al. 2010; Peppard & Ward 2005).

In private sector, top management does not often require rigorous evidence for the justification of ICT investments (Pfeffer & Sutton 2006), and thus, ICT business cases are often compact and may only include key information (e.g. preferred solution, cost, and ROI projection) with less supporting evidences. In contrast, agencies in the public sector are always accountable to taxpayers for their use of public funds and to ensure that public money is spent efficiently, effectively, and in the case of ICT investment, that value for money is obtained. This expectation of accountability has cultivated a norm of increased control over public agencies' spending and led to the requirement for a robust, detailed, and evidence-based ICT business case for each of their system implementations.

Despite the increased use of ICT business cases and increasing attention from information systems researchers for the last 15 years, scant research has investigated the application of ICT business case approach in the public sector (Maes et al. 2014). To fill this gap, this research aims to understand what business case approach is used in the public sector and its related benefits and disadvantages perceived by ICT business case experts.

In this study, we plan to collect data from ICT business case experts working at a global professional services firm located in Australia. We chose to conduct this study in Australia, as the researchers of this project were located in Australia. The professional services firm, at which ICT business case experts were employed, was selected because the firm provides assistance not only to private organisations, but also to the Australian Federal Government agencies to develop ICT business cases. We plan to invite ICT business case experts for interviews and focus groups, in which we will obtain (1) in-depth insights from their hands-on public sector ICT business case development experiences, and (2) comparisons of their private and public sector experiences of using different ICT business case approaches (and their related benefits and disadvantages). This paper is a research-in-progress. We have commenced our data collection. At the end of this paper, we will present our preliminary findings.

## 2 LITERATURE REVIEW

The importance of business cases for ICT projects in both private and public sectors has been emphasised by information systems researchers (Balaji et al. 2011; Goldfinch 2007). In private sector, business cases are used to establish responsibility assignment (Smith et al. 2010), get commitment from top management (Peppard & Ward 2005), or evaluate investments outcomes (Ward et al. 2008).

Prior research shows that almost all ICT-based private organisations in Europe use business cases for ICT projects (Ward et al. 2007). For example, Ward et al., (2007) conducted a survey with 102 organisations (89% being private sector organisations) based in United Kingdom, Belgium, Netherlands and Luxembourg on the effectiveness of business cases for ICT investments. According to their findings, 75% of the respondents agreed that the primary objective of business cases was to ensure return on value. Typically, the fundamental objective of using business cases by private sector organisations is to justify ICT investments to acquire funding from the organisation (Ward et al. 2008). However, we argue that public sector's approach to business cases is different. That is, the primary objectives of business case development in public sector also include the sense of accountability towards taxpayers' money. It is this sensitivity of accountability towards taxpayers' money that led public agencies favoured the development of detailed business cases for ICT projects.

There are two major streams of research on ICT business cases. One research stream focuses on the success factors of ICT projects (Plant & Willcocks 2007) and the other focuses on benefits realisation aspect of the business cases (Ashurst et al. 2008). However, none of these two streams appears to have significantly reduced the level of failures of ICT projects (Levinson 2009). ICT project failures are a major concern of practitioners. The sum of ICT project investment that has been written-off due to project failure was €142 billion in 2004 across the European Union (McManus & Wood-Harper 2008). However, by far, most studies focus on project failure in the private sector. In an observation of 201 projects conducted by private sector organisations, the major factors leading to project failures include problems related to little consideration of stakeholder management, risk management, and requirements management in the early stages of the project (McManus & Wood-Harper 2008). This indicates that business cases used in private sector may only contain key information (e.g. preferred solution, cost, and ROI projection) without much consideration of various factors (e.g. risks, project methodology, training strategy, capability assessment, stakeholder management) that may impact the success of the project, resulting in ICT investments made on weak justifications (Pfeffer & Sutton 2006; Ward et al. 2007). Unlike private organisations, agencies in the public sector became more sensitive to the amount of detail and rigor around evidences that a business case should incorporate.

Despite the fact that public sector spends a significant amount of funds on ICT projects (Goldfinch 2007), academic research has paid little attention to the application of ICT business case approach in the public sector (Maes et al. 2014). To fill this gap, this research aims to understand what business case approach is used in the public sector and its related benefits and disadvantages perceived by ICT business case experts.

