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The roles, responsibilities and practices of Project Portfolio Manager in Australia: a Qualitative Study

Abstract

The increasing use of project and programs by organizations in Australia to achieve business strategy has led to the need to understand project portfolio management . In this study, project portfolio management is referred as portfolio management and it is recognised as one discipline within organizational governance and capability.To investigate the governance structures and the roles, responsibilities and practices of portfolio managers, a sequential mixed method approach under a realism paradigm is used. This paper presents the first stage qualitative study, using an inductive interview based approach with six portfolio managers for six organizations in Australia. The results from the qualitative study are used to validate the research model developed on the basis of previous research and develop the constructs for the concept of portfolio context and the roles, responsibilities and practices of portfolio managers in the research model for the next stage, a quantitative study.

Keywords: portfolio management; strategic alignment; prioritization; benefit realisation

Introduction

Portfolio management has been acknowledged by the project management community as a tool for optimizing the organizational returns from project investments by improving the alignment of projects with strategy and ensuring resource sufficiency. It aims to optimize the outcomes from project investment across a portfolio and it is also regarded as the governance method for selection and prioritization of projects or programs. Organizations that do not align their project portfolio with organizational strategies and governance will tend to increase the risks of running projects that are low priority initiatives. As a result, there will be critical resource shortages, and investments will not be optimised. Therefore, application of the techniques of portfolio management within the context of organizational governance provides reasonable assurance that the organizational strategy can be achieved.

Portfolio management, however, presents a challenge for middle managers to manage its processes, people and practices. The portfolio management role is supposed to be pivotal in planning and controlling complex project landscapes more effectively and efficiently. Literature indicates that the roles and practices of portfolio managers vary and need to be adapted to organizational situations.

This paper presents results of a qualitative study using an inductive interview based approach with portfolio managers from service and manufacturing organizations in Australia. To assess the validity and reliability of past research, we pose the following research questions:

What are portfolio manager's roles and responsibilities in service and manufacturing organizations in Australia? Are there any differences in roles, responsibilities and practices between service and manufacturing organizations in Australia?

The unit of analysis is portfolio managers in service and manufacturing organizations in Australia. This study summarizes the work and study of an inductive qualitative study which will be followed by using a web based questionnaires. The results from the qualitative study will contribute the questionnaire design for the subsequent quantitative study.

The next section of this paper reviews the previous research literature on portfolio management and describes the research methodology in the qualitative study. The results and implication of this stage (qualitative study) will be discussed for the overall research project.

Research Into Project Portfolio Manager's Roles, Responsibilities and Practices

The importance of adopting portfolio management to achieve business or strategic goals has been recognised by academic and practitioners (Crawford & Helm 2009, Killen et al. 2008, Blomquist & Muller 2006, PMI 2008). Portfolio management, however, presents a challenge for middle managers to manage its processes, people and practices. The managerial problems in business development portfolio identified by Elonen and Arto (2003) and Engwall and Jerbrant (2003) have prompted further research on the need for more clarity about portfolio manager's roles, responsibilities and practices. The research of Drake and Byrd (2006) and Olsson (2008) indicates that this role is the owner of certain portfolio management tasks, such as risk management with focus on analysis. Blomquist & Muller (2006) research identifies that portfolio manager roles, which aims for improvement of the organization's overall results, start early in business cycle with business planning and followed by project selection, They also discovered that the portfolio management role can be an administrative or strategic position that enables them to influence and shape the company's future. However, the result of their research indicated that portfolio management's intertwined relationship with traditional line management roles and no clear evidence of governance structures and the corresponding roles and responsibilities implemented in different organizations. Thus, has prompted further research to allow better understanding of these manager's rationale for decision making and provide a more integrative picture of the various tasks of middle managers in different region and industries.

