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AN INVESTIGATION INTO CRITICAL FACTORS IMPACTING ON THE SUCCESSFUL IMPLEMENTATION OF PUBLIC-PRIVATE PARTNERSHIPS (PPPS) IN NEW ZEALAND

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A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Civil Engineering, The University of Auckland, 2013
Abstract

Recent studies show that the New Zealand’s infrastructure adequacy level lags behind other OECD countries, which might be a bottleneck for future economic growth and productivity. Being aware of the problem, the government has reformed its infrastructure development policy, with a focus on adopting innovative procurement methodologies, such as Public-Private Partnerships (PPPs), to achieve better value for money in public sector procurement. Despite the worldwide use, PPPs have been rarely practised in New Zealand. There has been a lack of existing studies investigating the PPP application specific to New Zealand, by taking the country-specific social, economic and policy environments into consideration.

This research examined the PPP application in New Zealand, identified the drivers for PPP adoption and investigated the critical factors that impact on the successful implementation of PPPs, based on which the thesis makes recommendations on how PPPs can be improved for better outcomes in New Zealand. The research adopted a qualitative research methodology using a combination of industry-wide interviews within New Zealand and multiple case studies, in the sector of exhibition and event venue, prison and school, based in Hong Kong Special Administrative Region, Australia and New Zealand, to identify critical factors leading to project success or failure.

The results show that the critical factors affecting the PPP implementation vary across jurisdictions given the differences in social, economic and legal environments and the maturity level of PPP development. Also, different sectors’ needs are varied due to their special characteristics for the provision of relevant assets and services. Despite the differences across jurisdictions and sectors, the critical factors impacting on the successful implementation of PPPs generally fall into seven categories: (1) General political, legal and economic conditions; (2) Business case development; (3) Procurement process; (4) Contract administration and management; (5) Public sector capacity and governance structure; (6) Private sector market depth, capability and structure; and (7) Risk analysis and allocation.
The research concludes by providing best practice guidelines for using PPPs in New Zealand and specific recommendations for the three sectors examined. The research contributes to the body of knowledge by adding the New Zealand case to PPP best practice frameworks and showing that different sectors’ needs vary. It is hoped that the recommendations will provide useful policy, organisation and management implications for policy makers, public sector authorities and private sector participants.
Acknowledgements

I would like to give my sincere thanks to my supervisor, Dr. Suzanne Wilkinson for her continuous support and guidance throughout my PhD journey. Her insightful comments on my work helped me to learn and get improved. Her kind encouragements have been so important to keep me motivated and continue this difficult task. Without her, I cannot make this accomplishment.

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**Glossary**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>BOOT</td>
<td>Build Operate Own Transfer</td>
</tr>
<tr>
<td>BOT</td>
<td>Build Operate Transfer</td>
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<tr>
<td>CGF</td>
<td>Credit Guarantee Finance</td>
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<tr>
<td>DBM</td>
<td>Design Build Maintain</td>
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<tr>
<td>DBFO</td>
<td>Design Build Finance Operate</td>
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<td>DHB</td>
<td>District Health Board</td>
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<td>EoI</td>
<td>Expression of Interest</td>
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<td>EU</td>
<td>Efficiency Unit</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GFC</td>
<td>Global Financial Crisis</td>
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<td>HKSAR</td>
<td>Hong Kong Special Administrative Region</td>
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<td>KPI</td>
<td>Key Performance Indicator</td>
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<td>NIU</td>
<td>National Infrastructure Unit</td>
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<td>NIP</td>
<td>National Infrastructure Plan</td>
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<td>NZCID</td>
<td>New Zealand Council for Infrastructure Development</td>
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<td>NZTA</td>
<td>New Zealand Transport Agency</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>PSC</td>
<td>Public Sector Comparator</td>
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<td>RfP</td>
<td>Request for Proposal</td>
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<td>RMA</td>
<td>Resource Management Act</td>
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<td>SDM</td>
<td>Supportive Debt Model</td>
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<td>SPV</td>
<td>Special Purpose Vehicle</td>
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Chapter 1 Introduction

1.1 Background

World class infrastructure is central to New Zealand’s standards of living. Investment in infrastructure not only catalyses national productivity and economic growth, but also supports social and environmental well-being. However, according to a recent study conducted by the New Zealand Council for Infrastructure Development (NZCID, 2009), the provision of public infrastructure in New Zealand lags behind international best practices. Whilst New Zealand was placed the 20th by the World Economic Forum (2009) for overall relative global competitiveness, it ranked the 30th for the adequacy of its infrastructure.

Inadequate investment in infrastructure is identified as a significant and peculiar problem for New Zealand (World Economic Forum, 2009). Intervention economists suggest that failure to address the problem will hinder the long-term economic output of New Zealand (World Economic Forum, 2009). Having been aware of the problem, the New Zealand government has taken a series of steps to tackle the bottleneck. A specialist body – National Infrastructure Unit (NIU) – was established within the Treasury in 2009 to coordinate infrastructure activities at the national level and to provide government agencies with guidance and support on infrastructure project appraisal and capital asset management. The National Infrastructure Plan was released in 2010 and 2011, setting out the investment principles, identifying the government long-term goal and assisting the infrastructure sectors to gain a better understanding of strategic planning at the national level and policy settings (National Infrastructure Unit, 2011b). The relevant legislation (e.g. Resource Management Act 1991, Local Government Act 2002, Corrections Act 2004) was reviewed by the Parliament that sought to remove unnecessary constraints on the provision of infrastructure (National Infrastructure Unit, 2010).

In addition to the initiatives to enhance infrastructure investment, given the medium-term budgetary constraints, the government stresses the importance of gaining efficiency in the delivery of
infrastructure (National Infrastructure Unit, 2010). Currently, a variety of procurement methodologies have been used in New Zealand. Although the traditional model – separate design and construct contract – dominates the construction industry, other forms of procurement, such as design and build, partnering and alliance, have gained increasing popularity in the industry. Especially, in recent years, alliance has been applied in a number of roading projects of significant scale, which have delivered satisfactory value for money outcomes (National Infrastructure Unit, 2010).

Although a good level of sophistication has been developed for public sector procurement, the New Zealand government is still looking at using innovative procurement methodologies to better assist with infrastructure development to achieve better value for money. Public-Private Partnerships (PPPs) have captured the government’s interest due to various advantages, such as acceleration of infrastructure provision, enhanced service quality, better risk allocation and whole-of-life cost savings (Chan et al., 2009, Li et al., 2005c, Grimsey and Lewis, 2004, European Commission, 2003). Numerous reports benchmarking the performance of PPPs against traditional procurement systems indicated that PPPs generally demonstrated superior cost certainty, time efficiency and end users’ satisfaction than traditionally procured projects (HM Treasury, 2008, The University of Melbourne, 2008, Raisbeck et al., 2009). As stated in the National Infrastructure Plan (2010), the New Zealand government intends to use PPPs where they represent value for money (National Infrastructure Unit, 2010). PPPs are placed within the public sector procurement options to be chosen at the business case stage. All proposals that have whole-of-life costs in excess of NZ$25 million are required to include an evaluation of PPP option (The New Zealand Treasury, 2011b). A PPP project will move forward once the value for money assessment and the relevant social and environmental considerations are justified.

PPPs have been practised worldwide in a variety of sectors, such as transport, water and wastewater treatment, education and corrections, in New Zealand, the experiences with PPPs are nonetheless limited. Only few PPP activities have been undertaken to date, including prison management services
and franchises for the water and wastewater treatment facilities (Grimsey and Lewis, 2005). Since the release of the first National Infrastructure Plan (2010), two PPP projects have been brought into market, the Wiri Prison Project and the Schools Project at Hobsonville.

1.2 Statement of Problem

Extensive research studies have revealed that PPPs usually embrace complicated contractual and financial arrangements, prolonged negotiation duration and long concession period (Kwak et al., 2009, Dixon et al., 2005). A range of factors such as high transaction costs and lengthy lead time, inadequate legislative and regulatory environment, lack of capacity in public agencies, private sector failure and inefficient procurement process have been identified as obstacles hindering the smooth implementation of PPP projects (Chan et al., 2010b, Duffield, 2005, Mahalingam, 2010, Ahadzi and Bowles, 2004).

In order to address the potential obstacles for using PPPs and increase the likelihood of achieving success, research has been conducted to investigate the critical success factors (CSFs) for PPP projects, based on existing PPP practices internationally (e.g. the UK, Australia, China) (Zhang, 2005a, Li et al., 2005b, Qiao et al., 2001, Chan et al., 2010a, Jefferies et al., 2002). In addition to the CSF research, a number of studies explored possible strategies to facilitate the PPP implementation across countries (Mahalingam, 2010, Garvin, 2010, Zhang, 2005b). Parallel to academic research, a wide range of policy and guideline documents have been released to provide the PPP practitioners with guidance on the policy objectives, principles and detailed procedural requirements for using PPPs. For example, Partnerships Victoria has published a suite of policy and guidelines, ranging from value for money assessment methodology, standard commercial principles to risk allocation, practitioners’ guide and contract management guide (Partnerships Victoria, 2006).

Despite abundant literature on extracting best practices for implementing PPPs internationally, few attempts have been made in New Zealand by taking the country-specific characteristics into
consideration, such as the small size of the economy, lack of sophisticated capital market, and relatively negative attitudes held by general public towards private sector involvement in infrastructure provision. The Treasury’s discussion paper (Katz, 2006) asserted that the benefits of PPPs can also be achieved by using traditional procurement methodologies and the use of PPPs in New Zealand would be impeded by factors such as political unacceptability, large tendering and contracting costs, high contract renegotiation costs and the difficulties of ensuring good performance. The Treasury’s position has held back PPP development in New Zealand.

In addition to the PPP debate at central government level, a few academic studies were undertaken to investigate the key aspects that affect the use of PPPs in New Zealand. Heiler (2002) found that the immature business environment for PPPs and the industry’s relatively low level of understanding would hinder the PPP adoption and implementation. Ribeiro and Dantas (2006) discussed the potential of utilising PPPs for land transport projects and pointed out that the relevant legislation and the public sector’s approach created difficulties in the adoption of PPPs. Owles (2008) extended the discussion, showing that given the lack of clear criteria for the selection of PPP projects, a sustainable PPP market cannot be guaranteed. Focusing on the housing sector, Austin (2008) highlighted that lacking management expertise and commitment from the public sector posed limitations on employing PPPs to achieve the desired outcomes. It is notable that the previous literature was published prior to 2009 under different policy contexts. Without considering the recent updates, the findings and recommendations cannot be directly employed as PPP guidance in New Zealand.

Since 2009, much has changed regarding the government policy direction and approach to public sector procurement. Relevant policy settings have evolved around PPPs to facilitate PPP implementation. For instance, prohibitive provisions on PPPs, such as the restrictions on private sector management of prison services under the Corrections Act 2004 and limitations on concession period of private sector operation of water projects, specified in the Local Government Act 2002, have been removed from the legislation, allowing the use of PPPs in the prison and water sectors (National
The NIU was set up to act as a centre of excellence for PPP programmes, enhancing the public sector capacity in structuring and managing PPP projects. A number of policies and guidelines on PPPs have been published, including the *Guidance for Public Private Partnerships (PPPs) in New Zealand* and *Draft Public Private Partnership Standard Contract – Version 2*, to facilitate a consistent and standardised procedure and approach towards PPPs (New Zealand Office of the Auditor-General, 2011). With regard to the policy change and the emerging issues, such as the Global Financial Crisis and the post-disaster reconstruction following recent Christchurch Earthquakes, not enough is known about the critical factors impacting on the successful implementation of PPP programmes, which are specific to New Zealand under the current policy, social and economic environments.

1.3 Research Objectives

This research was therefore conducted to fill the identified knowledge gap. The research objectives were to:

- Examine the past experiences, current application status and policy settings of PPPs in New Zealand and review the continuous debate on PPPs in New Zealand (OB1)

Before identifying the critical factors affecting the PPP implementation in New Zealand, it is important to gain an overview of the past experiences and current application status of PPPs. Since the government’s approach towards PPPs has changed since 2008, the current policy settings surrounding the use of PPPs need to be examined. The continuous debate on PPPs in New Zealand is to be reviewed to understand the emerging issues surrounding PPPs over time and analyse the applicability and relevance to current PPP practices.

- Identify the drivers for New Zealand to adopt PPPs for the provision of public assets and associated services (OB2)
Although the government has signalled the support for PPPs, it is not clear what factors drive the New Zealand government to enter into PPP contracts under the current policy context. Are the previously identified benefits of PPPs based on international practices applicable to New Zealand? This question will be answered by fulfilling Objective 2 through conducting industry-wide, semi-structured interviews.

- Investigate the critical factors that impact on the successful implementation of PPPs in New Zealand (OB3)

Internationally, existing literature has identified the critical factors for implementing PPPs. However, it is not known whether the previously-identified factors apply to New Zealand. Given the special policy, social and economic environments, it is likely that the New Zealand case is different to international practices. It is therefore essential to investigate the critical factors for PPPs that are specific to New Zealand by drawing together industry-wide practitioners’ views and opinions. Semi-structured interviews conducted in New Zealand were utilised to achieve Objective 3.

- Evaluate representative case studies in Hong Kong Special Administrative Region, Australia and New Zealand in the sector of exhibition and event venue, prison and school to analyse the critical factors affecting the successful implementation of PPPs (OB4)

PPP development is in its infancy in New Zealand with few previous experiences and two recent projects underway. Evaluating the existing and current PPP projects in New Zealand and extracting lessons would provide important implications on how to utilise PPP approaches to achieve better outcomes. Internationally, the PPP use is not new, with extensive experience gained in the past two decades. It is therefore essential to learn from international best practices, which can be tailored to suit the New Zealand PPP application. In this research, two jurisdictions, Hong Kong Special Administrative Region (HKSAR) and Australia, were studied. They were chosen because of the locations, free trades and frequent economic activities with New Zealand, their long history of PPP
development, similarities in legal and policy environment and the government’s current approach towards PPP adoption. Comparative case studies were used as a means to capture both international and local best practices and to analyse the critical factors for PPP implementation. PPP projects in three sectors, exhibition and event venue, prison and school, were selected for the case studies given the relevance to New Zealand’s past and present PPP practices.

- Synthesise the research findings to develop best practice guidelines for implementing PPPs in New Zealand with specific recommendations on the sector of exhibition and event venue, prison and school (OB5)

Based on the results from industry-wide interviews within New Zealand and comparative case studies, the research findings will be synthesised to derive the best practice guidelines. Meanwhile, specific recommendations on the sectors examined are made.

1.4 Scope and Limitations

This research examines the PPP application in New Zealand and suggests recommendations on how to utilise PPPs to achieve better outcomes. Despite extensive experiences on PPPs internationally, this research mainly focuses on capturing the PPP practices in HKSAR and Australia given the limits on time, availability of existing literature and site accessibility. HKSAR and Australia were selected to extract best international practices for a number of reasons: (1) They are both located in Asia-Pacific region, having free trades and frequent economic activities with New Zealand; (2) Both jurisdictions have a long history for PPP development (over two decades); (3) Both jurisdictions have similar legal environment as New Zealand; and (4) Both governments’ current approaches towards PPP adoption are similar to New Zealand.
1.5 Research Methods

A systematic methodological framework was designed to carry out this research and achieve the research objectives. A diagram showing the research objectives, thesis chapters, research methods used and the corresponding research stages is presented in Figure 1.1. A brief description of the research methods used for this research is provided below.

Figure 1.1 Research framework

- A comprehensive literature review is conducted to gain a thorough understanding of fundamental concepts and theories on PPPs and international best practices on the implementation of PPPs, which set the theoretical framework of the study. The literature review also covers the policy papers, academic studies, and a previous quasi-PPP case study in New Zealand from which the knowledge gap is identified. Literature review serves to partially achieve objectives 1, 2 and 3.
• Industry workshops and seminars the researcher attended throughout the PhD process are helpful to capture the industry’s opinions of New Zealand PPPs, confirm the research gap and refine research objectives correspondingly. Round-table discussions are the main form of the industry workshops and seminars.

• Semi-structured interviews with New Zealand PPP practitioners are used as the data collection method to achieve objective 2 and 3. In-depth, face-to-face interview techniques and semi-structured questionnaires are adopted for the interviews.

• Comparative case studies in the sector of exhibition and event venue, prison and school are undertaken to achieve objective 4. The findings derived, coupled with the results from semi-structured interviews will be synthesised to develop best practice guidelines for New Zealand to undertake PPPs with specific recommendations on the sectors examined.

1.6 Significance of Research

The New Zealand government has been keen on developing infrastructure and associated services by utilising private sector expertise and skills. Public-Private Partnerships (PPPs) are viable procurement methodologies to advance the infrastructure adequacy in an efficient way. In order to achieve the desired outcomes in adopting PPPs, a thorough and in-depth investigation on how to increase the value for money of PPP projects is required. Best practice guidelines specific to New Zealand will provide both the public procuring authorities and prospective private sector investors with useful guidance on how to engage with New Zealand PPPs. The research adds to the continual debate on the suitability of using PPPs, and how to use PPPs to maximise the outcomes of value for money. The findings of this research contribute to the body of knowledge by adding the New Zealand case to PPP best practice frameworks and showing different sectors’ needs vary.
1.7 Structure of the Thesis

The structure of this PhD thesis is as follows:

- Chapter 1 gives an introduction of the doctoral research project. It provides the background information on the subject matter and identifies the knowledge gap. It justifies the need for this research by commenting on previous research in the problem area. It then presents the research objectives and an overview of methodology used to achieve the objectives. The significance of the research is presented and the structure of the thesis is also outlined.

- Chapter 2 reviews fundamental concepts and theories concerning Public-Private Partnerships (PPPs). It describes the typical procurement process, organisational structure, financial arrangements, risk management and payment mechanisms of a PPP transaction. The drivers for using PPPs are summarised and critical factors affecting the successfulness of PPPs are also extracted. This chapter provides the theoretical framework for this PhD study.

- Chapter 3 reviews the current public sector procurement practices in New Zealand with a special focus on PPPs and the policy environment for using PPPs. It examines existing government policy papers, academic studies and project reports concerning the prospects for using PPPs to gain a picture of the continuous debate around PPPs in New Zealand. A previous quasi-PPP case is studied and analysed to draw on lessons that can be learned for future PPP application. In addition, the PPP development in Hong Kong Special Administrative Region and Australia are discussed and evaluated, providing a basis for comparisons with New Zealand’s PPPs.

- Chapter 4 describes the research methodology. It provides the rationale for adopting qualitative methodology in this study and detailed research design. The various research methods are articulated and data analysis procedures are outlined. The chapter also highlights issues with reliability and validity and ethical considerations in this study.
• Chapter 5 presents results and findings from industry-wide, semi-structured interviews with New Zealand practitioners. The drivers and critical factors for using PPPs are identified and discussed with details. The analysis and presentation of the data is based on the research objectives.

• Chapter 6 presents results derived from comparative case studies of PPP projects in the exhibition and event venue sector. It reviews the special characteristics for the provision of venue assets and associated services and the application of PPPs for venue development. The critical factors affecting the PPP implementation, mainly derived from semi-structured interviews with the stakeholders of respective projects, are presented within the context of the research objectives.

• Chapter 7 goes on to report on results gained from comparative case studies of PPP projects in the prison sector. Again, the special characteristics for the delivery of correctional services and the application of PPPs for prison development are first reviewed. Based on qualitative data, primarily obtained from focus group and semi-structured interviews, critical factors that impact on the PPP use in the prison sector are identified and articulated with underpinnings.

• Chapter 8 presents the research outcomes based on comparative case studies of school PPP projects. Following a similar structure adopted in Chapter 6 and Chapter 7, the critical features for a successful school PPP are identified, which are primarily based on semi-structured interviews with the stakeholders of the studied projects.

• Chapter 9 presents a synthesis of research findings and develops best practice guidelines for implementing PPPs in New Zealand with specific recommendations for previously investigated sectors. The results from literature review, document analysis, interviews and case studies are drawn together and compared across jurisdictions and sectors. The best practice guidelines are developed by incorporating the findings from this study into various themes identified from literature review. The best practice guidelines, along with the specific recommendations, are validated by soliciting opinions from subject matter experts.
• Chapter 10 integrates all parts of the thesis to reach a meaningful conclusion. It reviews the research objectives and summarises how the objectives have been achieved throughout the research process. The original contributions to the PPP knowledge and practices are highlighted. Also, by articulating the limitations of the current research, directions for future research are recommended.
Chapter 2  Fundamentals of Public-Private Partnerships (PPPs)

2.1 Introduction

This chapter describes some of the basic concepts and main facets around Public-Private Partnerships (PPPs). It sets the scene for the current study by providing a review of background knowledge about the subject area. Various procurement systems used for delivering public infrastructure and related services are firstly introduced. PPPs are then positioned in the overall picture of the procurement systems and defined in the context of this study. After summarising the key characteristics of PPPs, the key facets of PPPs – PPP organisation, financial arrangements, procurement process, risk management and payment mechanism are discussed in detail.

The chapter concludes with critical factors contributing to success/failure of PPPs from international PPP practices. It formulates the best practices database for PPP implementation and provides a basis for deriving and assessing the best practice guidelines for New Zealand PPPs developed from this study.

2.2 Procurement Systems and PPPs

2.2.1 Concept and Categorization

Before introducing PPPs, it is important to understand the broader concept – procurement system. The definition of procurement system concept is evolving and many academics in construction management field have tried to interpret it from different standpoints (Walker and Rowlinson, 2008). A definition developed by the International Commission on Building (CIB W92) during its meeting in 1997 was “a strategy to satisfy client’s development and/or operational needs with respect to the provision of constructed facilities for a discrete life cycle”.

Masterman (2002) argued that the contemporary procurement systems are not limited to the design and construction of projects, but also involve the financing, operating and facility management
components. McDermott (1999) contended that the cultural, managerial, economic, environmental and political issues affecting the procurement process should be embraced in the definition. By incorporating these relevant elements, Masterman (2002) developed a definition of procurement system as “the organisational structure adopted by the client for the implementation, and at times eventual operation of a project”.

There are a wide range of procurement systems available for the client to choose when initiating a new project. It is therefore of equal importance to categorise them into several groups to assist the understanding and choice of procurement systems. A number of ways can be used for the categorisation: (1) by the amount of risk taken by each of the participating parties; (2) by the level of information available or required at the time construction contractors are let; (3) by the way in which the contractor is reimbursed; (4) by the way in which the interaction between the design and construction, and sometimes the funding and operation, of the project is managed (Masterman, 2002). The last method is considered to be the most suitable for the examination and selection of procurement systems (Masterman, 2002). Accordingly, the procurement systems are grouped into four categories, which are shown in Table 2.1.
Table 2.1 An overview of the categorisation of procurement systems (Adapted from Masterman, 2002)

<table>
<thead>
<tr>
<th>Procurement systems</th>
<th>Characteristics</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate procurement system</td>
<td>A design contract is let first, and then a construction contract is let to another organisation.</td>
<td>Separate design and construct contracts</td>
</tr>
<tr>
<td>Integrated procurement system</td>
<td>One organisation takes responsibility for design and construction of the project. The responsibilities may extend to financing, operation, and maintenance</td>
<td>Design &amp; Build; PPPs</td>
</tr>
<tr>
<td>Management oriented procurement system</td>
<td>The management of the project is carried out by an organisation working with all parties involved</td>
<td>Management contracting; design &amp; manage</td>
</tr>
<tr>
<td>Discretionary (collaborative)</td>
<td>The client sets out a framework for the overall administration of the project within which the most appropriate procurement systems from other categories are used.</td>
<td>Partnering; alliance; joint venture</td>
</tr>
</tbody>
</table>

2.2.2 Definition of PPPs

According to Table 2.1, PPPs fall into the category of “integrated procurement system”. Given the various procurement systems under the same category, it is important to differentiate PPPs from the others by understanding what PPPs mean and what components PPPs embrace. Despite the worldwide use of PPPs, there is no unified definition about this term (Jefferies and McGeorge, 2009, Garvin, 2010, Solino and de Santos, 2010). The definitions of PPPs vary across countries given their specific context and policy objectives for using PPPs. Table 2.2 lists the recent definitions given by different institutions. Notably, some of the definitions are different with those from the same sources previously, showing the evolving nature of PPP theories and practices. In general, PPPs have been defined from both broad and narrow perspectives. In broad sense, PPPs refer to any type of venture embracing both public and private sectors, such as the definitions given by HM Treasury and Canadian Council of PPPs (shown in Table 2.2). Some cite a narrow definition of PPPs which confines the involvement of the private sector in the financing, design, construction, operation and maintenance in the provision of infrastructure assets and associated services, such as definitions given
by Infrastructure Australia and Efficiency Unit in Hong Kong (Jefferies and McGeorge, 2009). This thesis adopts the definition given by the NIU in New Zealand which explains PPPs from the narrow prospective. According to the NIU’s definition, New Zealand PPPs entail: (1) service delivery requiring the construction or enhancement of facility or assets; (2) private financing; (3) the private sector in charge of long-term operation till the end of the contract; and (4) service-based payment.

Table 2.2 Various PPP Definitions

<table>
<thead>
<tr>
<th>Source</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM Treasury (2009)</td>
<td>Public-private Partnerships (PPPs) are arrangements typified by joint working between the public and private sector. In the broadest sense, PPPs can cover all types of collaboration across the interface between the public and private sectors to deliver policies, services and infrastructure.</td>
</tr>
<tr>
<td>Infrastructure Australia (2008)</td>
<td>A PPP is a long-term contract between the public and private sectors where government pays the private sector to deliver infrastructure and related services on behalf, or in support, of government's broader service responsibilities. PPPs typically make the private sector parties who build infrastructure responsible for its condition and performance on a whole-of-life basis.</td>
</tr>
<tr>
<td>National Infrastructure Unit (2009a)</td>
<td>Public Private Partnerships (PPPs) refer to long-term contracts for the delivery of a service, where the provision of the service requires the construction of a facility or assets, or the enhancement of an existing facility. The private sector partner finances and builds the facility, operates it to provide the service and usually transfers control of it to the public sector at the end of the contract.</td>
</tr>
<tr>
<td>Canadian Council of Public-Private Partnerships (2007)</td>
<td>A cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.</td>
</tr>
<tr>
<td>Efficiency Unit (2008)</td>
<td>A PPP is a contractual arrangement involving the private sector in the delivery of public services. As the name suggests, this is based on a partnership approach, where the responsibility for the delivery of services is shared between the public and private sectors, both of which bring their complementary skills to the enterprise.</td>
</tr>
</tbody>
</table>
2.2.3 Various PPP Models

2.2.3.1 Categorisation of PPP models

The models used for different PPP projects vary given the individual project characteristics and policy context and it is continuously developed to suit the evolving PPP practices. A variety of PPP models have been used across infrastructure sectors and jurisdictions. Terms such as BOT (build, operate, transfer), BOOT (build, operate, own, transfer), DBFO (design, build, finance, operate) have gained familiarity among practitioners. However, sometimes confusions arise about the implications of these terms as they are used interchangeably in some occasions (Jefferies and McGeorge, 2009, European Commission, 2003). It is therefore important to have a clear understanding about the various PPP models and their implications, as well as the categorisation of the models.

There are a number of ways to differentiate PPP models. One categorising method classifies PPPs based on the nature of the services and risk transfer inherent in the PPP contract. Accordingly PPPs can be categorised into two main categories, usage-based and availability-based (Yescombe, 2007). The usage-based model is primarily used for projects with user-paid tolls, fares or usage fees for facilities, such as roads, bridges, and tunnels. The availability-based model can be further split into accommodation-based projects (e.g., hospitals, schools and prisons), equipment, systems or network-based PPPs and process plant (e.g. power generation) (Yescombe, 2007). A commonly-adopted categorising method utilises the extent to which the private sector entity is involved in the delivery of infrastructure and associated services as the basis to classify PPP models (Infrastructure Australia, 2008, CCPPP, 2005). The below section gives an overview of the spectrum of PPP models categorised using this way.

2.2.3.2 Spectrum of PPP models

Based on the extent of private sector involvement and the degree of risk allocation, Public-Private Partnerships can be categorised into several groups. A widely-accepted categorisation is developed by
the Canadian Council for Public-Private Partnerships and the spectrum of PPP models is given in Figure 2.1. The following section provides a brief introduction of some PPP models.

Figure 2.1 The scale of Public-Private Partnerships: Risk transfer and private sector involvement
(Source: Canadian Council for Public-Private Partnerships, 2005)

- **Operation & Maintenance Contract (O&M):** Under the contract, a private operator operates a publicly-owned asset for a specified term. Ownership of the asset remains with the public sector. Many consider O&M as a service contract rather than a PPP (UNECE, 2004). According to the definition of PPPs adopted in this thesis, since the service involves enhancement and refurbishment and private finance is engaged, O&M contract falls into the spectrum of PPPs.

- **Design-Build-Finance-Maintain (DBFM):** The private sector partner is engaged to design, build and finance an asset, provide hard facility management or maintenance services under a long-term agreement. In Australia, non-core hospital services and non-judicial court services are examples of DBFM-type contract. The scope of DBFM model may be further extended under which partial private-to-public service delivery is transferred to the private sector. Community facilities linked to educational facilities are exemplary cases of this kind.

- **Design-Build-Finance-Operate-Maintain (DBFOM):** The private sector designs, builds and finances an asset, provides hard and/or soft facility management services as well as operations
under a long-term agreement. Some prison projects use this model to deliver the correctional facilities and services (Partnerships Victoria, 2001a).

Some other terms such as Build-Operate-Transfer (BOT) and Build-Own-Operate (BOO) have been used interchangeably in existing literature. For example, in a BOT model, the private sector takes primary responsibility for financing, designing, building and operating the project. The ownership of the project is then transferred to the public sector. BOT is usually regarded as the first generation of PPPs (Jefferies and McGeorge, 2009). Under BOO, the private sector finances, builds, owns and operates a facility or service in perpetuity. The public constraints are stated in the original agreement and through on-going regulatory authority. Water treatment projects are typical examples of BOO application (Yuan et al., 2010).

2.2.3.3 PPPs vs Privatisation

PPPs are likely to be misunderstood as one form of “privatisation” (Garvin, 2007). Actually PPPs differ from privatisation for various reasons. Under PPPs, the public sector retains ultimate responsibility for service delivery, whereas under a privatisation, the private sector takes over the business and is accountable for the delivery of services (UNECE, 2004). Besides, in the case of PPPs, governments regulate the private sector’s behaviours through contractual mechanism, the contract, in which the general rights and obligations of various parties are specified. By contrast, governments can only impose regulatory regime via a privatisation to ensure the private sector entity’s business activities do not threaten the public interest (Grimsey and Lewis, 2004). In addition, with PPPs, the public sector defines the service requirements to meet public needs and has the right to change the output during the life of PPP contract. However, under privatisation, the service is defined by market and price mechanisms (HM Treasury, 2003).
2.2.3.4 PPPs vs Contracting out

Contracting out is mainly aimed at achieving value for money through the introduction of competition to some economic activities previously excluded from public sector procurement. PPPs share some similarities with contracting out. Domberger et al (1994) maintained that if extending the term of outsourced contracts and incorporating operations, maintenance and management of the facility into the service scope, contracting out emerges to have some common features with Operation and Maintenance (O&M) contract (one form of PPPs). However, there is clear gap between contracting out and PPPs as more complicated financial, organisational and contractual issues are involved in PPPs. Moreover, achieving cost saving is not the only concern for using PPPs. More considerations such as wider benefits to the community are also critical for PPPs (Akintoye et al., 2003a).

2.2.4 Value For Money

Achieving value for money lies at the heart of PPP arrangements and it is the overall objective for utilising PPPs (Akintoye et al., 2003b, Aziz, 2007, Grimsey and Lewis, 2005). Value for money is defined as “the optimum combination of whole-life cost and quality (or fitness for purpose) to meet the user’s requirement” (OGC, 2002). It is usually assessed using the criteria of economy\(^1\), efficiency\(^2\) and effectiveness\(^3\). It is about striking the right balance between economy, efficiency and effectiveness, and cannot be assessed through only one of the three dimensions.

The PPP approach represents a shift of mind-sets from traditional procurement system. Six main value for money determinants were identified based on PPP experiences in the UK: risk transfer, the long-

\(^1\)Economy: Reducing the cost of resources used for an activity, with a regard for maintaining quality.

\(^2\)Efficiency: Increasing output for a given input, or minimising input for a given output, with a regard for maintaining quality.

\(^3\)Effectiveness: Successfully achieving the intended outcomes from an activity.
term nature of contracts, the use of an output specification, competition, performance measurement and incentives and private sector management skills. These determinants are elaborated as follows:

- Risk transfer. Risk transfer and risk allocation is a distinguishing feature of PPPs (Jin and Doloi, 2008, Li et al., 2005a). Under a PPP, risks associated with design, construction, maintenance and operation of the asset are, to large extent, transferred to the private sector whilst the government retains the ultimate ownership of the asset. Given the principle that risk should be allocated to the party which is at the best position to manage it, the public sector sometimes retains some of the risks in order to achieve optimum risk allocation scheme.

- The long-term nature of contracts. PPP contracts generally entail long-term contractual arrangements (usually from 25 years to 40 years). The long-term nature of PPPs underpins a whole-of-life costing approach as the private sector party takes full integrated responsibility for design, construction, maintenance and/or operation for the life of the contract. During the project planning stage, specialists from all disciplines in relation to service delivery work together to come up with whole-of-life optimum solutions.

- The use of output specification. Via a PPP approach, the services outcome requirements are specified in output terms rather than prescriptive input terms. The government prepares an output specification detailing the infrastructure functionality and service requirements to seek a private sector partner to design, build, maintain and/or operate the facility under a long-term contract.

- Competition. A good level of competition is a key driver for prospective bidders to come up with innovative solutions in design and service delivery. Maintaining competitive tension is needed for obtaining benefits from PPP tendering processes.

- Performance measurement and incentives. Under PPPs, the private sector partner can only receive payments when the facility is operational. Payment will be subjected to timely delivery, agreed level of availability or satisfactory service performance. Usually there are incentive elements and abatement regimes in payment mechanisms. The performance measurement and incentives in PPPs
require the public sector procurer to focus on long-term quality of service being delivered and structure the procurement process accordingly. The public sector is given greater flexibility to seek better service performances over whole-of-life time (Infrastructure Australia, 2008).

- Private sector management skills. PPPs provide the private sector incentives to fully utilise their management skills in design, construction, operation and management of public assets and services, which may result in better service quality.

Both quantitative method and qualitative considerations are adopted in value for money assessment of private sector proposals. In many countries such as the UK and Australia, the Public Sector Comparator (PSC) serves as a quantitative tool for the value for money testing. PSC is a benchmark representing whole-of-life net present cost under traditional procurement. It is calculated by a discounted cash flow analysis, taking the costs and risks that would be encountered into consideration. The relevant estimates are based on the most recent way of providing the output by the public sector. Risk-adjusted cost via a PPP scheme will be compared against PSC, through which a quantitative assessment of value for money is conducted (Grimsey and Lewis, 2005). It is notable that the PSC is a hypothetical estimate, rather than an actual cost to governments. Qualitative factors, such as the alignment with the public sector’s strategic objectives, certainties of service quality and efficiency of design, are also incorporated into the assessment.

2.3 The Organisation of PPPs

2.3.1 Contractual arrangement for PPPs

A PPP is an organisational structure comprising of several parties for the provision of infrastructure and associated services. Typical PPP structure encompasses the establishment of a Special Purpose Vehicle (SPV) specifically created for the project. The SPV lies at the heart of all contractual and financial relationships of a PPP arrangement. A SPV is a separate legal entity (usually a company), normally consisting of a number of parties from diverse service disciplines. Setting up a SPV as a
separate legal entity reflects the nature of project finance – lending to the project to be non- or limited recourse to the sponsors. The assets and liability of the project will not appear on the balance sheet of the sponsors (Yescombe, 2007).

The public sector enters into PPP contract with a SPV who carries out activities specified in the contract. The SPV subsequently subcontracts with individual service providers such as architects, construction contractors, facility managers and operators to practically execute the PPP contract. The SPV often has a sponsor playing a lead role in the private sector consortium and generally provides equity investment. Debt financiers are also included in the consortium and under most circumstances, provide the majority of project funding (Grimsey and Lewis, 2004). A typical contractual arrangement for a PPP project is shown in Figure 2.2. The following section gives a detailed description of the roles played by various parties involved in a PPP arrangement.

![Figure 2.2 A typical PPP structure (Source: adapted from Grimsey and Lewis, 2004)](image_url)

Apart from the typical PPP structure, Joint-Venture (JV) PPPs (also known as institutional PPPs) is another form of PPP organisation (Bower, 2003). Under this arrangement, the SPV is jointly owned by the public and private sector parties. Joint-Venture PPPs help to reduce the possibility that the private entity makes super profit by holding shares in the SPV. JV PPPs also allow the public authority to have better access to project information. However, concerns arise in relation to the JV
PPPs that the roles and responsibilities of the public and private sector parties may have duplications, leading to unexpected conflicts and misunderstanding throughout the project life (Yescombe, 2007).

2.3.2 Key stakeholders in PPPs

Stakeholders are defined by the Project Management Institute in the Project Management Body of Knowledge (PMBOK) (PMI, 2008) as:

Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected by execution of the project or project completion. They may also exert influence over the project and its deliverables.

In the case of PPP transaction, primary stakeholders consist of:

- **The public sector procurer** (the central and local government, public procurement agencies, state-owned enterprises) For example, in New Zealand, organisations that can be seen as “public sector procurer” include entities within central government, namely ministries and departments, and the wider public sector, such as Crown-owned companies, local government and Crown entities (Wigley, 2011). Compared with traditional procurement system, PPPs relieve the public sector procurer from being intensively involved in actual execution of asset and service delivery by transferring many elements of service delivery to the private sector. Unlike privatisation, PPPs allow the public sector procurer to retain the ultimate control and ownership of assets and the accountability for the public interest.

The public sector plays a critical role in the development and implementation of PPPs. The role and responsibilities of the government in PPPs differs from activities that they undertake in traditional procurement. Under a PPP, in addition to be a contracted party, the government is primarily committed to structuring an effective and efficient procurement process, assisting the private consortium with support, and more importantly, sustaining favourable macro environment.
for PPPs. To be specific, the government’s main responsibilities in PPP arrangements include (Kwak et al., 2009, Kumaraswamy and Zhang, 2001):

- Creating enabling political, legal and investment environment
- Establishing a coordinating and supporting central authority
- Defining the service need and assessing affordability
- Preparing output specification and setting out performance regimes for services
- Structuring an efficient procurement process
- Selecting a suitable concessionaire
- Governing the contract based on the pre-agreed Key Performance Indicators (KPIs) and responding to changes when needed

- The sponsors who are as equity investors normally create a special purpose vehicle (SPV or Project Company) through which they contract with the public procurer, and the principal subcontractors. The number of sponsors in PPPs is normally around two or three. The sponsors are responsible for executing the contract by fulfilling the SPV’s contractual obligations, concerned with financing, design and building the infrastructure asset and delivering the defined services to the required standard.

- Financiers (including both debt and equity) are an integral part of the SPV. Given the non- or limited recourse finance to project sponsors, debt financiers have great stakes in the project. The revenue streams of the PPP project are, therefore subjected to careful scrutiny by financial institutions (Abdel Aziz, 2007). A detailed description of the roles of financiers and financing aspects of PPPs are presented in Section 2.4.

- Subcontractors (construction contractor, architect, operator or facility manager). Under separate agreement with SPV, the subcontractors carry out the SPV’s contractual obligations by engaging with activities within their specialised fields. From the perspective of subcontractors, their client is
the SPV under PPPs, whereas in traditional procurement, they contract with the public sector procurer individually (Bower, 2003).

- **Other involved parties** such as professional advisors (legal, financial, technical), insurers, rating agencies and underwriters, etc. Professional advisors play an important role in PPPs as PPP arrangements are very complex requiring considerable expertise and professional knowledge to structure and implement (Akintoye et al., 2003a). On the public sector side, advisors are engaged to plan out the procurement process and offer independent check at critical decision making points. The sponsors sometimes rely on outside advisors to prepare bid for PPP projects. Insurers and rating agencies are also involved in PPP arrangements via providing the SPV with risk management strategies and credit enhancement services (Carrillo et al., 2008).