### **3 BACKGROUND OF THE AUSTRALIAN FEDERAL GOVERNMENT'S ICT INVESTMENT**

#### **3.1 Overview of the Australian Federal Government's ICT expenditure**

The Australian Federal Government's core business is to service the Australian public by managing programs that are designed to assist public in nearly every major part of their lives (e.g. subsidies, loan, and grant programs to assist housing, food, education and health care). In order to support the diverse range of government programs across different government agencies, complex systems and technologies are required. From July 2008 to June 2009, the Federal Government spent a total of A\$5.29 billion on ICT, including ICT implementation, maintenance and Business-As-Usual (BAU) expenses (Australian Government Information Management Office 2013). For the period between July 2011 and June 2012, the annual expenditure in ICT increased by 12.85% to A\$5.97 billion (Australian Government Information Management Office 2013). Over this period, the proportion of non-BAU expenditure remained relatively constant at approximately 30% of total annual ICT expenditure. The government statistics are not explicit in what constitutes non-BAU expenditure; however, it is generally assumed that it comprises primarily of major ICT development and enhancement costs. This equates to approximately A\$1.8 billion in ICT project expenditure that the government needs to plan and administer per year.

### 3.2 The Australian Federal Government's two-pass ICT business case approach

In 2008, the Department of Finance implemented a two-pass ICT business case approach. The Australian Federal Government required all government agencies to follow this two-pass ICT business case approach for seeking approval and funding for ICT projects. This two-pass ICT business case is designed to articulate how the proposal contributes to the achievement of the government agency's policy objectives and related programs, and identifies and evaluates options for the delivery of the proposal. In 2012, The Australian Federal Government indicated that the approach supports effective and accountable decision making for major ICT investments by requiring agencies to document a comprehensive case for assessment by the Department of Finance (Department of Finance 2012).

Since 2008, the Australian Federal Government has requested all government agencies to use the two-pass ICT business case approach for submitting proposals that seek government funding for ICT enabled projects. By far, government agencies have used this approach to apply for a total cost of more than A\$30 million, including costs of at least A\$10 million for ICT high-risk projects (Department of Finance 2012). Note that, such high-risk projects are required to undergo a number of independent project assurance reviews (known as gateway reviews) throughout the project (Department of Finance 2013b).

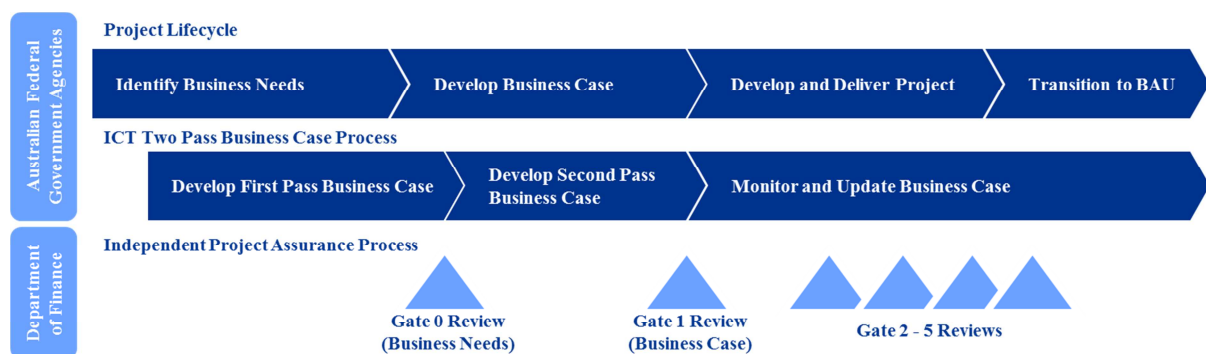


Figure 1 ICT two-pass business case development life-cycle

Figure 1 shows a summary of how the two-pass business case development and independent project assurance (gateway) processes interact with the project lifecycle (Department of Finance 2012). The ICT business case is designed to provide the Australian Federal Government with enhanced information on benefits, costs and risks, and also provides assurance that delivery options have been identified, considered, and costed before funding is requested.