Governance and Transaction Cost Economics

Portfolio management can be seen as providing governance structures adopted to minimize the overall costs in converting "input" to "output" through projects. When viewing projects as transactions, these costs are known as transaction costs, which are the sum of all costs for governing projects. Several researchers, such as Muller and Turner (2005) and Blomquist and Muller (2006), have proposed that transaction cost economics or TCE theory provides one theoretical framework for explaining the project and portfolio phenomenon.

TCE theory provides a potentially useful framework for several reasons. First, TCE specifically addresses sourcing decisions, that is, the decision to produce a good or service internally or purchase it externally. Second, TCE captures the widely-held perception that organizational members make sourcing decisions based upon an economic rationale with anticipated saving from 10%-50% (Anthes 1990, 1991). Third, TCE has enjoyed an abundance of empirical and theoretical academic attention (Anderson 1994; Walker

and Poppo 1991) and other researchers find TCE theory to be a useful interpretation of organizational reality.

The foundation of this study is based on Oliver Williamson's TCE theory. Williamson is widely recognized as the major author and spokesperson of TCE theory, as evidenced by 5371 citations of his work in the Social Sciences Index since 1981. Williamson developed TCE theory when he became troubled by a discrepancy between economic theory and organizational reality. Economic theory predicts that goods and services are most efficiently produced in specialized organizations that are able to achieve economies of scale. However, the 20th century witnessed the growth of large bureaucracies that produce many goods and services internally (Perrow 1986). Williamson proposes that costs are comprised not only of production costs (i.e. the cost of capital, labour, and materials) but also transaction costs. Transaction costs, which are synonymous with co-ordination cost, consist of the costs of monitoring, controlling and managing transactions. Thus, total costs (production cost plus transaction costs) will be considered when selecting among sourcing alternatives or making decisions.

According to Williamson (1985), there are two human factors (bounded rationality and opportunism) and three environmental factors (frequency of occurrence, asset specificity and uncertainty) that lead to transactions costs from the make or buy decision. The first human factor is *bounded rationality* whereby humans are unlikely to have the abilities or resources to consider every state-contingent outcome associated with a transaction that might arise. Based on Simon's (1957) *bounded rationality* argument "when transactions are conducted under conditions of uncertainty/complexity, the bounded rationality constraint (that humans exercise intended, but only limited, rational behavior in decision-making) is binding and an assessment of alternative organizational modes, in efficiency respects, becomes necessary". Williamson (1985) argues that it is bounded rationality in relation to the condition of the environment that occasions the economic problem. Therefore, governance structures seem to differ by the degree of complexity of an organization's environment. The second human factor is *opportunism* whereby humans will act to further their own self interests. Organizations presumably administer an efficient system of rewards and punishments to discourage employee opportunism. In contrast, organizations must incur transaction costs during contract negotiations, monitoring to prevent vendor opportunism. Using Transactions Cost Economics (TCE), the proposed research model (as shown in Figure 1) will be adopted for this study. An inductive qualitative study has been designed to test the model and build constructs for the concepts within the model.

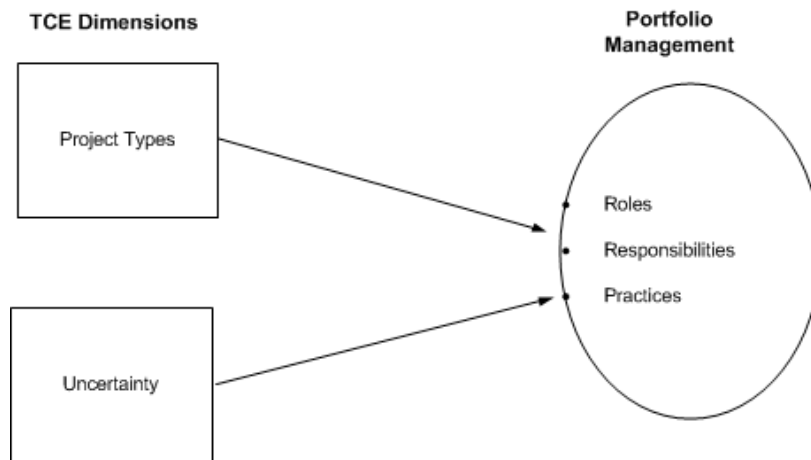


Figure 1: Research model on Portfolio Management roles, responsibilities and practices