- **End-users** are important stakeholders for a PPP project. The end-users’ satisfaction is a critical criterion in evaluating the outcomes of PPPs (Yuan et al., 2009). End-users’ interests and perspectives need to be captured in the development of PPP contracts (El-Gohary et al., 2006). For example, in school PPP projects, inputs from principals, teachers and selective community representatives are deemed essential in drafting output and service specifications and evaluating bids (Reeves and Ryan, 2007).

### 2.3.3 The organisation of SPV

Given the extent of private sector involvement in the delivery of public assets and services, PPP models are categorised into various groups, as discussed in Section 2.2.4. The organisation of SPV varies in accordance with different project characteristics. Based on the type of sponsors who take the lead in organising the SPV and putting up the bids, a SPV is generally formed via two approaches, subcontractor (construction contractor, facility manager, or operator) -led and financier-led.
2.3.3.1 Subcontractor-led SPV

Subcontractor-led SPV is also seen as the traditional approach in which PPP sponsors are typically a mixture of subcontractors and financial investors. Construction contractors or service providers sponsor the SPV, provide equity to the consortium and take the lead in bidding process (Grimsey and Lewis, 2004, Jefferies and McGeorge, 2009). Financiers generally act as long-term financial investors mainly focusing on revenue streams generated by project operation rather than activities undertaken prior to the completion of construction.

2.3.3.2 Financier-led SPV

Financier-led approach was developed in recent years, especially in Australia (Yescombe, 2007). Under this approach, financiers (e.g., investment banks, specialised PPP investment funds) provide equity investment, organise the bid submission, and make decisions on crucial bidding strategies. Although other parties such as builders and service providers sign agreements with the banks and contractually form the SPV, the investment banks take all equity stakes and act as underwriters for a variety of issues in relation to financing (Zhang, 2006).

2.3.3.3 Pros and Cons

Both subcontractor-led and financier-led approaches have their benefits and drawbacks in terms of accountability for service performance, alignment of various service components and continuity of the whole process. Equity participation is seen as a vehicle to align the interests of involved parties with maintaining long-term partnership and achieving government project objectives (Kwak et al., 2009). If the consortium is led by subcontractors, service delivery outcomes are closely linked to the service providers who have great equity stakes in the SPV. Such connectivity is nonetheless not apparent in financial-led model (Yescombe, 2007).
The use of subcontract-led approach is likely to raise concerns that each subcontractor who makes equity contributions may only be interested in a particular aspect of the PPP contract. They usually keep a separation between the equity commitments with their contractual obligations under the agreement with the consortium. For example, construction subcontractor may lose long-term interest after the completion of construction phase, and withdraw their equity investment at that time. The duplicated role, as an equity investor and subcontractor may threaten the long-term partnership and sustainability of the PPP deal. The financier-led model exhibits advantages in this realm. When financiers take the lead in SPV, they tend to align the interests of all service providers and integrate the whole process in order to generate a competitive bid and reduce transaction costs as well as obtain financial benefits (Chan et al., 2010a). With better alignment among the various parties and integration of the PPP process, the likelihood to achieve success will be increased.

2.4 Financial Arrangement for PPPs

Typically, funds for PPP projects are from two sources: equity and debt (Grimsey and Lewis, 2004). Equity is primarily provided by project sponsors and other primary investors. Debt generally forms the majority of funding as PPPs commonly employ project finance characterised by high debt/equity ratio. Commercial banks and bond investors are main debt providers by means of long-term loans and bonds respectively.

2.4.1 Equity

Subcontractors may act as equity providers in PPP projects, especially under the subcontractor-led model, they usually make substantial equity commitment to the SPV. Other primary investors including banks, PPP equity-investment funds may also contribute to the equity investment. Banks acting as equity investors are often lenders to the project (Yescoombe, 2007). Extending the scope of business to equity investment seems to be natural for the banks given their significant commitment to debt financing. PPP equity-investment funds may be life-insurance companies and pension funds
which have long-term liabilities as investment in infrastructure, especially via a PPP procurement methodology, can secure relatively long-term and stable return (Kwak et al., 2009). The equity-investment funds are usually set up and run by investment banks or other financial institutions. Under the financier-led model, equities are generally provided by financiers such as investment banks, PPP equity-investment funds or similar financial institutions.

Once a PPP project is built and has generated steady revenues as expected, equity investors may sell off their investment to secondary investors given their overall business development strategy. Secondary investors generally receive low return than the primary investors as since the project is built, the project risks are reduced.

2.4.2 Debt via project finance

2.4.2.1 Features of project finance

Project finance is commonly used as a means to obtain long-term debt financing for PPP projects. The lending is based on revenues generated by the project operation and it depends on a rigorous evaluation on the whole-of-life risk profile and risk allocation (Bakatjan et al., 2003). Compared with other financing approaches, such as corporate finance, project finance has a number of unique features (Yescombe, 2007).

- Project finance is carried out through a legally separated entity – SPV, which is specifically created for a new project.
- It is usually raised for a new project rather than an established business.
- It usually uses high debt and equity ratio.
- It has non- or limited recourse to the sponsors, so the lenders can only rely on cash flow of the project to pay back the loan and interests till the end of the contract.
- Lenders typically undertake careful examination and close control over the activities of the project to ensure the project finance debt can be repaid by revenues.
Given the large proportion of debt finance in PPPs and the features of project finance, lenders play an important role in PPPs. Lenders, who have substantial capital at risk, are greatly incentivised to ensure the effective management of all project risks (HM Treasury, 2003). The use of project finance therefore is essential to deliver value for money benefits for PPPs.

2.4.2.2 Debt – commercial banks

Commercial banks are the most important source for debt finance for PPPs (Yescombe, 2007). They provide long-term loans to the project. In order to raise bank loans, one or more banks are appointed as lead arrangers to underwrite and provide the loan. The appointment may involve the assistance by financial advisors or sometimes, banks act both as financial advisors and lead arrangers. Lead arrangers usually sign a mandate letter with the sponsors of the SPV to express their intent to participate. The mandate letter does not impose legal obligations on banks, although it gives indication of pricing and other terms regarding the debt finance. During the tendering stage, banks normally provide letters of intent to sponsors to support their bid. Letters of intent give both sponsors and public sector procurers assurance that banks are committed and the required finance can be materialised. Again, letters of intent are no more than moral commitment for the banks rather than legal documents (Yescombe, 2007).

Lenders usually carry out a rigorous due diligence process for PPP projects to ensure that loans will be repaid as expected. The project contract is the basis for undertaking a careful examination on the construction costs, operating cash flows and risks of the project. Advisors from different disciplines are typically employed in the due diligence to inform the lenders the viability of the project from a lender’s point of view. It is obvious that the due diligence exercise introduces financing discipline to the public sector procurement regime, adding rigour to project viability analysis (European Commission, 2003, Efficiency Unit, 2008). However, the due diligence may also result in lengthy lead time and problematic negotiation process given the banks’ direct or indirect involvement in contract negotiation and their strict financial position (Kwak et al., 2009).
Once the due diligence is done to a substantial degree, a term sheet will be developed specifying the financial structure and terms for the PPP deal to obtain internal credit approvals within the banks. After being granted the approval, banks may underwrite the debt by signing the agreed term sheet. The term sheet will then be subjected to further due diligence on the project contract and associated financing documents. At the final stage of negotiation, financing documents will be examined based on which the detailed financial structure and terms can be finalised (Regan et al., 2011).

In some cases, where public sector procurer requires a fully-committed bid, due diligence, internal credit approval and detailed financing package need to be completed prior to bid submission. This requirement would be beneficial to reduce negotiation duration, but may significantly increase the bid costs (KPMG, 2009, Regan et al., 2011).

2.4.2.3 Debt – bond investors

Debt financing for PPPs may also take the form of the issue of bonds. From the SPV’s perspective, bond is similar to bank loans. The SPV issues bonds agreeing to repay to the bond holder bond and interests on future instalment dates. Bonds holders essentially are long-term investors such as life-long insurance companies and pension funds, who have similar nature with PPP equity investors, whilst bond holders do not take equity risks.

Bond investors generally rely on an investment bank and a rating agency to undertake due diligence. An investment bank, acting similar role as a financial advisor in bank loan, is firstly appointed to structure and underwrite the bond issue. A rating agency then reviews the relevant documents and assigns credit rating for the project based on its independent evaluation. After underwriting bonds, the investment bank places the bonds with investors. Bonds may either be public issues or private placements (Regan et al., 2011). Monoline insurers play a critical role in bond financing by guaranteeing against default in the payment of bond interest and principal. Monoline insurers typically have the capacity and resources to evaluate the project’s risk profile. Through bearing
projects risks, bond insurance offers a credit enhancement mechanism, resulting higher credit rating of the insured bonds and better accessibility to the full pool of investment funds (EPEC, 2009).

2.4.2.4 Comparison between bank loans and bonds

Bank loans and bonds are both sources of debt financing used for PPPs. However, there are differences between the two debt financing mechanisms in various aspects, which are summarised in Table 2.3.

Table 2.3 A comparison between bank loans and bonds

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Bank loans</th>
<th>Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of project</td>
<td>Suitable for all types of project</td>
<td>Only used for large project</td>
</tr>
<tr>
<td>Cost</td>
<td>Higher than bonds</td>
<td>Tend to have lower cost than bank loans, partly because of wider investor base and monocline insurer taking credit risk</td>
</tr>
<tr>
<td>Term</td>
<td>Usually less than 20 years</td>
<td>Long-term finance</td>
</tr>
<tr>
<td>Time of involvement</td>
<td>At early stage</td>
<td>At very late stage</td>
</tr>
<tr>
<td></td>
<td>Relatively flexible</td>
<td>Fixed rate of interest</td>
</tr>
<tr>
<td>Exposure of project contract</td>
<td>Keep confidential</td>
<td>The terms of project contract need to be published in public</td>
</tr>
<tr>
<td>Control over project</td>
<td>Impose tight control on the project</td>
<td>Only control matters that significantly affect the project’s repayment ability</td>
</tr>
<tr>
<td>Loan repayment schedules</td>
<td>Flexible</td>
<td>Inflexible and cannot offer short-term funding</td>
</tr>
</tbody>
</table>

2.4.3 The Global Financial Crisis (GFC) and Debt Finance for PPPs

2.4.3.1 Impacts of the GFC on the capital market for PPPs

The Global Financial Crisis, starting from the middle of 2007, has triggered an extended period of disruption in debt finance market across many developed countries (Bedford, 2008). Project debt finance for PPPs has been a gradual tightening in terms of the availability, financing structure and
lending terms. As reported by numerous investigations based in Europe, Australia and Canada, the impacts of the GFC on debt finance for PPPs are reflected in both bank loans and bonds (KPMG, 2009, EPEC, 2009, McKenzie, 2008, Regan et al., 2011, CCPPP, 2009).

Senior bank loan tenor has significantly reduced from more than 20 years to 10 years or less, raising the concerns regarding refinancing risk at the end of tenor (KPMG, 2009). Banks tend to tighten their credit standard and be more cautious about the risks of PPP projects, resulting in substantially increased bank margins along with more conservative financing structures (EPEC, 2009). In the meantime, large banks tended not to underwrite debt finance as some banks have partially or totally withdrawn from project finance market and syndicated loan market has closed (KPMG, 2009).

Raising bonds for PPP projects largely depends on monoline insurers to offer credit enhancement. However, the monoline companies were heavily exposed to the US sub-prime mortgage market, leading to weakening of their balance sheets and downgrading their credit ratings (KPMG, 2009). Bond investors, therefore, are unwilling to accept the fluctuation of monoline insurance policies and invest in bonds. As a result, access to bonds in capital market seems to be difficult. No workable solutions have emerged to replace the bond market relying on monoline insurance (EPEC, 2009).

2.4.3.2 Possible remedies

With regard to the great impacts on debt finance for PPPs, alternative funding mechanisms such as Credit Guarantee Finance (CGF) and Supportive Debt Model (SDM) have been piloted in PPP projects as a response to the limited capacity of project finance market. A variety of possible remedies are suggested in existing literature in order to lower the adverse influences imposed by the GFC, which are summarised and assessed in Table 2.4.
<table>
<thead>
<tr>
<th>Remedies</th>
<th>Description</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjust procurement process – reduce the level of financial commitment up to financial close (KPMG, 2009, EPEC, 2009)</td>
<td>Committed finance required by existing procurement procedures seems impossible in face of current market situation. Reducing the level of financial commitment is one option for the public procurers.</td>
<td>• Reduce bidding costs</td>
<td>• Create a moral hazard • Amplify execution risk</td>
</tr>
<tr>
<td>Adjust procurement process – allow the preferred bidder to access to larger banking market (KPMG, 2009, EPEC, 2009)</td>
<td>Under the situation of funding shortage, it is difficult for banks to support multiple bidders. A funding competition can be held after the selection of the preferred bidder.</td>
<td>• Benefit the procurer due to the enlargement of the size of potential funding</td>
<td>• Discourage financier-led consortium • Possibly lose the robustness of bids without earlier involvement of lenders</td>
</tr>
<tr>
<td>Provide upfront government capital grant (KPMG, 2009)</td>
<td>For commercially unviable projects, the government may provide upfront capital contributions to enhance the financeability of the private portion.</td>
<td>• Make some projects financially viable</td>
<td>• Compromise the value for money outcomes due to retaining project within the government</td>
</tr>
<tr>
<td>Use co-lending facilities (EPEC, 2009)</td>
<td>When projects facing funding shortage, the government may fill the gap by lending to the project using public funds on the same terms as commercial banks.</td>
<td>• Provide prompt remedy to the credit crisis • Allow the deals to reach close shortly</td>
<td>• Increase the risk of public intervention in banks’ market • Cause conflict of interests for the public sector – as procurer and lender</td>
</tr>
<tr>
<td>Provide full financial guarantee (Regan et al., 2011)</td>
<td>Governments may choose to provide a financial guarantee, which would become a contingent liability of the government.</td>
<td>• Enable access to a wider pool of investors and add credibility to the project</td>
<td>• Remove the disciplines brought by financiers to the project • Substantially reduce risk transfer</td>
</tr>
<tr>
<td>Procedure</td>
<td>Description</td>
<td>Benefits</td>
<td>Implications</td>
</tr>
<tr>
<td>-----------</td>
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<td>--------------</td>
</tr>
<tr>
<td>Provide refinancing risk support (KPMG, 2009)</td>
<td>Refinancing issues arising from short debt tenors would add financial costs to the project and worsen value for money. Government may opt for sharing the refinancing risk with the private sector.</td>
<td>• Incentivise the private sector partner to manage its finance efficiently</td>
<td>• Raise the issue that to what extent the government guarantees which are untested before</td>
</tr>
<tr>
<td>Credit Guaranteed Finance (CGF) (Regan et al., 2011)</td>
<td>To overcome the problems with the financial market, governments may provide the debt finance for the project with guarantees from banks or a monoline insurer. Under this model the funding is separated from risk bearing.</td>
<td>• Respond to an immediate shortfall of finance</td>
<td>• Do not help to address the shortfall in market capacity</td>
</tr>
<tr>
<td>Supported Debt Model (SDM) (Regan et al., 2011, McKenzie, 2008)</td>
<td>Under this model, the government finances a predetermined level of project debt when PPP is successfully commissioned and operational.</td>
<td>• Lower financing costs</td>
<td>• Introduce another layer of contractual complexity</td>
</tr>
<tr>
<td>Develop “infrastructure bond” market (EPEC, 2009)</td>
<td>Governments could set up “infrastructure bond” market to draw on public savings and institutional investors, so that the market can access to wider group of investors.</td>
<td>• Make debt capital more available and is attractive from value for money perspective</td>
<td>• Lead to higher pricing of private finance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provide more efficient approach to attract capital market</td>
<td>• Do not solve the market capacity issue during construction phase</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Facilitate wider understanding of infrastructure market</td>
<td>• May be difficult to attract large number of investors due to the complexity of PPP structure</td>
</tr>
</tbody>
</table>

### 2.5 PPP Procurement Process

Typical PPP procurement process consists of two stages, the development stage and the realisation stage (Grimsey & Lewis, 2004). Reaching financial close signals the end of the development stage and the beginning the realisation stage as it usually a few months to arrange the finance after PPP
contract is signed (Grimsey and Lewis, 2004). The development stage can be further divided to the initial feasibility phase and procurement phase. The realisation stage is also referred as contract administration phase (Yescombe, 2007). Figure 2.3 presents a procurement framework adopted in a typical PPP project. The following section reviews the main tasks and procedures involved in each stage.

![Procurement process of a PPP transaction](Source: adapted from Grimsey and Lewis, 2004)

### 2.5.1 Business case development

The business case development stage in PPPs generally incorporates the service need, option appraisal, and project development stages. Similar to traditional procurement, PPPs start with identifying the service need. The service need identification commonly embraces a thorough and careful analysis of strategic context, investment objectives, existing arrangements and business needs. Key service requirements and potential business scope are defined at this stage (The New Zealand Treasury, 2011b). The benefits, risks, constraints and dependencies of the proposed project also need to be considered alongside the initial analysis (The New Zealand Treasury, 2011b).

Having decided the strategic context for the new investment proposal and confirmed a case for change, the following stage is focusing on conducting an option appraisal in order to choose the most suitable option to deliver the required services. The procuring authority considers whether the traditional procurement or PPPs is the appropriate route. The fundamental criteria underpinning the choice of
procurement route is the ability to achieve value for money outcomes (HM Treasury, 2003, National Infrastructure Unit, 2009a, Infrastructure Australia, 2008).

Bearing the basic principle in mind, the procurement appraisal paradigm in different jurisdictions varies slightly. Figure 2.4 depicts a three-stage appraisal procedure adopted in the UK. In the investment programme assessment phase, a PPP option should be considered if the characteristics of proposed projects fall into the features of a successful PPP, which may include: (1) sufficiently large in size and scale; (2) additional funding is needed to finance the project; (3) the outputs of the project being capable of being defined in clear and measurable terms; (4) the nature of the assets and services identified being able to be costed on a whole-of-life and long term basis; and (5) stable the technology and other aspects of the sector which are not susceptible to fast-paced change (Hong Kong Institute of Surveyors, 2009). Assuming that PPPs pass the investment programme assessment, a systematic and methodological cost and benefit analysis assisted with the PSC will be undertaken to rigorously test the value for money results through a PPP (HM Treasury, 2003). Once PPPs are selected as the preferred option based on the PSC assessment, a final procurement assessment will be carried out to confirm the decision with procurement option. The final assessment may contain affordability test, market interest test and assessment on the capacity of private sector (HM Treasury, 2003). Australia, Canada, Hong Kong generally adopt the similar paradigm to conduct procurement appraisal, whilst minor variances exist throughout the process. For example, in Australia, the need to undertake public interest test is stressed to ensure the public interests can be adequately protected by the selected procurement route (Infrastructure Australia, 2011).
Some other countries, such as Spain and Portugal, do not adopt PSC for the option appraisal. Instead, a feasibility analysis is firstly conducted. A PPP approach is justified if the majority of project’s market risks can be transferred to the private sector in an economically viable way. Then the government will proceed to estimate the rate of return based on which modifications are made such as enlarging the scope or providing government subsidies (Garvin, 2010).

The service need identification, coupled with the decisions of option will be presented to regional or central authorities (e.g. Cabinet) obtain political approvals. The process is also known as “business case” (Yescombe, 2007). Once the business case is confirmed, a procurement team will be formulated to develop the commercial principles, such as risk allocation schemes and payment mechanism, draft project contract, establish project management structure, engage professional advisors and undertake necessary consultations, and prepare for the tendering stage (National Infrastructure Unit, 2009a).
2.5.2 Procurement stage

Procurement stage of PPPs is concerned with selecting an appropriate bidder to carry out the PPP contract. The Hong Kong Institute of Surveyors outlined the main steps involved in this process (Hong Kong Institute of Surveyors, 2009).

- Invite expression of interests
- Prequalification of tenderers that have submitted an expression of interest
- Request for proposal
- Evaluation of tender
- Detailed negotiation with preferred tenderers
- Final value for money assessment on the preferred tender
- Submission of final business case

A range of issues such as transaction costs, procurement duration, effectiveness of the selection, competitiveness and transparency and accountability need to be considered in PPP procurement. The United Nations Economic Commission for Europe generalised a principle guiding the process (UNECE, 2004):

The selection of the bidder should be undertaken following a transparent, neutral and non-discriminatory selection process that promotes competition and strikes a balance between the need to reduce the length of time and cost of the bid process and, acquiring the best proposal. Along these lines, corruption should be penalized as well.

Based on worldwide PPP practices, procurement processes used for PPPs are generally classified into four categories (Yescombe, 2007, KPMG, 2010b, Solino and de Santos, 2010):

- Open procedure. This approach allows a single stage process without short-listing or pre-qualification. The government issues a call for tenders with project requirements and conditions
(Garvin, 2010). Multiple bidders submit binding bids which will be mainly evaluated on the basis of price without contract negotiation. PPP projects in Spain are generally procured through this procedure and the Spanish approach is viewed as simple and short processes (KPMG, 2010b). However, under this approach, significant project development especially detailed design is needed before bringing into market, which will possibly limit the room for innovation proposed by the private sector bidders. In reality, open procedure is rarely used in current PPP market due to the complexity of PPP contracts.

- **Restricted procedure.** Via this procedure, after pre-qualification, the bid requirements may be discussed with short-listed bidders prior to issuing tender documents. The awardee of contract is solely based on bid submissions without further negotiation with bidders. This approach is used in Portugal and Italy and it is relatively quick and low-cost procedure. However, due to lacking of contract negotiation, the fiscal impacts on governments may be overlooked as governments tend to underestimate the risks in some projects (KPMG, 2010b, Garvin, 2007, Garvin, 2010).

- **Negotiated procedure.** Negotiated procedure, mostly used in the UK, is structured into four stages, namely pre-qualification, invitation to negotiate, best and final offer, and preferred bidder (Yescombe, 2007, Solino and de Santos, 2010). The number of bidders is reduced as the procurement process proceeds. This approach is viewed as advantageous due to the higher possibilities of developing innovative solutions, tailored to characteristics of the particular project (Solino and de Santos, 2010). Meanwhile, concerns remain with a negotiated procedure as it allows extensive negotiations during the preferred bidder stage, undermining competition tension. The transparency requirement for PPP procurement may also be compromised via this approach (Solino and de Santos, 2010).

- **Multi-stage procurement procedure.** Broadly used in Europe (especially the UK), Canada and Australia, this approach consists of an EoI stage, an Request for Proposal (RfP) stage with interaction with bidders, selection of a preferred bidder and pre-award contract negotiations (KPMG, 2010b). Whilst maintaining relatively high competitive tension and leaving room for
innovative proposals, this approach is often criticised for its lengthy negotiation time and high costs for bidders (KPMG, 2010b, Carrillo et al., 2008, Savvidese, 2011). This procurement procedure is currently practised in various forms including Competitive Dialogue procedure enforced in Europe and the Interactive Tendering model frequently used in Australia (KPMG, 2010a). Table 2.5 presents a comparison of the two procurement models in terms of some key considerations for PPP procurement.

2.5.3 Contract management stage

Following financial close, a typical PPP project enters into the contract management stage. *Infrastructure Australia* summarises the main tasks and the underlying principles during this stage (Infrastructure Australia, 2008):

- Planning, information collection and analysis including planning the contract management strategies that will be used for the project to assist in determining the information that will be required to implement those strategies.
- Contract administration requiring an understanding of the various aspects for the project;
- Performance reporting and monitoring.
- Relationship management between the government and the private party, dispute resolution and issue management;
- Governance, probity and compliance;
- Knowledge and information management;
- Change management;
- Contingency planning; and
- On-going review.
Table 2.5 A comparison of Australian Interactive Tendering and European Competitive Dialogue procurement models (developed based on source: KPMG, 2010)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Interactive Tendering</th>
<th>Competitive Dialogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of interaction and dialogue with bidders</td>
<td>Parallel dialogue is undertaken from issuing RfP to the receipt of submissions.</td>
<td>The procedure allows a dialogue with the shortlisted bidders.</td>
</tr>
<tr>
<td>Extent of design, operation and FM service</td>
<td>Detailed design and service solutions and substantial amount of commercial and pricing terms are agreed in the tender process whilst still in competition.</td>
<td>All aspects of the tender need to be developed at an advanced level. Bidders are required to clarify, specify, or fine-tune their bids prior to bid evaluation. The submissions must include all elements considered necessary for the performance of the project.</td>
</tr>
<tr>
<td>Extent of design, operation and FM service</td>
<td>Detailed design and service solutions and substantial amount of commercial and pricing terms are agreed in the tender process whilst still in competition.</td>
<td>All aspects of the tender need to be developed at an advanced level. Bidders are required to clarify, specify, or fine-tune their bids prior to bid evaluation. The submissions must include all elements considered necessary for the performance of the project.</td>
</tr>
<tr>
<td>Extent of changes and duration of negotiation at post-tender stage</td>
<td>Changes to solutions may occur post preferred bidder selection without altering pricing mechanism. Compared to the European model, the post-tender negotiation usually takes longer before PPP contract is signed.</td>
<td>It is fairly inflexible as only limited changes are allowed at post-tender stage. No changes can be made to the bid’s fundamental features. The scope for design and price development should be in line with the agreed risk allocation scheme.</td>
</tr>
<tr>
<td>Restrictions on government changes to requirements</td>
<td>Change of requirements by the procuring authority is generally allowed to suit the changing circumstances.</td>
<td>The scope to change the requirements of the public sector is fairly restrictive during the procurement process.</td>
</tr>
<tr>
<td>Means to protect bidders’ commercial confidentiality</td>
<td>The interaction is undertaken individually. An independent and external probity advisor is appointed to scrutinise the procurement process.</td>
<td>Dialogue is normally conducted bilaterally and based on each bidder’s own technical solution.</td>
</tr>
<tr>
<td>Stages of procurement</td>
<td>Often not predetermined. If a strong value for money solution is submitted, the procurement may move quickly to the preferred bidder stage.</td>
<td>It is normally conducted in successive stages, albeit some flexibility is allowed. The bidders are usually informed the number of stages and timeframes in advance.</td>
</tr>
</tbody>
</table>
2.6 Risk Management for PPPs

Risk allocation lies at the heart for PPPs and is regarded as the main driver for value for money outcomes for PPPs (Jin and Doloi, 2008, Nisar, 2007, European Commission, 2003). Risk allocation is also a distinguishing characteristic of PPP transaction as under PPPs, most of the risks related to design, construction, maintenance and operation are transferred to the private sector partner (Medda, 2007, Lam et al., 2007). Despite a high degree of risk transfer in PPPs, both practitioners and academic researchers claim that the public authority should retain some risks which they are at better position to manage so that optimum and equitable outcomes could be achieved (Li et al., 2005a, Partnerships Victoria, 2001c, Efficiency Unit, 2008, Dixon et al., 2005). Appropriate risk allocation therefore is important for the success of PPP transactions (Qiao et al., 2001, Li et al., 2005b). Since risk allocation is embedded in the overall risk management, it is of great importance to review each stage and procedure of risk management and understand the typical risk profile for PPPs before delving deeper into the risk allocation issue for PPPs.

2.6.1 Risk management paradigm

In the context of PPP projects, risk refers to uncertainties which may impact either on the provision of the services or the financial viability of the project (Yescombe, 2007). In either case, the outcomes would be a loss or costs need to be borne by an entity involved in PPP transactions. Manage of risks is therefore the key to project success or failure. Risk management is defined as:

… a process which aims at providing a structured way of identifying and analysing potential risks, and devising and implementing responses to reduce their impact, and monitoring the effectiveness of actions that have been undertaken (Hong Kong Institute of Surveyors, 2009).

Risk management is a continuous process throughout project life cycle which encompasses (Akintoye et al., 2003a, Barkley, 2004, Partnerships Victoria, 2001c):
• Risk identification. The process of identifying all risks that may arise during the project. One method to identify risks is the development of a risk checklist. A brainstorming session should be included to identify project risks. Risks of similar nature are often categorised into the same group (Department of Finance and Administration, 2006, Partnerships Victoria, 2001c);

• Risk assessment. Risk assessment is undertaken to determine the value of a risk based on its probability and consequence. Both qualitative and quantitative approaches are used to assess the risks (Hong Kong Institute of Surveyors, 2009);

• Risk allocation. Risk allocation is concerned with allocating responsibility for coping with the consequences of each risk (Grimsey and Lewis, 2004);

• Risk treatment. Risk treatment refers to attempts made to reduce the likelihood of the risk occurring and the degree of its consequences for the party who takes the risk. In general, risk treatment methods may include risk transfer, risk reduction, risk acceptance and risk prevention (Hong Kong Institute of Surveyors, 2009, Department of Finance and Administration, 2006); and

• Risk monitoring and review. This process is established to monitor the effectiveness of risk treatment methods, to identify any new risks that emerge as project proceeds and update the risk treatment methods accordingly (Partnerships Victoria, 2001c).

It is notable that risk management may be interpreted and implemented differently to different stakeholders (Akintoye et al., 2003a). For example, for the public sector, risk management refers to the identification, assessment and evaluation of what risks are to be retained and transferred, and to formulate strategies on how risks are to be mitigated. The risk management objective is to ensure that the value for money can be achieved with public funds (Grimsey and Lewis, 2004). To the project sponsors, the purpose of risk management is to ensure risks that are allocated to them are properly priced so that the cost of managing them can be recovered (Hong Kong Institute of Surveyors, 2009). At the lenders’ side, they are more focused on risks that are associated with loan default and use interest rate over the loans to as risk treatment method (Akintoye et al., 2003a).
2.6.2 Risk profile for PPPs

A search of literature on risk management in PPPs reveals that there are a number of ways to identify and classify risks of PPP projects. For example, Miller and Lessard (2001) categorised PPP-related risks into three groups: “Market-related” risk concerning the revenues generated from project operation; “Completion” risks which refer to technical designs, construction cost/time overrun, and operation problems; and “Institutional” risks are arising from changes of laws and regulations. Li et al. (2005a) proposed a meta-classification approach to identify three levels of risk factors, comprising of macro-level risks concerned with the risks at a national or industry level status, meso-level risks representing the risk events and their consequences occurring within the system boundaries of the project and micro-level risks associated with the stakeholder relationships formed in the procurement process. The following is a risk classification developed by the Efficiency Unit in Hong Kong, in which the key types of risk are grouped as follows (Efficiency Unit, 2008):

- Demand risks: the risk that the projected numbers of users of a service will not materialise with consequent impact on revenues; or that the number of users may be excessive with consequent impact on costs
- Design and construction risks: the risk that there will be failure to meet performance specifications; and/or there will be cost and/or time overruns
- Operating and maintenance risk: the risk that operational failures or costs and/or maintenance costs are greater than anticipated
- Technology/obsolescence risk: the risk that the assets employed in the project will cease to be the best way of delivering the required service
- Finance risk: risk associated with the cost and availability of funds for the project
- Legislative risk: the risk that changes in legislation will affect the costs/viability of the project
- Approval risks: the risk that necessary approvals are difficult to obtain or are not forthcoming
- Hazard risks: the risk of accidents or natural disaster
2.6.3 Risk allocation in PPPs

The risk allocation between the public and private sector is mainly reflected in three ways (Grimsey and Lewis, 2004, Partnerships Victoria, 2001c):

- Specified service obligations
- The payment mechanism
- Contractual provisions adjusting the risk allocation implicit in the basic structure

There is widely accepted principle underlying risk allocation that risks should be allocated to the party who are in the best position to manage it. It can be elaborated as risk should be allocated to the party (Li et al., 2005a, Loosemore, 2007, Shen et al., 2006):

- who is best able to influence and control the risk factor;
- who can reduce the possibility of the risk materialization; and
- who can deal with the risk if it eventuates at the lowest cost.

Despite the clear principle regarding risk allocation, there is no unified approach to allocate PPP project risks due to the individual context of each project and the different angles towards risks taken by different stakeholders. In practice, risk matrix serves as a useful tool to prepare and set up risk allocation scheme for both government practitioners and private sector party. Standardised risk allocation framework is proposed in some PPP guideline and policies, such as the risk matrix given by Victorian Government in Australia (Partnerships Victoria, 2001c). However, the standardised framework should be tailored to use in different PPP cases to reflect on the unique characteristics of the project.

2.7 Payment Mechanism in PPPs

A unique characteristic of PPP arrangements is that the contractor is compensated on the basis of service delivery instead of being remunerated for the work performed using construction capital
payments (Abdel Aziz, 2007). No payment will be made until the services are operational. Two main payment mechanisms – usage-based payment and availability-based payment are commonly used in global PPP practices. (Yescombe, 2007, Efficiency Unit, 2008). The following section provides an overview of the payment mechanisms for PPPs by summarising the features of each mechanism.

2.7.1 Usage-based payments

Usage-based payments are usually adopted in economic infrastructure sectors such as roading, urban rail and ports. In this payment mechanism, the contractor is compensated for the usage of the project (Abdel Aziz, 2007). The payment is predominately determined by project demand (e.g., traffic volume) and the toll rates. The demand risk is transferred to the private sector. Pricing contains more elements than traditional procurement ranging from construction costs, operating and maintenance costs, and premiums for transferring the risks to the private sector (Efficiency Unit, 2008). If the estimated revenues generated from charging tolls to end users cannot cover the costs incurred, the public authority is likely to take various steps to support the project such as capital contributions, revenue guarantees, subsidies or debt guarantees (Yescombe, 2007). It is evident that this payment mechanism gives great incentives for the contractor to provide the services as required. However, penalties structure in the form of financial deductions is still in place to ensure the service availability and quality due to monopoly nature of the services (Yescombe, 2007).

A particular case of usage-based payments is the shadow-toll payment structure. Firstly initiated in the UK, shadow tolls are usage-based payments in which the public authority paid the tolls instead of the end users. Take the roading sector as an illustrative example: the payment mechanism incorporates an optional safety payment compensating the private sector partner for the costs of avoiding accidents. On the private sector’s side, the demand risk is, to some extent, reduced as users who are not willing to pay for the tolls may move back to use the toll road. Shadow-toll mechanisms were criticised as the private sector has no incentives to optimise the space/availability due to the limited risk transfer. It is therefore abandoned by the UK government later on.
2.7.2 Availability-based payments

Availability-based payments are commonly used for the promotion of PPPs to deliver services in social infrastructure sectors, such as school, hospital and prison. The roading sector is increasingly applying this mechanism to compensate the contractor (Garvin, 2010). The essence of availability-based payment mechanism is that payments are only made when the services are available. Payments usually consist of a single amount, in the form of “unitary charge”, including a combination of amortised capital costs, operating and maintenance costs, and the investors’ required return (Efficiency Unit, 2008). Penalties structure is normally embedded in this payment mechanism, which is reflected in two forms (Yescombe, 2007):

- Payment deductions made for any part of the facility which is unavailable
- Payment deductions made for failure to meet performance indicators of service quality

An important element for this payment mechanism is what is meant by “availability”. The definition of availability would vary among different sectors (Efficiency Unit, 2008). Therefore, a detailed and practical weighting scheme for each aspect of the facility needs to be clearly established in the PPP contract. In addition to the availability issue, the measurement of service quality is also of great concern in this regard. A common approach to address this concern is to set up a matrix of key performance indicators for the requirements of each service (Yescombe, 2007). Against the KPIs and their weighting, the quality of services can be measured.

The private sector operator may find other opportunities, other than providing services as required in PPP contract, to gain profits based on the built facility. In this case, additional revenues may be generated for the SPV by making the facility available for third parties. For example, school halls may be hired for community use or a retail shop may be opened attached to an exhibition and event centre. The third party revenues may be also considered in the arrangement of service fee payment.
2.8 Drivers for Using PPPs

The benefits of PPPs driving the government to use this procurement methodology have been reported in existing literature. This section outlines some reasons behind the worldwide adoption of PPPs to deliver public assets and services.

- Acceleration of infrastructure provision

PPP strategies allow the public sector to proceed with the provision of public facilities without providing funding upfront. Instead, the payment depends on the availability of services delivered by the private sector. This enables the government to bring forward infrastructure in demand when lacking of public funding or under limits on public spending imposed by budgetary constraints (European Commission, 2003). PPPs provide government opportunities to advance priority infrastructure projects for economic development (Li et al., 2005c, Askar and Gab-Allah, 2002).

- Better risk allocation

Under PPP arrangements, risks related to financing, designing, building and operating the public assets and services can be partly or wholly transferred to the private sector (Li et al., 2005c, Chan et al., 2009). The private sector is generally seen as better at managing risks than the public sector. Achieving better risk allocation has been identified as a significant driver for PPP adoption in a wide range of practical PPP guidance materials and academic publications (European Commission, 2003, Efficiency Unit, 2008, UNECE, 2004, Cheung et al., 2009).

- Whole-of-life cost savings

Since the private sector has been historically involved in design, build, maintenance and operation phases of public services, it can therefore optimize costs associated with these elements of service provision (Chan et al., 2009, Cheung et al., 2009, National Infrastructure Unit, 2009a). In particular under a PPP scheme, in which the long term maintainability of built infrastructure will accrue benefits
to the private sector operator through reduced operational costs, the PPP contractor can increase design specifications and standards to reduce maintenance costs. Locking in such operational economies and innovations is hard to achieve using traditional procurement models (Grimsey and Lewis, 2004, Dixon et al., 2005, European Commission, 2003, Efficiency Unit, 2008). This is primarily since there is no direct incentivisation of construction contractors to do so. In a PPP contract in which the contractor not only constructs but thereafter manages service provision from the asset, that contractor is directly benefits from any innovations reducing in service costs of maintenance and operation.

- Improved quality of services

PPP contracts leave more space for the private sector to innovate throughout the project life cycle. With the aid of innovative techniques and managerial skills, end users are more likely to receive better public services (Efficiency Unit, 2008, Grimsey and Lewis, 2004). In addition, under PPP arrangements, the private sector is required to ensure that services delivered satisfy pre-agreed benchmarks, otherwise the government will not make payments. In some cases the private sector may be motivated by rewards due to high quality of services provided (Li et al., 2005c, European Commission, 2003). Moreover, private consortia tend to improve maintainability through the combination of designing and constructing of public facilities (Chan et al., 2009, Cheung et al., 2009, Askar and Gab-Allah, 2002).

- Benefits for local economic and social development

Building, upgrading and maintaining public facilities create more job opportunities, alleviating social pressure caused by unemployment, especially under the current world-wide economic recession (Efficiency Unit, 2008). PPPs allow the private sector to participate in the provision of public facilities and services. The innovations achieved from private sector expertise may help to facilitate technology transfer to the local market.
2.9 Critical Factors Affecting the PPP Implementation

Researchers have found a variety of critical factors for PPP projects, which are likely to impact on the successful implementation of PPPs in New Zealand. Existing research was conducted based on literature review (Kwak et al., 2009, Aziz, 2007), case studies (Jefferies et al., 2002), scanning tour (Garvin, 2010), round-table discussions (Mahalingam, 2010), and interviews (Akintoye et al., 2003b, Zhang, 2005b) and questionnaire survey with industry practitioners and experts (Li et al., 2005b, Chan et al., 2010a, Zhang, 2005a). The critical factors are summarised in below.

2.9.1 General political, legal and economic conditions

Favourable investment environment is the cornerstone to attract the private sector entities to participate in the provision of public facilities and associated services (Li et al., 2005b, Chan et al., 2010a). To be detailed, the parameters in relation to the investment environment include: (1) political and wider public concerns, (2) legal and regulatory arrangements and (3) general economic conditions.

One significant reason for PPP failure is the political risk contingent on any project. This is inclusive of public opposition and legislative restrictions on involving the private sector in the provision of infrastructure projects, and the perception of apparently easy terms by which corporate entities secure long (and lucrative) concessionary contracts at public expense (Zhang, 2005b, Chan et al., 2010b, Li et al., 2005c, Carrillo et al., 2008). However politicians may not (or indeed seem not to) be aware of the dynamics of risk transfer which are the distinguishing characteristics of PPP. PPPs tend to be misunderstood by the public as forms of privatization (Grimsey and Lewis, 2004, Owles, 2008), which they are but only in the broadest definition of privatization. This in turn may create difficulties in persuading the various stakeholders in a project to agree with using PPP strategies. Quite simply depending on the side of the political spectrum that a stakeholder resides will indicate whether a PPP solution is perceived as a positive or negative in the evaluation of a project procurement framework. Right of centre/conservative stakeholders tends to support PPPs, however, left of centre/socialist
stakeholders tend to view PPPs as a removal of public assets into private hands. In some countries, poor prospects for economic growth adversely affect the confidence of the private sector to enter into the local market. In some other cases, the project fundamentals cannot justify the private investment.