Australian Federal Government agencies are required to submit a first-pass business case when establishing the business need for an ICT project (Department of Finance 2012). This first-pass business case is prepared at a high level, using market trends and prices to inform high-level costing estimates, and assumptions to develop benefit statements. Once the first-pass business case has been approved by the Department of Finance, agencies are instructed to develop a second-pass business case.

The second-pass business case builds on the first-pass business case by providing more detail on the benefits, costs, risks, and delivery of preferred options. Costs are based on expression of interest submissions provided by potential vendors, and a benefits realisation plan is based on detailed analysis of business operations. Other elements of the business case, such as project management plans, are also further developed during the second-pass process (Department of Finance 2013a). The intention of the iterative two-pass process is to ensure proposals are defined at an increasing level of detail and accuracy. The process also ensures agencies only invest in developing a second-pass business case for proposals which have received first-pass in-principle approval (Department of Finance 2012).

As shown in Figure 1, independent project assurance also plays a vital role in the business case submission process. This assurance is provided in the form of a series of gateway reviews (from Gate 0 to 5), with the first and second-pass business cases being reviewed during the first two gateway reviews. The gateway process continues for the life of the project and intends to provide independent assurance regarding an agency's capability to deliver and implement large projects and programs, providing advice to assist the agency in improving its project and program capability (Department of Finance 2012).

In sum, the Australian Federal Government's two-pass ICT business case approach requires government agencies to consider and document different ICT-investment related elements (e.g. strategic alignment, cost, benefits, risks, project management plan) for each ICT solution option presented in the business case across two stages of the ICT business case lifecycle. Additionally, the two-pass approach is subject to a series of project assurance activities. The Australian Federal Government's approach supports our view that the ICT business case approach used in the public sector is more complex and requires for a robust, detailed, and evidence-based ICT business case compared to those used in organisations in the private sector. Since scant research has investigated the development and utilisation of the two-pass ICT business case approach—a robust and evidence-based approach—in the public sector, this motivates us to conduct an exploratory qualitative study to gain a better understanding of benefits and disadvantages brought by this approach, in contrast to ad-hoc business case approaches adopted in private sector.

## **4 RESEARCH METHOD**

### **4.1 Informants for Interviews and Focus Groups**

This research adopts an exploratory qualitative case study of the Australian Federal Government. During the initial research planning stage, conducting the case study by collecting data from public servants of the Australian Federal Government were considered. However, our assessment suggested interviews with, and conducting a focus group with, public servants may introduce a high level of conflict-of-interest (e.g. difficult to filter out public servants who contributed developing and implementing the two-pass business case approach), bias (e.g. overly supportive of the approach), and an unbalance between public and private sector experience each informant may possess. Therefore, we plan to collect data from a professional services firm that assists private sector organisations and the Australian Federal Government agencies in developing ICT business case development. Furthermore, this professional services firm has rich experience in using the two-pass ICT business case guidelines provided by the Department of Finance to develop ICT business cases for Australian government clients, and thus, the qualitative data from this professional services firm is of high value.

### **4.2 Professional services firm description**

Wallaby (pseudonym) is a large global professional services firm, employing over 150,000 workers in over 150 countries, with approximately US\$20 billion in annual revenues as of September 2013. The Wallaby Australia Canberra office where the current study was conducted employs over 300 workers, among which over 90% of the staff had client-facing roles. Under the three high-level global service offerings (i.e. audit, tax and management consulting), the Canberra office had five sub-service lines which are Business Performance Improvement Consulting, Risk and Compliance Consulting, Management Consulting, Financial Management Consulting and Economic Modelling Consulting. In particular, employees working in the Management Consulting service line conducted a large number of private and public sector ICT business case engagements on an annual basis in the form of internal audit, management initiated reviews, assurance, and development projects.

### **4.3 Data collection and analysis**

We planned to collect data from three sources. The three sources are: (1) archival data from Wallaby and publically available Australian Federal Government archival data; (2) interviews with public sector ICT business case experts at Wallaby Australia; and (3) focus groups with ICT business case

experts who focuses on private, public or both sectors at Wallaby Australia. We have started data collection. This paper is a research-in-progress. In the following, we will report our preliminary data analysis.