Rationale of the research

This research is important for several reasons. The first reason is identification of a theoretical gap in the area of portfolio management particularly concerning the role of managers in portfolio management. As stated by [Elonen and Arto \(2003\)](#) and [Blomquist and Muller \(2006\)](#), the manager's roles & responsibilities in multi-projects vary, are unclear, and characterized by a lack of resources, low levels of support or commitment and poor information flow. This suggests a need to investigate and improve practices of portfolio management. Good portfolio management is becoming a key competence for organizations handling numerous projects simultaneously ([Martinsuo and Lehtonen 2007](#)) and needing the capability to produce products or services to compete globally ([Killen et al. 2008](#)). The third reason is to investigate the portfolio management learning capability. As stated by [Killen et al. \(2008\)](#), portfolio management is thought to be a human-centered capability and people are highlighted as an important organizational resource that must be nurtured, developed and allocated effectively through the portfolio management capability.

Research Methodology

This paper adopts pragmatic perspective and proposes the use of sequential multi-method approach. The design which involves a first phase of qualitative data collection and analysis, followed by a second phase of quantitative data collection and analysis that builds on the results of the first qualitative phase. This method is to counterbalance the limitations of one approach with the strengths of the other in order to enhance the reliability of the results ([Rudestam & Newtom 2001](#)). While the qualitative methods enable

flexible and detailed exploration of issues, the quantitative component helps make statistical inference about the relationships between concepts (Punch 1998).

The execution of the research starts with an exploratory qualitative study to develop a basic understanding of the roles and responsibilities of managers in portfolio management. The aim of the qualitative study is to:

- Test the validity of the research model qualitatively which examining whether there is a positive relationship between the TCE dimensions and the portfolio manager's roles, responsibilities and practices
- Explore the portfolio management in Australian organizations context and find constructs and measurement scales for the concept of portfolio management in the research model (Figure 1).

The work on data collection and analysis were guided by the questions “How do TCE dimensions; project type and uncertainty determine the use of portfolio management?” What are project portfolio manager's practices, roles and responsibilities in portfolio management in service and manufacturing organizations?”

Sampling

The sampling method used for interviews is theoretical sampling. The interviewees are the people who have the best knowledge of the research subject and the number of interviews determined by theoretical saturation, which means when the answers from interviewees no longer contribute to generate new concepts or categories, the sampling process will be stopped (Strauss & Corbin 1990). In order to collect a variety of data and get integral information, the targeted interviewees were Portfolio Managers from large service and manufacturing industries that have implemented project management.

Data Collection

The constructs of the variables in the research model, which are the roles, responsibilities and practices will be operationalized. The data collection instrument used is semi structured interviews with six portfolio managers; three managers are from service organizations and the final three managers are from manufacturing organizations in. The interviews were held either face-to-face or through conference calls and interviewed were tape-recorded for subsequent analysis. Transcriptions were made immediately after the interviews and sent back to the interviewees for validation. The roles and responsibilities of managers in portfolio managers have been identified through a continuous comparison of interview results. The interviews are summarized in Appendix 1.

Data Analysis Method

The aim of the interviews is to generate constructs and measurement scales for the concepts of portfolio manager's roles, responsibilities and practices in Australia. There is a very little pre-conception about portfolio management context and the roles, responsibilities and practices of portfolio managers in Australia. The literature (Blomquist & Muller 2006; Killen et al. 2008; Jonas 2010) focuses on portfolio managers but there may be some differences in the roles, responsibilities and practices in the Australian context. This research reflects on the practical lives of portfolio managers to build constructs for the concepts and portfolio context and roles, responsibilities and practices in Australia.