2.9.2 Business case development

Business case development usually follows systematic procedures. Existing literature has shown that the parameters in relation to business case development which mostly affect the outcomes of PPPs include: (1) Service need analysis identification and cost-benefit analysis; (2) Procurement option analysis; and (3) Affordability analysis.

Conducting thorough service need identification and a realistic cost-benefit analysis is critical to securing a sustainable PPP project (Qiao et al., 2001). Both the economic and financial viability need to be considered in this analysis (Zhang, 2005a). An important step involved in the analysis is to appropriately treat the uncertainties existed and conduct sensitivity analysis accordingly (Qiao et al., 2001, Birnie, 1999, Ye and Tiong, 2003). Opting for a PPP solution should be based on a methodical and systematic procurement option analysis (Infrastructure Australia, 2008). Also, whether the affordability issues are addressed largely affect the potential success of PPPs (Yescombe, 2007).

2.9.3 Procurement process

PPPs have been criticized among international practitioners and researchers for the high transaction cost and lengthy lead time of bringing infrastructure into service (Efficiency Unit, 2008, Chan et al., 2010b, Carrillo et al., 2008, Zhang, 2005b). Australian experiences suggest that bidding and contracting costs for a $2 billion project could be as high as $20 million per bidder. Bidding cost could be 2.5 – 4% of the total cost of the project including government’s costs (National Infrastructure Unit, 2009a). This is very high but indicative of the risk profile of such a long-term commitment by the private sector. Three parameters of procurement process have been identified as essential affecting
the success of PPPs: (1) Project brief development; (2) Tendering procedures; (3) Balance between streamlining the process and maintaining competition.

Lack of appropriate standard tendering procedures and poor articulation of project brief at the tender stage lead PPP transactions to be both lengthy and expensive (Kwak et al., 2009, Aziz, 2007). Clear project brief and well-defined output specification are necessary to achieve efficiency in the tendering process and secure a strong private consortium (Mahalingam, 2010). Chan et al. (2010a) and Li et al. (2005b) stressed the significance of running a streamlined procurement process whilst ensuring competitive tension and transparency.

2.9.4 Contract administration and management

Effective contract management is regarded as a pre-condition for achieving optimum value for money outcomes from undertaking PPPs (Grimsey and Lewis, 2004, Dulaimi et al., 2010). For performance-based PPPs, the payments of PPPs are based on the specifications provided by the public sector in the form of a series of Key Performance Indicators (KPIs) and the actual assessment of the operational performance (Yescombe, 2007). Problems such as inadequate contract administration documentation, inappropriate governance structure, and inefficient monitoring and evaluation may reduce the effectiveness of contract administration (Victorian Auditor-General's Office, 2010). Apart from the contractual mechanism, the relational contracting principles with a focus on the development of goodwill trust were promoted to manage the relationship between the government and the private party (English and Baxter, 2010).

2.9.5 Public sector capacity and governance structure

The public procuring authority plays a critical role in the development of PPP projects (Kwak et al., 2009, Chan et al., 2010a). An internal project team is set up at project development phase and is responsible for business case development, preparing the tender documents, conducting market
sounding, and organising the tendering process. The capability and experience of the project team is essential to ensure that the PPP transaction is structured properly.

A common problem hampering the use of PPPs is that the public authorities are not experienced in selecting and structuring PPP projects (Li et al., 2005c). Also, the structure of governance may be lack of clarity, so that relevant public officials may not be clear about their roles throughout the procurement process. They either become too involved, which undermines the innovations achieved by the private sector or do not provide commitment and support which prolongs the bidding duration (Zhang, 2005a, Zhang, 2005b).

2.9.6 Private sector market depth, capability and structure

The financial, technical and managerial capabilities of the private entity largely determine the value for money outcomes (Li et al., 2005b, Birnie, 1999, Jefferies et al., 2002). Workable project organisational structure should be created within the private consortia and all parties should be strategically aligned to synergise and exploit their individual strengths (Li et al., 2005b, Zhang, 2005a). PPPs are likely to result in failure if the private sector is not able to deliver the projects in accordance with the output specification. The private sector’s failure might be due to insufficient techniques and financial capability in building and operating the public assets (Chan et al., 2010b, Li et al., 2005b, Li et al., 2005c, Zhang, 2005b).

The accessibility to financial market is deemed as necessary for PPP success (Akintoye et al., 2003b). Financiers with substantial and experience in PPPs would bring disciplines in project selection and justification. The appropriate role of financiers during the procurement process would assist with reducing transaction costs and shortening negotiation duration (Zhang, 2005a). Much attention should be paid to the availability of financial market at project development phase (Li et al., 2005b).
Although two types of private sector organisation exist, subcontractor-led and financier-led SPV, the existing literature has not suggested which type is most effective. However, the structure of the private sector partner does have an impact on the outcomes of PPPs (Birnie, 1999).

2.9.7 Risk analysis and risk allocation

Akintoye et al. (2003a), Li et al. (2005b), Qiao et al. (2001), and Zhang (2005a) revealed that conducting a detailed risk analysis and equitably allocating the risks to the party who is at the best position to control and manage them are critical to ensuring the smooth implementation of PPPs. Equitable risk allocation is achieved through appropriate contractual arrangements (e.g., concession agreement, shareholder agreement, design and build contract) (Zhang, 2005a).

2.10 Concluding Statement

This chapter presents some key concepts and theories surrounding PPPs. It defines PPPs in the spectrum of current procurement systems used for procuring public infrastructure and associated services. Various PPP models are outlined and categorised in accordance with the extent to which risks are transferred to the private sector. After clarifying the basic concepts of PPPs, this chapter sheds a light on five key facets of PPPs – organisation, financial arrangement, procurement process, risk management and payment mechanism. The fundamental issues and theories related to the key facets are also examined and explained with details. Based on the existing literature, this chapter presents the drivers for adopting PPPs. The critical factors that are likely to affect the successfulness of PPP projects are extracted, categorised and described with details.

This chapter presents the conceptual framework for the PhD study based on which the research is carried out. It also provides a theoretical base for the thesis. The next chapter will review the practices and policy settings for PPPs in New Zealand with a view to identify the opportunities and challenges with adopting PPPs in New Zealand infrastructure development.
Chapter 3  PPP Practices and Policies

3.1 Introduction

Having presented some fundamental concepts and theories surrounding PPPs and formulated the theoretical framework for this research, this chapter examines past practices and the current application status of PPPs and their current policy settings in New Zealand. The private sector in New Zealand has been involved in the provision of public infrastructure and services for many years. The experiences with PPPs were nonetheless very limited. The scarcity of PPP practices was partly due to the government’s sceptical view towards the suitability of PPPs for New Zealand. The government’s approach to PPPs has changed since the “Building Nations” symposium was held in 2009. Relevant policy settings have evolved around PPPs to facilitate PPP implementation so that optimum value for money outcomes can be achieved.

This chapter summarises New Zealand’s past practices related to PPPs. Current institutional, legal and policy settings surrounding PPPs are also reviewed. It then goes on to review the previous policy papers, academic studies, and project reports to gain an understanding of the industry-wide debate around PPPs. Through conducting a case study of a quasi-PPP project in New Zealand, lessons can be learned about the factors that may lead to success or failure. The PPP development in the Hong Kong Special Administrative Region and Australia are also discussed and evaluated, providing a basis for comparisons with New Zealand’s PPPs. The chapter focuses on the first research objective and partly addresses the second and third objectives. Information for this chapter is pooled from government documents, academic articles, discussion papers of organisations and official websites.

3.2 Private Sector Involvement in Public Sector Procurement

In New Zealand, the private sector has been involved in the delivery of public infrastructure or related services, or a combination of both, for many years (Tomczak, 2005). The involvement has been taken
in various delivery models, which are listed in Table 3.1. Examples of the application of each model are also provided in this table.

Table 3.1 Various forms of private sector involvement in New Zealand

<table>
<thead>
<tr>
<th>Delivery Model</th>
<th>Application in New Zealand (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design-Bid-Build</td>
<td>The majority of the capital projects are delivered by the traditional approach (Henderson, 2004)</td>
</tr>
<tr>
<td>Outsourcing</td>
<td>Widely used across infrastructure sectors (e.g. in the roading sector, all the maintenance work, which used to be provided by the public sector, is contracted out to a private sector firm (Perry, 2005); Auckland Central Remand Prison, the operation of which was contracted out (Katz, 2006)</td>
</tr>
<tr>
<td>Design-Build</td>
<td>Widely used across infrastructure sectors</td>
</tr>
<tr>
<td>Design-Build-Manage</td>
<td>Canterbury’s landfill project</td>
</tr>
<tr>
<td>Design-Build-Operate</td>
<td>Wellington’s Clear Water Project (a sewage treatment plant)</td>
</tr>
<tr>
<td>Build-Operate-Own-Transfer</td>
<td>Auckland’s indoor arena – Vector Arena (a major entertainment venue)</td>
</tr>
<tr>
<td>Franchise</td>
<td>Papakura’s water and wastewater services project</td>
</tr>
<tr>
<td>Privatisation</td>
<td>Privatisation of the rail network (has been taken over by public body)</td>
</tr>
</tbody>
</table>

Despite the private sector involvement in these projects, only the Design-Build-Manage (DBM), Build-Operate-Own-Transfer (BOOT) model and some of the Franchise projects fall into the realms of PPPs given the PPP definition adopted in New Zealand (refer to Section 2.2.2). Other models do not comprise all key features of PPPs. For example, the Wellington’s Clear Water Project did not use private financing for the construction of the facility. Instead, the government paid the private contractor a lump-sum for the design and construction costs. It is also notable that the past quasi-PPP activities were undertaken predominantly at local government level, indicating that the central government was reluctant to use PPPs for the delivery of infrastructure services. The rail network, used to be privatised during early 1990s, was re-nationalised in 2008. Although the privatisation has merits in economic gains by reducing the taxpayers’ burden in providing subsidies for railway
operation, the railway services were bought back by the government for ideological reasons, which shows the political fragility in decision-making in the delivery of public assets and services.

Since the “Building Nations” Symposium was held in August 2009, two social infrastructure PPP projects – the new prison at Wiri and two new schools in Hobsonville – have been brought to market by central government agencies, the Department of Corrections and the Ministry of Education, respectively. The Wiri prison project will be designed, built, and operated under a Public-Private Partnership and custodial services will be provided by the private sector (Beehive, 2010). The school project will be procured under a Design-Build-Maintain arrangement where the core services will be retained by the government (Beehive, 2011).

### 3.3 Current Context of PPPs

Since 2009, the New Zealand government has been more open to PPP options for the delivery of public infrastructure and associated services. The government has expressed particular interest in pursuing PPPs in the social infrastructure sector (National Infrastructure Unit, 2011a). The policy context for PPPs has become more favourable as changes have occurred at political, institutional, legislative and policy level, which, to some degree, facilitate the selection, planning, and implementation of PPP projects. This section provides an overview of the current policy settings around PPPs, focusing on the government’s approach, institutional arrangements, legislative framework and policy and guideline frameworks.

#### 3.3.1 Government's approach to PPPs

In New Zealand, PPPs are within the pool of procurement options for the delivery of infrastructure and associated services. The overall approach to PPPs taken by the New Zealand government is: “The Government intends to use Public Private Partnerships where they represent value for money to taxpayers.” (National Infrastructure Unit, 2010) “Off-balance sheet” consideration is not a factor that
determines the government’s choice of procurement option given the underlying economics and accounting treatment of PPPs in New Zealand (National Infrastructure Unit, 2010).

In terms of the means to select PPP projects, the Treasury’s *Better Business Cases for Capital Proposals Toolkit: Indicative Business Case* states that:

> All proposals requiring Cabinet approval that have whole-of-life costs in excess of $25 million must include an evaluation of alternative procurement options that includes a Public Private Partnership (PPP) option. (The New Zealand Treasury, 2011b)

Generally, a PPP approach may be considered for large-scale and long-duration assets where:

- The project is sufficiently complex that innovative approaches can be employed
- Outputs or outcomes can be well-specified, enabling clear performance specification
- The assets are specific-purpose and can only be used for the purpose intended (such as a prison or hospital)
- The service is durable and it is unlikely that the service requirements will vary unpredictably over the life of the contract, and
- There is a market appetite and depth (to attract multiple bidders) (The New Zealand Treasury, 2011a).

Once PPPs are short-listed in the initial option assessment, an alternative approach is required for seeking approvals from Ministers and approaching the market (The New Zealand Treasury, 2011a). Early approval needs to be sought from Joint Ministers to proceed with further more detailed economic assessment of the shortlisted procurement options (The New Zealand Treasury, 2011b). Where PPP options are approved at this stage, a detailed economic analysis of the shortlisted options will be undertaken to determine the preferred solutions representing optimum value for money (The New Zealand Treasury, 2011b). At the same time, a formal market sounding exercise will be performed to test the capacity, capability and interest of the market to provide the required services.
and obtain feedback concerning the service requirements (The New Zealand Treasury, 2011b). On the basis of economic analysis and market sounding, preferred service solutions will be recommended. Subject to Cabinet Ministers’ approval, a more detailed assessment of the procurement options can proceed accordingly. If PPPs are selected as a preferred solution, the means to establish a PSC and compare PPP delivery option against the PSC should be informed to the detailed business case development stage (The New Zealand Treasury, 2011b).

3.3.2 Institutional arrangements

3.3.2.1 Departments and public agencies

PPPs are a means of funding, delivering and managing public assets, which are within the responsibility of government departments, public agencies or local authorities. In other words, if engaging with PPPs, these organisations would be the contracting parties on behalf of the government. The institutional arrangements, governance structure and the approach of planning and seeking funding within governmental and public agencies have important implications for their capacity to design and implement a PPP project. This section therefore examines the institutional arrangements of the public sector in New Zealand by looking at the current situation in various sectors.

- Transport

Regarding the roading sector, the Ministry of Transport is in charge of setting broad policy direction and overseeing roading activities. A crown entity, New Zealand Transport Agency (NZTA), is responsible for planning, operating and maintaining national state highways by developing and managing the National Land Transport Plan (NLTF). In the development of NLTF, the NZTA carries out project assessments, based on which the funding from NLTF is approached (National Infrastructure Unit, 2010).
Local roads and public transport infrastructure are administered by local authorities (National Infrastructure Unit, 2010). State highways are solely funded from National Land Transport Fund (NLTF) derived from current user charges. The funding for local road and public transport expenditures is from a mixture of NLTF and local rate revenue (Kensington Swan and NZCID, 2006). In order to manage local roads and transport services and seek funding allocations from NLTF, local authorities need to establish Regional Land Transport Programmes (RLTPs), which should be in line with Regional Economic Development Strategies (National Infrastructure Unit, 2009b).

The rail network in New Zealand is generally divided into two parts, rail freight and long-distance passenger, and metro passenger services. The former is owned and managed by the New Zealand Railways Corporation (KiwiRail Group), a state-owned enterprise. The funding source of its operation is from a combination of commercial revenue, borrowings, subsidies and equity from the government shareholder (National Infrastructure Unit, 2009b). In terms of the metro system, shortfalls between the operating cost and revenue are subsidised by local councils and road-user funding via NZTA (National Infrastructure Unit, 2010).

- Education

In New Zealand, responsibility for infrastructure investment and management of state primary and secondary schools is shared between the Ministry of Education and individual Boards of Trustees (Kensington Swan and NZCID, 2006). The Ministry sets out the overall policy and regulatory arrangements for the education system and is responsible for the provision of school assets which are funded by the Ministry’s approved budget. In terms of asset planning, the Ministry establishes 10-year capital asset management plans and annually develops School Property Capital plan, looking ahead 3-5 years (National Infrastructure Unit, 2010). Each state school has a board, comprising elected parent and community representatives. The Boards prepare and implement a 10-year property plan and are in charge of the planning and day-to-day management of school property. Operating funding is provided
to schools through a school’s five-year agreement in concert with the priorities set out in the Property Plan (National Infrastructure Unit, 2010).

- Health

The infrastructure in the health sector is managed by 21 District Health Boards (DHBs). The DHBs are in charge of planning, managing, providing and funding services for the population of their district. The Ministry of Health provides strategic policy direction, and collaborates with the DHBs to ensure that health and disability services are delivered in accordance with the requirements set out in accountability documents (Kensington Swan and NZCID, 2006). The funding for the health and disability system is mainly from general taxation and managed by the DHBs. New capital expenditure has to be within the budget for capital investments outlined in the National Asset Management Plans (National Infrastructure Unit, 2010).

- Corrections

New Zealand prisons are owned and operated by the Department of Corrections. The government provides the funding for prison construction and operating expenses, including the custody of prisoners.

- Local and regional governance

Much infrastructure, such as water and wastewater treatment, public transport and street lighting, are planned, financed and managed by city and district councils and regional councils. They are funded from rate revenue and allocation of central government funding.

In summary, the governance of infrastructure planning and investment is highly decentralised (Kensington Swan and NZCID, 2006). The education, health and transport sectors have multi-layer structures of delegated responsibility. Many planning decisions are delegated to the level of local government in the absence of national standards for guidance. Apart from the corrections sector,
policy settings, infrastructure planning and investment, and asset operation and management are usually undertaken by different parties through diverse development and management plans. Because of the fragmented governance and planning, the decision-making process in association with infrastructure investment is complex. Transparency and accountability issues are of great concern.

### 3.3.2.2 Central PPP unit

A central coordinating authority, the NIU, was established within the Treasury in 2009, acting as a centre of excellence for PPP programmes. Created as a specialist infrastructure unit, the role of the NIU has considerable bearing on the initiation and development of New Zealand PPP programmes. As pointed out in Infrastructure Australia’s *Practitioner’s Guide* (2011), the central PPP unit serves as:

> The focal point for economic and financial assessment and advice on all PPPs and will assist government agencies more generally. It will ensure application of these Guidelines. The relevant PPP authority will also promote best-practice PPPs by absorbing and disseminating the lessons of experience and consulting with other governments on their experience and practices.

To be specific, the roles and responsibilities of NIU in relation to PPPs mainly include (National Infrastructure Unit, 2009a):

- To formulate, and monitor progress on, a 20-year National Infrastructure Plan (NIP) that will be updated on a three-year basis. The NIP gives the strategic direction of government’s investment in infrastructure to the industry, indicating the pipeline of projects. The direction of infrastructure investment would assist private sector entities to identify possible PPP projects and build up the market’s interest and confidence in participating in the New Zealand PPP market.

- To establish robust and reliable cross-government frameworks for infrastructure project appraisal and capital asset management. This is accomplished by applying the *Better Business Case Toolkit* consisting of programme, indicative and detailed business case development. With a standard
process in place, the market will be better informed about the government’s approach towards
PPPs and the relevant criteria for selecting and justifying PPP proposals.

- To formulate PPP policy and guideline documents. The NIU is responsible for formulating PPP
  policy and guideline documents to guide the practitioners in New Zealand to engage with PPPs.

- To provide support and guidance to government agencies in the preparation of PPPs. The NIU
  should be involved in the economic and financial assessment as well as providing advice in the
development of a PPP proposal.

- To appoint an experienced officer available to the project steering and working groups to respond
to issues that arise in the project development and tendering stages.

It is noteworthy that the NIU will not duplicate the role of line agencies and will not contract for PPP
projects. Instead, the NIU works in cooperation with government agencies by providing expert advice
in the preparation of PPPs. PPP contracts remain with the line agencies (National Infrastructure Unit,
2009a).

3.3.3 Legislative and regulatory framework

In general, the New Zealand legislation allows the adoption of PPPs to deliver public infrastructure
and associated services. There are no provisions explicitly prohibiting the use of PPPs, although some
Acts and regulations may impose legislative constraints on the implementation of PPPs, either in a
direct or an indirect way. With regard to the bottlenecks and regulatory burdens on business, the
government has initiated a programme of legislative changes and regulatory reform to identify and
remove the inefficient regulations (National Infrastructure Unit, 2010). A range of legislation and
regulations pertaining to infrastructure investment and development has been under review, and some
provisions excluding private sector involvement have been removed (National Infrastructure Unit,
2010). Table 3.2 provides an overview of the legislation related to the use of PPPs in New Zealand
with comments on their impact on PPP implementation.
Table 3.2 An overview of legislation concerning PPPs in New Zealand

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Provisions associated with PPPs/Comments on impacts</th>
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<tbody>
<tr>
<td>Land Transport Management Act 2003</td>
<td>Opens the door for limited road tolling and private sector involvement in roading (Owles, 2008)</td>
</tr>
<tr>
<td></td>
<td>Imposes procedural restrictions on roading PPPs (Ascari Partners Ltd, 2005)</td>
</tr>
<tr>
<td>Local Government Act 2002</td>
<td>Allows local bodies to enter PPPs; requires the local bodies to establish PPP policy (Perry, 2005)</td>
</tr>
<tr>
<td></td>
<td>Limits the contract and partnership between councils and private sector partners for operating water facilities for a term of up to 15 years, which inhibits the use of PPPs for water and wastewater services (Kensington Swan and NZCID, 2006)</td>
</tr>
<tr>
<td>Local Government Act 2002 Amendment Act 2010</td>
<td>Promote flexibility in the delivery of water services by extending the current 15-year limit on water-service contracts to 35 years, and allowing private firms to build, own and operate new water and wastewater treatment plants during the contract period (Selwood and Buetow, 2010)</td>
</tr>
<tr>
<td>Corrections Act 2004</td>
<td>Prohibits the Crown from entering into any contract for the management of any prison (Kensington Swan and NZCID, 2006)</td>
</tr>
<tr>
<td>Corrections (Contract Management of Prisons) Amendment Act 2009</td>
<td>Removes the prohibition on the use of PPPs in the management of prisons (Selwood and Buetow, 2010)</td>
</tr>
<tr>
<td>Resource Management Act 1991</td>
<td>Creates unnecessary delays and compliance costs hindering economic growth and infrastructure development (National Infrastructure Unit, 2010)</td>
</tr>
<tr>
<td>Public Works Act 1981</td>
<td>Provides the Crown with statutory authority to acquire land for a public work; requires a series of steps to acquire land which results in long transaction duration for potential PPP projects (Kensington Swan and NZCID, 2006)</td>
</tr>
<tr>
<td>Infrastructure Bill 2010</td>
<td>Proposes a broad suite of amendments, across several Acts to facilitate infrastructure development (National Infrastructure Unit, 2010)</td>
</tr>
</tbody>
</table>
3.3.4 Policy and guideline frameworks

Similar to other jurisdictions where PPPs are extensively used, such as the UK and Australia, the New Zealand government is committed to establishing policy and guideline frameworks as a means of underpinning the PPP programme. The NIU is developing a PPP toolkit intended to provide a suite of guidance material for reference when undertaking PPP projects. A number of policies and guidelines are available to date and the relevant documents comprise:

1. Guidance for Public Private Partnerships (PPPs) in New Zealand (National Infrastructure Unit, 2009a). The Guidance aims to outline the general direction, principles and processes that the New Zealand government will adopt to advance PPP projects. Drawing on existing international and local publications, the document is the first PPP guidance released in New Zealand. Whilst remaining at high level and fairly generic, the Guidance presents to public agencies, potential bidders and the public the procurement processes that the New Zealand government will embrace when embarking on a PPP project. It also sets out a qualitative framework to assess the suitability of PPPs for a capital project.

2. Draft Public Private Partnership (PPP) Standard Contract – Version 2 (National Infrastructure Unit, 2011a). Developed primarily for social accommodation-based infrastructure, the Draft Contract sets out the commercial principles underlying New Zealand PPPs in the form of a set of “model terms” allowing schedules to be designed for specific projects. The purpose of the Draft Contract is to improve the efficiency PPP procurement processes, and provides the market with a consistent approach and position that the government will take in PPP transactions. The clauses were largely based on overseas PPP knowledge and experience. Adaptations were then made by analysing their relevance to the New Zealand market. The current version also incorporates the submissions by market participants after the first version was released for consultation. The Draft Contract will remain at “draft” status until being tested by a number of pilot PPP projects.

Although not specially drafted for PPP procurement, the Business Cases Toolkit explicitly outlines the procedural requirements of business case development for a PPP project in New Zealand. It also clearly states the circumstances under which the government will consider using PPPs for procuring capital projects. In association with the National Infrastructure Plan, the Business Cases Toolkit provides the market with more certainty around the likely investment opportunities in New Zealand PPP projects.

3.4 PPP debate in New Zealand

Despite the limited experiences with PPPs, there has been ongoing debate on the suitability of using PPPs in New Zealand at different levels. The existing literature on this subject includes policy papers, academic research and project reports. The literature sheds light on the opportunities and challenges in using PPPs in the specific context of New Zealand.

3.4.1 Policy papers

The discussion paper released by the New Zealand Treasury (Katz, 2006) evaluated PPPs against traditional procurement in which the government provides the finance, and construction and operation are contracted out separately. The paper maintained that the benefits of PPPs range from better whole-of-life project evaluation, optimisation of design and operation, and access to additional capital to off-balance sheet financing. Plus, there are generally no legal barriers to PPPs in New Zealand. However, the paper contended that the benefits may also be achieved in other ways than by entering into PPPs. In addition, PPPs may bring disadvantages such as political unacceptability, large tendering and contracting costs, high contract renegotiation costs, and the difficulties of ensuring good performance, especially in the dimensions of “soft services” performance. The paper concluded that a PPP may be worthwhile only if three conditions are met: Project outcomes can be specified in service level terms, performance can be measured objectively and performance objectives are durable. The Treasury’s
position led the government to be sceptical towards the adoption of PPPs and to be more cautious with option appraisal before engaging with PPPs.

In examining provisions of the Land Transport Management Act 2003 and the policy framework in the roading sector, the discussion paper prepared for the New Zealand Council for Infrastructure Development (NZCID) (Ascari Partners Ltd, 2005) argued that, if used appropriately, there is scope for New Zealand to benefit from PPPs in the delivery of roads. Besides, the LTMA has allowed limited road tolling and private sector involvement. Although permitted by the legislation, there are no PPP roads being undertaken to date. The discussion paper claimed that the absence of PPP practices in roads was attributable to a policy vacuum that New Zealand roading agencies are operating in. Additionally, uncertainties and risks posed by the LTMA still exist, which would hinder PPP implementation, such as the inability to toll existing infrastructure and the extensive consultation and approval processes required.

3.4.2 Academic research

In addition to the PPP debate at government or policy level, academic researchers also attempt to analyse the New Zealand policy context and industry capacity, and discuss the prospects of using PPPs in New Zealand.

Heiler (2002) maintained that the business environment for PPPs in New Zealand remains not mature, and the level of understanding of PPPs is generally low. Local experience are inadequate to give the market confidence to participate in PPPs. The research further concluded that if the New Zealand government was interested in creating an environment supporting PPP developments in capital projects, several initiatives were required: (1) A more detailed analysis of private sector needs and constraints; (2) Identification of investment opportunities suitable for PPPs; (3) A commitment to pursue PPP implementation where appropriate; and (4) Identification of a pilot PPP project with minimal difficulties to gain experience.
As for the housing sector, Austin (2008) found that there are limitations on New Zealand to utilising PPPs to achieve affordability outcomes. The limitations mainly entail the availability of funds and land at reduced cost, management expertise, responsibilities of local councils, and retention mechanisms. With respect to the limitations, three steps are proposed in this research including establishment of objectives and targets, identification of potential partners and resources, and selection of an appropriate model for each scheme.

With respect to the roading sector, Owles (2008) argued that New Zealand should be open to the possibility of utilising PPPs in major roading projects and test the viability of PPP options for appropriate projects accordingly. The roading agencies have extensive experience in constructing and managing land transport infrastructure. Also, there are a number of contracting entities operating in New Zealand who are capable of participating in PPP projects. Given the proximity in legal and social frameworks, Australian infrastructure investors could also access New Zealand’s PPP market. The capacity of public agencies and the maturity of the industry make PPPs possible for New Zealand’s roading projects. However, Owles also pointed out that the adoption of PPPs necessitates clear criteria for the projects under consideration and a transparent tender process. Otherwise, investors and industry may easily lose interest in investing in New Zealand’s PPP market. Another attempt to investigate the PPP suitability in New Zealand was made by Ribeiro and Dantas (2006) who undertook technical discussions on PPP planning and implementation, with an emphasis on land transport projects. The research suggested that the investment through the NLTF is insufficient to meet growing traffic demands and strategic needs. The funding gap provided a great incentive for the government to use PPP approaches. However, the relevant legislation and the roading agencies’ approach to project assessment, to some degree, undermine the viability of PPPs. By drawing on international experiences, this research concluded that PPP should be carefully planned and presented based upon simple, transparent and strategic principles. Tools and methods that could accurately analyse the complexity of PPP arrangements should also be developed.
3.4.3 Project Report

There are reports investigating the suitability of PPPs by conducting a case study. The Steering Group of Waterview Connection project conducted a synthesised study on whether PPPs are viable procurement options for provision of the $2 billion project (Waterview Procurement Project Steering Group, 2008). This report comprehensively analysed the feasibility of PPPs in terms of criteria including potential for whole-of-life cost savings, benefits to road users, access to additional revenue sources, costs of contract variations and legal viability of PPPs. The study concluded that delivering the Waterview Connection using PPP models would meet the variety of criteria. The report further elaborated that the most suitable form of PPP models is design, build, finance, operate (DBFO) based on considerations of risk allocation and design of payment mechanism.

Another sophisticated investigation of PPPs in New Zealand is made in a Master’s thesis from the University of Auckland (Tomczak, 2005). The thesis attempted to inform strategies from the private sector to participate in New Zealand PPPs by conducting a case study of the Auckland indoor arena, Vector Arena. The thesis presented the PPP procurement procedures of the project as a means to provide guidance on PPP implementation in New Zealand.

3.4.4 Case Study: Auckland Central Remand prison project

Despite the lack of PPP experiences in New Zealand, there are a number of projects delivered using a quasi-PPP approach, comprising the majority of PPP characteristics, given the definition adopted in this research. Conducting a case study of a representative quasi-PPP project previously delivered and extracting the lessons learned would shed light on the way forward when embarking on PPPs in New Zealand. This section therefore examines a case of this kind. By providing a description of project delivery details and the rationale behind the “hand-back” and “re-tendering”, lessons are learnt about using PPPs in future attempts. The information for the evaluation of case studies was collected via a
review of government documents, academic articles, organisational discussion papers and information from official websites

3.4.4.1 An overview of the development of the project

The Auckland Central Remand Prison (ACRP) was a 290-cell correctional facility to accommodate male remand prisoners with different security classifications. Located on the same site as Mt Eden prison, the prison entered into operation in July 2000 (OPUS Architecture, 2000). It was the first privately managed prison in New Zealand (Department of Corrections, 2011b).

After a competitive tendering exercise, the management contract was awarded to a Sydney-based private company – Australasian Corrections Management Pty Ltd (ACM) – a subsidiary of the US-based Wackenhut Corrections Corporation (now known as GEO Group) (GEO Group, 2009). After five-year’s management by the ACM, the control of the project reverted to the Public Prisons Service in July 2005, due to the passing of the Corrections Act 2004 by the then government (Department of Corrections, 2011b).

In June 2007, the Department of Corrections initiated a new project to replace the Mt Eden prison on its existing site. Completed in March 2011, the project was named the Mt Eden Corrections Facility (MECF), into which the Auckland Central Remand prison was incorporated (Department of Corrections, 2011b). Since the passing of the Corrections (Contract Management of Prisons) Amendment Act 2009, allowing private sector management of prisons, the government decided to transfer the management of MECF to the private sector again following an extensive consultation with unions, current staff and iwi (local tribe) (Department of Corrections, 2011b). In May 2011, after a two-stage competitive tendering, the project was handed over to Serco, one of the leading correctional service providers in the world (Department of Corrections, 2011c). In August 2011, all prisoners from the old Mt Eden prison and the Auckland Central Remand prison were transferred to the new facility and the MECF came to full operation since then (Department of Corrections, 2011d).
3.4.4.2 The reasons for the “hand-back”

There was no formal investigation reporting on the performance of the ACRP project. Due to the difficulty of making a comparable evaluation between the privately-managed prison and State-managed prisons, there was a lack of evidence to demonstrate cost savings and service improvement achieved in the ACRP project (New Zealand Parliament, 2009b). The hand-back of the management of the project in 2005 seemed to be controversial. There was an extensive debate at government and parliamentary level regarding whether or not to proceed with the privatisation of prison management. The central issue was whether the legislation should allow the private sector companies to competitively tender for the management of prisons (New Zealand Parliament, 2009a). In 2004, the Corrections Act 2004 was passed, specifying that only public sector authorities can provide correctional services (New Zealand Parliament, 2009c).

The reasons against the contract management were more ideological than grounded in evidences. The then government (Labour) held the view that only the public sector should be responsible for incarcerating citizens. There would be detrimental consequences if prisons were managed by private sector companies. In order to pursue profits and satisfy their stakeholders, the private sector prison manager might compromise the service quality, such as with lower staff numbers and reduced pay, fewer rehabilitative services, and a reduced range of services (New Zealand Parliament, 2009c). The Labour government believed that managing prisons should be in the State’s portfolio given the nature of incarceration.

3.4.4.3 Reasons for re-tendering for private management

The main reasons for the government to incorporate the ACRP into the new MECF and request for competitive tendering for contract management in 2010 include:

1. The legislation concerning contract management of prisons – the Corrections Amendment Act 2009 – allows private sector entities to tender for contracts to manage the operation of prisons, on a case-
by-case basis (Department of Corrections, 2011b). Empowered by the amended legislation, the Department of Corrections was able to proceed with signing a management contract with private sector organisations for the MECF project.

2. It was the government’s policy to utilise the private sector’s skills and expertise to enhance the prison service level, achieve cost savings, and to introduce innovations to prison operation. In addition, the Department of Corrections intended to apply improvements obtained in this project across all prisons procured and managed by the Department (Department of Corrections, 2011b).

3.4.4.4 Lessons learned

The evolution of the Auckland Central Remand Prison project with respect to contract management reflected the volatile legal and policy settings in New Zealand for private sector involvement in the provision of public infrastructure and associated services. The case presented lessons for undertaking future PPP activities:

1. The government should provide a stable legal environment in order to attract world-leading private investors to bid for PPPs in New Zealand. From 1994 to 2009, the provisions in legislation concerning whether or not to permit the private sector to engage in contract management of prisons were subjected to changes three times, in 1995, 2004 and 2009. If the case of the ACRP was replicated in future projects, private sector companies would lose interest in investing in New Zealand PPPs.

2. The government should take a consistent policy and approach regarding public sector procurement and the adoption of PPPs. In New Zealand, the National Party seems to support the introduction of private sector companies to public sector procurement and service delivery, whilst the Labour Party generally holds a negative view of private sector involvement (New Zealand Parliament, 2009c). The short election cycle (three years) complicates the situation. Being aware of the fluctuation of the political context in New Zealand, private sector companies would be considerably cautious of
entering the New Zealand market. In order to address the concern, the government should recognise the potential political risk and propose reasonable mitigation measures.

3. As for potential private sector investors, it would be beneficial to conduct a thorough analysis of the various factors affecting the smooth implementation of PPPs in New Zealand before bidding for PPP projects. Without being fully aware of the New Zealand context, they are likely to incur significant losses in participating in PPPs.

3.5 International PPP Practices

3.5.1 Worldwide PPP application

PPPs have been used for the provision of public assets and services around the globe for many years. Many countries are developing PPP programmes, and a thorough and detailed survey of worldwide PPP activities is beyond the scope of this thesis. This section therefore presents a review of the PPP practices in a representative selection of countries. The review covers the following aspects: experiences with PPPs, government’s approach towards PPP adoption, institutional arrangements for PPP projects, legislative and regulatory environments and policy and guideline frameworks.

- The UK

The UK has been a leader in developing PPP programmes since the “Private Finance Initiatives” was launched in 1992. To date, PPPs, as an integral part of the government’s policy, have been applied in a wide range of sectors. According to a recent survey, in March 2012, there are 717 PPP projects that are in contracts, of which 648 are operational (HM Treasury, 2012). PPP deals account for about 15% of public sector capital investment. The early PPP development was primarily focused on transport-related projects, driven by the intention to utilise private finance to advance infrastructure projects without causing budgetary constraints for the government (Carrillo et al., 2008). PPPs have been increasingly applied in social infrastructure sectors, such as hospitals, schools, and defence-related...
projects. The PPP programmes in the UK are characterised by the large number of individual projects and the relatively small size of each project. For example, the Building Schools for the Future programme involves the building and renovation of a large number of schools for a single public sector authority.

When PPPs were first introduced to the UK, the government was keen on using private finance to meet the infrastructure needs, removing the public assets from the public budget. Achieving “off balance sheet” financing was seen as the initial driver for the UK’s PPP programme. Currently, the UK government holds the position that PPP projects will proceed only if the value for money test justifies a PPP approach. Various departments and local authorities have embarked on PPPs, assisted by the central PPP unit – Infrastructure UK. Established within the Treasury, Infrastructure UK is responsible for setting up PPP policy, guidance and statistics and providing advice to line agencies on PPP planning and execution. Given the intensive PPP activities, some Departments have a Private Finance Unit, committed to providing assistance and advice specifically for the sector. For local governments, the Local Partnerships assist with providing commercial expertise in arranging PPP projects. There is generally no PPP law, albeit the need to conform to some procurement regulations set out by the European Union. Instead, PPP development is largely influenced by the PPP policies and guidelines. A broad suite of guideline documents have been released, ranging from guidance on conducting value for money assessments, procurement and contract management, and funding arrangements to budgeting and accounting treatment methods. Notably, the Standardised PFI Contract is recognised as the most important document specifying the government’s position and the basic commercial principals in a PPP contract.

It is notable that the guidance on value for money assessment in the UK includes Value for Money Assessment Guidance (HM Treasury, 2006), which sets out a three-stage process to assess value for money of PPP schemes, and Quantitative Assessment User Guide (HM Treasury, 2007), serving as a practical tool for conducting the quantitative assessment. The UK’s guidance is similar to New
Zealand’s recently released guidance, *Better Business Cases for Capital Proposals Toolkit*. Both sets of documents indicate the respective government’s structured and standard approach regarding business case development for capital projects, with a special focus on value for money. However, the UK’s documents represent a higher level of details whilst the New Zealand’s tend to be more general. This is in line with the PPP development status of the two countries: The UK has pioneered the PPP use, whereas New Zealand is an emerging market.

**France**

France has an established tradition of using PPPs for the delivery of public services (e.g., in water and wastewater treatment), mainly in the form of concessions. Historically, it has been commonplace to procure the rail and electricity via a concession framework. Since 2000, PPPs were adopted for almost all economic infrastructure sectors (e.g., transport, energy, telecommunications) (EPEC, 2012). Also, social infrastructure PPPs were formed after 2002, covering sectors such as hospitals and prisons (Grimsey and Lewis, 2005).

In France, PPPs are procured at various government levels. The government supports PPP development by setting up an enabling institutional arrangement and promoting a standardised approach (EPEC, 2012). The central PPP unit, MAPPP, started to operate in 2005 and is responsible for validating the preliminary evaluation of PPP projects and providing advice on the implementation of PPP projects (EPEC, 2012). The legal framework for PPPs in France is complex, as many codes and laws govern or influence the use of PPP arrangements. There is general PPP legislation allowing the use of PPPs and setting out the frameworks under which the PPP activities are undertaken. Sector-specific legislation was enacted for hospital and prison projects by incorporating sector-specific requirements (Yescombe, 2007).
• The United States (US)

In the US, the private sector has been involved in the provision of public services (e.g., water and wastewater, correctional services) for many years. Currently, the largest PPP sector is the water sector, with 15% of systems being provided by the private sector (Yescombe, 2007). There has been a recent trend that PPPs are utilised for the delivery of transport projects. Transport PPPs operate at both policy and project level (Garvin, 2010). For example, the Federal highway assistance program was undertaken at the policy level. The Dulles Toll Road Extension in Virginia is an example of PPP application focusing on an individual project (Grimsey and Lewis, 2005).