Firstly, we planned to obtain and analyse corporate and publically available public sector archival data. Archival data helped us obtain contextual and objective understanding of ICT business case approach used in the public sector (see section 3). Up till March 2015, we obtained archival data from internal audit reports, government reports on previous ICT investments, and ICT business case development processes, procedures, templates and policies used in the Australian Federal Government.

Secondly, we planned to conduct one-on-one interviews. The objective of the interviews was to obtain informants' experiences on using the two-pass ICT business case approach in the Australian Federal Government context. Six interviews were planned be conducted in one of the closed meeting rooms located at the Wallaby Australia Canberra office from February 2015 to May 2015. Each interview should last for 60 to 90 minutes. So far, we have completed three one-to-one interviews that lasted for 75 to 90 minutes. We purposively selected our sample based on a specific selection criterion in order to filter the most relevant samples (Miles & Huberman 1994). One Director and two Associate Directors were selected as part of our preliminary data collection, because they had rich hands-on direct business case development experience (i.e. over 8+ years) and considered to be ICT business case subject matter experts by the Wallaby and the government. Informants were notified that they had the right to refuse answering certain questions, be withdrawn from the interview at any time, or request not to use the materials they provided. At the beginning of the interviews, each informant read and signed the content form.

Thirdly, we planned to conduct focus groups. The objective of the focus groups was to gather a comparison view from informants who specialised in either private or public sector ICT business case development. This research setting is anticipated to allow informants to openly share their ICT business case development experience in their relevant sector, and compare the benefits and disadvantages of different approaches. Six focus groups will be conducted between May 2015 and June 2015. Each focus group will last for 60 minutes and consist of six informants. Informants will be selected purposively using the same selection criteria used for one-on-one interviews, but informants can have either private, public or both sector experiences.

Yin (2010)'s qualitative data analysis (i.e. compiling, disassembling, and reassembling) process was adopted to analyse the preliminary interview field notes. In the first phase, *compiling*, preliminary data was collected from interviews and corporate and publically available public sector archival data. As the data was collected, the attributes of each type of data (e.g. date collected, type of data, source, informant name, demographic information, title of documents) were recorded into an Excel spreadsheet in order to capture all available data's information in a single location. Furthermore, sufficient familiarisation with the data was performed during and after each data collection (Yin 2010).

In the *disassembling* stage, interview field notes were open-coded manually by marking concepts in the margins of each field note. In order to remain unbiased from any prejudgements, the coding started without any predetermined code. The open-coding involved assigning code (i.e. concepts) to text, sentences, or chunk of sentences that had similar meanings. After the open-coding, level 1 code that had similar meanings were grouped together and assigned with level 2 categories. During this exercise, some of the level 1 code was not able to be assigned to a level 2 category. For those falling under this condition was grouped into a separate category named "other", which will be revisited in the third phase.

According to Yin (2010), *reassembling* is the data analysis stage where themes start to merge. At the end of collecting the full set of data (i.e. from interviews and focus groups), in our research plan, we will conduct axial coding, which systematically develops categories by grouping similar concepts. Furthermore, we will engage two independent researchers in order to increase the reliability of the coding, which is also known as inter-coder reliability (Denzin & Lincoln 2005; Miles & Huberman 1994).

Preliminary findings described in the next section were based on the data collected from (1) three in-depth one-on-one interviews and (2) corporate and publically available public sector archival data. The full findings will be available in late 2015.

## **5 PRELIMINARY FINDINGS**

### **5.1 Benefits of the two-pass business case approach**

#### *5.1.1 Coverage*

In developing a complete two-pass business case, the agency must undertake a comprehensive and detailed analysis and assessment of the agency's strategy, business problem, technical solution, and implementation approach. Informants mentioned that the process benefits the agency in guiding them in developing a clear view of what they are intending to achieve and how they will achieve it. From the perspective of government decision-makers, the business case emphasises the expected outcomes and benefits of the project and the investment required which in turn provides Department of Finance with relevant and detailed information to make informed decisions in allocating scarce government resources.