The inductive data display and analysis technique to analyze the interview data is used. This is done using the process of data reduction, data display, and conclusion drawing and verification (Miles & Huberman 1994). The raw data gathered from the interview is immediately coded in this iterative process using NVIVO 9 software. The raw data is disaggregated into conceptual units and the labels were provided. For example, during the first interview, the first interviewee is asked to define the concept of portfolio management in their organization. The interviewee responds was as follow:

“Portfolio management includes processes to identify, evaluate, select, prioritize and authorise components within the portfolio. My role (as Portfolio Manager) is to monitor and validate components relative to alignment with corporate strategy, resources availability and viability at an acceptable level of risk.”

By analyzing the interviewee's words, we interpreted them to mean that the portfolio should align with the organizational strategy. So, a label is assigned for this paragraph, “strategy alignment” and similar coding for the rest of the data provided by interviewee to generate other codes.

For the second interview, the same method to generate codes from the interviewee's transcript and comparison of the codes from these two interviews to identify whether there were some codes with similar connotation that could be placed into related groups, categories or new code emerged. For example, on practices of portfolio management, the second interviewees said:

“Our portfolio practices refer to the application of processes, techniques and tools such as project prioritization and selection by corporate strategy...”

The transcript from the second interviewee also stresses the importance of aligning portfolio process with organizational strategy, so we used the code “strategy alignment”, generated from the first interview, to cover the meaning of this sentence. Consequently, a category could be built to include the codes related to strategy, so the name “strategy alignment” will be used continuously for this category.

During the second interview, new aspects arise; for example, the interviewee talked about the portfolio process should not be ignored and said:

“In our organization, the portfolio management processes is important as it bring consistency to the governance of project and programs and deliver values....”

Portfolio process was not mentioned by the first interviewee, so it is a new code generated from the second interviewee; hence, “values” is labelled. It is labelled because the first interviewee was the portfolio manager of an IT department, whereas the second interviewee was the portfolio manager of a corporate division. The different natures of this portfolio determined the different concerns about the portfolio.

Subsequently, the same analytical procedures are used for all the following interviews. By the six interview, all codes in the six interviews could be traced back to the codes or categories generated in the previous interviews. The decision is made to stop the interviews. The codes and categories are reviewed to check whether they are correctly explained the concepts of roles, responsibilities and practices of portfolio managers and portfolio context in the research model. Also whether could build construct and measurement scales for the two concepts based on these codes and categories for the future quantitative study. When these questions could not be answered, the process return to raw data, recoded the data and repeat the process until a satisfactory answer is achieved. The results from the data analysis are presented in the next section.

Qualitative Data Analysis and Results

The results from the data analysis of the qualitative study is presented in this section. It is divided into two subsections: roles, responsibilities and practices of portfolio manager and the portfolio context (TCE dimensions).

Portfolio Context (TCE Dimensions)

Based on interview data analysis and the research result listed in Table 1, the two TCE dimensions in portfolio context were summarised. In each dimension, there are several dimensions and their constitutional components. These sub-dimensions and their components form the basis to further develop constructs for the concept of TCE dimension in the research model (refer to Table 1).

Concept	TCE Dimensions	Sub-dimensions	Components	Source
Portfolio Context	Project Types	Internal/ External	ICT	(Blomquist & Muller 2006)
			Engineering	
			New product development	
			R&D	
		Size	Small	Interview
			Medium	
			Large	
		Duration	Short Term	Interview
			Middle Term	
			Long Term	
		Asset specificity	Human	(Williamson 1985)
			Equipments	
	Uncertainty	Complexity	number of factors taken into account during decision making	(Duncan 1972)
		Frequency	change in factors for decision making	(Williamson 1985)
		Risk	the potential that a chosen action or activity (including the choice of inaction) will lead	Interview

			to a loss (an undesirable outcome)	
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Table 1: Portfolio Management Context