Although the federal and state governments encourage the utilisation of innovative financing techniques, PPP development in the US has been slow (Algarni et al., 2007), partly because that market is diverse and fragmented, with varied initiatives at the federal, state, local and municipal level (Grimsey and Lewis, 2005). It is notable that the passing of the Transportation Infrastructure Finance and Innovation Act 1998 supported the utilisation of private sector investment for major transport projects (Yescombe, 2007).

There has been limited PPP guidance in the US, which is mainly focused on the transport sector. The report *Public-Private Partnerships for Transportation: A Toolkit for Legislators*, released by the National Conference of State Legislatures, is the most recent guidance document on developing transport PPPs (NCSL, 2010). The report describes the State government’s role in a PPP and sets out a series of principles underlying the development and execution of PPPs. Although primarily targeted at practitioners in the transport sector, the report serves as a good start for the US to adopt PPP arrangements to better assist infrastructure development.

• Canada

The PPP programme in Canada covers a wide range of sectors including roads, airports, energy, hospitals, water and wastewater, social housing and schools (Grimsey and Lewis, 2005). According to
a recent survey, 10% to 20% of public sector capital investment is delivered via a PPP approach. In Canada, there has been a steady pipeline of PPP projects, with multiple deals released to the market annually (KPMG, 2010b).

Canada generally has a favourable political environment supporting PPPs (KPMG, 2010b). At federal level, a PPP option is required to be considered for large infrastructure spending involving federal funding. For the British Columbia province, a PPP approach should be included in the procurement option analysis if the capital value of a project exceeds C$20 million (KPMG, 2010b). Although many Canadian provinces have set up PPP agencies, there seems to be a lack of consistency across the country regarding the selection and approval of PPP projects (CCPPP, 2009). The federal Crown entity, Canada PPP, was established in 2010 to support PPP development by managing the PPP Canada Fund, establishing a centre for expertise on PPPs and advising on PPP application at federal level. Similar to countries such as the UK, a great deal of guidance material has been developed in Canada to inform the practitioners of strategies to engage with PPPs. The guidance ranges from financing aspects of PPPs (such as Project Finance: An Introductory Manual for Canadian PPP Project Managers and Advisors and Private Finance for Public-Private Partnerships) to procedural requirements for undertaking PPPs (such as Responsible PPP Procurement for British Columbia) (CCPPP, 2013), covering a variety of essential issues involved in Canadian PPPs.

- South Africa

South Africa started its PPP development in the mid-1990s by adopting a concession model to upgrade the national roads network. Examples of the land transport PPPs include the N4 and N3 toll roads, which were part of major national roads (Grimsey and Lewis, 2005). The following stage for the growth of PPP programmes is concerned with prison and hospital projects, such as the prisons at Bloemfontein and Louis Trichardt in 2000 and the Inkosi Albert Luthuli Hospital in 2001. Following a number of projects of relatively small scale, the general pipeline of PPP projects has increased. Mega projects, like the Gautrain rail link (2006), were brought forward by the government.
As the PPP programme expands in South Africa, an orderly approach to PPPs has been developed gradually. A dedicated PPP unit was established within the National Treasury, formulating a three-stage evaluation for proceeding with a PPP: (1) after preparation feasibility study; (2) before procurement documentation; and (3) before signing final documentation (Yescombe, 2007). The release of the standard form of PPP contract in 2004 further promoted a structured and consistent approach towards PPP use in South Africa (Yescombe, 2007).

- **China**

In China, PPPs have been implemented in a variety of sectors such as water and wastewater, venues, land transport and power stations, mainly in the form of BOT (Wang et al., 1999). The impetus for the government to opt for BOT was mainly to relieve the public budgetary constraints, especially in the area of public infrastructure (Chen and Wang, 2009). The concept of Public-Private Partnerships was officially introduced by the Chinese government with the release of policy note Suggestions to Promote and Guide Private Investments (De Jong et al., 2010). A report Suggestions to Advance Marketisation in Civil Infrastructure Industries issued in 2002 introduced a dozen more PPP projects using diversified PPP models (e.g., the National Stadium for the Beijing Olympic Games – the Bird’s Nest, and the Beijing Metro Line 4 project) (Liu et al., 2009).

China’s PPPs are initiated by both central and local governments (Chen, 2009). Local governments have shown more interest in engaging with the private sector to advance the infrastructure. This is probably attributed to the institutional change in 1994, tax sharing reform, under which the majority tax incomes are collected by central government whilst capital expenditure responsibilities remaining with the local governments (Chen and Wang, 2009). Facing a funding gap, local governments tend to refer to private sector investors to address the bottleneck via the adoption of PPPs. China has substantial legal and regulatory restrictions on private sector involvement in public sector procurement (Chen, 2009). Despite the availability of a number of policies allowing private sector participation in some infrastructure sectors, uncertainties prevail concerning the legitimacy of the
government’s entering into PPP contracts. In addition, the guidelines for PPPs are very limited with few documents setting out specific legal directions for PPP projects, such as the *Method of Managing Urban Public Utilities Concessions* (2004) (Chen and Wang, 2009). Due to the lack of policy and guidelines, it remains unclear what the policy directions for using PPPs in China. It is difficult for the public bodies to structure and manage PPP arrangements in China, because of absence of practical guide, as opposed to countries such as the UK, Canada and Australia, where a range of guidance documents are available. Without a consistent and standard approach towards PPPs, the industry is likely to be reluctant to enter into China’s PPP market, due to uncertainties around risk allocation and policy environments.

- Korea

After the Private Capital Inducement Act was introduced in Korea in 1994, the private sector was invited to participate in the provision of public assets and associated services. The preliminary attempt was seven projects (mainly roads), which were then overtaken by the Asian Financial Crisis in 1997 (Yescombe, 2007). The passing of the Private Participation in Infrastructure Act enabled the renewed growth of PPP programmes in Korea. A considerable number of PPP projects have been approved since 1997, with transport concessions forming a major part. Other sectors, such as schools and wastewater projects, also adopted a PPP approach. In 2005, the PPP projects took up around 15% of public sector investment, with the proportion continuing to grow in recent years (Yescombe, 2007).

The Korean government has shown increasing interest in bringing private sector investment to the provision of public projects (Gil, 2010). A centre of expertise – the Private Infrastructure Investment Center of Korea, was set up in 1999, to offer policy support, assess and evaluate PPP proposals and help with bid evaluation (Yescombe, 2007). The Private Participation in Infrastructure Act (with amendments) sets out the basic framework for PPP planning and implementation, facilitating a coordinated approach to PPPs (Yescombe, 2007).
3.5.2 Why study Hong Kong Special Administrative Region and Australia?

This research focuses on studying the PPP practices in the Hong Kong Special Administrative Region (HKSAR) and Australia to extract important lessons for New Zealand. In addition to criteria such as site accessibility and the availability of existing literature on PPPs, the selection of HKSAR and Australia took into account the following reasons:

- Hong Kong and Australia are located in the Asia-Pacific area, having frequent financial interaction with New Zealand. As New Zealand’s ninth export destination, Hong Kong is seen as an important strategic partner for New Zealand. Recently, a Closer Economic Partnership Agreement between New Zealand and Hong Kong was signed, enhancing business flows and strengthening cooperation in economic areas between the two regions. Being the closest neighbour, Australia is one of New Zealand’s most important partners in the areas of business and trade. The Free Trade Agreement facilitated the economic integration of the two economies. Since the formulation and development of a country’s PPP market has great bearing on the activities of various business sectors, such as legal and commercial advisors, banks, construction contractors, architects and facility managers, understanding close business partners’ PPP practices would yield useful lessons for analysing New Zealand’s PPP market.

- Hong Kong and Australia have a long history of PPP development. Hong Kong has been a leader in using PPPs in the provision of public works since the 1960s. It also has a track record of projects which were initially proposed as PPPs but did not come to fruition. Around the globe, Australia is considered as a leading country in PPP development, with a long history of using PPPs and a sophisticated PPP market. Focusing on the two jurisdictions would give an opportunity to extract best practice established over a long period of PPP application.

- Hong Kong and Australia share similarities with New Zealand in terms of the legal environment for using PPPs. As a previous British colony, Hong Kong’s legal system is largely based on English common law, complemented by local legislation. Both Australia and New Zealand are
Commonwealth realms, with legal systems originating in British common law. The similarities in the legal system enable this research to make comparable recommendations to New Zealand based on the outcomes derived from Hong Kong and Australia.

- Hong Kong and Australian governments hold a relatively similar approach as New Zealand towards the adoption of PPPs. It has been clear across the three jurisdictions that the government adopts PPPs for value for money reasons, rather than merely seeking private sector finance. A relatively systematic and cautious approach is promoted towards the appraisal of PPP deals. In a similar policy context of PPP adoption, it makes sense to examine the PPP practices in Hong Kong and Australia to make comparable recommendations for New Zealand.

The following sections provide a more detailed overview of the PPP experiences in Hong Kong and Australia, the policy frameworks governing the PPP application and the continuing debate regarding the critical factors affecting the success of PPP deals with regard to the specific environment.

### 3.5.3 PPPs in Hong Kong Special Administrative Region (HKSAR)

#### 3.5.3.1 PPP practices

Hong Kong has been one of the first jurisdictions using PPPs to deliver public infrastructure projects, mainly in the form of BOT (Cheung et al., 2009, Kumaraswamy and Zhang, 2001). The early PPP activities, dating back to the late 1960s, were primarily undertaken in the land transport sector, such as the 1969 Cross-Harbour Tunnel and 1997 Western Harbour Crossing, featured varying degrees of success (Cheung, 2009). In addition to various BOT experiences, other PPP models, such as DBO, were also applied in early PPP projects, including solid waste facilities, landfills and refuse transfer stations (Hayllar, 2010).

Following the 1997 Asian Financial Crisis, the HKSAR government initiated an infrastructure development programme to boost the economy and increase public confidence. Involvement of the private sector, by means of PPPs, has been adopted as government policy to procure public services
A number of capital projects, such as the West Kowloon Cultural District, Hong Kong Disneyland, Hong Kong – Zhuhai – Macau Bridge and Centre for Youth Development, were proposed by the government and subject to investigations into the suitability of using PPPs to deliver (Hayllar, 2010).

Despite many potential capital PPP projects, only a few of them reached fruition (e.g., AsiaWorld-Expo). The initial PPP proposals were finally rejected for a variety of reasons, such as public opposition, political considerations and concerns over the project’s economic viability (Hayllar, 2010). For instance, a PPP option was abandoned for the Hong Kong – Zhuhai – Macau Bridge due to the desire to speed up project delivery and maintain control over tolls (Cheung, 2009). Considering the prolonged preparation and transaction duration and inflexibility to exert control over tolls typically involved in a PPP, the public sector eventually opted for a traditional procurement method. Another PPP candidate, the Centre for Youth Development, did not achieve the expected outcomes owing to inadequate stakeholder engagement and a failure to gain the trust of interested parties (Hayllar, 2010). The cancellation of some PPP proposals reflects the government’s comparatively cautious approach towards PPP adoption.

Parallel to the attempts to adopt PPPs for capital project using private finance, the HKSAR government adopted a Management, Operation and Maintenance (MOM) contract, a non-privately funded PPP model, to maintain infrastructure facilities, such as some heritage buildings (Ng and Wong, 2006, Ng and Wong, 2007). This trend was partly due to the government’s sufficient financial reserves and the desire to utilise the private sector’s expertise and innovation (Hayllar, 2010). Ng and Wong (2006) found that the non-privately-funded PPP approach was more cost-effective and efficient than traditionally-procured maintenance projects.
3.5.3.2 PPP policy context

In Hong Kong, the Public Works Subcommittee and the Finance Committee of the Legislative Council are responsible for approving PPP proposals and granting funds (Efficiency Unit, 2008). A central unit, the Efficiency Unit (EU) is at the forefront in promoting PPPs and undertaking PPP-related research with the aim of informing local practitioners of the relevant knowledge and practices. Governmental bureaux and departments are responsible for procuring public works projects and associated services, and are likely to act as public procuring authorities and contracting parties for PPPs.

The adoption of PPPs has been promoted in the Hong Kong government’s annual policy address. The government’s approach towards PPPs was highlighted in Serving the Community by Using the Private Sector: Policy and Practice Guide (Efficiency Unit, 2001):

> Consideration should always be given to involving the private sector in the provision of new services. And opportunities to improve private sector involvement in existing activities should be examined proactively. Decision-makers should begin with the presumption that the private sector can provide services to the community, while recognising that there will remain some special circumstances where public sector provision may be necessary.

In light of the policy support for PPPs at government level, PPPs continue to be considered as possible solutions for a range of projects with the purpose of bringing the complementary skills of both the public and private sectors to the delivery of public services (Efficiency Unit, 2008). A partnership approach is emphasised for Hong Kong’s PPPs, in which the responsibility for service delivery is shared by both parties (Efficiency Unit, 2008).

To foster a consistent approach towards PPP implementation, the EU has published a series of guides under the theme of Serving the Community by Using the Private Sector (Cheung, 2009). An introductory Guide to Public Private Partnerships (2003) and its updated version (2008) set up the
general steps to follow when the HKSAR government engages with PPPs (Efficiency Unit, 2008). Coupled with other guideline documents, such as *A User Guide to Contract Management* (Efficiency Unit, 2007a), the guideline frameworks for private sector involvement states the government’s overall position and approach to public sector procurement, under which a PPP project is initiated, planned and developed.

### 3.5.3.3 PPP debate in Hong Kong

A great deal of research has been conducted, discussing the suitability of PPPs for Hong Kong and recommending measures to advance the likelihood of success when using PPPs. Cheung (2009) identified the leading obstacles for implementing PPPs in Hong Kong: (1) Lengthy delays because of political debate; (2) Lengthy delays in negotiation; (3) Abandonment of PPP projects before the contract stage; (4) Confusion over government objectives and evaluation criteria and (5) High participation costs. In addition, the critical factors contributing to PPP success were shown to be: (1) Favourable legal framework; (2) Commitment and responsibility of public and private sectors; (3) Strong and good private consortium; (4) Stable macro-economic condition and (5) Appropriate risk allocation and risk sharing.

Hayllar (2010) examined past practices with PPPs in Hong Kong and argued that Hong Kong lacked some important aspects required for good governance of PPP projects, although it seemed to provide a favourable economic and social environment for PPPs. Hong Kong has established a methodical approach (PSC) to assess the value for money of PPP options (Efficiency Unit, 2008). However, the selection of procurement route is largely determined by political considerations. Limited engagement and communication with stakeholders, the Legislative Councils and the public impeded the transparency of the PPP process, leading to abandoning PPPs prior to the contract stage. Effective and efficient consultations with community, the business sector and other stakeholders were deemed essential for enhancing the development of economic and administrative environments for PPPs.
Ng and Wong (2006) investigated the non-privately funded maintenance PPP contracts in Hong Kong and concluded that compared with traditional procurement, a PPP approach allows higher flexibility, encourages innovation, enhances cost-effectiveness and improves the efficiency of work. They suggested that to facilitate the PPP implementation, the performance standards and benchmarks should be clearly defined, reasonable and achievable. Also, the public sector staff’s attitude and willingness to accept PPPs greatly influences the productivity of partnerships. The government is therefore recommended to consider staffing issues before stepping into PPPs. By nurturing a partnering culture and enhancing the collaboration between two parties, the project will be delivered more efficiently.

Chiang and Cheng (2009) found that there was almost no financial market for PPPs in Hong Kong. This was partly due to the financial institutions’ lack of good understanding of PPPs and perceived high risks associated with PPPs, such as political risk arising from inconsistent policies of the local government. The perception that PPPs do not lead to a high level of project performance also hinders the financial institutions participating in Hong Kong’s PPPs.

The EU (2007b) summarised the common barriers that may impede private sector involvement in PPPs: (1) town planning and land use; (2) time; (3) staffing; (4) transparency and accountability; (5) confidence; and (6) availability of expertise and experience. In order to tackle the possible constraints, a number of best practices are recommended, such as conducting market testing, providing output performance specifications that clearly identify the service requirements and arranging briefings and site inspections.

Based on local PPP experiences, the EU (2008) identified the following success factors in establishing PPPs in Hong Kong: (1) High level support; (2) Project champion; (3) Maintain momentum; (4) Market testing and (5) Stakeholder consultation. In addition, the obstacles identified comprise: (1) Problems with land use amendments; (2) Lack of confidence in the PPP approach, and insufficient
experience and expertise; (3) Long contract durations; (4) Technological changes; and (5) Lack of public acceptance of the use of PPPs.

Hayllar (2010), Cheung (2009) and APCO et al. (2005) conducted a case study of a high-profile project, the West Kowloon Cultural District, which is a proposed project to be developed as a cultural and entertainment centre. Located to the west of Yau Ma Tei on the Kowloon Peninsula, Hong Kong, the project was firstly proposed as a PPP. However, the development was delayed due to strong public opposition and continual debate on the suitability of using PPPs to advance a project of such great strategic importance and close relevance to community (Cheung et al., 2009). Without obtaining approvals from the relevant authorities (e.g., the Legislative Council) and adequately engaging the stakeholders, the government faced intense public criticism for lacking of transparency and accountability when making focal decisions (Hayllar, 2010). The initial plan was then abandoned and the West Kowloon Cultural District Authority will be responsible for managing the proposed project.

Five issues were identified as the reasons leading to the abandonment of the PPP proposal:

- **Lack of clear policy objectives**

  At the initial stage, the government was not clear about the overall policy for arts and cultural development. The ambiguous policy objectives were not broadly understood and therefore not convincing enough to gain public support.

- **Flawed business case development**

  The government did not follow a rigorous procedure to identify the service need and assess the possible options. Arts development and sustainability seemed to be ignored by the government as much focus was placed on real estate development.

- **Lack of transparency and accountability**
The government’s “single developer” approach received much public criticism. Accusations were raised regarding the lack of opportunity for other developers to participate and the lack of transparent criteria for bid evaluation and selection.

- Insufficient engagement with stakeholders

The project was initiated and planned without sufficient consultation with relevant stakeholders, such as the Legislative Council. The public consultation process was not effectively conducted, and did not allow for in-depth discussion or addressing concerns in a timely manner.

- Prolonged consultation and development process

There were no clearly specified timeframes and milestones to meet. The continual debate and consultation resulted in a prolonged process. Being kept in the process for a lengthy period, the private sector party wasted much time and resources on the project.

**3.5.4 PPPs in Australia**

**3.5.4.1 PPP Practices**

Australia is seen as a country which has developed a mature and sophisticated PPP market. The PPP usage covers a wide range of sectors such as water, schools, transport, hospitals and prisons. Duffield (2005) was of a view that PPP development in Australia could be divided into two stages, with the first generation primarily motivated by private finance where all service components are transferred to the private sector, whereas under the second generation of PPPs, state governments generally remain responsible for “core services” and the private sector provides other services such as facility management and maintenance. The change of scope for the private sector’s responsibilities in a PPP reflected the shift of the government’s policy objectives, from mobilising private financing to maximising value for money (English and Baxter, 2010). The establishment of the Partnerships Victoria in 2000 and the release of a suite of policy documents were seen as a watershed for the two generations of PPPs because of the significant implications in structuring and running PPP projects in Australia (Jeffries and McGeorge, 2009). Prior to 2008, PPP activities in Australia were undertaken
at state level and the Victoria State was regarded as the pioneer in terms of using PPPs and developing best practice frameworks.

### 3.5.4.2 Current PPP policy context

In order to facilitate PPP development, at state level, a specialist PPP unit is usually established to oversee PPP implementation, assist with structuring the contractual issues and the procurement process, and develop policy and guidelines by incorporating evolving best practices. For example, in the Victoria State, *Partnerships Victoria*, under the Department of Treasury and Finance, acts as the central PPP unit for PPP projects (Cheung et al., 2009). A suite of PPP policies and guidelines were issued and constantly updated, including a risk allocation guide (Partnerships Victoria, 2001c), commercial principles (Partnerships Victoria, 2008), development of PSC (Partnerships Victoria, 2001b) and contract management (Partnerships Victoria, 2001a).

In 2008, *Infrastructure Australia* was set up to coordinate PPP activities at federal level which were previously conducted within various states under individual PPP policies. PPP policy and guidelines have been published by *Infrastructure Australia*, enabling a consistent approach towards PPPs across states. The “national guideline” formulates the policy, basis on which PPPs are structured and carried out in Australia, but allows for specific state requirements (Infrastructure Australia, 2008).

### 3.5.4.3 PPP debate in Australia

In Australia, the PPP development of practices is accompanied by continual debate on the suitability of PPPs for the provision of public assets and associated services. Extensive research has been undertaken to examine the PPP performance and key issues in relation to PPP application in Australia. Raisbeck et al (2009) conducted an empirical study in Australia, comparing the performance of PPPs with traditional procurement methods. The research concluded that PPPs generally provide superior performance in cost and time dimensions, and the advantage increases with the size and complexity of projects.
Cheung (2009) identified the top five success factors for Australian PPP projects: (1) Commitment and responsibility of public and private sectors; (2) Appropriate risk allocation and risk sharing; (3) Strong and good private consortium; (4) Good governance; and (5) Technical feasibility.

Duffield (2005) evaluated the PPP experiences in Australia and suggested that for a successful PPP, a series of factors are required: (1) Clarify that the use of PPPs is a strategic choice; (2) Articulate clear objectives; (3) Clarify interfaces with other contracts and service requirements; (4) Establish flexible processes for long-term contracts; (5) Ensure accountability to the public and the private sector; (6) Facilitate high quality competitive bids; (7) Actually transfer risks as allocated and confirm the deal make sense; (8) Develop a culture of partnerships; and (9) Transfer knowledge through the contract.

Grimsey and Lewis (2004) stressed that conducting a public interest test is important to ensure accountability as it relates to the legitimacy of the government to engage with the private sector. Strong political leadership and unambiguous commitment are considered a clear driver for value for money in PPP implementation. Establishing a specialist PPP unit and releasing policy and guidelines provides possible means to obtain strong political commitment (Duffield, 2005).

Regan et al (2011) examined the influences of the GFC on the viability of PPP projects in Australia and revealed that capital market conditions are unstable and volatile, reflected in limited availability of equity and debt capital, a higher cost of capital, and shorter lending terms. The adverse capital market situation is likely to result in a tougher approach from banks in structuring PPP finance, which may threaten the value for money outcomes of PPPs.

KPMG (2010b) assessed the procurement processes of Australian PPP projects and identified the barriers to competition and procurement efficiencies of PPPs: (1) A largely unknown pipeline of projects; (2) A perceived lack of commitment to PPPs consistently across all Australian jurisdictions; (3) The magnitude of bid costs; (4) The skill and expertise of the Government team managing the
procurement process; (5) The government’s level of commitment to the project and the PPP procurement model.

3.6 Conclusion

As opposed to Hong Kong and Australia, where relatively abundant literature is available examining PPP application, there is limited research providing a critical review of the key issues in relation to PPPs, with a special focus on New Zealand. The next stage of the research study covered in Chapter 5 validates the issues highlighted in the literature review and identifies critical factors that can be used to facilitate PPP implementation in New Zealand.
Chapter 4 Research Methodology

4.1 Introduction

This chapter describes the research methodology used for the PhD study to achieve the research objectives. It begins with an overview of the research process, and goes on to examine the dominant research methodologies used in construction management research, focusing on the pros and cons of each methodology and their application conditions. The chapter then elaborates on the rationale for selecting qualitative research methodology with an emphasis on its epistemological underpinnings. This is followed by a detailed description of the research design.

This chapter then reviews the four research methods used in this research – document analysis, industry workshops/seminars, industry-wide, semi-structured interviews and multiple case studies. With regard to the semi-structured interviews and case studies, the respective rationale and the data collection protocols are elaborated with details. The chapter then discusses the concerns for validity and reliability involved in this research and explains how the relevant issues are addressed in the research design. It then describes the ethical considerations and the means taken to tackle the ethical issues.

4.2 Research Process

This PhD research consists of four stages – problem identification and objectives formulation, empirical data collection and analyses, research findings synthesis and validation and conclusions. Figure 4.1 provides a diagrammatic overview of the research process showing the activities and sub-activities conducted at each stage. The initial phase involved a comprehensive literature review on the fundamental concepts and theories of PPPs and review of existing practices and current policy settings in association with PPPs in New Zealand. The review of literature identified the research gap – a lack of understanding of the critical factors impacting on the successful implementation of PPP programme in New Zealand, with regard to the specific policy, social and economic environments. A
conceptual framework was formulated based on the literature review, laying the foundation for the following empirical study. The researcher also attended six industry workshops/seminars held in Auckland and Wellington (detailed information is presented in Section 4.5.2) to gain an understanding of the prospects for using PPPs in New Zealand from practitioners’ perspectives. The industry workshops/seminars gave the researcher an opportunity to capture the industry needs in terms of PPP development in New Zealand, confirmed the research direction set out in the literature and to refine the research objectives.
The second phase was the empirical study including data collection and analyses. Document analysis, industry workshops/seminars, industry-wide interviews and case studies were primary research methods. The documents reviewed comprised of local reports, industry and government discussion papers and government policy documents. Twenty-two interviews were undertaken with practitioners from diverse stakeholders of PPPs in New Zealand. The presentations and discussions at the industry workshops/seminars, together with feedback from attendees, confirmed and verified the interview results. Multiple case studies focusing on exhibition and event venue, prison and school sector were conducted across jurisdictions, within which semi-structured interviews were the main data collection instrument. Other data sources for case studies include document analysis and direct observation.

The third phase was a synthesis of findings from all information generated from this research to achieve the stated objectives. From this, best practice guidelines for New Zealand to implement PPPs with specific recommendations on exhibition and event venue, prison and school sectors. The best practice guidelines derived were then presented to the subject matter experts for validation. The validation exercise was designed to test the validity and practicability of the protocols to guide PPP practitioners in New Zealand.

The next section describes the research methodology used in this research, the research design and elaborates on the rationale for choosing the selected research methods.

### 4.3 Research Methodology

Research methodology is a procedural framework within which the research is undertaken (Amaratunga et al., 2002). It is concerned with “a system about how we go about research” and it has an important role in generating knowledge on construction management (Smyth and Morris, 2007). Located in epistemology – an evaluation of how we acquire knowledge through research, research methodology should be selected and applied with a strong epistemological base (Smyth and Morris, 2007).
4.3.1 Research traditions in construction management field

4.3.1.1 Epistemological base

There are two dominant schools of inquiry paradigms, positivism and interpretive approach in construction management research (Amaratunga et al., 2002, Fellows and Liu, 2008). Positivism refers to the view that the world is external and objective and science can lead to an understanding of a phenomenon ruling out of its social, political and cultural influences. It aims at generalisation and establishing principles or laws (Kalof and Dan, 2008). Positivism usually employs “quantitative and experimental methods to test hypothetical-deductive generalisations” (Amaratunga et al., 2002). Interpretative approach emphasises that the world is socially constructed and qualitative methods are used to inductively and comprehensively understand people’s experiences and views in context-specific settings (Liamputtong and Ezzy, 2005). A summary of the key features of positivist and interpretive research paradigm is presented in Table 4.1.

Table 4.1 Key features of positivist and interpretive paradigms (Source: Amaratunga et al, 2002)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Positivist paradigm</th>
<th>Interpretive paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic beliefs</td>
<td>The world is external and objective</td>
<td>The world is socially constructed</td>
</tr>
<tr>
<td></td>
<td>Observer is independent</td>
<td>Observer is part of what is observed</td>
</tr>
<tr>
<td></td>
<td>Science is value-free</td>
<td>Science is driven by human interests</td>
</tr>
<tr>
<td>Researcher should</td>
<td>Focus on facts</td>
<td>Focus on meanings</td>
</tr>
<tr>
<td></td>
<td>Look for causality and fundamental laws</td>
<td>Try to understand what is happening</td>
</tr>
<tr>
<td></td>
<td>Reduce phenomena to simplest elements</td>
<td>Look at the totality of each situation</td>
</tr>
<tr>
<td></td>
<td>Formulate hypothesis and test them</td>
<td>Develop ideas through induction from data</td>
</tr>
<tr>
<td>Preferred method in</td>
<td>Operationalising concepts</td>
<td>Using multiple methods to establish</td>
</tr>
<tr>
<td>the research</td>
<td>Taking large samples</td>
<td>different views of the phenomena</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small samples studied in depth or over time</td>
</tr>
</tbody>
</table>
4.3.1.2 Dominant research methodologies

According to the two schools of epistemological aspects, the research methodologies can be broadly classified into quantitative and qualitative research (Fellows and Liu, 2008). Quantitative research follows the positivist approach and adopts the logic of natural science assuming that the human behaviour can be explained by investigating “social facts” using methodologies (Frankfort-Nachmias and Nachmias, 2000). It “emphasises measurement and analysis of causal relations among variables” (Denzin and Lincoln, 2005). It uses a deductive process in which hypotheses are formulated based on theories and literature and then tested through empirical data collection and analysis (Meneill and Chapman, 2005). Quantitative research tends to provide a “snapshot” of a situation, and the data and results seem to be instantaneous or cross-sectional (Fellows and Liu, 2008). With a focus on measuring “how much” or “how often”, a quantitative investigation allows large-scale data collection and is grounded in mathematical knowledge and statistical analysis (Gephart, 2004).

Qualitative research draws upon an interpretative orientation and seeks to study phenomena in the context in which they occur and use meanings given by people to understand the phenomena (Denzin and Lincoln, 2005). It follows an inductive logic in which data and information is collected to generated theories. In other worlds, an exploration is conducted before theories are formulated (Kalof and Dan, 2008). Qualitative approaches can provide insights that shed a light on how “concepts and theories operate in particular cases” (Gephart, 2004). One characteristic of qualitative data is its richness and holism and the data collection relies on an intense and lengthy contact with a “field.”, through direct encounters with individuals (e.g., one-to-one interviews, group interviews or direct observation) (Hancock, 2002).

There is another school of research methodology used in the construction management field, triangulation. This is a combination of quantitative and qualitative approaches (Fellows and Liu, 2008). Using a mixed approach, the respective pitfalls of quantitative and qualitative approaches can be eliminated and a multi-facet view of the subject matter can be achieved via synthesis (Kalof and
Dan, 2008). When triangulation is adopted, qualitative research is usually conducted at an exploratory stage to develop conceptual framework by examining the relevant theories and literature, acting as a precursor to quantitative research (Mcneill and Chapman, 2005).

4.3.1.3 Pros and cons

Given the above description of philosophical underpinnings and the characteristics of quantitative, qualitative and triangulation, a comparison can be made on the strengths and weaknesses of each research methodology, which is summarised in Table 4.2.

4.3.2 Choice of research methodology

Some researchers (Bloomberg and Volpe, 2008, Babbie, 2005) have suggested that the choice of research methodology is largely determined by the research problem and purpose. Given a lack of previous PPP research and practices, this research aims to develop best practice guidelines for practitioners to engage with PPPs in New Zealand. Due to the limited number of projects using PPPs and the relatively limited exposure of public procuring authorities and the market to PPP procurement methodology, the research sample for investigating the identified problem is small. A quantitative approach, that requires large-scale data collection for statistical analysis and establishing causal relationships among relevant variables, is thus precluded. In addition, the level of knowledge and experience of PPPs are comparatively limited in New Zealand’s local industry. A qualitative approach is particularly suitable for investigating a subject matter, in which little is known about the phenomenon previously (Kalof and Dan, 2008)
Table 4.2 Comparison of strengths and weaknesses of each research methodology (Adapted from Amaratunga et al., 2002)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative methodology</td>
<td>• Provide wide coverage of the range of situations</td>
<td>• The methods used tend to be inflexible and artificial</td>
</tr>
<tr>
<td></td>
<td>• Fast and economical</td>
<td>• Not very helpful in generating theories</td>
</tr>
<tr>
<td></td>
<td>• Where statistics are aggregated from large samples, they may be of considerable relevance to policy decisions</td>
<td>• Difficult for decision makers to infer what changes and actions should take place in future</td>
</tr>
<tr>
<td>Qualitative methodology</td>
<td>• Data collection methods seem to be more natural than artificial</td>
<td>• Not effective in understanding processes or the meanings that individuals attach to actions</td>
</tr>
<tr>
<td></td>
<td>• Able to observe changes processes over time</td>
<td>• Data collection can be tedious, requiring more resources</td>
</tr>
<tr>
<td></td>
<td>• Able to understand individuals’ meaning</td>
<td>• Analysis and interpretation of data may be more difficult</td>
</tr>
<tr>
<td></td>
<td>• Able to generate theory</td>
<td>• Harder to control the pace, progress and end-points of research process</td>
</tr>
<tr>
<td>Triangulation</td>
<td>• Enable confirmation of results</td>
<td>• Policy makers may give low credibility to results from qualitative research</td>
</tr>
<tr>
<td></td>
<td>• Elaborate or develop analysis with more details</td>
<td>• Possible constraints imposed by available resources</td>
</tr>
<tr>
<td></td>
<td>• Obtain the relevant strengths and avoid weaknesses of both methodology</td>
<td></td>
</tr>
</tbody>
</table>

Despite extensive literature on the implementation of PPPs internationally, few attempts have been made in New Zealand to explore the critical factors affecting the successful implementation of PPPs and to recommend measures and strategies to improve the outcomes from using PPPs. This research is
therefore largely of an exploratory nature and qualitative research methodology is preferred. Bloomberg and Volpe (2008), Hancock (2002) and Mcneil and Chapman (2005) pointed out that qualitative approaches focus on exploration, discovery and desperation. Amaratunga et al (2002) suggested that the use of qualitative research permits unexpected developments in the research process and allows the data to be used for theory or best practice framework development, which is desired for this study.

In light of insufficiencies of current literature addressing PPP issues in New Zealand, this research relies on collecting empirical data from practitioners with extensive PPP experiences and a high level of understanding of PPP theories and practices and public sector procurement environment. A qualitative methodology is ideal for this research as it provides in-depth ways to solicit experts’ insights on a subject matter and offers in-depth knowledge on the elaboration and refinement of concepts and best practices (Hancock, 2002). In addition, qualitative data provides well-grounded, rich, and insightful descriptions and explanations of processes and organisational structures embedded in specific social and economic contexts (Gephart, 2004). According to the nature of this research and the features of qualitative research, this study opts for qualitative approaches to achieve the objectives.

4.4 Research Design

A research design is a logical plan that connects the empirical data to the initial set of questions to be answered and the ultimate conclusions (Yin, 2009). “It is about stating the way in which the researcher accomplishes the research objectives” (Fellows and Liu, 2008). A research design is seen as a “blueprint” or the research that details with (Yin, 2003):

- What questions to study,
- What data are relevant,
- What data to collect and
- How to analyse the results
The overall aim of this PhD research is to identify key challenges for using PPPs in New Zealand and suggest measures and strategies to increase the likelihood of achieving success in PPP implementation.

The main aim is further divided into five objectives, which are accomplished by using multiple research methods following a logical sequence. Table 4.3 presents an overview of the objectives and the corresponding research methods.

Table 4.3 Relationships between research objectives and research methods

<table>
<thead>
<tr>
<th>No.</th>
<th>Objectives</th>
<th>Research methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Examine the past experiences, current application status and policy settings of PPPs in New Zealand and review the continuous debate on PPPs in New Zealand</td>
<td>Document analysis, industry workshops/seminars</td>
</tr>
<tr>
<td>2</td>
<td>Identify the drivers for New Zealand to adopt PPPs for the provision of public assets and associated services</td>
<td>Industry-wide semi-structured interviews, industry workshops/seminars</td>
</tr>
<tr>
<td>3</td>
<td>Investigate the critical factors that impact on the successful implementation of PPPs in New Zealand</td>
<td>Industry-wide semi-structured interviews, industry workshops/seminars</td>
</tr>
<tr>
<td>4</td>
<td>Evaluate representative case studies in Hong Kong Special Administrative Region, Australia and New Zealand in the sector of exhibition and event venue, prison and school to analyse the critical factors affecting the successful implementation of PPPs</td>
<td>Multiple case studies (exhibition and event venue, prison and school)</td>
</tr>
<tr>
<td>5</td>
<td>Synthesise the research findings to develop best practice guidelines for implementing PPPs in New Zealand with specific recommendations on the sector of exhibition and event venue, prison and school</td>
<td>Research synthesis, subject matter experts validation</td>
</tr>
</tbody>
</table>

4.5 Research Methods

4.5.1 Document analysis

Document analysis of secondary data is a commonly used qualitative research method (Kalof and Dan, 2008). The first, second and third research objectives are mainly concerned with evaluating the
suitability of PPPs in New Zealand, drawing out lessons from previous quasi-PPP practices and seeking strategies to increase the likelihood of achieving success in PPPs. An in-depth document analysis was considered to be a suitable approach to understand the implications of PPPs and to examine the PPP environment in New Zealand.

Information on the development of the PPP programme in New Zealand was obtained through analysis of policy papers, research reports and industry discussion papers. Internet searches of reports and documents and accessibility to electronic databases of academic publications enabled the researcher to collect the relevant information. Document analysis was deemed essential for this research as it offered evaluations of historical data on PPP activities in New Zealand, reviews of ongoing government and industry debate surrounding the merits of PPPs and insights into current policy, legal and institutional settings around PPPs.

Reports and documents in relation to a quasi-PPP project undertaken previously – the Auckland Central Remand Prison project – were reviewed to gain an understanding of the rationale for opting for quasi-PPP procurement route and extracting lessons learnt which can be applied to current and future PPP deals in New Zealand. The case was selected because the initiation, development and execution of this project captured many public and industry concerns and the adoption of an alternative procurement route signalled the procuring authority’s openness to innovative delivery models. The review of the case indicated that constraints existed in the application of alternative procurement option in New Zealand. The case study also suggested ways to alleviate those constraints. The findings derived from document analysis are presented in Chapter Three.

4.5.2 Industry workshops/seminars

During this study, the researcher attended six industry workshops/seminars at different stages. A summary of the details of the workshops/seminars is presented in Table 4.4. The attendees included representatives from public authorities, leading academic institutions, PPP advisors, financiers, and
infrastructure construction companies. The workshops/seminars were seen as a vehicle to collect the main concerns from senior industry players and gain insights from the diversified PPP stakeholders who participated in the discussions. The information obtained from the presentations, discussions and feedback was essential in shaping the research directions via understanding the industry needs, refining research objectives, approaching potential participants for further in-depth interviews, confirming research findings and disseminating results. The themes discussed in the workshops/seminars mirrored the evolution of PPP theories and practices in New Zealand and provided a platform for the researcher to interact with industry players, facilitating the research outputs to be adopted by the industry.
Table 4.4 A summary of industry workshops/seminars attended

<table>
<thead>
<tr>
<th>No.</th>
<th>Main theme</th>
<th>Date</th>
<th>Hosting organisation</th>
<th>Role of the researcher</th>
</tr>
</thead>
</table>
| 1   | • The application and implications of collaborative forms of contract in New Zealand  
     • Lessons and experiences of New Engineering Contract | 29/07/2009 | Construction Clients’ Group | Attendee and participant of round-table discussion |
| 2   | • Key issues of PPPs  
     • Making PPPs work in NZ – legal structures, risks and financial issues of PPPs | 15/09/2009 | LexisNexis NZ Ltd | Attendee and participant of round-table discussion |
| 3   | • Driving value from procurement  
     • Implications of government procurement documents | 23/09/2009 | Construction Clients’ Group | Speaker (presenting PhD research project) |
| 4   | • A practical framework to determine the benefits and pitfalls of PPPs  
     • A practical process for PPPs and how to select an appropriate PPP model | 25/11/2009 | Coffey Commercial Advisory | Attendee and participant of round-table discussion |
| 5   | • Overseas PPP case studies  
     • An investor’s perspective of the development of NZ PPP market  
     • PPP overview and opportunities in NZ | 15/06/2010 | Chartered Institute of Building and the Institute of Civil Engineers | Keynote speaker and member of panel discussion |
| 6   | • Examination of PPP actions in 2011  
     • Financing issues of PPPs  
     • Recent PPP progress | 10/02/2011 | Institute of Civil Engineers | Keynote speaker and member of panel discussion |

The PhD research was initiated when the New Zealand government first announced its current infrastructure development scheme and encouraged public agencies to innovate in the ways of capital asset delivery and management. The government started to look at the prospects of using PPPs to maximise value for money from public sector procurement. However, due to the lack of experience
and understanding of PPPs, the debate around PPPs remained at the government level, with few government officials and senior industry players capable of commenting on the implications of PPPs and their potential application in New Zealand. With regard to the raised profile for PPPs and the limited understanding among the industry, the first four workshops/seminars the researcher attended were set up to bring together senior industry players’ opinions on the trend of PPP development. For example, in the second and fourth industry seminars, the hosting organisations (consultancy firms) drew upon industry-wide concerns towards the adoption of PPPs and attempted to inform the government procurement managers and policy advisors of the basic structural and procedural arrangements of a PPP which can be applied in New Zealand. The intent of the first and third workshops was to analyse the performance of the commonly-used delivery models and to find out the conditions under which PPPs can provide better value. The researcher presented the research topic and initial research design in the third workshop. Positive feedback from participants provided practical contributions to this research to enrich the best practice frameworks of public sector procurement in New Zealand.