#### *5.1.2 Identification and consideration of options*

Informants perceived the development of the business case facilitates the identification of all feasible options, which are considered and reviewed before a preferred solution is identified. If the first-pass business case is accepted, the agency is usually instructed to conduct further, more detailed analysis of some or all options as part of the second-pass business case.

Informants mentioned that the process of identifying and analysing various options ensures that the agency critically assesses its immediate, medium and longer term needs and the cost/benefit of different solutions to the problem. Additionally, the requirement for robust consideration of reasonable options enables an effective and value-for-money solution to be selected and approved for implementation, ultimately providing the optimal outcome for the government and the public.

#### *5.1.3 Program and Project Management Capability*

One component of the two-pass business case approach is an independent project management capability assessment. The review must be performed against the Office of Government Commerce (OGC) P3M3® Portfolio, Programme and Project Management Maturity Model. This assessment rates the agency's capability in the area of management control, benefits management, financial management, stakeholder engagement, organisational governance, risk management, resource management, and generic attributes.

Informants perceived that the P3M3® project management capability review helps protect against failures at project implementation stage and facilitates successful outcomes through effective skill and expertise identification and sourcing early in the planning stage. Informants also mentioned that this independent assessment provides assurance that the agency submitting a funding request has sufficient capability to successfully deliver the intended project.

### **5.2 Disadvantages of the two-pass business case approach**

#### *5.2.1 Duration and Frequency*

Informants perceived the ICT two-pass business case process is an inherently lengthy process (i.e. 18 months or longer) due to the size of the projects and level of detailed required completing documentation. Internal stresses, changes in the operating environment, and restricted scheduling of central government input can extend the duration substantially. Informants indicated that the long duration of the business case process could result in the proposed solution no longer meeting requirements following changes in the agency's objectives, or technology advancements.

### 5.2.2 *Agency Expertise*

As outlined in the benefits section, the coverage of the business case is extensive and deep to ensure approval is based on comprehensive information and appropriate consideration of all key areas. The requirement to cover such a broad range of elements with considerable depth requires those responsible for developing the business case to possess a range of skills and knowledge, which may not be readily available within the agency. The core business of government agency IT departments is the technical implementation and support of business information systems and these IT departments may not possess all the required skills, knowledge and expertise required to fully develop a robust business case. A lack of expertise may lead to a suboptimal business case being developed and could result in non-approval or protracted assessment of an inadequate solution.

### 5.2.3 *Cost*

The cost involved to develop a government business case is significant, particularly due to the duration and effort required and the need for expertise across a number of areas. If agencies decide to develop a business case in-house, they must resource the activity with experienced staff for the duration of the project, which can be 18 months or longer. The effort involved may require a number of staff working full-time. Alternatively, if in-house resources do not have the full capability or capacity to develop the business case and additional expertise or support is required, engaging external consultants adds to the cost.

## **6 CONCLUSION**

The primary objective for this research-in-progress is to present a research plan, as well as the preliminary findings, on what business case approach is used in the public sector and its related benefits and disadvantages perceived by ICT business case experts in Australia. Our preliminary findings suggest the Australian Federal Government used a complex and detailed ICT two-pass business case which had some benefits and disadvantages perceived by professional services employees. Notably, the preliminary findings are not designed to unduly promote or discredit the process and approach used in the public sector, but to show independent perspective of ICT business case experts.

In our research plan, we will conduct interviews and focus groups with ICT business case experts at Wallaby Australia. Our preliminary findings from archival data and three one-to-one interviews show that the Australian Federal Government's ICT two-pass business case ensured adequate coverage of relevant factors, comprehensive consideration of options, and assurance that the agency is capable of delivering a project of scale. However there were also some trade-offs in achieving those benefits; for instance, the government's approach requires a significant investment of resources (i.e. both time and cost) and a broad range of scarce skills and expertise.

Our study has contributed to the literature on ICT business case by investigating the business case approach used and related benefits and disadvantages in the public sector. After the completion of data collection, this research has potentials to provide guidance for private sector practitioners by adopting benefits of the public sector ICT business case approach. Furthermore, public sector practitioners can further enhance the approach by considering opportunities for improvement (i.e. disadvantages) addressed in this paper.

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