The explanation of the TCE dimensions, sub-dimensions and their components that generated from the interview are as follows:

Project Types and Uncertainty

Our interviewees from manufacturing organisations describe their project types as product development or projects, mainly for external delivery with both short and long term goals. The project size is categorised as medium and large. It is determined by several criteria such as budget, duration or resource allocation. If the project has high budget, then the project is categorised as large project. The environment is dynamic that require experiential product development using frequent iterations, testing and milestones. The environment is complex in certain decision making on the product development and research and development projects. Therefore, the use of portfolio management planning in manufacturing organizations assist in aggregating business for strategic analysis, repositioning and guide diversity away from low growth sectors. After implementing portfolio management, the three manufacturing organizations that involved in this study has indicated the portfolio management process improved their market position substantially relative to their competitors.

Whereas our interviewees from service organizations describe their project types as service projects mainly on internal delivery with both short and long term goals. The project size is categorised as small, medium and large. It is determined by several criteria such as budget, duration or resource allocation. The environment is dynamic that require frequent iterations, control, testing and milestones. The environments are generally complex in decision making on the projects. Therefore, the use of portfolio management planning in service organizations assist to aggregate business for strategic analysis and repositioning and guide diversity away from sectors that deliver low value or benefits. After implementing portfolio management, the three service organizations that we interviewed has indicated improvement in value delivery and investment.

In this study, it is discovered that though criteria were the same in service and manufacturing industries, but the thresholds changed dramatically due to the nature of the industries. For example, one of the interview involves a service organization, it is discovered that budget that is lower than a\$1 million, it was considered as a small project and a\$ 5 million is considered as a large project. Any budget from a\$1

million to a\$5 million will be considered medium size project. On the other hand with a manufacturing company that also used budget as the criterion for judging project size, had different threshold. When the budget is lower than a\$100 million, the project size is considered small. If is higher than \$2 billion, the budget will be considered as large and budget in between \$100million and A\$ 2 billion is considered as medium.

The result shows that different project types and dynamics in the organizations require the use of portfolio management which was found in (Blomquist & Muller 2006). This result provides the direction to develop the constructs and measurement scales for the concept of portfolio context. The result can help to measure how supportive the portfolio context and will contribute to the questionnaire design in the quantitative study in the next phase.

Portfolio Roles, Responsibilities and Practices

The roles of portfolio managers for both service and manufacturing organizations in Australia are found at medium and higher levels in the organization structure. Their responsibilities generally involve aligning projects/program/products with strategy, prioritization, and resource management across portfolio. The portfolio managers for both manufacturing and service organizations are report or work closely with corporate financial services to achieve financial objectives in managing their portfolio. The portfolio managers for both industries are require to achieve financial results in relation to the annual plan. Tools that the portfolio managers used are financial system and enterprise project management software to track the schedule, budget and resources of projects,program or product development.

The portfolio managers in manufacturing also work closely with the sales and marketing team to monitor the competitor strategies on product development.

The coding method described in the data analysis method section and developed the codes on roles, responsibilities and practices from the raw data. During the interview, interviewees were asked to give some keywords about their roles, responsibilities and practices. The most frequently used keywords were: Business planning & strategic alignment, portfolio prioritization and selection, stakeholder management, risk management, regulatory, value assessment and benefit realisation. The code is analysed based on (Blomquist & Muller 2006; Killen et al. 2008; Jonas 2010) roles and practices of portfolio manager.

In this study, these keywords/codes are grouped into six categories:

- Business planning & strategic alignment
- Portfolio prioritization and selection
- Stakeholder management

- Risk management
- Resource planning
- Value assessment and benefits realization

The categories, codes and the number of times these codes (within each category) were mentioned by interviewees is summarised in Table 3.