The fifth and sixth seminars were primarily concerned with providing updates of PPP activities and evolving policy and institutional settings of PPPs. Many attendees are involved in the initiation, planning and development of the pilot PPP projects – the Wiri Prison and Hobsonville Schools. The researcher presented research findings during the two seminars and joined the subsequent panel discussion to offer a comparative perspective on the PPP development in New Zealand with other jurisdictions such as Australia and Hong Kong. The discussions and feedback from participants supplemented and confirmed the research findings derived from industry-wide interviews and case studies.

4.5.3 Semi-structured Interviews

Interviews are a widely-used method for qualitative research. Kvale (1994) described qualitative interviews as a method to “gather descriptions of the life-world of the interviewee with respect to
interpretation of the meaning of the described phenomena”. In this research, interviews were adopted to accomplish Objectives 2 and 3, which are concerned with understanding the drivers for PPP adoption and critical factors impacting on the PPP implementation in New Zealand. The interview method was chosen because it can be utilised to elicit insights and perspectives on the use of PPPs in New Zealand, and “to understand how and why they come to have this particular perspective” (Amaratunga et al., 2002). In addition, King (1994) pointed out that interviews are best suited under the circumstances that the study focuses on the meanings of particular phenomena to the participants. Interviews are preferred in this research as it is important to understand the implications of PPPs from the perspectives of diversified stakeholders.

4.5.3.1 Selection of participants

A number of researchers ((Liamputtong and Ezzy, 2005, Hancock, 2002, Yin, 2003) maintained that the objective of sampling in qualitative interviews is different to that in quantitative research such as large-scale surveys, which are concerned with ensuring that the results derived from the samples can be statistically generalised to the population. Instead, qualitative research uses a purposeful sampling strategy aiming to choose information-rich units for in-depth investigation. In qualitative research sampling, units are selected based on their ability to provide a thorough and sophisticated understanding of all dimensions of the subject matter (Liamputtong and Ezzy, 2005).

In this research, twenty-two participants were chosen for the interviews. The limited number of interviewees was commensurate with the current status of PPP development in New Zealand. Since the use of PPPs is at the infancy, only limited government officials, executives from private sector entities and experienced PPP advisors are capable of providing insightful opinions on the direction and trend of PPP application. To be specific, the selection of participants followed a purposeful sampling procedure that allows the selection to be narrowed down to a specific group of individuals who can provide rich and in-depth information on the trend and implications of PPPs in New Zealand. To be specific, the selection was based on the participants’ overseas experience with PPPs (often
Australia and the UK), the understanding of intent and direction of PPP adoption, and the positions in their organizations. The stakeholders selected for this study included senior and middle management from both the public and private sector side. A detailed description of the background and characteristics of the participants are given in Table 4.5 and Table 4.6.

Table 4.5 Background of the participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Role in organization</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government</td>
<td>Procurement manager; Project manager; Senior engineer</td>
<td>3</td>
</tr>
<tr>
<td>Education</td>
<td>Policy advisor; Regional procurement manager (2)</td>
<td>3</td>
</tr>
<tr>
<td>Corrections</td>
<td>Project manager</td>
<td>1</td>
</tr>
<tr>
<td>Housing</td>
<td>Procurement manager</td>
<td>1</td>
</tr>
<tr>
<td>Local government</td>
<td>Property group manager; procurement manager</td>
<td>2</td>
</tr>
<tr>
<td>Other procuring authority</td>
<td>Executive</td>
<td>1</td>
</tr>
<tr>
<td>Treasury</td>
<td>Senior policy advisor (2)</td>
<td>2</td>
</tr>
<tr>
<td>Public advisory body</td>
<td>Executive</td>
<td>1</td>
</tr>
<tr>
<td>Advisors (commercial/legal)</td>
<td>Director; Executive Director; Partner (2)</td>
<td>4</td>
</tr>
<tr>
<td>Construction contractor</td>
<td>Executive; Division Executive</td>
<td>2</td>
</tr>
<tr>
<td>Operator/Facility Manager</td>
<td>Executive</td>
<td>1</td>
</tr>
<tr>
<td>Financier</td>
<td>Executive director</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>22</td>
</tr>
</tbody>
</table>

Table 4.6 Characteristics of the participants

<table>
<thead>
<tr>
<th>Description</th>
<th>Nr</th>
<th>Percentage</th>
<th>Description</th>
<th>Nr</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Ownership</td>
<td></td>
<td></td>
<td>Professional work experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>14</td>
<td>64%</td>
<td>≥20 years</td>
<td>5</td>
<td>23%</td>
</tr>
<tr>
<td>Private</td>
<td>8</td>
<td>36%</td>
<td>15-20 years</td>
<td>9</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10-15 years</td>
<td>8</td>
<td>36%</td>
</tr>
<tr>
<td>Designation</td>
<td></td>
<td></td>
<td>Experience with PPPs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper management</td>
<td>17</td>
<td>77%</td>
<td>Yes</td>
<td>12</td>
<td>55%</td>
</tr>
<tr>
<td>Middle management</td>
<td>5</td>
<td>23%</td>
<td>No</td>
<td>10</td>
<td>45%</td>
</tr>
</tbody>
</table>
4.5.3.2 Interview protocols

The interviews were conducted in two cities, Auckland and Wellington. Eight pilot interviews were conducted between September 2009 and December 2009, following which the questionnaire was revised. Fourteen interviews were undertaken between November 2010 and April 2011. There is a ten-month gap between the two rounds of interviews because two pilot PPP projects were initiated during that period and the participants of the second-round interviews could provide comments on the basis of their observation and experiences of recent PPP activities and updates.

The participants were approached by e-mails and telephone calls. The interviews ranged from 45 minutes to one hour and were audio-taped with the participants’ permission. The study used the face-to-face interview technique as it enables the acquisition of in-depth answers from participants and allows probing questions to delve deeper into the research problem. A semi-structured questionnaire was used to elicit reliable, comparable qualitative data as well as spontaneous discussion. The questions asked in the interviews with various stakeholders are essentially the same. The final list of questions is provided in Appendix A1. The main themes explored in the interviews included the following:

- The drivers for New Zealand to adopt PPPs
- Possible challenges and barriers in relation to the adoption and implementation of PPPs in New Zealand
- The initiatives adopted by the New Zealand government to address the perceived challenges
- Likely measures and strategies to facilitate the PPP implementation
4.5.4 Case Studies

4.5.4.1 Why case studies?

In this research, the case study approach was employed to accomplish Objective Four which is concerned with evaluating overseas and New Zealand’s PPP experiences and investigating the critical factors affecting the implementation of PPP projects. A case study is a commonly used research strategy following a qualitative approach and is research that “describes a single event or unit of analysis determined by the researcher” (Gephart, 2004). Yin (2009) gave a technical definition of case study: “A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” Yin (2003) further argued that the case study is a comprehensive research strategy encompassing research design logics, data collection techniques and data analysis strategies, allowing collecting and triangulating data from multiple sources of evidences.

A case study strategy was used in this research because it can provide in-depth, rich and thorough investigation of the PPP implementation, embracing procurement processes and relevant contractual and organisational arrangements (Platt, 2008). Further, case studies allow an understanding of what causes a phenomenon, linking causes and outcomes, as is the case of this research, which requires elaboration on why the factors extracted are deemed critical for PPP application and the impacts of the critical factors on the value for money outcomes of a PPP. Also, case studies are ideal for this research as planning, development and execution of PPP projects are closely related to the social, economic and policy contexts, and case studies offer a way to investigate the PPP implementation within its real-life context. A quantitative survey method is precluded in this regard due to its weakness in understanding context, process, and causal mechanisms (Flyvbjerg, 2011). Also, case study approach enables the researcher to employ multiple types of data collection methods including interviews, direct observation and document analysis, providing a more holistic view towards the use of front-line PPP projects. Conversely, a quantitative survey only offers one way of collecting data.
and tends to group together dissimilar cases to get larger samples, which is likely to overlook the particularity of each case and is not conducive to gaining an understanding of the multiple facets of PPP arrangements (Flyvbjerg, 2011).

Case study strategy is seen as an effective means for theory development embracing creating new constructs, propositions or hypotheses (Eisenhardt, 2007, Kalof and Dan, 2008). The information generated from case studies can be utilised to identify the main patterns and themes about the studied subject (Babbie, 2005, Eisenhardt, 2007). The characteristics of case study strategy fits the nature of this research as little was known about the prospects of using PPPs in New Zealand and how to structure and implement the PPP arrangements in order to maximise the value from the delivery of public assets and services. Following an inductive logic, case study strategy is suitable for identifying the dominant trends, key emergent issues and primary solutions taken or proposed to facilitate the PPP application.

4.5.4.2 Case study design

Figure 4.2 presents a categorisation of the types of case study designs developed by the COSMOS Corporation (Yin, 2003): (1) holistic single-case designs, (2) holistic multiple-case designs, (3) embedded single-case designs, and (4) embedded multiple-case designs. This research adopted an embedded multiple-case study design.
The rationale underlying the use of multiple-case design for this research is its “replication” logic, as multiple case studies allow predicting similar results or predicting contrasting results but with predictable reasons (Yin, 2003). This research intends to investigate the critical factors influencing the implementation of PPPs in different sectors, based on which best practice guidelines that apply to general PPP application are formulated. The special characteristics of the delivery of assets and services in different sectors vary, which is likely to result in deviations in terms of PPP practices. Multiple case studies of PPP application in different sectors enable comparisons to be made on the similarities and differences of PPP practices across sectors and allow examinations of how the critical factors affect PPP outcomes under different circumstances, in this case, varied infrastructure sectors. In addition, the practices with PPPs in the same sector may vary under different policy contexts embracing a country’s approach to PPPs, institutional arrangements, legal, social and economic conditions. Conducting multiple case studies in different jurisdictions focusing on a particular sector would provide more convincing results regarding the critical factors influencing PPP implementation.

Figure 4.2 Basic types of designs for case studies (Source: COSMOS Corporation)
in that sector. If common conclusions are drawn from cases with different contexts, the
generalisability of research findings can be increased (Eisenhardt, 2007, Stake, 2006).

Yin (2003) claimed that a multiple-case study is preferred over a single-case design if the researcher
has the options and resources, as analytical conclusions generated from multiple cases tend to be more
powerful than those derived from a single case alone. For this research, fieldtrips to the sites of PPP
projects in different sectors and jurisdictions and interviewing key stakeholders of the projects
enabled the researcher to collect project and context-related information for conducting multiple case
studies.

Embedded design was selected for multiple case studies in this research. As illustrated by Yin (2003),
an embedded design is preferred if interviews with key stakeholders are included in the case studies,
as applied to this research. For case studies in this research, each interviewee was regarded as a “unit
of analysis”. It is notable that the sampling logic underlying the selection of participants followed a
purposeful sampling procedure rather than a probability sampling method used in quantitative surveys.

**4.5.4.3 Case selection**

Eisenhardt (2007), Platt (2008), and Yin (2003) argued that the sampling logic for case studies is
fundamentally different with large-scale hypothesis testing research in which the samples should be
representative of the population. Instead, a purposeful sampling procedure should be adopted for case
studies. “Cases are selected because they are particularly suitable for illuminating and extending
relationships and logic among constructs” (Eisenhardt, 2007). In other words, the case selection is
based on theoretical usefulness.

Stake (2006) proposed three primary criteria for selecting cases: (1) the cases should be relevant to the
research objectives; (2) they should provide diversity across contexts; and (3) they must provide
opportunities to investigate the complexity and the contexts. Yin (2003) added that accessibility to
fields should also be considered when selecting cases.
In accordance with the above rules, seven international and local cases were selected for this research. A summary of the cases studied is given in Table 4.7. Internationally, PPPs have been used for the delivery of infrastructure assets and related services in a spectrum of sectors, such as roads, urban rail, power station, water and wastewater, exhibition and event venues, schools, prisons and hospitals. However, in New Zealand, the experiences of PPPs are very limited, restricting the pool of cases which can be used for case studies. Hence, in this research, three infrastructure sectors – exhibition and event venue, prison and school were selected due to the relevance to New Zealand’s PPP experiences (although limited) and recent trends of PPP application.

Table 4.7 A summary of case studies selected

<table>
<thead>
<tr>
<th>Infrastructure sector</th>
<th>Title</th>
<th>Jurisdictions</th>
<th>Location</th>
<th>Fieldtrip date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibition and event venue</td>
<td>AsiaWorld-Expo</td>
<td>HKSAR</td>
<td>Hong Kong</td>
<td>March-April 2010</td>
</tr>
<tr>
<td></td>
<td>Vector Arena</td>
<td>New Zealand</td>
<td>Auckland</td>
<td>January-March 2011</td>
</tr>
<tr>
<td></td>
<td>Sydney SuperDome</td>
<td>Australia</td>
<td>Sydney</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Prison</td>
<td>Ararat Prison</td>
<td>Australia</td>
<td>Melbourne</td>
<td>April-May 2011</td>
</tr>
<tr>
<td></td>
<td>Wiri Prison</td>
<td>New Zealand</td>
<td>Auckland</td>
<td>January-May 2011</td>
</tr>
<tr>
<td>School</td>
<td>Partnerships</td>
<td>Australia</td>
<td>Melbourne</td>
<td>April-May 2011</td>
</tr>
<tr>
<td></td>
<td>Victoria in Schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hobsonville Schools</td>
<td>New Zealand</td>
<td>Auckland</td>
<td>January-May 2011</td>
</tr>
</tbody>
</table>

The exhibition and event venue sector was selected because one of the few previous PPP attempts in New Zealand – Vector Arena, located in Auckland falls into this category. In addition, as a part of Christchurch rebuild programme, a new convention centre is being considered by the government to assist with the Canterbury region’s economic recovery by enhancing its international reputation, boosting relevant industries (e.g., tourism, hotels, business), and creating new employment opportunities (Cairns, 2012). PPPs are perceived as a possible procurement options for delivering the new convention centre. It is therefore of great importance to understand the critical factors influencing
the PPP implementation in this sector in order to derive workable strategies to increase the value for money outcomes from using PPPs in venue development. As the only PPP venue project in New Zealand, the Vector Arena project was selected for the case studies. Another venue PPP project – AsiaWorld-Expo located in Hong Kong Special Administrative Region (HKSAR) was chosen arising from the initiative to examine the PPP application in venue development under different context. The venue development of AWE and VA were compared to the previously studied PPP project in Australia (Jefferies et al., 2002). A comparative analysis provides an opportunity to understand the variations in PPP implementation as a result of the diversity across different policy contexts. In addition, the researcher was able to conduct fieldtrips to the locations of AsiaWorld-Expo and Vector Arena, formulating the basis for in-depth case studies.

The choice of prison and school sectors arises from the current focus of PPP activities in New Zealand – social infrastructure (National Infrastructure Unit, 2011a). The two pilot PPP projects – Wiri Prison and Hobsonville Schools – were therefore selected for case studies. Although the two projects have not yet reached operating stage when the thesis is drafted, all information regarding how the PPP contracts are designed and structured is available and is deemed sufficient to achieve the research objective. Two social infrastructure PPP projects in Australia – Ararat Prison and Partnerships Victoria in Schools – were studied to enable comparative analyses to be made on the critical factors affecting PPP outcomes in the respective sectors. The two projects were procured under Australia’s National PPP guidelines and Partnerships Victoria’s PPP policy frameworks. Since no PPP activities have been undertaken in the prison and school sector in Hong Kong, PPP projects in Hong Kong were therefore not incorporated in the case studies of prison and school PPPs. By comparing the Australian cases with two pilot projects in New Zealand with regard to the different policy contexts, more robust findings regarding the measures and strategies for using PPPs in the prison and school sectors can be derived, as suggested by Stake (2006). In particular, since different PPP models were used for the Ararat (non-core services) and Wiri project (full-package), comparative case studies offer insights on
the suitability and applicable conditions of varied PPP models for prison development. Again, fieldtrips to Melbourne, Auckland and Wellington enabled the researcher to collect qualitative data required to accomplish the case study objective.

4.5.4.4 Data collection of case studies

A distinguishing feature of case study method is the ability to reach conclusions based on multiple sources of evidence. Table 4.8 lists the six sources of evidence with comments on their strengths and weaknesses.

According to Yin’s (2009) categorisation of data sources for case studies, this research mainly employs a triangulation of three data collection methods – direct observation, document analysis and interviews. An overview of data collection methods employed in this research is presented in Table 4.9. As stated above, the researcher undertook fieldtrips to the locations of all case study projects apart from the Sydney SuperDome, enabling direct observation and conducting interviews. A variety of documents in relation to the case study projects were also reviewed to design the interview questions and corroborate the information from interviews. Besides, document analysis can also help to verify the contents (e.g., names, titles, and spellings) mentioned by the participants.
<table>
<thead>
<tr>
<th>Sources of evidence</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
</table>
| Documentation       | • stable – can be reviewed repeatedly  
• unobtrusive – not created as a result of the case study  
• exact – contains exact names, references, and details of an event  
• broad coverage – long span of time, many events, and many settings | • retrievability – can be low  
• biased selectivity, if collection is incomplete  
• reporting bias – reflects (unknown) bias of author  
• access – may be deliberately blocked |
| Archival records     | • [same as above for documentation]  
• precise and quantitative | • [same as above for documentation]  
• accessibility for privacy reasons |
| Interviews           | • targeted – focuses directly on case study topic  
• insightful – provides perceived causal inferences | • bias due to poorly constructed questions  
• response bias  
• inaccuracies due to poor recall  
• reflexivity – interviewee gives what interviewer wants to hear |
| Direct observation   | • reality – covers events in real time  
• contextual – covers context of event | • time-consuming  
• selectivity – unless broad coverage  
• reflexivity – event may proceed differently because it is being observed  
• cost – hours needed by human observers |
| Participant observation | • [same as above for direct observations]  
• insightful into interpersonal behaviour and motives | • [same as above for documentation]  
• bias due to investigator’s manipulation of events  
• selectivity  
• availability |
| Physical artefacts   | • Insightful into cultural features  
• Insightful into technical operations | |
Table 4.9 An overview of data collection methods used

<table>
<thead>
<tr>
<th>Infrastructure sector</th>
<th>Title</th>
<th>Data collection methods</th>
<th>Direct observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibition venue</td>
<td>AsiaWorld-Expo</td>
<td>Semi-structured</td>
<td>Minutes of meeting; media release</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes (Hong Kong)</td>
</tr>
<tr>
<td></td>
<td>Vector Arena</td>
<td>Semi-structured</td>
<td>Media release</td>
</tr>
<tr>
<td></td>
<td>Sydney SuperDome</td>
<td>NA</td>
<td>Summary of Contract Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>Prison</td>
<td>Ararat Prison</td>
<td>Focus group &amp; semi-structured</td>
<td>Project summary, fact sheet</td>
</tr>
<tr>
<td></td>
<td>Wiri Prison</td>
<td>Semi-structured</td>
<td>Newsletter release</td>
</tr>
<tr>
<td>School</td>
<td>Partnerships</td>
<td>Semi-structured</td>
<td>Project summary</td>
</tr>
<tr>
<td></td>
<td>Victoria in Schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hobsonville Schools</td>
<td>Semi-structured</td>
<td>Newsletter release</td>
</tr>
</tbody>
</table>

As Yin (2003), Kalof (2009) and Taylor et al (2011) argued, one of the most important sources of evidences for case study is interviews. In this research, interviews are the main data collection instrument for all case studies. The participants of the interviews were selected via a purposeful sampling procedure. The research targeted at participants who are able to provide rich information about the particular project. The participants cover a wide range of stakeholders of PPPs. The detailed background information of all case studies participants is shown in Table 4.10. It is notable that a limited number of interviewees were selected for this research. This is because of the initiative to select experts being familiar with the particular project and capable of providing comments on the organisation and processes of the project. The researcher obtained the information about potential participants by firstly reviewing relevant documents where organisations involved in a particular project were clearly stated. The researcher then approached the respective organisations and asked for contacts of people who were either involved in the case study project or were familiar with the
development and execution of the project. Some participants were referred to by previous interviewees and they became the interview participants accordingly.

The participants were approached via e-mails and telephone calls. Apart from the focus group interview conducted for the Ararat Prison project with seven public sector participants, all interviews utilised an individual face-to-face technique, which allows the researcher to obtain in-depth answers from the participants and probe deeper on the questions deemed important to understand the processes and arrangements. The focus group lasted about one and a half hour and all other face-to-face interviews took 45 minutes to one hour. Semi-structured questionnaires were used to solicit reliable and comparable qualitative data whilst allowing a high degree of flexibility during the interviews.

Due to the different knowledge acquired prior to interviews among various cases, the interview questions presented to the participants in different cases vary. The interview questions and discussion areas used for the case studies are shown in Appendix A2. The essential themes explored in the interviews across cases are same, including:

- Key facets of the PPP transaction including contractual structure, procurement processes, risk allocation strategy, and/or payment mechanism;
- Main challenges encountered in the development, procurement and/or execution of the project;
- Initiatives taken to address the challenges emerged and their effectiveness; and
- Additional strategies and means to facilitate the implementation of PPPs
<table>
<thead>
<tr>
<th>Cases studies</th>
<th>Interviewee (code)</th>
<th>Main role of the organisation in PPP</th>
<th>Designation</th>
<th>Years of experience with working and research in PPPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>AsiaWorld-Expo</td>
<td>AR1</td>
<td>Venue operation and management</td>
<td>Executive</td>
<td>More than 15 years</td>
</tr>
<tr>
<td></td>
<td>AR2</td>
<td>Venue operation and management</td>
<td>Senior manager</td>
<td>About 10 years</td>
</tr>
<tr>
<td></td>
<td>AR3</td>
<td>Contractor</td>
<td>Engineer</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>AA1</td>
<td>Academic research</td>
<td>Professor</td>
<td>More than 15 years</td>
</tr>
<tr>
<td></td>
<td>AA2</td>
<td>Academic research</td>
<td>Post-doctoral researcher</td>
<td>About 5 years</td>
</tr>
<tr>
<td></td>
<td>AA3</td>
<td>Academic research</td>
<td>Associate professor</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>Vector Arena</td>
<td>VP1</td>
<td>Public procuring authority</td>
<td>Procurement manager</td>
<td>No direct PPP experience, but familiar with the project</td>
</tr>
<tr>
<td></td>
<td>VP2</td>
<td>Public procuring authority</td>
<td>Procurement manager</td>
<td>No direct PPP experience, but familiar with the project</td>
</tr>
<tr>
<td></td>
<td>VP3</td>
<td>Central advising authority</td>
<td>Executive</td>
<td>More than 20 years</td>
</tr>
<tr>
<td></td>
<td>VP4</td>
<td>Central coordinating authority</td>
<td>Senior manager</td>
<td>About 10 years</td>
</tr>
<tr>
<td></td>
<td>VR1</td>
<td>Venue operation and management</td>
<td>Executive</td>
<td>More than 15 years</td>
</tr>
<tr>
<td></td>
<td>VR2</td>
<td>Contractor</td>
<td>Executive</td>
<td>More than 15 years</td>
</tr>
<tr>
<td></td>
<td>VR3</td>
<td>Contractor</td>
<td>Engineer</td>
<td>About 5 years</td>
</tr>
<tr>
<td>Ararat Prison</td>
<td>AS1</td>
<td>State coordinating authority</td>
<td>Policy advisor</td>
<td>More than 5 years</td>
</tr>
<tr>
<td></td>
<td>AP1-AP7</td>
<td>Public agency</td>
<td>Policy analysts</td>
<td>Varies among participants</td>
</tr>
<tr>
<td></td>
<td>AC1</td>
<td>Contractor</td>
<td>Executive</td>
<td>More than 10 years</td>
</tr>
<tr>
<td></td>
<td>AF1</td>
<td>Facility manager</td>
<td>Senior manager</td>
<td>More than 10 years</td>
</tr>
<tr>
<td>Location</td>
<td>Role</td>
<td>Experience or Position</td>
<td></td>
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<tr>
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<td>----------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiri Prison</td>
<td>WT1 Treasury Policy advisor</td>
<td>About 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP1 Public agency Policy analyst</td>
<td>More than 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WC1 Contractor Senior manager</td>
<td>More than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WC2 Contractor Manager</td>
<td>No direct PPP experience, but very familiar with New Zealand’s PPP policies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WA1 Advisor Senior manager</td>
<td>More than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WA2 Advisor Executive</td>
<td>More than 15 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WA3 Advisor Senior manager</td>
<td>More than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WA4 Advisor Partner</td>
<td>More than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partnerships</td>
<td>PS1 State coordinating party Policy advisor</td>
<td>Less than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria in Schools</td>
<td>PP1 Public agency Contract manager</td>
<td>No direct PPP experience, but familiar with public sector procurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PP2 Public agency Policy advisor</td>
<td>More than 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC1 Contractor Senior manager</td>
<td>More than 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PF1 Facility manager Senior manager</td>
<td>More than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hobsonville Schools</td>
<td>HT1 Treasury Policy advisor</td>
<td>More than 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HP1 Public agency Policy analyst</td>
<td>No direct PPP experience, but familiar with New Zealand’s PPP policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HC1 Contractor Senior manager</td>
<td>More than 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HC2 Contractor Senior engineer</td>
<td>No direct PPP experience, but familiar with New Zealand’s PPP policy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HA1 Advisor Senior manager</td>
<td>More than 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HA2 Advisor Associate</td>
<td>About 5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HE1 Equity provider Executive</td>
<td>More than 10 years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.5.5 Subject Matter Experts validation

Validation is an important step to ensure the quality of the research findings. After synthesising the results from industry-wide interviews and multiple case studies, best practice guidelines for New Zealand to use PPPs are derived with specific recommendations on the exhibition and event venue, prison and school sectors. The guidelines and the specific recommendations are then subject to research validation. The validation exercise in this research adopted a Subject Matter Experts method using which the experts in the field of PPPs are asked to give their opinions on the research outcomes to verify the research outputs and to evaluate the applicability of the procurement protocols derived from this research.

This research followed a similar validation procedure conducted by Yeung (2007) for his PhD thesis. Using the similar process, a structured questionnaire survey was administered to each of the SMEs to test the quality of the best practice guidelines developed based on this research. The questionnaire presented to the experts is shown in Appendix A3. The questionnaire contains the research objectives, the best practice guidelines developed and the criteria for validation. The criteria cover six areas: appropriateness, objectivity, replicability, practicability, reliability and suitability. The participants were asked to rate the six aspects in accordance with a Likert scale (1-5). A score more than “3” represents “satisfactory” result for that aspect.

Three main criteria were used to select the participants for the research validation exercise. First, the participants must have extensive experience in relation to PPPs, either as a practitioner or an academic. Second, the participants should be very familiar with New Zealand’s policy directions in relation to the application of PPPs. Third, the participants for validation must not be involved in the development of the best practice guidelines. (e.g. interviews and case studies). Table 4.11 presents an overview of the characteristics of the selected participants. The results of the validation exercise will be presented in Section 9.8.
Table 4.11 Characteristics of the participants of validation exercise

<table>
<thead>
<tr>
<th>No.</th>
<th>Position</th>
<th>Type of Organisation</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manager</td>
<td>Consultancy firm</td>
<td>Overseas PPP experience</td>
</tr>
<tr>
<td>2</td>
<td>Senior manager</td>
<td>Consultancy firm</td>
<td>Overseas PPP experience and be involved in current New Zealand PPPs</td>
</tr>
<tr>
<td>3</td>
<td>Researcher</td>
<td>University</td>
<td>Overseas PPP experience at the private sector side</td>
</tr>
<tr>
<td>4</td>
<td>Researcher</td>
<td>University</td>
<td>Active research in procurement systems in New Zealand</td>
</tr>
<tr>
<td>5</td>
<td>Manager</td>
<td>Construction firm</td>
<td>Overseas PPP experience</td>
</tr>
</tbody>
</table>

4.6 Data Analysis

This study adopted a qualitative data analysis approach to analyse the qualitative data. A number of researchers (Denzin and Lincoln, 2005, Kalof and Dan, 2008, Ruane, 2005) maintained that compared to quantitative data analysis in which a well-defined set of statistical methods are adopted, analysis of qualitative data tends to be less rigid as it usually embraces synthesis of text. Miles and Huberman (1994), Gephart (2004) and Liamputtong and Ezzy (2005) argued that qualitative data analysis starts at the early research design stage, as the data are being collected. Preliminary data analysis of documents and relevant literature assists with shaping the direction of the remaining data collection. Hence, the qualitative data analysis and data collection form an iterative and cyclical process, as suggested by Miles and Huberman (1994). Among a range of qualitative data analysis techniques, such as content analysis, discourse analysis and thematic analysis, this study adopted thematic analysis as it allows factors to emerge inductively from identifiable themes and patterns from the qualitative data (Liamputtong and Ezzy, 2005, Frankfort-Nachmias and Nachmias, 2000).

In this research, the qualitative data is mainly displayed in the form of text generated from interviews, document analysis and fieldtrip notes. In particular, the interviews were audio-recorded and transcribed. A sample of interview transcripts is provided in Appendix B. The transcribed textual data, coupled with qualitative data from other sources were subjected to coding, which is the process of
organising and interpreting data (Kalof and Dan, 2008). By scanning through the transcripts and text, key emerging themes were identified and labelled with codes. Once the initial codes were developed, the next stage involved making connections and patterns within or between the identified themes and categories. Mapping the links between all codes helps to ensure that each one is elaborated and delineated. Throughout the coding process, the researcher kept a running log of how the codes were developed, used and linked.

The qualitative data analysis of this research was aided by computer software package NVivo 9, developed by QSL International. NVivo allows the researcher to manage and analyse qualitative data. It also keeps the insights and perspectives on the data without undermining the richness of data. The use of the software assisted the development of themes and categories and the comparative analysis of text codes under the same category. The identification of themes followed a progressive sequence.

The first few interviews were firstly subjected to preliminary analysis, coming up with emerging themes and categories which were then incorporated into a subsequent coding process. The challenges and suggested solutions of using PPPs were identified and corroborated on a gradual basis. Through submitting a “query”, such as “business case development”, similar comments and quotations from participants can be arrayed and synthesised. Some of the important and representative comments and quotations were extracted to support the results, which are presented in research results chapters.

4.7 Reliability and Validity

As pointed out by a variety of researchers (Fellows and Liu, 2008, Blaikie, 2000, Ruane, 2005, Bloomberg and Volpe, 2008), it is important to ensure the validity and reliability of the research design to increase the confidence of research findings. To be specific, four main aspects of the validity and reliability issues were considered relevant to this study, as identified by previous researchers such as Yin (2003), Denzin and Lincoln (2005) and Kalof and Dan (2008):

- Construct validity: establishing correct operational measures for the concepts being studied
• Internal validity: establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships

• External validity: establishing the domain to which a study’s findings can be generalised

• Reliability: demonstrating that the operation of a study – such as the data collection procedures – can be repeated, with the same results.

These four aspects were considered in designing the research and a set of tactics have been taken to address the respective concerns. This study attempted to ensure the construct validity by using triangulation, referring to a combination of data collection techniques and multiple sources of evidence, including interviews, document analysis and field notes taken based on direct observation. In addition, by requesting the participants to review the transcripts and research reports, the construct validity can be further warranted.

The internal validity of this research was addressed via a pattern matching logic, which is one of the most desirable strategies in qualitative data analysis, to compare the empirically-based findings with predicted patterns gained from literature review (Yin, 2003). If empirical findings coincide with the predicted patterns, the internal validity of the results can be strengthened.

With regard to the issue with external validity, the tactic adopted in this research was the use of multiple-case design. Given the replication logic underlying multiple case studies, the analytical generalisability of the research results can be enhanced.

This research tackled the concern with reliability by establishing and following operational interview protocols and case study protocols. Through clearly documenting the interview and case study purposes, fieldtrip details, data collection procedures, interview questions and responses, the reliability of the results can be ensured. It is notable that the validation exercise undertaken with subject matter experts helped to enhance the reliability and validity of the research.
4.8 Ethical Considerations

Ethical issues need to be considered in this research due to the involvement of human beings during the data collection process (Kalof and Dan, 2008, Fellows and Liu, 2008, Bechhofer et al., 2000). According to the Nuremberg Code, voluntary consent need to be obtained before collecting data from human participants in order to avoid all possible harm to them (International Sociological Association, 2001).

The researcher addressed the ethical principle regarding informed consent by presenting the Participant Information Sheet (PIS) and Consent Form (CF) to the prospective participants. In the PIS and CF, the objectives and data collection protocols are clearly specified. They give the participants a thorough and clear understanding of the nature of the research and the potential benefits and risks of participation. In particular, a special suite of PIS and CF were prepared and presented to the Chief Executive of the participants’ organisations to obtain their formal consent, by which means the potential threats to the participants’ employment status arising from the participation in this research can be avoided.

Due to the use of interview methods, it is impossible to keep participants completely anonymous and maintain confidentiality. The researcher attempted to tackle the concern about the confidentiality by ensuring that the participants’ personal information will not be presented in any form of publications base on the results derived from this research.

The ethics approval for this research has been obtained from the University of Auckland Human Participants Ethics Committee in 2009 for a period of three years. The information regarding the ethics application and relevant materials are presented in Appendix C.
4.9 Conclusion

This chapter presents an overview of the research process, the rationale for the selection of research methodology and the main research methods used to generate the research results. The concerns in relation to reliability and validity and ethical considerations are also discussed. The next chapter presents the research results derived from industry-wide interviews with New Zealand’s senior practitioners. This is conducted pursuant to Objective 2 and Objective 3.
Chapter 5 Drivers and Critical Factors for Using PPPs in New Zealand

5.1 Introduction

This chapter reports on the research results derived from industry-wide interviews undertaken with senior practitioners in New Zealand. The interview results are supplemented and confirmed by the attendees’ comments and opinions of industry workshops/seminars that the researcher attended during the PhD study. Essentially, this chapter is in pursuance of Objective 2 and Objective 3, as stated in previous section 1.3:

- Identify the drivers for New Zealand to adopt PPPs for the provision of public assets and associated services
- Investigate the critical factors that impact on the successful implementation of PPPs in New Zealand

The chapter starts with describing the interview protocol employed to conduct the twenty-two industry-wide interviews, with an emphasis on the profile of the participants. It then presents the research results and compares with previous research findings based on PPP studies undertaken in other jurisdictions. The results presented in this chapter are also compared with the conclusions made in Chapter 3, which are mainly derived from document analysis of New Zealand’s past practices in relation to PPPs and current policy context for implementing PPPs.

5.2 Description of the Interview Approach

Interviewing senior practitioners with extensive overseas experience in running PPPs and profound understanding of the New Zealand government’s intent and direction of PPP adoption is the primary instrument to investigate the prospects of using PPPs in New Zealand. The main objective of the interviews was to understand the drivers for PPP adoption, examine critical factors for implementing
PPPs, and suggest enablers to address the identified challenges and facilitate the PPP use in New Zealand. The detailed description of the interview methodology and choice of participants are elaborated in Section 4.5.3.

In order to gain a balanced view towards the PPP adoption and application in New Zealand, the stakeholders selected for participating in the research interviews include experts from both public sector and private sector side. To be specific, on the public sector side, the participants consist of senior practitioners from various procuring authorities (e.g., central government agencies, local government) and public advisory organisations (e.g., Treasury). On the private sector side, the participants are from organisations including PPP advisors, construction companies, facility management companies/operators and financiers. The diversified stakeholders selected and the roles of the participants in their organisations are shown in Table 5.1. It is notable that each participant is assigned with a code in order to present the interview results by giving direct quotations.

Table 5.1 Background of Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Role in organization</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government agencies</td>
<td>Transport: Procurement manager; Project manager; Senior engineer</td>
<td>CT1,CT2,CT3</td>
</tr>
<tr>
<td></td>
<td>Education: Policy advisor; Regional procurement manager (2)</td>
<td>CE1,CE2,CE3</td>
</tr>
<tr>
<td></td>
<td>Corrections: Project manager</td>
<td>CC1</td>
</tr>
<tr>
<td></td>
<td>Housing: Procurement manager</td>
<td>CH1</td>
</tr>
<tr>
<td>Local government</td>
<td>Property group manager; procurement manager</td>
<td>L1,L2</td>
</tr>
<tr>
<td>Other procuring authority</td>
<td>Executive</td>
<td>O1</td>
</tr>
<tr>
<td>Treasury</td>
<td>Senior policy advisor (2)</td>
<td>T1,T2</td>
</tr>
<tr>
<td>Public advisory body</td>
<td>Executive</td>
<td>P1</td>
</tr>
<tr>
<td>Advisors (commercial/legal)</td>
<td>Director; Executive Director; Partner (2)</td>
<td>A1,A2,A3,A4</td>
</tr>
<tr>
<td>Construction contractor</td>
<td>Executive; Division Executive</td>
<td>C1,C2</td>
</tr>
<tr>
<td>Operator/Facility Manager</td>
<td>Executive</td>
<td>OF1</td>
</tr>
<tr>
<td>Financier</td>
<td>Executive director</td>
<td>F1</td>
</tr>
</tbody>
</table>
5.3 Drivers for Using PPPs in New Zealand

Through conducting twenty-two industry-wide interviews in New Zealand, six drivers were identified as the reasons for the New Zealand government to enter into PPPs, which are listed in Table 5.2 and described in this section.

Table 5.2 Drivers for PPP adoption in New Zealand

<table>
<thead>
<tr>
<th>No.</th>
<th>Drivers identified</th>
<th>Number of participants who identified the driver (of 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Whole-of-life cost savings</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Driver to change across the public sector</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Acceleration of infrastructure provision</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>Better risk allocation</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>Private sector innovation</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>Improved quality of services</td>
<td>10</td>
</tr>
</tbody>
</table>

5.3.1 Whole-of-life cost savings

Nineteen participants indicated that PPPs are favoured by the New Zealand government as they offer whole-of-life and integrated solutions to the provision of infrastructure assets and services. As an integrated model, PPPs provide opportunities to synthesise design, construction and operational components to reach an optimum delivery solution. As commented by Participant A3, “PPPs create a module of linkage between the design and build, and how it can be operated.” He further used a hospital project as an example to illustrate his point:

Better service provision can only happen if you have a process involving medical staff in the design and development processes so they (the project team) can take into account how they operate, what shift patterns they use and how the hospital flows work. You have a more integrated process if you include those participants. If you design a traditional hospital, you are not necessarily getting that because you are only thinking about getting it built and running.

(A3)
Given the integration of various service components in a PPP, all participants highlighted the possibilities of achieving whole-of-life cost savings under PPPs, although the extent to which the savings can be made among different sectors vary. Generally speaking, the larger the operation component is included, the greater chance that PPPs can offer whole-of-life cost savings. Participants from social infrastructure sectors (CE1 and CC1) were optimistic about PPPs obtaining whole-of-life cost savings. For example, Participant CE1 asserted, “Running schools is not all about cleaning. It involves systematic facilities management. PPP strategies allow the private sector to design, build and operate the public facilities as a whole.” (CE1)

However, participants from the transport sector held slightly different opinions. Participant CT1 and CT3 maintained that the whole-of-life cost savings are not apparent in roading projects as “the operating costs are relatively low compared to capital costs. Running roads are not as complicated as managing big public facilities”. They admitted that their opinions might have limitations and could not be generalised to other sectors.

5.3.2 Driver to change across the public sector

Sixteen participants pointed out that an important reason for the New Zealand government to introduce PPPs is to improve the effectiveness and efficiency in the delivery of public assets and services across public agencies. According to Participant A2, A3, CC1 and T2, the current procurement processes in New Zealand have not achieved the optimum outcomes as expected. A2 pointed out that most public agencies usually have a default procurement method, and apply it to every type of project without necessarily considering the effectiveness and suitability of the method. “PPPs are a response to what’s not happening under traditional procurement (T2)” T2 gave the reason that why the use of PPPs may contribute to improved public sector procurement practices:

Under a PPP, the private sector is incentivised to provide things according to the KPIs (Key Performance Indicator) structure because otherwise they are not getting paid. Also the third
party funders (financiers) take a fairly negative view on the fact that they might not get paid. So
the incentives that are on the private sector side are more enhanced via a PPP. It is a better
procurement process for the public sector to start understanding how they are going to ask for
different things from the market.

P1 complimented, “The financier has a much higher requirement (for scrutiny) than the contractors
themselves. Due diligence makes the assessment process reliable.” PPPs could bring rigorous scrutiny
by financiers to public assets. Participant CC1 confirmed the role of PPPs in the enhancement of
public sector procurement exercise as a catalyst for change across the public sector. Through the
public and private sector working collectively to develop the best solution, PPPs may give the
government insights on where they can improve in the future. T2 summarised, “We would ultimately
like to get to the position where the traditional procurement can achieve.”

5.3.3 Acceleration of infrastructure provision

Sixteen participants indicated that accelerating infrastructure provision by utilising private project
financing techniques and instruments is a principal reason for adopting PPPs. Participant CE1 and
CE2 argued, “In our sector, we are expecting a shortage of project funding from the government. We
are willing to take advantage of private financing”. Similarly, participants from the transport sector
(CT1, CT2) responded: “Under the pay-go system, the user charge wouldn’t cover the projected
investment in roading. Private financing is a possible funding option (CT2).” The roundtable
attendees asserted that the economic downturn of 2008 to date made it difficult to raise additional
taxes/rates to fund infrastructure without impacting on any economic recovery. In addition, the recent
earthquakes in Christchurch exacerbated the government’s fiscal stringent in funding infrastructure
projects. The private sector offered the financial ability to invest in needed infrastructure without
detrimental effects. Indeed, arguably PPP currently offers economic stimulus for the general economy
using funds from within the economy itself. Thus, the use of private finance appeared to be a
reasonable option to facilitate infrastructure development.
5.3.4 Better risk allocation

Thirteen participants agreed that achieving optimal risk allocation is a strong incentive for utilising PPPs in New Zealand: “In general, the private sector is more efficient in the procurement of assets and providing public services. It is beneficial for the government to share some risks with a private partner (CT1).” Participant CT3 discussed the possibilities of achieving better risk allocation using a PPP in the roading sector: “We can just transfer a lot (risks) through PPPs. They (the private sector) can control a lot more through the operation phase which is difficult for us at the moment with shorter-term operating roads.” The merit of achieving optimal risk allocation via PPP methods was also confirmed as a key driver in the industry workshops/seminars. In particular, the government appears keen to transfer the operation and maintenance risks to the private sector to capture the private sector’s expertise.

5.3.5 Private sector innovation

Eleven participants highlighted the ability of PPPs to achieve innovation throughout the project life cycle. Participant A1 believed that via a PPP, a robust procurement process with different perspectives will drive innovation in service provision, as well as the quality of infrastructure. He elaborated on the reasons for the alleged benefit of PPPs: “as long as you’ve got a combination of designers, builders, operators, facility managers and bankers sitting at the table testing a proposition from all different angles, it will drive innovation. (A1)” In addition, the use of output specification, which is the distinguishing feature of PPPs, is likely to give rise to innovative solutions, as suggested by Participant F1.

Among the possible areas in gaining innovations via involving the private sector in the operation of public services, four participants (T1, P1, CE1 and CE3) mentioned the advantage of PPPs to access additional revenue sources, and thus to increase the cost effectiveness of the infrastructure provision. “The long term nature of the contract means that they have an opportunity to earn revenues that can
be used to offset project costs (P1).” CE3 used a hypothetical school project as an example to illustrate his point: The private sector might build a recreational centre open to the public to generate more revenue, and at the same time, the facilities are more likely to be fully utilised and the adjacent communities also benefit.

Despite the likely innovations brought by the use of PPPs, five participants (F1, A1, A3, T2, and CH1) acknowledged that the degree to which innovations can be gained through PPPs differ among different sectors. As argued by Participant F1, “the more service component (embraced by the PPP model), the more opportunity there is to delivery that step change (innovations).” For example, as for the Wiri Prison project, the government is more concerned with the continued innovations in the prison operation as the correctional services are incorporated in the intended PPP model (A1). However, in the roading sector, as argued by Participant CT3, not much additional value can be seen from traffic operation due to its relative simplicity. The innovations gained through the adoption of PPPs are more likely to be manifested in the long-term maintenance component (Victorian Auditor-General's Office, 2007). Participant A1 and T2 generalised that based on their observation, the New Zealand government is less convinced in terms of achieving innovations in the design and build component, whereas the operation and maintenance aspects are the main focus.

5.3.6 Improved quality of services

Ten participants were of the view that in New Zealand, the provision of public assets and services by the private sector serves as an effective way of soliciting competitive private consortia which have experience in maintaining and operating public projects. Normally, upon the completion of the building phase, a professional management team takes over the responsibilities for running the projects. Payment for services helps to make sure that the private sector partner is incentivised to build the assets customised to services in a way facilitating the long-term operation (Victorian Auditor-General's Office, 2010). Participant A2, P1 and T1 reinforced the potential for a school project to benefit from PPPs arising from improved quality of services: “With someone else (the
private sector partner) to look after the maintenance services, the board can focus on getting better educational outcomes. (A2)” The industry workshops/seminars participants reported that receiving a better service is essential for the value for money criteria which is a major determinant factor leading to an award of a PPP contract to a private consortium.

5.4 Critical Factors

This study examined the critical factors for implementing PPPs in New Zealand. Fourteen critical factors were identified, which are listed in Table 5.3 and explained in this section.

Table 5.3 Identified critical factors influencing the use of PPPs in New Zealand

<table>
<thead>
<tr>
<th>No</th>
<th>Critical factors identified</th>
<th>Number of participants who identified the factor (of 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Size of economy</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Procurement process</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>Political champion</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Public sector capacity</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>Role of the National Infrastructure Unit (NIU)</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>Public sector leadership</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>Availability of policy and guideline documents</td>
<td>18</td>
</tr>
<tr>
<td>8</td>
<td>Governance structure</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>Business case development</td>
<td>16</td>
</tr>
<tr>
<td>10</td>
<td>Risk allocation</td>
<td>16</td>
</tr>
<tr>
<td>11</td>
<td>Public sector’s culture and approach to procurement</td>
<td>15</td>
</tr>
<tr>
<td>12</td>
<td>Private sector market depth and capability</td>
<td>13</td>
</tr>
<tr>
<td>13</td>
<td>Capital market depth</td>
<td>12</td>
</tr>
<tr>
<td>14</td>
<td>Legislative and regulatory constraints</td>
<td>8</td>
</tr>
</tbody>
</table>

5.4.1 Size of economy

In New Zealand, the problems in relation to the small size of economy are emphasized by all the participants. In particular, the problems are reflected in three aspects: small size of project, lack of
pipelines and insufficient infrastructure demand. The recent market shocks caused by Christchurch
Earthquakes may also have effects on the government’s decisions to proceed with PPPs.

A significant constraint with New Zealand PPPs is that “a project which is considered as big in most parts of the world would be considered small (F1)” The attractiveness of the market for international players in many cases would be low because it is expensive for the private companies to “set up processes and procedures if it is a small value job. They are just not going to invest (CH1).” The participants from local government (L1, L2) reinforced the issue with the size of the projects. “We have thousands of small size maintenance and upgrading projects but they are just not big enough to sustain PPPs. (L1)” “There haven’t been any major projects that would warrant a PPP (L2).” The small size of capital projects in New Zealand exacerbate the effects of high bid costs and financing costs, which are the common features of PPPs, on the outcomes of the project: “it threaten value for money which is the reason why government should go down this route in the first place” as suggested by Participant L1. CC1 admitted, “We are going to have to be more efficient in the operating model and construction model to negate the impact of the financing costs. (CC1)”

The participants stressed that lacking of project pipeline and deal flow may reduce the market’s appetites to participate in New Zealand PPPs. A3 claimed, “All of these issues come back to pipeline. How well the government can flag the pipeline of projects [is very important]. That is always difficult because the lack of visibility and uncertainty over time. (A3)” C1 also highlighted the issue, “The critical thing is for the government to establish a pipeline of opportunities. (C1)”

All participants agreed that the infrastructure demand in New Zealand is not sufficient to justify an end-user pay mechanism, which to some degree, makes it difficult for economic infrastructure sectors to use PPPs. C1, C2, A4 and CT3 reported that market risk is not acceptable for the private sector in New Zealand because for example, “the traffic volume will not generate revenue streams. If the quality of revenue stream is questionable, you won’t get a PPP. (C1)” A4 added his opinions to the issue: “I suspect it won’t be full demand risk assumed by the private sector. (A4)” CT2 claimed that
the current regulation towards the design of transport network might partly be responsible for the shortage of traffic demand: “When there is a toll road, there will be an alternative [route] because the intention is not trying to generate the traffic. It is used to relieve the traffic congestion. (CT2)"

The recent market shock arising from Christchurch Earthquake captures the participants’ attention owing to the likely impacts on the government’s investment portfolio and the distribution of public finance. T2 maintained that the government has not changed its direction on infrastructure spending to date, but she admitted, “It is still a possibility that it would happen. The primary decision is whether to spend on infrastructure or not. PPPs are just a procurement option once the spending decision has been made. (T2)” The market shock does not directly impact the implementation of PPPs, but it could affect the initial decision spending on infrastructure assets.

### 5.4.2 Procurement process

Given the small market and the complexity of PPP transactions, all participants stressed that New Zealand needs to have a streamlined and robust procurement process in order to sustain a PPP programme. Before bringing projects to the market, the public sector should be clear about the objectives and client’s requirement. During this stage, the agencies need to focus on developing output specification and service specifications, which set specific targets to achieve in performance regimes from a long-term perspective. In addition, the client’s requirement should build incentive mechanisms to allow the private sector partner to innovate over time. The end users or the relevant stakeholders should to be well consulted in the preparation of the relevant documents.

The participants (A1, A2, P1 and F1) suggested that short-listing to two or three bidders would be viable for New Zealand PPPs. Since the duration of tendering process has great impact on bid costs, it is beneficial to get the preferred bidder earlier without creating a non-competitive situation. In addition, as indicated by L1, the level of details required during the procurement is partly responsible for the high bid costs. The requirement for the details of submissions should vary depending on the
size of project. For smaller projects like schools, the public sector should request less information or lower level of details of drawings for the bid submission, although the submissions still need to be detailed enough to evaluate and select the preferred bidder. In addition, the government should better not ask for bids with committed finance. Instead, other forms of guarantee, such as Indicative Term Sheet, are acceptable because normally the banks take much longer to undertake the due diligence before issuing committed finance compared to other forms of guarantee, which may greatly delay the process. An interactive tendering process is desirable in New Zealand. Through an effective dialogue, bidders do not waste money on developing unnecessary solutions. However, propriety issues arise if the contacts are frequent. It is therefore of equal importance to introduce robust propriety management protocols to protect the bidders’ intellectual property during the bidding phase.

5.4.3 Political champion

Twenty participants maintained that a positive political attitude towards the involvement of the private sector in the provision of infrastructure is essential to sustain a PPP programme. Although the current National Government has clearly signalled the support for PPPs, the relatively short election cycle and lack of political champion still stand in the way of PPP development in New Zealand. “If the ministers don’t agree with us doing them, the whole program could eventually be stopped (T2).”

The participants raised three reasons accountable for the political obstacle with New Zealand PPPs. A lack of political champion within the public sector affects the continuity of PPP project, creating uncertainties about the viability of PPPs in the long run. CH1 argued:

For example, I set up a PPP today and it is going okay. Then I leave in five years’ time. Who is going to be the champion of your organization? ... The real concern is if you engage with a private sector to help in delivering PPPs, will that organization still be around and capable of delivery that in 20 years’ time? (CH1)
The reason for the lack of support might be the scarce interaction between the business sector and public sector under the Labour Government for nine years (from 1999 to 2008), as suggested by C1. PPPs have gained less support at local government level. “The problem for them is they don’t want to raise the rates. They want to retain the control of all their infrastructure assets and they don’t believe pay the private sector for provision of services (A1)”

Short political time scale (three-year for central government and four-year for local government) poses considerable uncertainty to the industry around New Zealand’s PPP market as the labour Party seems to be objective to PPPs from some feedbacks so far (A4). A1 pointed out, “Decisions in infrastructure take long time to make. You can have change of politicians during the decision making process. That creates some problems. I think PPPs are even more susceptible because there is a lack of understanding in New Zealand. (A1)” CC1 also expressed the concern:

During the market sounding [of the pilot PPP projects], the market did reflect a level of nervousness that there had been history [in New Zealand] that due to change of political power, contracting arrangement changed as a result. So that is a key consideration (CC1).

The opposition from the communities gives the politicians strong pressure to proceed with PPPs. Due to the lack of understanding, the public tend to object to PPPs as they suspect PPPs are another type of privatisation and the public will lose control of public services. For example, the Board of Trustees of schools plays an important role throughout the construction and operating phase of school properties. Participant CE2 and CE3 claimed, “Under a PPP (scheme), the Board’s responsibility will be replaced by the private sector, and this (will) affect the interests of the relevant communities such as the parents and the teachers (CE2, CE3)” A particular issue with New Zealanders is “they don’t expect to pay for the infrastructure. They think they are just magically developed. So it is hard to use the end-user pay mechanism here (A1).” The public opposition can affect the political decisions with PPPs which may slow down the wider adoption with PPPs.
5.4.4 Public sector capacity

The participants maintained that the capability of the public sector to structure, run and manage PPPs is as an important enabler to the success of PPP projects. Similar to other countries when PPPs were first introduced, the public sector in New Zealand does not have enough expertise to develop strong PPP programmes. Sixteen participants acknowledged that there seems to be a general and rough understanding of PPPs in New Zealand public sector bodies (A1, A2, and A4). However, the understanding is not comprehensive with some inaccurate perceptions. A3 explained in details:

There are a number of people who are around public sector support PPPs for wrong reasons. They think it is free private sector money. I’ve got no money and I am not going to get from the budget but I want this to be built. Therefore I consider PPPs. (A3)

The misunderstanding might lead to unreasonable decision making towards using PPPs where value for money cannot be guaranteed. Participant A1 reported that some people in public sector perceive PPPs simply equal to Australian toll road concession model and they consider PPPs as a rigid contractual scheme. They do not fully recognise the variety of PPP models, especially the availability-based payment model. So they refuse the application of PPPs without undertaking a thorough assessment, which may lose the opportunity to use PPPs. C1 expressed his concern over the bid evaluation by the public sector: “They have the evaluation criteria, but how do you interpret that? Who is interpreting that? It is the interpretation of the criteria which is the key (C1)”

Lacking of expertise is another factor affecting the public sector’s capability. T2 pointed out “in terms of providing output specification, it is very different with they (the public sector) have been used to. They are happy with the concept of it, but find it is very hard to do it in practice. (T2)” Apart from the challenge with specifying outcomes through setting up a series of KPIs, the ability to maintain long-term contract management is problematic.
5.4.5 Role of National Infrastructure Unit (NIU)

In New Zealand, the NIU acts as a central “PPP cell” to create a centre of excellence. Twenty participants highlighted the important role of the NIU in assisting with structuring PPPs and promoting best practice frameworks. In addition to establishing PPP-related policies and guidelines, the NIU encourages the public sector to focus on the business case development rather than rushing to any procurement options. A3 stated that the NIU places great emphasis on investigating the value from pursuing PPPs such as the room for innovation during operational phase and “it is sending the right message. (A3)”

Apart from providing advice on general infrastructure development strategy, the experts from the NIU are intensively involved in the PPP procurement process to assist with the agencies. CC1 emphasized the significant role of the NIU in the development of PPPs: “They are not just advising. They are embedded in the core project team. They are doing project-related tasks to ensure the successful application of the project. (CC1)” A1 commented on the role of NIU so far, “Some frustration for the private sector is that the NIU hasn’t charged out the market and boarded a lot of projects. It is trying to get a good level of experience and expertise in house so it really helps the agencies. (A1)”

5.4.6 Public sector leadership

Enhanced public sector leadership is instrumental to the smooth application of PPPs in New Zealand, as suggested by eighteen participants. Firstly, the public sector should be consistent with their commitment. CC1 suggested, “We need to stick to what we have said, particularly with the early projects. We promise something in market sounding. The commitments need to be followed through. If we start waving, the markets get nervous. (CC1)” T2 also stressed the importance of government’s reputation in terms of maintaining credibility around publicising project pipeline:

We indicate to people at the time we are going to detailed business case. That is prior to being approved as PPPs, but the market knows that we are undertaking a serious PPP investigation as
opposed to a preliminary investigation. So we are careful with what we actually publicise so people don’t have to run around. (T2)

The strong role of the NIU lies at the heart in achieving long-sight and central public leadership. As suggested by A2 and CT1, the whole infrastructure investment portfolio should be planned at a programme level to bring agencies, public sector bodies, and procuring authorities together and jointly procure assets. In order to achieve the programme-level planning, drafting standardised policy, guideline and contract documents is an important measure. The standardised documents, coupled with a consistent approach are central to make the agencies comfortable with the type of project and the process that needs to be in place. Also, the market will get a clear understanding about the government’s position, so “they don’t have to rethink everything and they can utilise the knowledge from the UK, Australia or Canada. (CC1)” With regard to the pipeline issue, under the pre-condition that the government credibility is not threatened, the NIU needs to give the market “as much as indications they can at that time of where we are considering things (T2)” and let the private players know “what they are working on and if they are getting more in the market (T2)”

It is also important to ensure that the role the NIU plays is appropriate and does not exceed the “threshold”. A1 emphasized that the NIU should not take over the procurement and replace the agencies’ leading role throughout the process as the NIU experts are not specialized in the service discipline. Instead, they provide commercial advice to the agencies. Due to the limited human resources in NIU, they should not be involved in the detailed drafting of the bid requirements. Their responsibilities are more related to review, revise and edit the detailed draft to ensure the requirements are consistent with the initial intent and represent good practices.

5.4.7 Availability of policy and guideline documents

Since the NIU was established, a range of policy and guideline documents associated with PPPs have been released. According to eighteen participants, the documents provide both the public and private
sector practical guidance on the procurement process of PPPs New Zealand and offer the market a consistent approach regarding the government’s position in various commercial principles. Largely built on established PPP policies and guidance overseas (primarily the UK and Australia), the New Zealand framework incorporates the international best practices. As highlighted by T2, “We are using precedents from international jurisdictions but we also have intentionally decided to deviate in some circumstances. (T2)”

As stated by the participants, the Guidance is a good first tier document although it is fairly high level and not detailed enough to guide people with the practical procurement. The participants held positive view towards the Standard Contract. As commented by CC1,

    New Zealand documentation is very clear and concise. And in vertical, it is very fair in the way which applies the obligations on the Crown and the contract. It is structured understanding the basic positions to be reached. It is the right balance. [The market] knows the basic substance is there. Seeing that substantive development position gives the comfort they need. (CC1)

In terms of the NIP, C1 suggests that it assists with the understanding of the possible project pipeline by signalling the government infrastructure strategic direction and the future investment portfolio, which gives the industry more confidence with the sustainability of New Zealand market.

**5.4.8 Governance structure**

Sixteen participants highlighted the issue with the governance structure. C2 contended that PPPs would be difficult where there are many local boards involved in the decision making and procurement process such as the current practices with education sector. A1 also argued “too many people are running around (A1)” and he cited the healthcare sector as an example to illustrate the problem. “We’ve got multiple DHBs (District Health Boards). We don’t need as many DHBs as we’ve got. (A1)” He further elaborated,
…actually divesting all the management power down to the communities give them the responsibility for the provision of certain services, but it also takes away the purchasing power you have by centralizing. PPP does rely on centralized purchasing power. So the chance of getting a good deal [is limited] because you got this big opportunity disappears. (A1)

L1 pointed out that the independency of decision making at various levels of public sector bodies is not conducive to the use of PPPs. “The Treasury may be there telling the Departments what to do. But lots of expenditures are not placed by Treasury. (L1)” Apart from central government agencies, there are many other capital intense procuring authorities, such as local governments and tertiary institutions. For example, the participant from university procuring group (O1) reported on the difficulty with entering into PPPs given the special characteristics of their property services:

We are informed client. The major factor affecting all our building is (that) we operate them virtually forever. Therefore we are more concerned to ensure the buildings are built to a very high standard, both of the design and quality. Most of the builders cannot think through the university’s needs in great depth to meet our high standard of building. (O1)

Participant A2 concurred with the point and claimed that currently, the Ministry of Education is responsible for the provision of school assets. But the school boards take charge of the maintenance based on its annual maintenance fund allocated by the Ministry (A2, A3, CE2 and CE3). The fragmentation of procuring power and the independency between the decision-making authorities make it difficult to take a whole-of-life perspective towards capital asset delivery, posing constraints on the PPP adoption and potential application.

5.4.9 Business case development

Sixteen participants indicated that sound business case development is a pre-requisite to achieve success in PPPs. Parameters in relation to business case development affecting the outcomes of PPPs
include: (1) Service need analysis identification and cost-benefit analysis; (2) Procurement option analysis; and (3) Affordability analysis.

A3 highlighted the importance of the service need stage: “Focusing on the business case first, making sure you got your service need absolutely known before you start going to your solution. (A3)” He observed that many PPP cases failed overseas were not attributed to the use of PPPs. Instead, the failure was initiated from an insufficient or imprecise cost-benefit analysis in the first instance. Besides, the service should to be viable and meaningful for long-term (CH1). Otherwise there is no point pursuing PPPs.

The option analysis and the value for money assessment should be grounded in solid calculation and careful consideration. The government needs to clearly understand “why we go down this route in the first place. Does it make sense to procure in this way in terms of value for money? (L1)” A thorough sensitivity analysis should be conducted when dealing with the cost of finance because the cost variance may significantly affect the value for money outcome. In addition to the use of quantitative method such as the PSC, other qualitative factors should also be taken into account. These factors may include how the project is able to drive the change to the public sector, if PPPs can generate innovation and place competitive tension. The market test should be fully exercised once preliminary assessment justifies the use of PPPs. A3 claimed, “We need to test with the market the deals that are likely to work to make sure that there is market appetite at the scale we are going to. (A3)”

5.4.10 Risk analysis and allocation

Regarding the central issue of PPPs, risk allocation, sixteen participants suggested that the various stakeholders of PPPs should take a more realistic and reasonable approach in New Zealand PPPs. The political risk should be retained by the public sector. The ways to address political risk include promise to compensate (to a capped amount) the bidders in competition if the PPP project was cancelled due to the change of government. In addition, T2 advised that the public sector could assist
with obtaining the relating approvals and conducting site investigation. For example, “the RMA consent ing process would have been done before the project goes to market to avoid delays…We might take site investigation and make those reports available to bidders to alleviate from having to do it themselves (the private sector). (T2)”

From the private sector side, it is also essential “to be more commercial and take more risks especially the banks (L1)”. He further explained the reasons:

The whole nature of PPPs is driven either by lawyers taking control of the process or by the banks (PPPs are highly geared). In order to feel comfortable, the banks become deeply invasive into the contractual structure of the project. That combination makes it so expensive to put PPPs together. (L1)

L1 therefore suggested the banks to be less critical to examine the project because they hold a suite of documents and warranties to ensure their interests. Being too invasive will just lead the process to be more costly and time-consuming. Besides, C2 proposed that performance guarantees by the sponsors would be helpful to make the process easier.

5.4.11 Public sector's culture and approach to procurement

According to fifteen participants, the public sector culture and its approach to procurement might hinder PPPs in New Zealand. PPPs require the public sector and the builders, operators, facility managers and financiers to jointly discuss the solutions in detail before proceeding with procurement. However, as reported by A2, “[the public sector] is not comfortable with the details requested. (A2)” CC1 agreed that the public agencies are familiar with provision of assets and contracting out the services separately. It is nonetheless problematic for them to get used to the discipline of long-term asset management and coming up with operational solutions.
The current practices with respect to procurement approach within the public sector may impose constraints to the adoption of PPPs. A3 has observed that Departments get solutions ahead and start rushing towards it without having said “Do I really need this? Are there other options could be reconfiguring the output in a different way? (A3)” Without a sound business development process, the adoption of PPPs will not make sense. L1 argued that the perception of PPPs as a financing technique instead of a procurement methodology leads the value for money assessment unfair. He added, “If the assessment is made on the basis of funding and financing without including the risk transfer and the benefits of passing on responsibility, any assessment would result in not doing a PPP.”(L1)

Eleven participants indicated that there has been a cultural shift taking place within the agencies towards the practices with procurement, which is conducive to prospective PPP application. The agencies started trying to provide output specification instead of being prescriptive in some projects. For example, CT3 claimed, “We’ve looked at targets focusing on travel time rather than the actual specification of the roads. (CT3)” CH1 also maintained, “We’ve got maintenance contracts at the moment, which are performance-based contracts (CH1)”.

Besides, the Department of Corrections has contracted the Auckland Central Remand Prison to a private operator based on performance standards (CC1). The existing experiences targeting at outcomes may be applied to future PPP schemes.

More innovative procurement methodologies play an increasing role in the public sector’s procurement option pool. According to the participants (CT1, CT2, CH1, P1, and A3), integrated approaches, such as the Design and Build model, has been widely used in various sectors. Collaborative approaches, such as the alliance\(^4\) model, have been used in several major roading projects and have gained value for the ratepayers, as suggested by CT3. Likewise, the housing sector has started dealing with some multi-national companies and trying to work on a partnership basis.

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\(^4\) Alliance model refers to a collaborative procurement system, under which all parties work cooperatively in an open manner to deliver the project. Based on a target price, the parties share the risks and rewards for completing the project on time and within budget. Similar to PPPs, alliance is built on a relationship culture, encouraging openness and cooperation when seeking solutions to various issues. It also favours a less prescriptive approach (Walker and Rowlinson, 2008). However, compared with PPPs where the public sector contracts with a single entity, the SPV, different contracts are let to different parties under alliance.
A3 maintained that the more the public sector exposes to new methodologies, the broader view they will have towards procurement, which is a necessary enabler for PPPs.

5.4.12 Private sector market depth and capability

The participants agreed that a strong and competitive bid market is regarded as instrumental to the success of PPPs. However, they questioned the competency and maturity of the potential private participants in New Zealand PPP market. A3 commented,

I know there are various players around who are keen to be involved, but don’t understand them well. The complexity of the contractual model is probably the main barrier [to understand]. There is additional investment of time and money in PPPs in terms of understanding what you have signed up to. (A3)

Among the various roles of private players, thirteen participants raised concerns about the facility management market in New Zealand, both the providers and advisors. The financial advisors and sponsors are in shortage as well. In terms of construction sector, although “it is very shallow in the capability and capacity to fund PPP bids (C1)”, the construction companies are generally able to sustain the market. The participant from the housing sector (CH1) held the view that lack of maturity in the private sector inhibits the PPP adoption for social housing. “Until the private sector develops some maturity, it would be risky for us to release some of our service provision. (CH1)” He further elaborated the reason, “At the moment, our maintenance contractors don’t have the capacity to do some major upgrade work. (CH1)”

The negative attitude towards taking on risks is another factor accounting for the challenge with the bid market, especially in the construction sector. Participant C2 admitted that getting into a PPP bid is costly. “We are not interested in the ‘bidding project’. We would rather do something we are familiar with – getting the building built. (C2)” A3 explained, “there is more risk being involved in PPPs. It is
not necessarily because it is PPPs. It is because you signed up to a fixed price contract with liquidated damages provision if you don’t finish on time. (A3)"

5.4.13 Capital market depth

Twelve participants highlighted that a strong capital market and the availability of relevant financing techniques is critical to enable a PPP transaction. Especially the recent GFC since late 2008 made PPPs more dependent on the capital market as it is harder to access to capital and it is more expensive with stricter required credit standards. In New Zealand, the availability of debt and equity seems to be fine, but the capital market generally lacks of depth. In terms of the availability of debt, the banks are generally keen on the opportunities to invest. There has been a history of Australian banks operating in New Zealand. It is possible that those banks are involved in New Zealand PPPs. As suggested by A1, “there is plenty of capacity to do some fairly significant projects in New Zealand. (A1)” However, the concern is “the banks can’t support multiple bids [if committed finance is required]. Once you get to billion-dollar-plus deals, it is going to be hard for the New Zealand market. (A1)” In addition, as suggested by T2, “I think debt is always there. It depends on what you are willing to take on board for terms and conditions. (T2)” The term of the debt finance would be relatively short compared to country like the UK where debt may cover the whole term. “In New Zealand, we will probably have to have at least two refinancing during the period of transaction, (A3)” Moreover, “the cost of finance is very expensive at the moment (L1)”and “the interest rate is volatile (A1)”, further aggravating the refinancing risk facing New Zealand PPPs. As a result, a rigorous value for money assessment for debt financing needs to be conducted before any decisions to be reached. The availability of equity did not raise much concern among the participants, although they acknowledged that “equity is always going to be scarce (A3)”. Due to the small size of project, the need for equity is probably not as high as large project requires. “Equity is most interested in risk allocation and the KPIs. [Equity will be available as long as] you can get on acceptable terms for both sides. (T2)” It is therefore less of a concern currently.
Since New Zealand just initiated two PPP projects recently, the GFC does not have direct impact on New Zealand market nowadays. However, it will affect the terms and conditions to some extent. Also, the GFC affected the adoption of PPPs in the Waterview Connection project. Despite the previous investigation suggesting PPPs are viable option for the project, it finally proceeded with the Design and Build route. One of the reasons is “the time we were ready to procure the project was financial crisis time. Banks were not available to finance. (CT3)”

5.4.14 Legislative and regulatory arrangements

Enabling legislation is vital for the involvement of the private sector in the development of infrastructure and related services. In New Zealand, the current legislation generally allows the use of PPPs in the provision of public assets and services. However, eight participants mentioned that in practice, legislative and regulatory impediments still exist. A1 and CC1 argued that the designation process required by the RMA might cause possible delays to the procurement process and compromise the innovative solutions by the private sector. A1 commented on the challenge: “In New Zealand, you have to design things to a very developed design stage before you will be able to get your designation under RMA, which means you will get very little opportunity to innovate when it comes to the private sector participation. (A1)” The opinion from CC1 reiterates the problem:

Ensuring that you get the use of the site you need for the procurement you are undertaking and you can do it in a way that it doesn’t constrain the solutions that the private sector might generate. So we have to go about developing a designation process that removes the constraint as possible (CC1).
5.5 Discussion

5.5.1 Drivers for Using PPPs in New Zealand

The results from general industry-wide interviews show that the drivers for New Zealand to adopt PPPs are not much different with other countries, as identified in the existing literature. As a late starter of using PPPs, the New Zealand government’s drivers for using PPPs are different with the UK’s initial intentions with the introduction of PPPs, which were primarily about removing the government’s budgetary constraint and achieving “off-balance sheet financing” (Cheung et al., 2009). The interview results show that the drivers for New Zealand are more about gaining “efficiency” and “adding value” to public services than financing reasons. This is consistent with the current accounting treatment, under which a public asset that is financed by service payments via a PPP give rise to similar liability to the government’s balance sheet as if it was financed through government debt (National Infrastructure Unit, 2009a). The result is also in line with a similar survey conducted in Hong Kong (Chan et al., 2009). According to that study, the Hong Kong practitioners tended to rate project operational efficiency-related drivers higher than economy-related driving factors.

The New Zealand participants emphasised the whole-of-life consideration and integrated solution as a desired benefit from using PPPs. Similarly, in China and Hong Kong, the practitioners ranked “provide an integrated solution (for public infrastructure/services)” as the top reason for adopting PPPs (Chan et al., 2009). The similar results, to some extent, reflect that in current practices of public sector procurement across the world, a long-term, integrated approach towards the asset delivery and service provision is lacking. Besides, better whole-of-life evaluation and optimisation of design and operation have been considered by Katz (2006), demonstrating the New Zealand government’s focus on achieving better value over project life-cycle has not changed over the years.

The interview results mirror the New Zealand government’s intention to utilise the experience gained from engaging with PPPs to enhance the overall efficiency in public sector procurement.
Internationally, especially in Hong Kong and Australia, PPPs were perceived as an effective means to address inefficiency arising from public monopoly and lack of competition (Cheung et al., 2009). However, improving the public sector’s capital asset management practices in general is of particular importance for New Zealand. This is because that New Zealand’s small-sized economy and relatively limited infrastructure activities determine that there would not be many projects with the sufficient scale to sustain a PPP and the majority of public works will still be procured in a traditional way. By adopting PPP methods in a few projects, extracting good practices and gaining experience, the underlying philosophies of PPPs (e.g., outcome-based specification, rigorous due diligence, whole-of-life focus) can be applied across the public sector system, giving rise to the improvement of the government’s overall practices and performance about capital asset management.

Although the interviewees agreed that financing reason is not a primary determinant for entering into PPPs, PPPs offer attractive mechanisms to bridge the considerable infrastructure demand and current budgetary restraints. Unlike Hong Kong where sufficient financial reserves are available for asset expenditure (Chan et al., 2009), the economic downturn since 2008, coupled with the recent Christchurch earthquakes, largely affect the New Zealand government’s fiscal ability to fund infrastructure. Utilising private finance is hence still an incentive for New Zealand to adopt PPPs.

Achieving optimum risk transfer and risk allocation has been recognised around the globe as a core driver for value for money under PPPs (Jin and Doloi, 2008, Loosemore, 2007, Shen et al., 2006). The interview results show that it is also the case for New Zealand, although varying degrees of risk transfer have been realised in existing procurement options, such as Design and Construct and alliancing (Henderson, 2004). Various risk allocation matrix are developed by different organisations and scholars to showcase an equitable risk allocation scheme in a PPP transaction (Partnerships Victoria, 2001c, Li et al., 2005a). It was noted that New Zealand has specific contextual risks that will require innovative solutions if PPP is to be effective as a procurement mechanism for the future. For instance any Treaty of Waitangi (signed in 1840 – the treaty by which the Maori indigenous
population has its rights to historic ownership, land access and harvesting rights, etc. enforced) claim would constitute a significant risk for any potential PPP in New Zealand. The Treaty of Waitangi allows for Iwi (regionally linked tribes) to institute compensatory claims of historic ownership of land and access to resources, etc. which could potentially be ex post facto, the initiation of a PPP project. It would make an “interesting” – not to say very costly and time consuming – legal issue if a land access or use claim was instituted at an advanced stage of a PPP negotiation for a bridge, hospital or power station. This demonstrates the particular requirement of a risk framework unique to the New Zealand context to be developed.

The New Zealand government’s intent to utilise the private sector’s expertise and skills to create innovational approaches in public asset and service provision parallels other countries’ motivation to embark on PPPs (Cheung et al., 2009, Yuan et al., 2010, Reeves and Ryan, 2007). Despite the desire to achieve innovations, the New Zealand government generally holds a sceptical view towards the extent to which innovations can be materialised at design and construction stages. The main focus is on seeking innovations at operational stage. Hence, there is a general consensus that the more service components are included in the PPP arrangement, the higher likelihood innovations can be realised. Unlike Australia where the current PPP policy excludes the private sector’s participation in providing core services, New Zealand is open to a variety of PPP models, increasing the likelihood to achieving innovations by incorporating “core service” component in the selected PPPs.

Similar to other countries (e.g., Ireland, Australia, and the UK) where PPPs are initiated to improve the performance of both asset provision and service delivery (Cheung et al., 2009, Reeves and Ryan, 2007), New Zealand is keen on employing PPP strategies to raise the level of service quality, especially in the areas of social infrastructure sectors. The interview results confirm the previous findings derived from the case study of the ACRP project, in which the government expected to enhance the prison service level through the private sector involvement (refer to Chapter 3).
Unlike developing countries, such as China, where the introduction of PPPs are seen as a vehicle to boost the region’s social and economic development, the New Zealand government would like to see a change across the public sector, through the involvement of the private sector via a PPP. The change may be reflected in a higher level of sophistication in its public sector procurement. The difference is understandable because in New Zealand, despite the recent adoption of PPPs, the private sector has been engaged in the provision of a wide range of public assets and services. However, in countries, such as China, international private players may bring advanced technical and managerial skills in the service provision, filling the gap of local capacity and assisting with the region’s wider development.

5.5.2 Critical factors

The interview findings confirm that critical factors identified in New Zealand generally fall into the categories extracted from existing literature. However, the implications of the generic factors are, to some degree, different in New Zealand context. For example, in countries such as China and India, PPPs would be impossible without enabling legislation as some of the relevant acts prevent the private sector from participation in the provision of infrastructure related services (Adams et al., 2006, Chen, 2009, Mahalingam, 2010). In New Zealand, the constraints imposed by existing legislation and regulation are of less significance because the impediments can be technically addressed by more careful circulation and taking mitigating measures. In terms of the public sector capacity, it is always difficult with the country’s first few PPPs due to the lack of experience and knowledge (Akintoye et al., 2003b). In New Zealand, the public sector has a general understanding of PPPs. PPPs are within their procurement options and they are willing to adopt the concept of output specification. The actual problem is that they are lack of a profound understanding of PPPs, such as the variety of PPP models.

The research reveals that the real challenge to New Zealand is the small size of economy. Challenges related to bid costs, capital costs, capital market and bid market are closely linked to the small market. Without a sufficient scale of project, the high bid costs and costs of capital would make PPPs unviable in the sense of value for money. Experienced international private players, including the financiers,
are mainly concerned with the project pipeline and deal flow in New Zealand. In the absence of steady investment opportunities, the international bidders will not be interested in New Zealand market. In light of the limited local market capacity, the private sector market depth and capability to enter into PPPs is questionable, which will largely influence the value for money outcomes. This is consistent with the assertion of Katz (2006) who contended that the perceived benefits of PPPs cannot offset the disadvantages inherent with PPPs, especially under the New Zealand context where the market is too small to sustain PPPs.

According to a worldwide maturity analysis of PPP programmes, Deloitte positioned New Zealand as “the active PPP market” (New Zealand Office of the Auditor-General, 2011). Lacking of a well-functioning and mature market, the development of PPP programmes largely relies on a strong and committed central PPP coordinating authority (in this case, the NIU) to establish a best practices framework in the form of policy and guideline documents and assist with actual project implementation to bridge the public sector capacity. The central role of the NIU in New Zealand’s PPPs confirms with Fisher’s (2006) assertion that a nation’s central PPP institution has great impact on the realisation of PPP projects and achievement of value for money in PPPs. As part of the NIU’s role in PPPs, the three policy and guideline documents (mentioned in Section 5.3.3) clarifies the government’s strategic direction in terms of PPP use and fundamental positions in a PPP transaction. As opposed to jurisdictions like the UK and Australia, where a whole suite of PPP guidance material have been released (Infrastructure Australia, 2008, Garvin, 2010), New Zealand has just started its development of PPP policy and guidelines. As the first few documents being applied and tested through the pilot PPP projects, the PPP toolkit specific to New Zealand will be enriched and updated by incorporating emerging best practices. The experts from the NIU are also required to be intensively involved in PPP project delivery, providing commercial advice to the public procuring authorities.