Category	Code	Service Organizations			Manufacturing Organizations			Time mentioned by interviewees
1. ROLES		S1	S2	S3	M1	M2	M3	
Types of Portfolio		IT Portfolio	Assets Portfolio	Corporate Portfolio	NPD	Innovation	R&D	
<i>Prior to project</i>								
Business planning & strategic alignment	Involve in stakeholder business planning and align investment with strategic goals	4	3	4	3	3	3	20
Portfolio prioritization & selection	Technique to prioritize and select projects to maximize investment	2	3	3	2	3	3	16
Stakeholder management	A process to support an organization in achieving its strategic objectives by interpreting and influencing both the external and internal environments and by creating positive relationships with stakeholders through the	4	4	3	3	2	3	19

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Category	Code	Service Organizations			Manufacturing Organizations			Time mentioned by interviewees
	appropriate management of their expectations and agreed objectives.							
Risk Management	The identification, assessment, and prioritization of risks or the <i>effect of uncertainty on objectives</i> , whether positive or negative followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities	5	3	5	3	3	3	22
During Project								
Resource Planning	Resources allocation to achieve maximum output	3	3	3	3	2	3	17
Steering Committee	Participation in steering groups							
Post Project								

Category	Code	Service Organizations			Manufacturing Organizations			Time mentioned by interviewees
Review	Initiate review of projects or product developments	4	4	3	3	4	3	21
Communication	Provide effective communication via meetings or reports with stakeholders	2	3	2	2	4	4	17
2. RESPONSIBILITIES								
Regulatory	Compliance procedures, policy and quality	2	3	2	2	2	3	14
Value and Benefit Assessment	Development and implement Investment Framework: <ul style="list-style-type: none"> • Financial target • Value Assessment model/Benefit Realization model 	4	4	5	3	3	3	22
3. PRACTICES								
Established/years		4	3	2	5	3	4	
Decision Making	Group decision making by	3	4	3	2	2	2	16

Category	Code	Service Organizations			Manufacturing Organizations			Time mentioned by interviewees
	Investment or Portfolio Board							
Tools	Tools used to manage the portfolio management techniques and processes	CA - Clarity	Excel	MS Project Server	MS Project Server	MS Project Server	MS Project Server	

Table 3: Roles, Responsibilities and Practices of Portfolio Managers

The Portfolio manager's roles for both service and manufacturing organizations involve before and after a single project/program/product. From the interview, it indicates that portfolio manager has similar roles and is stated as below:

- a) Involves in strategic business planning with stakeholder during prestage of project or product development
- b) Ensure projects/programs/products delivered on time, budget and scope during the project or product development
- c) Managing risks
- d) Project reviews, coaching, issue handling and improvement of corporate processes after the project or product development.

Though the portfolio manager's roles are similar, they differ slightly in the extent due to their different portfolio management context. For example, in services organizations, the business planning processes are relatively shorter term (1-3 years) compare to manufacturing. The process on ensuring the projects/program deliver benefits/value and alignment with organizations strategy are essential. Those business case that do not have strong benefit/value to organization strategy or business change will not be in top priority on delivery or even approved by their Portfolio Review Board. Their responsibilities include compliance with corporate policies, development, implement and maintain Investment Framework and the investment model such as Value Assessment model/Benefit Realization model and achieving financial target.

As for manufacturing organizations, portfolio managers will need to work on portfolio strategy and work on longer term product roadmaps (1-10 years) due to research and development activities required for their industries. The roadmap outlines how management wants to achieve their desired objectives (product and technology) and allows for identification of needed capabilities, which then be planned for in terms of time and budget (Cooper et al. 2004). The portfolio managers work closely with their sales and marketing team to monitor competitor product information and trend. They are also working closely with their R&D and quality team to monitor the quality of products before delivery as defects product will incur heavy losses (profit and goodwill) to the organizations. The portfolio manager in manufacturing are involve in several stages such as new product development, new product management and new categories opportunity and their responsibilities include integration of business drivers, team leadership and achieving financial target.

The roles identified during this study will subsequently be validated through a quantitative study which is phase 2.

Conclusion

In qualitative study, six portfolio managers from three manufacturing organizations and three service organizations in Australia were interviewed. The objective was to explore the relationship between portfolio context (using TCE dimensions) and the roles, responsibilities and practices of portfolio managers in Australia. The inductive approach is applied to analyze the interview data and the research questions is answered as follows:

- The research model is partly validated and there are indications for a positive relationship between the portfolio context (TCE dimensions) and the roles, responsibilities and practices of portfolio managers in service and manufacturing organizations in Australia
- Constructs for the portfolio context and roles, responsibilities and practices in the research model are built
- There are differences of roles, responsibilities and practices of portfolio managers in manufacturing and service organization in Australia
- There's a shift of portfolio manager's role in service organizations from tactical to strategic
- The stakeholder management skills are essential for portfolio managers in both industries
- Portfolio Managers from both industries are involved in risk management.

Practical Implication

The practical implications of the results are:

- Portfolio managers are focusing on business results, stakeholder satisfaction and long term strategy and results of their portfolio
- Portfolio managers from service industry require not only project management skills but also financial analysis skills for reporting and communications
- Top management in both service and manufacturing industries are involved in portfolio management to achieve business results, strategy alignment of the projects and accountable for the value of projects requested.

Theoretical Implications

The TCE's underlying assumption that different project types need different governance structures (Williamson 1985) is supported by this preliminary results. Organizations from both industries; service and manufacturing show flexibility in adapting their governance to the requirements of their environment. However, in service industries organization are new to portfolio management and are looking for the best practices for their project, program and portfolio management. The organizations use specific processes and tools to counteract the problem of bounded rationality in decision making, issues handling and business planning.

The role of portfolio manager is to put together the network of resources to deliver projects/product development. They ensure the availability of the right resource at the right place and time and interaction with other projects and the resources needs. Their role becomes pivotal as one of organizational integrator to co-ordinate resources, advisor to management teams and escalator of issues across organizational boundaries.

Suggestions for future study

This strength of this study is collecting data from both service and manufacturing organizations in Australia to include information to develop the constructs for portfolio context and the roles, responsibilities and practices. Based on these constructs, the subsequent quantitative study can be designed and conducted. However, this study is based on interviews with a small sample size and the results cannot be generalized. A future sample size using a large sample size, is needed to test these results.

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Appendix 1: Interview Data Overview

No.	Title of Interviewee	Nature of Company	Nature of work in the company	Nature of project/program work	No. of projects (per year)	Size of projects/programs	Duration of project/program	No. of People involve in Portfolio
A. Service Industries								
1.	Executive Coordinator ICT Portfolio Management	Local Council	Provide ICT solutions and projects	ICT Infrastructure, software & business change	200	Large	1-5 years	4
2.	Corporate Portfolio Manager	Energy Supplier	Provide business and management solutions to fleet, property, network & ICT, assets and business change	Corporate project and business change	100	Large	6months – 2 years	3
3.	Head of Strategic Initiative Office	Insurance	Provide business and management solutions to insurance	Corporate project and business change	15	Medium	6-24 months	2

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No.	Title of Interviewee	Nature of Company	Nature of work in the company	Nature of project/program work	No. of projects (per year)	Size of projects/programs	Duration of project/program	No. of People involve in Portfolio
			products, ICT and assets					
B. Manufacturing Industries								
4.	General Manager - Innovation	Health and Wellbeing	manage innovation, R&D portfolio	New Product Development	40	Medium	1-3 years	3
5.	New Product Planning	Pharmaceutical	Manage new product development planning and R&D portfolio	New product development	100	Large	1-10 years	4
6.	Global IT Security, SOX & Compliance Manager	global leader in the development, manufacturing and marketing of innovative medical products	Manage IT portfolio	Project and security compliance	30	Medium	1-2 years	2