Public procuring authorities in New Zealand should develop strong leadership when embarking on PPPs. Similar to other countries when PPPs were first introduced (Akintoye et al., 2003b,
Mahalingam, 2010), the public sector in New Zealand are inexperienced in crafting and managing PPP contracts. With respect to the gap in public capacity, the public procuring authorities are required to deliver their commitments along the process, stick to the specified timetables, and ensure effective communication with the private sector participants. This is in line with Li et al’s (2005b) research finding, based on a survey conducted in the UK, that a well-organised and committed public agency is essential for a PPP. The research shows it is also the case for New Zealand as in the absense of experience and expertise in running PPPs, the procuring authorities must have a dedicated project team to ensure that the first few PPP projects deliver the expected objectives. Like countries, such as India, where capacity strengthening initiatives are adopted (Mahalingam, 2010), the New Zealand case stresses a programme of enhancing public sector procurement practices across line agencies and other procuring authorities. There has been a driver for the public sector to adopt alternative delivery models to procure public assets and services. By adopting procurement mechanisms, such as alliance, contract management, and early contractor involvement, the basic components of PPPs, including outcome-based specifications, a “partnering” approach and long-term contract management can be, to varying degrees, applied to New Zealand. Through gaining experiences from other types of contracts embracing basic PPP features, the public procuring authorities are better positioned to adopt and implement PPPs. An effective governance structure is also needed within the public sector, as suggested by the interviewees. This finding resonates with Li et al (2005b) and Martins et al (2011) who find that setting up good governance structure is a critical success factor for PPPs. This research suggest it is of particular importance for New Zeland to establish effective governance structure because under the conditions that a well-established market is not formulated, informed and prompt decisions need to be made at key points influencing the project progression in order to increase the market’s confidence, reduce procurement period and decrease bid costs. With different level of government officials involved in varied level of the governance structure, clear communication lines can be established, facilitating the decision-making.
Compared countries such as the UK and Canada where a steady stream of PPP projects are available (KPMG, 2010b), New Zealand is much concerned with examining the suitability of PPPs for capital projects, requiring a sound business case development to be undertaken. In addition to explicit criteria specifying the conditions under which PPPs should be considered, a rigorous quantitative assessment is adopted in New Zealand to investigate the suitability of PPPs. This is in consistent with Garvin’s (2010) finding that in countries like the UK, Australia and Canada, a clear programme for selecting PPPs has been developed and a PSC technique is widely used for conducting the value for money analysis. In the case of New Zealand PPPs, this research suggest that a number of qualitative factors such as the alignment with the overall policy objective must be included in the option analysis and an extensive market sounding exercise is of particular importance as feedback from the industry is critical to determining the viability of intended PPP project and to ensuring a competitive situation during tendering stage.

In light of the small size of New Zealand PPP projects in general, a streamlined and robust procurement process should be in place to ensure that the PPP options represent optimum value for money. This finding accords with the studies of Zhang (2005b) and Chan (2010a) who contend that an efficient procurement framework featuring standardised procurement procedures and contract conditions, clear project brief, effective negotiation process and competitive environment are desirable for PPP procurement. Countries such as the UK and Australia have made such effort in structuring and implementing an efficient procurement process by a variety of means, such as issuing and applying standardised contract or commercial principles (HM Treasury, 2007, Partnerships Victoria, 2008), and introducing procurement mechanisms enabling conducive communication and competitive environment, such as the Competitive Dialogue enforced in European countries and the Interactive Dialogue commonly used across Australia (KPMG, 2010b). Whilst ensuring the requirement of competition and transparency, New Zealand PPPs prefers a streamlined procurement process,
reflected in lower level of details required for bid submissions, commensurate procurement duration in accordance with project size, and no requirement of committed finance.

In addition to advocating streamlined PPP procurement in New Zealand, the government is suggested to take on more risks in PPP transactions. This concurs with Garvin (2010), Shen (2006) and Aziz’s (2007) claim that equitable risk allocation lies at the heart for achieving success in PPPs. Compared to other countries such as the UK, Australia and Canada where mature PPP markets with a high level of sophistication have been developed, the New Zealand government is required to assume or share more risks, such as risks in relation to obtaining consents, investigating geological conditions, land acquisition, and political environment, as the industry is generally uncertain about the New Zealand’s PPP market and tends to hold a sceptical view towards the viability and continuity of PPP programme.

It is notable that the critical factor “contract administration and management”, identified in the existing literature was not highlighted by the New Zealand practitioners. This may be due to the fact that the current pilot PPP projects have not reached the operating stage. Not enough experiences have been gained to comment on this issue. However, as clearly indicated by the interviewees, they are able to comment more in later stage.

5.6 Conclusion

This chapter summarises the findings derived from twenty-two industry-wide interviews conducted with senior practitioners in New Zealand. The results and outcomes presented are aimed at accomplishing Objective Two and Objective Three outlined in Section 1.3. The next chapter will present the research findings based on multiple international and local case studies with a focus on exhibition and event venue, prison and school sector.
Chapter 6 Using PPPs for Large-scale Venue Development: A Comparative Analysis

6.1 Introduction

This chapter reports on the research results derived from comparative case studies focusing on exhibition and event venue using PPPs. Essentially, this chapter aims to partly achieve Objective 4 outlined in Section 1.3: Evaluate representative case studies in Hong Kong Special Administrative Region, Australia and New Zealand in the sectors of exhibition and event venue, prison and school to analyse the critical factors affecting the successful implementation of PPPs.

In the following case studies section, an introduction of the exhibition and event venue sector and the use of PPPs are firstly provided, followed by a detailed analysis of the special characteristics of design, building, financing, managing and operating of the venue facilities and associated services. It then goes on to review the PPP models applied in the sector and discuss the reasons why PPPs have been adopted for venue development. Following a brief description of the case study approach and the profile of the participants selected for the semi-structured interviews, the background information of the studied cases is given, including the policy context in which the PPP project was undertaken, the characteristics of the facility and associated services, the financial and contractual arrangement, the procurement process and the payment mechanism. Critical factors impacting on the fruition and smooth application of PPPs in the venue sector are drawn upon from the qualitative data analysis, which are then subjected to discussion by comparing with existing theories and practices of PPPs derived from literature review. At the end of the chapter, strategies for using PPPs in the particular sector are developed to guide the practitioners when embarking on PPPs for venue development.

6.2 An Overview of Venue Development and the Use of PPPs

The exhibition and event industry plays an important role in a region and country’s local economy as it helps to enhance their international reputation, boost relevant industries and business sectors (e.g.
tourism, hotel, restaurants, etc.), and generate new employment opportunities (CUHK, 2009). According to a report released by the Hong Kong Exhibition and Convention Industry Association, the exhibition industry accounted for 1.8% of Hong Kong’s total GDP (LegCo Panel on Commerce and Industry, 2008). In 2006, the tax income generated from expenditures connected with the exhibition and event industry was estimated about US$125 billion (LegCo Panel on Commerce and Industry, 2008).

6.2.1 Special characteristics with large-scale public venue development

Hosting important exhibitions and events requires large-scale venues. The initiation and development of new venues is likely to give rise to extensive and continuous public debate. For essential infrastructure sectors such as education, healthcare and transport, the associated services benefit general public. By contrast, as for venues, only a limited number of people (e.g. conference attendees, delegates, tickets buyers, etc.) directly receive the services (Nelson, 2004). The governments therefore need to be focused on the prioritisation and maintaining a balance between non-essential investment in culture and entertainment (e.g., venue) and investment in essential infrastructure (e.g., schools). Under a coordinated and programme approach towards the infrastructure planning, a venue project will be brought forward if the proposal is justified from the wider economic and social perspective.

Large-scale venues are not only designed to accommodate exhibition, entertainment or sports events, but also regarded as icons of the cities with unique aesthetic and architectural statements (Nelson, 2004). Governments are keen on building state-of-the-art facilities which become places of interests for tourists. Much emphasis is placed on adopting advanced engineering technologies, new materials and innovative designs (Liang et al., 2011). The development of venue projects is usually subjected to tight timeframes and needs to meet higher facility and quality standards required by international events (Liang et al., 2011).
The core business of venues is organising exhibitions and event. Although the stadiums for large sports events (e.g. Olympic Games) can be well used during events time, concern for the sponsors exists on how to effectively operate and maintain the facilities in the long run. The venue business involves expertise including marketing practices, customer relationship management, advertising, sales promotion, and submitting professional bids (Davidson and Rogers, 2006). The requirement of functionality coupled with the complexity of the venue business give rise to considerable costs associated with managing and operating (Liang et al., 2011). A highly specialized operator is essential for business and controlling operating costs.

6.2.2 PPP application in venue development

The PPP models applied to different venue projects vary. For example, the John Labatt Centre project in Canada adopted a model where the private sector was involved in design, construction, financing, maintenance and operation (Davis, 2011). In the case of Melbourne Convention and Exhibition Centre, the public sector remains responsibilities for providing “core services” concerned with organizing the events and bringing in business whilst the facility management rests with the private sector partner (Victorian Auditor-General's Office, 2007). For the National Stadium for Beijing 2008 Olympic Games, a state-owned enterprise and the private sector partner formulated a Joint Venture Company as the SPV to carry out full-package services in relation to the asset (Liu et al., 2009).

PPPs in large-scale venue development have gained acceptability for a number of reasons. Using private finance is a way to alleviate budgetary constraints for governments to fund new venues (Liang et al., 2011). Under PPP arrangements, the public and private sector are able to bring complementary skills to venue development (Grimsey and Lewis, 2004, European Commission, 2003). In addition, PPPs offer an integrated solution to the provision of venues and related services (Grimsey and Lewis, 2004). The packaging of design, construction and operation provides a channel for whole-of-life costing, resulting in better value for money outcomes (Efficiency Unit, 2008).
6.3 Case Study Approach and the Profile of Participants

Three venue PPP projects, AsiaWorld-Expo (AWE) in HKSAR, Vector Arena (VA) in New Zealand, and Sydney SuperDome in Australia were selected (the background information of the three projects is shown in Table 6.1). The main instrument of data collection was semi-structured interviews. Thirteen interviews were conducted with six for AWE and seven for VA. The research targeted practitioners who were acquainted with the project development and procurement process, familiar with the PPP policy context in respective jurisdictions and experienced in running PPP projects. All the practitioners selected hold senior positions in their organizations (at executive level). Three interviews with academic researchers were conducted for the AWE project to gain more context-specific information regarding Hong Kong SAR’s approach towards PPPs.

Table 6.1 Background characteristics of the case study projects

<table>
<thead>
<tr>
<th>Name</th>
<th>AsiaWorld-Expo</th>
<th>Vector Arena</th>
<th>Sydney SuperDome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure type</strong></td>
<td>Economic</td>
<td>Economic</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Sector</strong></td>
<td>Exhibition and event</td>
<td>Exhibition and event</td>
<td>Exhibition and event</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Lantau, adjacent to Hong Kong international airport, Hong Kong</td>
<td>Edge of central Auckland, New Zealand</td>
<td>Western Suburbs of Sydney, New South Wales, Australia</td>
</tr>
<tr>
<td><strong>Current status</strong></td>
<td>Operation</td>
<td>Operation</td>
<td>Operation</td>
</tr>
<tr>
<td><strong>Contract value</strong></td>
<td>HK$2.35 billion (US$303.0 million)</td>
<td>NZ$72.6 million (US$60.6 million)</td>
<td>AU$197.2 million (US$210.6 million)</td>
</tr>
<tr>
<td><strong>Year of contract award</strong></td>
<td>2003</td>
<td>2004</td>
<td>1997</td>
</tr>
<tr>
<td><strong>Cost performance</strong></td>
<td>Within budget</td>
<td>Cost overrun</td>
<td>Not clear</td>
</tr>
<tr>
<td><strong>Time performance</strong></td>
<td>On schedule</td>
<td>Time overrun</td>
<td>On schedule</td>
</tr>
<tr>
<td><strong>Procurement duration</strong></td>
<td>25 months</td>
<td>49 months</td>
<td>17 months</td>
</tr>
<tr>
<td><strong>Disputes raised</strong></td>
<td>NA</td>
<td>Yes</td>
<td>NA</td>
</tr>
</tbody>
</table>
In addition to interviews, other sources of evidences were collected via a combination of project
document analysis, such as the *Summary of Contract* of SSD, archival review, and direct observation
in order to increase the reliability and validity of research results. The profile of the data collection is
presented in Table 6.2. Please refer to the Methodology chapter for further details on the participants’
background information.

Table 6.2 Profile of data collection

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Archival review</td>
<td>Minutes of meeting;</td>
<td>Media release</td>
</tr>
<tr>
<td></td>
<td>Newspaper release</td>
<td></td>
</tr>
<tr>
<td>Interviews</td>
<td>Service records; survey data</td>
<td>Service records; survey data</td>
</tr>
<tr>
<td></td>
<td>Private sector (AR1-AR3)</td>
<td>Private sector (VR1- VR3)</td>
</tr>
<tr>
<td></td>
<td>Academics (AA1-AA3)</td>
<td>Public sector (VP1-VP4)</td>
</tr>
<tr>
<td>Direct observation</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 6.4 Description of case studies

#### 6.4.1 Case Study 1: AsiaWorld-Expo in HKSAR

Located next Hong Kong International Airport, AWE is an exhibition and event venue offering over
70,000 m² of rentable space for exhibitions, conventions, concerts, sports and entertainment events. It
consists of 10 ground-level and column-free exhibition and event halls including 13,500-seat,
purpose-built indoor seated entertainment arena (AsiaWorld-Expo Media Release, 2005).

AWE was a Public-Private Partnership in the form of Joint Venture. The partners were the HKSAR
Government, the Airport Authority (AA) and a contractor-led private consortium (LegCo Panel on
Commerce and Industry, 2004). The Government and AA formed a company named “IEC Holdings
Limited” (the Holdings Ltd), as the investment vehicle for the project. The Holdings Ltd. and the Joint
Venture Partners (the private consortium) formed a Joint Venture Company to build, operate and own
the AWE. The Joint Venture Partners was responsible for the design and construction (LegCo Panel on Commerce and Industry, 2003). The Government and AA held 76.5% and 10% of shares in the Joint Venture Company based on their shareholding in the Holdings Ltd. AA contributed the land in exchange for a 10% equity stake. The Government funded 85% of the total capital investment up to US$258.0 million and the Joint Venture Partners provided the rest of the funding by means of equity injection (LegCo Panel on Commerce and Industry, 2003). The Joint Venture Company, as the owner of AWE, signed a Management and Operating Agreement with AWE Management Ltd to take responsibility for managing, promoting, operating and maintaining the venue. Figure 1 shows the contractual arrangement and financing scheme among the various parties.

According to the Joint Venture Agreement, the Joint Venture Partners are allowed to receive a share of distributable profits on a priority basis up to a preferred return rate specified in the agreement. Any surplus of revenues above the preferred return will be distributed among the Government, AA and the Joint Venture Partners in the way of dividends based on their respective equity share in the Joint Venture Company. The residual value of the exhibition venue after 25-year franchise period will be shared by the Government and AA in accordance with their equity stakes in Holdings Ltd (LegCo Panel on Commerce and Industry, 2004).
6.4.2 Case Study 2: Vector Arena in New Zealand

The Vector Arena project was initiated and planned prior to 2009 when policy settings were generally unfavourable towards PPPs. In this case, the government (Auckland City Council which is currently referred to as Auckland Council) opted for a PPP approach in order to engage a private sector entity with extensive experience and skills to operate events venue, and transfer the risks in relation to maintenance and operation to the private sector partner.

Vector Arena is a multi-purpose facility designed for a wide variety of sports and entertainment events. It seats up to 12,000 for sports, business and entertainment events and exhibitions (City Scene, 2009). It is seen as an essential part of Auckland City infrastructure since it serves to bring more business and employment opportunities for New Zealanders, improve Auckland’s international reputation, and enhance the economic growth and prosperity (2007).

Auckland City Council entered into a long-term concession agreement with Quay Park Arena Management (QPAM) Ltd to design, build, operate and maintain the facility. After 40 years, the ownership of the arena will be transferred to the Council. The Council invested US$58.5 million and
QPAM US$10.5 million (75% of which was provided by a Sydney-based company, Jacobsen Venue Management Limited, and 25% from a Miami-based company, Jack Utsick Presents) in the development of Vector Arena. New Zealand firm Mainzeal signed a contract with QPAM for the construction of the arena project. The venue is located at Quay Park, which was leased by Auckland City Council from Maori Trust Board, Ngati Whatua o Orakei, for 150 years (Tomczak, 2005). Upon the completion of construction, the lease of land was transferred to QPAM Ltd. The contractual arrangement and financing scheme is shown in Figure 2.

The private sector partner is remunerated through revenues from ticket sales and venue lease. There is a “super profit” share mechanism specifying that if the revenues reach a certain level, both of the parties are entitled to share the distributable profits.

Figure 6.2 Contractual arrangement of the VA project

6.5 Results

An investigation of the two venue PPP projects – AsiaWorld-Expo and Vector Arena, with comparison with the Sydney SuperDome project, identifies the critical factors for using PPPs for venue development, which are derived inductively and presented in the following sections.
6.5.1 Business case development

All participants emphasized the need to conduct an accurate and thorough cost-benefit analysis to justify the service need. In the case of AWE, the first challenge facing the decision makers was whether to proceed with the building. Due to the considerable uncertainties around construction and operating performance, the related calculation (e.g. Internal Return Rate, IRR) was highly sensitive to the underlying assumptions, such as likely lease rates, occupancy rates and the construction costs. An overview of the initial cost-benefit analysis on the project itself is presented in Table 6.3.

Table 6.3 An overview of the initial cost-benefit analysis (Source: LegCo Panel on Commerce and Industry, 2001)

<table>
<thead>
<tr>
<th>Cost (US$ million)</th>
<th>Single-phase development</th>
<th>Two-phase development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phase 1</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Exhibition Centre construction cost</td>
<td>270.9</td>
<td>175.4</td>
</tr>
<tr>
<td>Carpark construction cost</td>
<td>68.4</td>
<td>47.7</td>
</tr>
<tr>
<td>Infrastructure construction cost</td>
<td>21.9</td>
<td>14.2</td>
</tr>
<tr>
<td>Transportation facilities</td>
<td>14.2</td>
<td>14.2</td>
</tr>
<tr>
<td>Professional fees</td>
<td>29.7</td>
<td>19.3</td>
</tr>
<tr>
<td>Contingency</td>
<td>40.0</td>
<td>27.1</td>
</tr>
<tr>
<td>Total</td>
<td>445.0</td>
<td>298.0</td>
</tr>
</tbody>
</table>

Operating cost

Unavailable. Estimated to be lower than operational revenues.

Benefit (US$ million)

| Lease rates | Ultimately to be determined by the market |
| Occupancy rates | To be determined by the market |
| Internal Rate of Return (Single development) | 6.7% |
| Internal Rate of Return (Two phase approach) | 6.1% |
| Appraisal period | 30 years |
As shown in Table 6.3, the project was not viable from a financial perspective as the predicted returns would not be able to pay back the capital investment. AR1 and AR2 commented,

> When the Finance Committee first received the proposal, the members were worried about (its) financial viability. They questioned the validity of the underlying assumptions. (Synthesis of views from AR1 and AR2)

AA1 pointed out the AWE proposal was confirmed due to considerations on the wider social and economic benefits the new venue may bring to Hong Kong. Factors, such as boosting the tourist industry, increasing overall competitiveness of Hong Kong’s exhibition industry and enhancing the attractiveness of the whole area surrounding the international airport, were taken into account and highly weighted in the decision making (LegCo Panel on Commerce and Industry, 2003). According to the estimation undertaken by the Government Economists, over a 25-year period, the proposed AWE project would bring a substantial net economic benefit of US$ 1.3 billion in present value to Hong Kong, with an economic rate of return around 18% and a cost-benefit ratio about 1:4.7 (LegCo Panel on Commerce and Industry, 2001). In addition, as AR1 highlighted, the government intended to introduce a competition mechanism in the exhibition industry as “the new venue and HKCEC (another exhibition venue, which is owned and operated by the government) can be complementary to each other (AR1)”.

The high economic returns from a wider community perspective, along with other social benefits determined that the AWE was brought forward with the funding gap being bridged by government financial supports. The business need justification for VA seemed to be different to AWE. Without an existing event venue of comparable scale in Auckland City, the building of VA was necessary in order to maintain the city’s international standing. Similarly, the decision to build SSD was relatively straightforward as it was an integral part of Olympic Games,

Ten participants (four of AWE and six of VA) provided comments on the issue of site selection when conceptualizing venue projects. Where venues locate should be in line with the government’s long-
term urban development plan and strategic direction (LegCo Panel on Commerce and Industry, 2003).

On the private sector side, AR1 and AR2 stressed the importance of the location of AWE,

We want (AWE) to be linked with major business sectors, (such as) hotels, restaurants, shopping malls… We want the whole area to be attractive to business. (Synthesis of views from AR1 and AR2)

AR3 further elaborated that the accessibility to public transportation, international airport, and connectivity with mainland China was central for the business performance in AWE. The government therefore chose the land adjacent to the international airport which would be integrated with the Sky City Development scheme. A metro station was set up at AWE linking it with the metro network and provided franchised “point-to-point” bus services (LegCo Panel on Commerce and Industry, 2008). The government also planned to build the Hong Kong – Zhuhai – Macao Bridge, expanding the transport options to get to AWE. AR1 predicted that the exhibition and events business would be improved once the Bridge is completed. The decision on land selection was also difficult in the case of VA project (Tomczak, 2005). After excluding several options, the Quay Park site was chosen as it is close to Auckland City Centre and the tourist Viaduct Area.

Despite the use of similar criteria when selecting the venue site, the connectivity to mainland China was highly weighted in the decision making of AWE. Hong Kong has its geographic advantage for the exhibition and event industry as it is seen as a hub for business people from the rest of the world and mainland China to meet, communicate and seek opportunities for business. Therefore, being close to the international airport and convenient transport with mainland China were given high priority when selecting the site for AWE. All participants highlighted the necessity of undertaking extensive public consultation with the relevant stakeholders and taking the stakeholders’ interest into consideration in the business case development. In the AWE project, the relevant authorities such as the Economic Bureau and Tourist Commission were involved in the initial service need identification. The Airport Authority, as the land provider, was well consulted as their participation would
significantly impact on the progression of the project. By involving the AA in the Joint Venture Company by means of equity participation, the acquisition of land and obtaining relevant approvals went smoothly. Likewise, before bringing forward the VA project, a thorough consultation was undertaken with sports, entertainment, business leaders and communities to confirm the need for a new arena in Auckland (New Zealand Office of the Auditor-General, 2006).

The practice in VA was slightly different from AWE and SSD because of the involvement of the Maori Board, Ngati Whatua o Orakei, reflecting New Zealand’s special legal and political environment. The Treaty of Waitangi permits Iwi (regionally linked tribes) to claim compensation for the ownership of land. In this case, the Council obtained the land by lease. For any New Zealand PPPs, the requirements by Treaty of Waitangi must be addressed and consultation with iwi is vital if the intended site is owned by them. The land for VA was leased from a Maori Board. An extensive consultation with the tribe was undertaken. As commented by VP2, “unless approved by the communities, the project would not be a success”.

6.5.2 Financial arrangements

A similarity observed across the three venue projects is that the governments made significant financial contributions to the capital investment. All participants agreed that the project would be not financially viable without substantial capital injection from the government. VR1 was of the view that given the low forecast return of investment, the VA project would not be attractive enough to the private sector parties without government’s financial support.

Across the three projects, the application for granting public funding was lodged prior to the tendering stage. As claimed by seven participants (four of AWE and three of VA), such a course of action would give more credibility to the project and would provide prospective bidders with assurance of the government’s determination to proceed with the project. A minor difference was that the amount of government’s financial contribution had been confirmed by the HKSAR Government and
Auckland City Council, whilst the OCA left room for the bidders to propose the amount of capital grants needed for the project.

In the case of AWE and VA, the remaining construction costs were funded by equity only. All participants agreed that providing long-term equity by the private sector partners is essential in reducing lead time as the financiers generally require more rigorous investigation into the likely costs and revenues. Under the circumstances where debt finance is needed, more risk appetite of the equity providers or certain types of guarantee could add credit to the project. For example, in the case of SSD, the private sector participants devoted a substantial amount of equity and Abigroup underwritten arena’s operating fund account to the investment bank (Jefferies et al., 2002).

6.5.3 Procurement process

Six participants (four of AWE and two of VA) emphasized the importance of maintaining competition prior to the selection of preferred bidder. For instance, Participant AA2 and AA3 asserted that a useful way to improve competition was to conduct extensive market sounding. For AWE, the government undertook an international road show where they approached potential market participants, promoted the proposed project and solicited practical solutions. The exercise received positive feedback from the private sector as more than ten domestic and international proposals were received at EOI stage. Less market submissions were received for VA (five) and SSD (five). The results seemed to reflect the less attractiveness of the exhibition and event industry in New Zealand and Australia as opposed to Hong Kong.

Seven participants (three of AWE and four of VA) believed that governments’ bid requirements should allow enough flexibility for the private sector bidders to propose innovative solutions. In addition to the exhibition centre proposed by the public sector, the successful bidder - Dragages – added a world-class concert arena in the bid at no extra costs to the government (FIRST, 2006). AR1 and AR2 noted that the exhibition and entertainment events complement each other and also
contribute to maximizing the use of the assets. VR1 also acknowledged the necessity of having enough room to come up with innovative bids in the case of VA. VP4 admitted that it is difficult to draft output specification ensuring the government’s requirements can be clearly reflected whilst giving the private bidder enough room to innovate. Likewise, in the case of SSD, the Millennium proposed features that were not included in the Government’s original “benchmark” design. It is believed that the features would significantly increase the arena’s potential uses (Olympic Co-ordination Authority, 1999).

Eight participants (four of AWE and four of VA) claimed that the tender evaluation of venue projects should be primarily based on the ability of the private consortia to develop the proposed facilities and run the business. For example, the evaluation board of the AWE project scored the submissions according to their organisational structure, development capability, operational capability, marketing capability and preliminary business plan. As pointed out by AA1 and AA2, “the government cared more about the ability rather than price. (AA1 and AA2)” VP3 also agreed that the private sector partner’s experience in running venues of similar nature was highly weighted during bid evaluation. Although a key evaluation criterion of the SSD project was the extent to which the bidders minimized the contribution required from the Government, the other features of the consortium, such as the technical capability and business plan, were still taken into consideration by the assessment team (Olympic Co-ordination Authority, 1999).

6.5.4 Governance structure and private consortium structure

All participants of AWE and VA highlighted the importance of setting up an effective governance structure for developing a PPP project. As for AWE, from project initiation to contract award, Legislative Council Panel on Commerce and Industry (LCPCI) met on a regular basis to address the concerns emerged at different stages, such as the viability for an additional exhibition centre, the size of the new venue, whether or not to engage with the private sector partner, the need for government financial support and the tendering method. According to comments by AA2 and AA3, the meetings
served as a useful vehicle for the communication among the various stakeholders (e.g. AA) to facilitate an efficient and fast decision-making process. Especially in the lodgement for funding application, LCPCI responded quickly to the issues raised by Finance Committee, which was essential to attain the grants before moving to the market sounding exercise. Similarly, in the case of VA, a Programme Manager was responsible for preparing an in-house project plan including Council communications and resource consent applications (New Zealand Office of the Auditor-General, 2006). The PM’s role was believed by VP1 and VP2 as “the focal point for communication between the two contracting parties”. Jefferies (2002) argued that as for SSD, the government was educated and experienced in structuring the venue PPP project, contributing to an efficient procurement process.

The AWE and SSD project shared commonality as the design-build contractor and operator actually belong to one entity. As argued by AR1 and AR2, the alignment of responsibilities was conducive for effective communication and interface management, leading to the enhancement of the constructability and maintainability. By contrast, the VA project was designed, built and operated by different entities (albeit they are all part of the SPV). Although the project participants argued that the cost and time overrun and the current litigation issue should not be attributed to the use of PPPs, the builder and architect did not maintain a good “partnership” relationship. The private consortium structure of VA is somehow in accordance with the PPP development status in New Zealand. Apart from the construction sector, the local market capacity for PPPs is limited. Due to the high risk profile of VA and the lack of PPP project pipeline, international investors were generally reluctant to participate in “risky” New Zealand PPP projects.

6.5.5 Risk analysis and allocation

In the case of VA and SSD, most of the risks related to design, construction, operating and maintenance are transferred to the private sector. As stressed by VR2, VP3 and VP4, transferring the operating risk to the private sector is essential for project success as “the experienced private operator can fully use their commercial creativity (in running venues) (VR2)”. The government was not
involved in the management of AWE. The Participants AR1 and AR2 maintained that risk transfer enabled the private operator to maximise their business potential in sales and marketing. As claimed by AR1, “the project success lied in the ability to bring in business.” This confirms Jefferies’s (2002) point that successful operation by the private consortium is one of the critical success factors for SSD.

According to seven participants (two of AWE and five of VA), the public sector should take on or share some risks which are beyond the control of the private sector, such as obtaining approvals and regulatory changes. In the case of AWE and SSD, the public sector assisted with setting up the legal entities (e.g. the Joint Venture Company) and the lodgement of applications for modification of the arena’s development consent (Olympic Co-ordination Authority, 1999). In comparison, under the risk allocation scheme of VA, the risks were mostly transferred to the private sector. Participant VR1, VR2 and VP3 pointed out that the reason for the delayed schedule for VA was the prolonged duration for acquiring resource consents as required by Resource Management Act 1991. The Council did not reach agreement in the negotiation with the initial preferred bidder, Abigroup, whilst it had been granted resource consent. The successful bidder – QPAM Ltd – needed to lodge another application for modification. The re-application exacerbated the problem with the time-consuming consenting process. The process could have been streamlined if the delegation for the land was granted before tendering. As advised by VP4, the public sector could assist with obtain the relating approvals and conducting site investigation before approaching market. “The RMA (Resource Management Act consenting process would have been done before the project goes to market to avoid delays.” (VP4)

Eleven participants (six of AWE and five of VA) highlighted the central issue of venue PPPs – demand risk, concerning risks that revenues generated from venue business cannot cover the relating costs and satisfy the required profits. As admitted by Participant AR1, AR2, VR1, and VR3 the business of running and operating venue is very risky.

We (the private sector operator) must try our best to make the business a success, because we are responsible for the Board of our parent company. (Synthesis of views from AR1 and AR2)
The quality of revenue stream is the key to the successful PPP. If the quality of revenue stream is questionable, you won’t get a PPP. (VR3)

The senior management of Abigroup (the operator of SSD) also stressed the pressure of taking demand risk in SSD and maintained that the company intended to pursue infrastructure projects where the majority of the revenue stream is underwritten by governments (Jefferies et al., 2002).

The governments lent support to the AWE and SSD projects, which to some extent, alleviate the demand risks for the private sector operator. For instance, in order to enhance the utilization of AWE, the HKSAR Government encouraged the business and other MICE (Meetings, Incentive travels, Conventions and Exhibitions) facilities to use AWE. “One show, two locations” approach was promoted to balance the use of HKCEC and AWE. The Trade Development Council (TDC) endeavoured to foster communication and cooperation with the AWE and local small and medium enterprises and new exhibitors (CUHK, 2009). In the case of SSD, the competing facility for the venue is Sydney Entertainment Centre in Darling Harbour. Under the Project Agreement, the OCA protected the interests of Millennium Agent either by closing the SEC, changing its use or refunding the private sector partner a proportion of the loss caused by material competition (Olympic Coordination Authority, 1999). The participants of VA (VR1 and VR2) maintained that the government was not involved in venue operation, which allowed more flexibility to the private sector operator. The different perceptions regarding government support in operating stage is in line with the current situation of New Zealand that there is no competing facility for VA. The government plays less important role in bringing business opportunities to VA.

6.6 Discussion

An examination of the three PPP projects for venue development shows that the use of PPPs has yielded varied results in terms of construction time and cost performance. With the AWE and SSD projects being built within the budget and time, VA was completed behind schedule and featured cost
overruns. Due to the capped public financial support, the additional costs were only born by the private sector partner, leading to a considerable loss for the contractor. Despite the uncertainties in construction performance, the private sector’s expertise and skills have been largely captured and utilised in the venue operation. By transferring the demand risk to the private sector, they are better incentivised to exploit the commercial creativity in bringing in business. The innovative features added to the AWE and SSD by the private sector partner is a reflection of the extensive experience in venue operation and management. In addition, the governments are free of providing subsidy during the operating phase of the venues which is common for public-operated venues (Liang et al., 2011). As a starting point for wider debate on PPPs for venue development, this research identifies five critical success dimensions specifically for venue PPPs.

A two-level cost-benefit analysis (at project level and wider economic level) for venue development, as shown in the AWE project, confirmed Nelson (2004)’s recommendation that a comprehensive analysis examining the project’s financial viability and profitability from a wider community perspective needs to be conducted. The emphasis on a well-defined service need is in line with the previous findings for general PPP application (Qiao et al., 2001, El-Gohary et al., 2006). For example, Li et al (2005b) elaborated that thorough cost-benefit assessment ranked high (5th out of 18) by the UK practitioners as a critical success factor. Compared to economic infrastructure where revenues are generated from operation (e.g. the transport sector), the financial analysis for venues is more complicated in light of the greater level of difficulty with forecasting operating revenues. A sensitivity analysis thus is crucial for venue projects following the initial calculation as it offers an effective means to examine the effects of the variations on key variables on the economic outcomes of the proposed project.

The comments from the participants agreed with Nelson’s (2004) point that addressing communities’ interests and public debate is a key challenge for PPP application in venues. In sectors such as education, corrections and healthcare, the communities are likely to be concerned with the private
sector seeking profits from public services and compromising service quality (Jefferies and McGeorge, 2009). For transport PPP projects, the public shows more worries on the government losing control of toll rate. Here, in venue development, the public disquiet is primarily surrounding the ability of the private sector partner to cooperate with all relevant parties to enhance the region’s international competitiveness.

In international PPP practices, it is common for governments to provide certain type of support to enhance the profitability of PPP projects when demand risk is of great concern for debt financiers. The support may take a variety of forms such as guarantees on offtaking (Sobhiyah et al., 2009), 2009) and raw water supply (Chen, 2009). During and after the recent GFC, alternative mechanisms of government support were used or proposed to alleviate the adverse impacts of GFC on PPP finance. The various mechanisms range from co-lending facilities, providing full financial guarantee (Regan et al., 2011), providing refinancing risk support (KPMG, 2009), to Credit Guaranteed Finance and Supported Debt Model (Regan et al., 2011). Providing upfront capital grant by government was also suggested by KPMG (2009) as possible means to lend credibility of PPP projects when debt financiers lacking confidence in the project’s profitability. This financing strategy was adopted in the three venue projects and seemed to work well. However, the potential risk of compromising value for money outcomes should be highlighted when governments preparing financial packages for venue PPPs. The equity injection by private operators across the three projects indicates that the PPPs are structured using a subcontractor-led approach (Yescombe, 2007). The adoption of this approach is in line with large operation component of venue projects and the important role of private operator as equity participation is an effective means to safeguard the operator’s commitment to the project. By contrast, the financial-led approach, mostly used for current social infrastructure projects in Australia would be suitable for PPPs where the subcontractor plays a less significant role and financiers take the lead in putting bids together (Yescombe, 2007).
Conducting market sounding is incorporated in various PPP guidelines as a “must-do” step for PPPs (Infrastructure Australia, 2011). It is also perceived to be essential to sustain competition for venue PPPs. Due to the relatively small pool of venue operators internationally, approaching market players seems to be particularly critical for venue development using PPPs.

The practices of the three venue projects underpinned the point that providing a high-quality output specification is vital for PPP success (Chan et al., 2010a, Carrillo et al., 2008). Compared to sectors like schools and hospitals where “availability” of services matters most, the bid requirements for venue projects allow a greater level of flexibility and room for proposing innovative solutions due to the high aesthetic requirements in architectural design and commercial creativity in venue operation.

Using the value-based bid evaluation method was also highlighted in previous studies (Li et al., 2005b). However, in practice, the “toll rate” for transport projects and “unitary charge” for availability-based projects are still important determinants in bid evaluation. In comparison, the assessment of venue development proposals mainly focuses on the technical and managerial aspects of the private consortia given the large operation component involved.

Public sector’s capacity, government support and political commitment are widely regarded as critical success factors PPP implementation (El-Gohary et al., 2006, Zhang, 2005b). In addition to gaining political support, an effective governance structure is desirable for venue development due to the tight timeframes required by some special events (e.g. Olympic Games). Some special issues, for example, applying for funding approval and acquiring land utilization rights, involve complicated decision-making and review procedures. Without an effective governance structure in place, the project development would be prolonged leading to delays in meeting significant milestones.

It would be beneficial to opt for a private sector partner who can provide full-package services. If a full-service partner is not available, sustaining effective alignment of the each partner’s strengths as well as creating culture of partnership within the private sector consortium is necessary. The point
was mentioned in Chan’s study (2010a) reporting that good partners’ relationship is critical for PPP success. It is of particular importance for venues given their high requirements of design innovation, maintenance issues and complicated event promoting and organizing business.

Optimum risk allocation lies at the heart of PPP arrangements (Jin and Doloi, 2008, Li et al., 2005b). Appropriate risk allocation and transfer is also considered essential for venue PPPs. The practices in the studied venue projects reinforced the previous finding (Shen et al., 2006, Loosemore, 2007) that the government should retain risks that are beyond the control of the private sector such as land acquisition and obtaining necessary approvals.

The demand risk profile of venue PPPs is of similar nature to transport projects where the private consortium design, build, maintain and operate roads and collect tolls to pay back the investment and gain profits. For roading PPPs, the demand risk is mainly concerned traffic volume not meeting the forecasted demands (e.g. Sydney Cross City Tunnel and Hong Kong Western Harbour Crossing). In both sectors, governments could share the demand risk by providing coordination with competing facilities. However, the room left for the private sector to mitigate demand risk differ in the two sectors. For venue PPPs, the private operator may use a variety of innovative means to boost the business performance such as cooperating with international event organizers, increasing marketing inputs and setting up other business like restaurants and cafés. By contrast, the room for road operators to enhance revenues is limited as the road operation is relatively straightforward involving less extent of business creativity.

6.7 Strategies for Using PPPs in Venue Development

The results from a comparative analysis of the three venue projects where PPPs are used show that the implications for PPP venue development differ from other infrastructure sectors. The special characteristics of venue development give rise to the variations of PPP practices in venues with PPPs in other sectors. The large capital investment and operating and maintenance costs determine that a
business need may be missed due to the likely scenario of NPV being negative. Governments’ financial investment is therefore essential to make the project viable. However, spending taxpayers’ money may then lead to intense public debate. The high aesthetic value of venues requires a well-defined output specification allowing proposing innovative solutions. Meanwhile, tight timeframes required for venue development pose challenges for the procurement process. The public sector’s capacity to structure an efficient procurement process is thus crucial. In light of the large operation component in running exhibition and event businesses, selecting a strong private consortium and appropriately allocating and mitigating the demand risk are considered as vital. Given the close link between venue business performance and the vibrancy of surrounding area, attention should be paid to land selection.

The research proposes that governments embarking on future venue PPPs should take a cautious approach to identifying service need. A thorough and accurate cost-benefit analysis coupled with sensitivity tests are required to ensure a well-defined service need. The analysis should incorporate quantitative calculations as well as qualitative considerations such as economic and social benefits to wider community. Extensive consultation with the relevant stakeholders is necessary to mitigate the potential risks of public opposition. For land selection, an ideal site would be close to existing or planned business centres and integrated with other business sectors and public transport networks. In order to make venue PPPs viable and attractive to private investors, governments are required to provide support to the project. Providing capital grants is one way of achieving this. In the cases where debt finance is used, streamlined financing processes by providing guarantees are favoured. Given the tight timeframes of venues, a robust tendering exercise should be structured to select the best private consortium for carrying out the venue projects. Conducting extensive market sounding, allowing room for innovation in bid requirement and adopting value-based bid evaluation methods are useful means to ensure an efficient, competitive and transparent procurement process. Sustaining an effective public sector governance structure and leadership is of equal importance to guarantee a
robust procurement process and achieve long-term relationships underpinning the success of PPPs. Workable project organisational structure should be created within the private consortia and all parties should be strategically aligned to synergizing and exploit their individual strengths. Optimum risk allocation lies at the core of PPPs and the application in venue development is not an exception. Governments are required to retain more risks beyond the control of the private sector such as land acquisition and obtaining the relevant approvals. It is critical for governments to lend support at operating phase to mitigate the demand risk by coordinating with competing facilities. Meanwhile, the private operator must maximise their commercial strength and creativity to increase business performance. Care for community events is one of the strategies private operators can adopt to improve their reputation and secure on-going and stable operation of the business.
Chapter 7 Using PPPs for Prison Development: A Comparative Analysis

7.1 Introduction

This chapter continues to present the research results derived from comparative case studies focusing on the prison development using PPPs. Similarly, this chapter aims to partly accomplish Objective 4 of the PhD research outlined in Section 1.3: Evaluate representative case studies in Hong Kong Special Administrative Region, Australia and New Zealand in the sector of exhibition and event venue, prison and school to analyse the critical factors affecting the successful implementation of PPPs. This chapter follows the same structure adopted for Chapter Six to present the research results and discussion.

7.2 An Overview of Prison Development and the Use of PPPs

Correctional services are an important part of a country’s judicial system. The primary objective of the services is to increase community safety and reduce re-offending and subsequent criminal activities through a variety of in-prison programmes, such as rehabilitation programmes, education and job training. The delivery of correctional services requires the building, upgrading, maintaining and operating of prisons (Department of Corrections, 2012a). The provision of prisons and associated services is a critical policy regime for governments.

7.2.1 Special Characteristics with the Provision of Prison and Correctional Services

Prison facilities are part of a nation’s social infrastructure networks. The delivery of correctional services forms an important policy for governments due to its close relevance to community safety and citizens’ well-being (National Infrastructure Unit, 2010). The functions of correctional services encompass keeping the prisoners in a safe, healthy and humane way, providing rehabilitation
programmes and offering vocational training and education (Grimsey and Lewis, 2004). Given the strategic importance of corrections system, the operation of prisons is subjected to comprehensive and strict legislative, regulatory and policy requirements. For instance, in New Zealand, the correctional services delivered by the Department of Corrections conform to the relevant legislation, such as the Corrections Act 2004 and a series of amendment Acts, international obligations such as the United Nations Standard Minimum Rules for the Treatment of Prisoners 1955 specifying the basic standards for faculties and management of prisoners, and regulatory and policy requirements such as the *Operations Manual* (Department of Corrections, 2012b).

Prison and correctional services consist of core services (e.g. custodial, industries, education and training programme) and ancillary services (e.g. facility management) (Grimsey and Lewis, 2004). The diversity of services requires multi-disciplinary expertise and skills to operate and manage prisons, posing challenges to the service providers. If the services are solely provided by one entity, significant business and management recourses are needed from the organisation. If more than two entities are involved in prison operation, emphasis needs to be placed on the interface management between the different service providers (Partnerships Victoria, 2008).

The correctional services fall into the realms of social services which are typically delivered by the public sector. Nonetheless, the spectrum of correctional services contains components that have the potential to be managed by the business sector (e.g., industries, facility management) (Blank, 2000). The operation of prisons therefore has captured industry’s interest, resulting in the emergence of a number of international prison operators and many privately-run prisons in the US and the UK (Schneider, 1999).

There are diverse groups of stakeholders involved in the delivery of prison projects including businesses, prisoners, humanitarian reformers and affected communities (Schneider, 1999). The funding for prison facilities and services are typically from general tax, determining that the provision of prison services needs to ensure value for money. In addition, the end users – prisoners, are not free
and generally cannot make choices about most activities in their daily life, leading to concern about their health, safety and human rights. The way in which prisons assets and associate services are delivered usually raises public concern and is subjected to much public exposure (Camp et al., 2001).

The building of new prisons normally needs large capital grants. Similar to other social infrastructure projects, like schools and hospitals, the on-going operation and maintenance of prisons also require long-term considerable expenditure. The high initial capital costs in conjunction with on-going operating expenses would impose budgetary pressure on procurers of prison and correctional services (Jefferies and McGeorge, 2009).

There is a large operation component in the provision of prison assets and services, arising from the proportion of operating costs in the project life-cycle costing and the complexity of correctional services. Much Emphasis on operation determines that organisations planning, designing and building prisons should take into account the operational and maintenance features, creating a need of taking an integrated approach.

7.2.2 The application of PPPs in prison development

Given the different institutional arrangements, legislative and regulatory environments and individual project context, PPP models differ for prison development. In countries, like the US and the UK, the most commonly-used model is design, build, finance and operate (DBFO) arrangement where the private sector is responsible for all prison-related services. A number of examples where the private sector provides full-packaged services include Parc Prison (opened in 1997 and located at Bridgeend, South Wales), Lowdham Prison (opened in 1998 and located at Nottingham) and Port Phillip Prison (opened in 1997 and located at Victoria State, Australia) (NAO, 2003, Victorian Auditor-General's Office, 2010). Another widely-used PPP model is design, build, finance and maintain (DBFM) arrangement under which the ancillary services such as security and information systems management, accommodation services and facility management are transferred to the private sector whereas the
state retains the responsibilities for providing core services such as custodial services and commercial enterprise. Due to the dissatisfaction with the operation of private prisons, all PPP prisons in Victoria State were procured under the DBFM model (e.g. the Metropolitan Remand Centre and Margoneet Correctional Centre) (Victorian Auditor-General's Office, 2010). The French mixed management model is an alternative form of PPP application in prisons. Under this model, the private sector designs, builds, and finances the prisons and manages a limited range of prison services, but excluding prison operations and custodial services (Grimsey and Lewis, 2004).

A number of reasons are identified as drivers for using PPPs in prisons. PPPs provide an alternative mechanism to meet the rapidly expanding prison population especially during a period of fiscal constraints (Camp et al., 2001). Through the use of private financing for initial capital investment, PPPs allow governments to pay for services over time (Martins et al., 2011).

Under PPPs, the private sector is incentivised to offer an integrated approach towards the design, building, maintenance and operation of projects (Dixon et al., 2005, Yescombe, 2007). From the public sector side, the whole-of-life costs of PPPs are likely to be lower than expenditures procured in traditional ways. The potential profits gained from prison operation also give the private sector investors room to achieve their business purposes.

Better service quality may be obtained through the introduction of PPPs into prison sector. Because the payment of PPP prisons are based on service availability and performance with reward and abatement mechanisms, the private sector is better motivated to provide better prison services (Carrillo et al., 2008). The report released by National Audit Office in the UK suggested that private-operated prisons tended to perform well in terms of treating prisoners with respect and providing purposeful activities (NAO, 2003).

In the UK and Australia, the need for prison reform and better managerial control are important considerations for PPP use in prisons (Camp et al., 2001). Through bringing in private sector expertise
and experience, PPPs may act as a catalyst for a change for the public sector approach to procurement and service delivery schemes. Technological and managerial skills learned from the private sector partner are likely to be applied across the publicly owned and operated prisons, which would benefit the correctional system as a whole (Chan et al., 2009, Duffield, 2005).

7.3 Case Study Approach and the Profile of Participants

Two PPP prison projects, Ararat Prison and Wiri Prison, based in Australia and New Zealand were selected for the case studies (The background information of the two projects is shown in Table 7.1). The qualitative data was mainly collected via semi-structured interviews and focus group. Evidences from other sources such as document analysis and direct observation compliment and corroborate the research findings. The stakeholders selected for the research include experts from central/state coordinating authority public agencies, the construction sector, facility managers, financial/legal advisors, and financiers. The research targeted practitioners being familiar with the project development and procurement phases of Ararat and Wiri and the policy environment of PPPs in the respective jurisdictions. All participants held middle or upper management positions in their organisations. Although both projects examined have not reached operating phase, the participants of Ararat were involved or familiar with the Victoria State’s previous experiences in prison PPPs, such as the Metropolitan Remand Centre and Marngoneet Correctional Centre contracts, which have been operational for six years. The details for data collection are shown in Table 7.2.
Table 7.1 Background characteristics of the case study projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Ararat Prison</th>
<th>Wiri Prison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure type</strong></td>
<td>Social</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Sector</strong></td>
<td>Prison</td>
<td>Prison</td>
</tr>
<tr>
<td><strong>Project type</strong></td>
<td>Expansion of existing facilities</td>
<td>Greenfield</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>West of Melbourne, Victoria, Australia</td>
<td>Wiri, South Auckland, New Zealand</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>358-bed prison and 40-bed transitional facility</td>
<td>Maximum 1060 prisoners</td>
</tr>
<tr>
<td><strong>PPP model</strong></td>
<td>DBFM</td>
<td>Full-package services</td>
</tr>
<tr>
<td><strong>Current status</strong></td>
<td>Construction</td>
<td>Preferred bidder appointed</td>
</tr>
<tr>
<td><strong>Contract value</strong></td>
<td>AU$394 million (US$ 410.9 million)</td>
<td>Approximate NZ$840 million (US$686.9 million)</td>
</tr>
<tr>
<td><strong>Year of contract award</strong></td>
<td>2010</td>
<td>2012</td>
</tr>
<tr>
<td><strong>Concession period</strong></td>
<td>25 years</td>
<td>25 years</td>
</tr>
<tr>
<td><strong>Cost performance</strong></td>
<td>Cost overruns</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Time performance</strong></td>
<td>Time delays</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Procurement duration</strong></td>
<td>14 months</td>
<td>19 months</td>
</tr>
</tbody>
</table>

Table 7.2 Profile of data collection

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Document analysis</strong></td>
<td>Media release; Project development plan; Government reports; Project Summary</td>
</tr>
<tr>
<td><strong>Interviews/focus group</strong></td>
<td>State coordinating authority (AS1); Public agency (AP1-AP7); Construction contractor (AC1); Facility manager (AF1)</td>
</tr>
<tr>
<td><strong>Direct observation</strong></td>
<td>Yes</td>
</tr>
</tbody>
</table>
7.4 Description of case studies

7.4.1 Ararat Prison

The Ararat Prison project was planned and initiated after 2008, in compliance with both the national guideline and Victoria State’s specific policy requirements. It is the first social infrastructure projects (e.g., Partnerships Victoria in Schools project, the new Royal Children’s Hospital project) undertaken under the current Victoria State policy. It is the fifth PPP prison project delivered in Victoria (Victorian Auditor-General's Office, 2010).

Since 2006, the Victoria State in Australia has experienced a significant increase of male prisoners. In response to the projected growth in the number of prisoners, the State initiated the Ararat Prison project, including: (1) funding and construction of a new medium-security prison facility for protection of prisoners adjacent to the existing Ararat Prison; (2) development of a 40-bed transitional facility for persons subject to extended supervision orders at Ararat (Department of Justice, 2010).

The project was procured under a PPP arrangement where the State of Victoria entered into a Project Agreement with an equity provider-led consortium – Aegis Correctional Partnership Pty Ltd. The private consortium was responsible for the design, construction and finance of the new facility including a new 358-bed medium-security prison expansion of the existing Ararat Prison and provision of facility management services across the facilities over 25 years (Department of Justice, 2010). The detailed contractual arrangement is shown in Figure 7.1.
After a competitive tender process, the Aegis consortium was chosen as the successful bidder and in May 2010, the project reached financial close (Department of Justice, 2010). Under the Project Agreement, Aegis is required to provide the Services according to the Services Specification. Expected to be completed by the end of 2012, the construction of the project was halted in May 2012 because the consortium was in financial trouble, and the payments to sub-contractors were delayed (Sexton and Butler, 2012). After the negotiation between the government and two domestic banks, a new PPP arrangement was set up with the consortium being led by the Commonwealth Bank, featuring a restart of the project (Sexton and Millar, 2012).

### 7.4.2 Wiri Prison

The Wiri prison project was the New Zealand government’s first attempt in social infrastructure sector procured under the current policy context. In April 2010, the Department of Corrections in New Zealand proposed to develop a maximum 1060-bed men’s prison in Wiri, South Auckland, adjacent to the existing Auckland Region Women’s Corrections Facility (Department of Corrections, 2010). The project uses a custodial PPP approach under which the Department engages with an operator-led consortium to design, build, operate, finance and maintain the prison for the duration of the contract.
The prison will revert to the Department 25 years after it becomes operational (Department of Corrections, 2011a).

Following an EoI exercise, three private consortia were short-listed in February 2011. The Department then issued a RfP, followed by an interactive tendering process. The private consortium – SecureFuture was appointed as the preferred bidder in March 2012. The project will be built by Fletcher, operated by Serco and maintained by Spotless Facility Services. The prison is expected to open in 2015 (English and Tolly, 2012).

7.5 Results

An investigation of the processes and organisation used for two prison PPP projects – the Ararat prison and the Wiri prison, and an analysis of the similarities and differences, identifies the key dimensions for using PPPs for prison development. The information was used to collate the main interventions used or proposed to improve prison PPPs.

7.5.1 Business case development

Because of the sensitivity of prison development, undertaking a clearly identified service need for prison PPPs is important. Participant AP1 and AP2 argued that accurate projection of prison population and estimation of growing trend, along with precise cost-benefit analysis, are pre-conditions for initiating prison PPP projects. The Ararat project was initiated as a response to projected growing male prisoner population, resulting from a series of policy decision to increase community safety, such as tougher sentences and increased prosecution of sexual assault (Department of Justice, 2010). In addition to conducting forecasts of the prison numbers, the participants (WT1, WP1 and WA3) of Wiri emphasised the need to take a programme view towards the service need analysis. During the planning and development of the project, the public casted much doubt on the need to build a new prison in light of reduced projected offender numbers. Nonetheless, the project was brought forward due to the Department of Corrections’ overall strategic development scheme to
better equip the prison facility to facilitate rehabilitation and the current conditions of the nation’s wider prison network with some aging prisons close to ending their viable life.

All participants agreed that the selection of a preferred delivery model should be grounded in careful quantitative analysis rather than ideological reasons. For example, in the case of Wiri, the net present cost of the service payments to be paid to SecureFuture is 10% lower than the PSC, indicating cost efficiency of a PPP (English and Tolly, 2012). Although admitting the uncertainties embedded in the calculation of PSC, the participants argued that the quantitative value-for-money assessment provided a systematic and methodical approach, giving the government confidence towards the PPP process.

In addition to a quantitative assessment, a comprehensive analysis on the suitability of PPPs for the intended project is essential. As reported by the builder of Ararat – Hawkins Construction, the main reason for the cost overruns and time delays was that the inflexible feature of PPP arrangements is not incompatible with the nature of a redevelopment project (Gibson, 2012b). The PPP model suits to projects with a good level of accuracy and clear objectives from the outset. However, in this case, construction in an existing operating prison gives rise to scope change and access and workforce interfaces, creating difficulties to the execution of PPPs (Gibson, 2012a). The selection of PPPs, especially the choice between separation or integration, of ancillary and core services needs to consider the alignment with the government’s policy objectives. Due to the Victoria State’s policy approach to PPPs, in which the private sector is excluded from providing core services in PPPs, a DBFM model was utilised for the Ararat Prison project. Opting for full-fledged PPP model in the Wiri project is consistent with the government’s policy directions to achieve operational innovations and focus on value for money outcomes. As maintained by Participant WT1, WP1 and WA2, considering the New Zealand’s environment for PPPs, without including the operation component in the PPP model, it is difficult for a PPP prison like Wiri to ensure value for money due to the differentials of cost of finance and high transaction costs. In addition, the government intended to apply the private sector’s expertise and innovations in prison operation to wider prison network from undertaking a
PPP. A full-fledged model encourages the private sector to use their technical and managerial strengths in prison development.

During business case development, five participants of Wiri emphasised the necessity of undertaking an accurate affordability analysis for prison PPP projects. Affordability analysis is embedded in financial costing, with particular focus on the preferred option. As stated by Participant WA3, “affordability implications that are created for building new prisons matter to the success of PPPs”. He reiterated that, if financial costing indicates PPPs are unaffordable, potential remedies such as adopting a different design solution and altering the scope of the option could apply to close the affordability gaps. Similarly, participants of the focus group and AS1 also mentioned that the affordability of the Ararat project was tested and budgetary allocations obtained before proceeding with a PPP option. AS1 further explained that the current capital asset management guidance and practices determined that awareness and care for affordability are required prior to progressing PPPs.

7.5.2 Procurement process

The project development process entails preparing project brief including output specification, setting up the key performance indicators and designing a reward and abatement mechanism. Eight participants (two for Ararat and six for Wiri) emphasised the critical role a high-quality output specification plays in realising effective contract monitoring and enforcement and driving design and operational innovations. For example, Participant AC1 and WC1 suggested that a clear specification that can be coherently interpreted by different individuals is crucial. The relevant documents (e.g., output specification, service specifications) should be consistent to give the prospective bidders unambiguous instructions regarding the clients’ requirements. However, in the Ararat and Wiri’s tendering practices, the interpretations of output specification varied among different people, as observed by the participants of both projects, and had some contradictions.
Compared to the Ararat project, where the operational services remain with the public sector, the participants of Wiri (WP1, WA1 and WA3) stated that the government placed much emphasis on accomplishing better operational results through introducing private sector innovations and leveraging private sector expertise. As such, much effort was made to incorporate a wide range of operational outcomes, such as enhancing rehabilitation and re-integration with communities, into the service performance of the contract to guarantee that the expected service outcomes can be achieved via contract management. Commensurate incentive and penalty mechanisms were set up to ensure the achievement of the primary objective – lowering recidivist rates (English and Tolly, 2012). Participant WP1, WA1 and WA3 highlighted the trade-off facing the project team when developing prison projects. The project team attempted to strike a balance between maximising private sector innovations and requiring the private operator to comply with the existing Operation Manual enforced across the prison network.

With respect to the difficulty found in providing quality tender documents, especially the output specification, seven participants stressed that involving diverse stakeholders in the project development stage is vital. Through thorough and detailed consultations with relevant stakeholders, such as the Department’s operating staff, unions, prisoners and relevant communities, the potential service needs and the desired outcomes were better captured for the preparation of tender documents. In terms of the likely conflicts between the innovative solutions proposed by the bidders and current prison operational practices, the participants of Wiri (WT1, WP1 and WA4) maintained that as long as the solutions are in compliance with the legislation and the public interest, other barriers will be removed. As a response to the government’s encouragement of promoting service innovations, the preferred bidder of Wiri proposed a series of measures, including investing in prison facilities for rehabilitation and re-integration activities and providing follow-up services accessible to prisoners after release.
Both the Ararat and Wiri projects adopted an interactive dialogue tendering procedure. The Australian participants from the focus group argued that such practices are commonly used across states in Australia and the practices have been effective during the tendering process of Ararat Prison:

We tried to make sure at all stages, they (the bidders) had best possible information and the quality of information we provided. The interactive tendering session helped to manage the process. (Synthesis of views from AP1-AP7)

Participant AC1 maintained that the dialogue allowed deeper issues about the Department’s requirements to be discussed. Through the communication about the design and operational solutions, the Department was able to provide advice on the issues which were not specified in the previous documents. The New Zealand participants (WP1, WT1, WA2, and WA4) also maintained that interactive tendering was desirable because effective dialogue would reduce bid costs arising from developing solutions that are not desirable by the clients.

7.5.3 Contract administration and management

All participants felt that effective contract administration and management, to a large degree, determines the extent to which value for money outcomes are achieved via a PPP and the sustainability of PPPs. As maintained by the participants of Ararat, the “core services” model, like the Ararat Prison, is likely to give rise to interface issue during the contract management stage due to the interdependency of two parties (operating staff employed by the public sector and the private sector partner) in the provision of correctional services. The interface issue is of great concern in prison PPP projects owing to the institutional arrangements in terms of the delivery of prison infrastructure and associated services. Under the Victoria’s justice and corrections system, different divisions within the Department of Justice are responsible for the provision of prison facilities and correctional services respectively. As elaborated by Participant AC1, “the government’s operation manager has different philosophy with the Department (of Justice) and intends to enforce changes…” Participant AF1 added
that the Department of Justice tends to procure the prison project in accordance with their policy objectives, which might, to some degree, differ from the ways in which the operating staff to provide the security and correctional services. The interface issue was not highlighted by the participants of Wiri. This may be attributed to the fact that the private sector partner will be responsible for providing the correctional services and facility management, with the government being in charge of monitoring and evaluating the performance against the pre-specified outcomes, based on which periodic payments are made. However, the New Zealand participants expressed concerns over the continuity of the prison PPPs, in light of the uncertainty surrounding the availability of political champion over the long concession period. Potential risks exist that the PPP project is cancelled after it becomes operational, as a result of the change of government or lack of champion within the public sector, as admitted by Participant WA1 and WA2.

With respect to the potential challenges with contract administration, the participants suggested that it is essential to keep constant and effective communication between the government’s operation manager and private sector partner and also within the public agencies, especially in the situations that changes to contract occur. When changes occur, “the private sector partner should be able to sustain constant communication, explain the intent behind the contract, and convince them how the services are delivered in accordance with long-term interests”, as stated by Participant AP1 and AP2. Participant AF1 further explained that in the Ararat project, based on the past experience with running prison PPPs, the Department of Justice has endeavoured to create an efficient communication channel throughout the project implementation process. He believed that the channel would be useful to avoid disconnections between the contract, prison operator and the private sector partner. Clear lines of inter-organisational communications need to be set up and maintained to ensure that the emerging issues in contract administration are promptly responded and tackled.

According to Participants AP1-AP7, monitoring, auditing and management of contract administration will be better executed by utilising appropriate documentation with traceable computer systems. The
documentation embraces keeping a contract administration manual and documenting the analysis and rationale for any variations and the corresponding actions in terms of payment reductions.

### 7.5.4 Governance structure and public sector capacity

All participants emphasised the importance of establishing an effective governance structure within the public sector throughout the planning, preparation and execution process. In the two PPP prison projects examined, responsive in-house teams were set up at different levels during the project development and tendering stages. As for the Ararat project, participants from the focus group claimed that a four-level governance structure – evaluation panel consisting of commercial/legal, technical, and services specialists, project steering committee, Minister for Corrections and Cabinet sub-committee was in place. The participants believed that such governance structure was conducive to ensuring an efficient procurement process by giving timely approvals at various decision-making points. In the case of Wiri, as stated by Participant WP1 and WT1, a steering committee was formulated at the outset, and met on a monthly basis. Besides, a core project group comprising experts from the NIU and representatives from the Department met on a weekly basis so that any existing or potential barriers can be addressed in time.

Sustaining effective governance structures in contract administration stage is of equal significance for prison PPPs. Based on Victorian Government’s previous experience of prison PPPs, Participant AP2, AP3 and AP7 contended that simplifying the governance arrangements at operational stage would facilitate timely reporting and avoid duplication of responsibilities within the public sector, such as the contract administrator and the operating staff from Corrections Victoria.

With regard to the issue, lack of public sector capacity, strong public leadership assisted by central PPP unit would increase the likelihood of project success. Governments should stick to the promises to the market throughout the process. Participants of the focus group maintained, “We tried to make the timelines we set up for each of the stages in a pretty organized way (Synthesis of views from
Participant AP1-AP7).” Participant WP1 and WA2 were of a view that the procuring authority should be able to foresee, acknowledge the potential risks to the bidders and address the concerns raised accordingly. It is notable that central PPP units of the two jurisdictions, Department of Treasury and Finance (DTF) and the NIU, were extensively involved in the respective projects in accordance with the previous PPP experience within procuring authorities. The roles that central PPP units played range from establishing policy and guidelines, assisting with project procurement and providing expert advice. For example, in New Zealand where little experience has been gained from using PPPs, the NIU was intensively involved in the core project team acting as commercial advisors to the Department.

7.5.5 Private sector market depth, capability and structure

Six participants (two for Ararat and four for Wiri) claimed that in order to secure a viable PPP, a properly structured private consortium is vital. The participants agreed that there is no one-approach-fits-all private sector structure for prison PPPs. The organisation of the consortium needs to be in compliance with general market conditions and special characteristics of the project. In the case of Wiri where custodial services are incorporated, an operator/contractor-led structure was adopted, whereas the Ararat project used a financier-led approach. The organisation of private consortia differs partly because of the varied levels of market maturity. When the Wiri Prion project was initiated, the PPP development in New Zealand remained at initial stage, lacking enough competitive financiers capable of being project sponsors by providing equity injection and putting the bids together. Nonetheless, by the time the Ararat project was envisaged, the financier-led approach had been commonly used for forming consortium in Australia. As commented by Participant AS1, in Victoria, due to much experience with running PPP projects, the financiers have been familiar with the design, construction and management aspects of a PPP project and are used to leading bids.

All participants from the private sector side mentioned that it is critical to maintain a long-term partnering relationship for private entities acting as different roles in a private consortium. The
participants reported, based on their observation, that there has been a lack of project sponsors, facility managers and world-leading prison operators. Participant AC1 and WC1 argued that given the unbalanced number of market players of the facility manager, construction contractor, operator and equity provider, they should sustain long-term partnership built on trust and mutual understanding. When the financier-led approach is used, long-term relationships assist equity providers with gaining a broader and more practical service delivery. With enhanced understanding of service delivery, the equity providers are better incentivised to provide optimum design and operational solutions for prison PPPs.

7.5.6 Risk analysis and allocation

For the Ararat Prison project, the major risks in relation to design, building, financing, and maintenance are transferred to the private sector, whereas in the case of Wiri, the risks connected with providing custodial services are also included in the private sector’s risk profile. Although the core services are retained by the public sector in Ararat, three participants (AS1, AC1 and AF1) stated that a central issue embedded in the project risk allocation scheme is the private sector being requested to employ prisoners to engage in a range of services relating facility management and being responsible for energy volume risk associated with electricity and gas consumption other than in the industry workshop areas. The participants from the public sector side maintained that such risk transfer offers greater opportunities to enhance rehabilitation and prisoners’ re-integration on release. The private sector partner absorbing the energy volume risk provides an incentive for the architect, builder and facility manager to use innovative technologies to achieve energy saving, which is one of the desired outcomes sought from undertaking the PPPs. However, from the private sector’s perspective, the increased risk profile poses challenges to accomplishing their organisational objectives in participating in the project. For example, Participant AF1 commented,

…the Department of Justice are very keen for us to use prison labour to help us maintain the facility. The prisoners can be engaged in cleaning, etc. That requires us to think of what are the
risks associated with it. If they damage something belongs to us? How difficult to supervise them?

…the use of utilities is always very contentious in Victoria. Does the operator take on the responsibility for utilities? How much gas and electricity is going to be used? We cannot necessarily influence the operational parameters. If the prisoner decided to turn the heater on throughout the night instead of turning it off, that would have an impact on the usage of utilities.

Unlike PPPs used for economic infrastructure projects, such as toll roads, urban rail, where demand and revenue risks capture the primary concern of the private sector, prison PPPs generally represent stable revenue streams to the private sector as long as the service performance standards are met. As such, five participants therefore (two for Ararat and three for Wiri) recommended that financiers should take on more risks in prison PPPs due to the potential relatively stable cash flows. Participant WA4 claimed that the banks could be less critical in the due diligence to avoid a prolonged and complicated transaction process.

Despite the increased risk profile to private sector for prison PPPs, the public sector still needs to retain or share the risks which otherwise cannot be well managed, such as the political risks and risks in relation to obtaining relevant approvals. In the case of Wiri, the concerns for potential political risk were raised by the bidders during the interactive dialogue stage. The government responded to the concerns by retaining the political risks. The government promised to compensate the bidders to a capped amount if the project is cancelled due to a change of government. In addition to the political risk, the participants of Wiri highlighted the risk of obtaining designation approval as required by Resource Management Act 1991. According to Participant WT1, the resource consent was initially granted to a women’s prison at the intended site of Wiri Prison project. The change of purpose resulted in another application, leading to a prolonged process. Participant WA1 and WT1 pointed out that for the following PPP projects, it is essential for the government to obtain the resource consent before approaching the market.
7.6 Discussion

This chapter evaluates the PPP application in the prison sector by examining two recent projects based in Australia and New Zealand. It extends the on-going debate on the suitability of PPPs for prison development by highlighting the key issues emerging from the project initiation and execution and extracting strategies and measures to get better results from the use of PPPs.

Previous literature has shown that many PPP projects not meeting the expected outcomes because the service need was not sufficiently justified (Askar and Gab-Allah, 2002, Kalidindi and Thomas, 2003). This research reinforces this point and highlights that the initiation of new projects needs to be based on accurate estimation of prison numbers which are influenced by the relevant policies to enforce penalties. Conducting a programme-level service need analysis for prison development affirms Mahalingam’s (2010) finding that adopting a programmatic approach toward PPPs is an important strategy enabling PPPs. Specific to prison PPPs, the proposed investment must be aligned with the Department’s and overall infrastructure development plan and existing organisational strategic position.

International PPP practices, especially in the UK and Australia, place emphasis on using quantitative value for money methodology to assess the cost efficiency of a PPP proposal (Garvin, 2010, Grimsey and Lewis, 2005). Such PSC-based assessment was exercised in the prison PPP cases examined. This research further reinforces the need to take other qualitative factors into account (e.g., the nature of the project – whether it is greenfield or brownfield – and the alignment with government’s policy objective). Unlike other social infrastructure sectors, such as schools and hospitals, where a DBFM model is commonly used, both integrated and separated PPP models can be selected for prison development. As such, an extended analysis on whether to bundle the services is required, which should be undertaken on the basis of the government’s policy objectives for embarking on PPPs.

Undertaking an affordability analysis has been underlined in previous research on PPP application, indicating that the government’s fiscal position over the appraisal time needs to be examined to ensure the sustainability of PPPs (Carrillo et al., 2008, Akintoye et al., 2003b). This is pursuant to the
features of performance-based PPPs that periodical payments for services will be made by governments after the project enters into operation to pay back the capital costs, operating and maintenance spending plus an agreed level of profits. Compared to school PPPs, with relatively small capital size and maintenance costs, the affordability implications are of importance for prison PPPs, especially for projects using an integrated approach due to higher fiscal liabilities posed to the government.

The emphasis on providing quality tender documents for prison PPPs concurs with previous research findings that clear project brief and client requirements are critical success factors for PPP projects (Jamali, 2004). In comparison with economic infrastructure PPPs, such as toll roads and urban rails, involving third-party or end user payments, clearly and coherently specifying the service performance standards seems to be of particular importance for social infrastructure PPPs, like prisons. Notably, for prison PPPs, where operational services are transferred to the private sector, it is critical for the public sector project team to ensure that the core service performance indicators are incorporated in the contract to maximise the private sector innovations. The importance of community involvement in the development of PPPs has been recognised in the existing literature (Mahalingam, 2010). For PPPs in prison development, the community involvement of prison projects is not restricted to consultation with end-users as suggested by Chan (2010a). The participation of broad groups of stakeholders (e.g. prisoners, custodial staff, and training providers) for prison development partly reflects the diverse stakeholders in prison development and the complex nature of prison services.

A distinguishing feature of PPPs is the long concession period focusing on contract administration and management. In comparison with third-party or end-user pay PPPs in which the private sector partner’s revenues are largely dependent on the service quality and end-user satisfaction, it is particularly important for governments to perform effective contract monitoring and management in prison development due to the reliance on the public sector’s operating staff to evaluate the performance standards and therefore enforce the incentive and penalty mechanism.
Effective governance structures suggested in this research is consistent with the previous research findings recognising the dominant influence of good governance in PPP planning and execution (Martins et al., 2011, European Commission, 2003). For prison PPPs, the implications extend from project development and tendering process to contract management phase, given the focus on operational efficiency and long-term viability. As reflected in the Ararat project, if the lines of communication between the various parties including the private sector partner, operational staff of existing prison and the public sector’s contract management team, the access and workforce interface issue during the construction stage could have been better solved.

A properly structured private consortium and enhanced partnering relationship among the various entities underpins Zhang (2005b) and Jefferies et al.’s (2002) finding that a strong private consortium and good partners’ relationship are critical success factors for successful implementation of PPPs. The research shows that it is also the case for prison PPPs given the limited number of prison operators and facility managers with sufficient capacity to engage with PPPs. The failure of the builder for the Ararat project reinforces that lacking of a strong private sector partner, the success of a prison PPP cannot be guaranteed.

Equitable risk allocation for PPP projects has been highlighted in much of the previous literature focusing on PPP implementation as risk allocation lies at the core for achieving value for money in PPPs (Li et al., 2005b, Garvin, 2010). However, the implications of risk allocation vary among different infrastructure sectors and countries. As for infrastructure sectors such as toll roads and venue projects, where demand risk is taken by the private sector, lenders and private sponsors need to be rigorous and strict with forecasting project revenue streams and governments are usually required to take on more risks by providing additional supports (e.g. co-finance, credit enhancement schemes) if the economic viability cannot be ensured. For prison PPPs, especially the non-core services PPP projects, given the foreseeable stable revenue streams, governments tend to transfer more risks to the private sector partner, such as employing the prisoners in the facility management and energy usage, as is the case for the Ararat project. In countries like New Zealand where the PPP market lacks
attractiveness to the potential players, governments need to retain more risks (e.g. site investigation, obtaining approvals) aiming at sustaining a dynamic PPP market.

7.7 Strategies for Using PPPs for Prison Development

This research finds that the critical factors affecting general application of PPPs apply to prison PPP practices. However deviations exist arising from the special characteristics of prison development. The provision of correctional services is subjected to extensive legislative, regulatory and policy requirements, which to some extent, limits the private sector’s freedom to operational innovations. In the Wiri project, the constraints by the policy were removed to incentivise the bidders to propose better solutions, under the conditions that legislative requirements are met. The complexity of correctional services determines that clear and coherent output and services specifications need to be developed, based on which effective contract management and administration can be performed. Given the complicated and multi-disciplinary nature of correctional services, a properly structured private sector partner with the main participants being long-term business partners is preferred to ensure that the desired outcomes can be gained through private sector innovations and expertise. The correctional services are within social services, although allowing for making profits. This raises the concern about the private sector being involved in providing core services. As such, decision-making on the choice integrated or non-integrated PPP models should be conducted in pursuant to the government’s policy objectives towards the adoption of PPPs. In addition, the provision of prison services is exposed to much public examination. A well-articulated service identification and value for money assessment need to be undertaken before proceeding with a PPP. The important role of an affordability analysis is highlighted for prison development, owing to the large capital and considerable operating costs for the provision of prison services.

Governments who are engaging with PPPs for the provision of prison facilities and assets should clearly identify the service need at both project and programme level grounding in precise cost-benefit analysis. A thorough and careful procurement option analysis should be followed based on quantitative value for money assessment and qualitative evaluation. All available PPP models for
prison development should be taken into consideration when conducting the option analysis. In addition to economic appraisal, affordability analysis focusing on financial costing needs to be elaborated in prison PPPs as the long-term viability of PPPs, to large degree, depends on the governments’ fiscal situations over the appraisal time. Since the quality of output specification determines the extent to which private sector partners can exert their design and operational innovations, governments should make great effort in making high-quality output specifications by involving diverse stakeholders’ opinions. During the project development stage, an appropriate payment mechanism, coupled with reward and abatement schemes need to be set up to ensure effective contract management and monitoring. Standardised tendering exercise and streamlined procurement process are desirable for prison PPPs and an interactive dialogue procedure would contribute to optimum bid submissions in response to the governments’ service requirement. Practices of prison PPPs place much emphasis on contract management and administration as the operational performances significantly influence the ability to achieve value for money objectives. This research proposes an appropriate documentation system and constant and effective communication in order to establish operational contract management protocols. Although equitable risk allocation has been widely advocated in PPP practices, the prison PPPs tend to transfer more risks to the private sector as there is low demand risk involved in the private sector partner’s risk profile. A good governance structure is favourable for prison PPPs throughout the planning and execution stages and strong public leadership is required. On the private sector side, setting up a properly-structured consortium and maintaining the long-term partnership would help to achieve their long-term business strategies in the countries’ PPP market.
Chapter 8 Using PPPs for School Development: A Comparative Analysis

8.1 Introduction

This chapter goes on to report on the research results derived from comparative case studies focusing on the school development using PPPs. This chapter aims to partly accomplish the Objective 4 outlined in Section 1.3: Evaluate representative case studies in Hong Kong Special Administrative Region, Australia and New Zealand in the sector of exhibition and event venue, prison and school to analyse the critical factors affecting the successful implementation of PPPs. Following the same structure adopted in the previous two case studies chapters, this chapter concludes with strategies for using PPPs in school development.

8.2 An Overview of School Development and the Use of PPPs

Elementary and secondary education is an essential policy regime for governments. The primary objective of education system is to equip citizens with knowledge and skills to succeed in the modern world. The delivery of educational services relies on the development of school assets. Building, management and operation of schools therefore plays an important role in achieving educational objectives.

8.2.1 Special characteristics with school development

The provision of school facilities and services has special characteristics, compared to other infrastructure sectors. The building of schools usually requires comparably small capital investment. The long-term operating and maintenance expenses of school projects take relatively higher proportion in life-cycle costing than capital costs, as opposed to other capital intense infrastructure sectors, such as land transport, urban rail (Solino and Vassallo, 2009, Gibson and Davies, 2008). The large proportion of operating costs determines that a whole-of-life approach is preferred for school
development and more emphasis should be placed on the long-term service delivery (National Infrastructure Unit, 2010).

Services in relation to school operation comprise educational programmes (e.g. teaching), community activities and facility management (Grimsey and Lewis, 2004). The facility management embraces a variety of activities such as operational, security, cleaning, safety, utility, maintenance and repair services (Partnerships Victoria, 2001c). Providing high-quality educational services is the primary objective for school development (CCPPP, 2010). The ability to achieve the objective largely depends on the performance of school assets delivery and the associated management (NAO, 2009). The operation of school services needs providers from distinct professional disciplines. The educational services fall in the realms of social services, which should be provided by the public sector, whilst the management of school assets requires the expertise and skills from the business sector (Blank, 2000).

The building, management and operation of school projects involve diverse groups of stakeholders including central procuring agencies, principles, teachers, parents, students and wider community. Different groups have varied roles at key decision-making points throughout the project life cycle. For example, in New Zealand, the Ministry of Education sets out the strategic objectives for school development, structures and implements the procurement process. Upon the completion of construction, the school board (typically comprised of principals, teachers and parents) takes the responsibility for service delivery and on-going maintenance of the facility and manages the annual maintenance funding allocated by government (National Infrastructure Unit, 2010). The involvement of multi-group stakeholders contributes to increase the accountability of the educational services and ensures the community’ interest. However, it is likely to result in duplication of roles and inconsistency of approaches toward the provision of school services, complicating the decision making process for school projects (El-Gohary et al., 2006).

There is general no special requirement imposed on the design of elementary and secondary schools although innovative design is desirable. This differs from other infrastructure sectors such as hospitals
and university buildings, which have unique design requirements given the complex nature of the services. For example, the architects of university buildings need to take the functions of teaching, research, laboratory, and resting into consideration during the design stage. By contrast, the functions of school facilities are fairly simple, without unique design requirements for special purposes and technical challenges (Reeves and Ryan, 2007). The planning, design and construction of school projects are often subjected to tight timeframes as construction needs to be completed by the start of the school year.

8.2.2 PPP application in the school sector

The PPP models used for school development is mainly in the form of DBFM under which the private sector partner is responsible for financing, design and building the school facility and providing facility management whilst educational services remain with the State (Grimsey and Lewis, 2004). For example, in Canada, the Alberta Schools project consisting of the construction of 28 new schools was procured under DBFM arrangements with a 30-year concession period (Alberta News Release, 2008). In Australia, the DBFM model has been practised for a number of projects across the states such as New South Wales Project 1 and Project 2, Southeast Queensland School Project and Partnerships Victoria in School Project (CCPPP, 2010). In the UK’s Building Schools for the Future (BSF) programme, PPPs were implemented in the form of Joint Venture where a joint venture company was set up between a private sector partner, the local authority and Partnerships for Schools for delivery BSF projects. The local authority signed a contract with the joint venture company to deliver the entire scheme including the buildings, maintenance and other premises-related services to the schools on a long-term basis (Aritua et al., 2008). In some developing countries like Ghana, partnership involving local or international NGOs and local community groups work closely to respond to the educational needs of poor rural communities (Akyeampong, 2009).

A number of reasons are identified as drivers for the adoption of PPPs for school development. PPPs underpin a whole-of-life approach toward capital asset procurement and service delivery through the
integration of design, construction and facility management (Cheung et al., 2009). The relatively high maintenance costs associated with school operation requires a life-cycle costing strategy. It is likely that the use of PPPs lead to synthesized and optimum design, construction and maintenance solutions for school development. The enhanced constructability and maintainability could contribute to whole-of-life cost saving (Carrillo et al., 2008). PPPs may generate additional revenue sources from school facilities, resulting in increased efficiency in the usage of public resources (National Infrastructure Unit, 2009a). It is common that school infrastructure has event halls, sports facilities or retail stores. The functions of these facilities have the potentials to be extended to wider community use. By utilising private sector’s creative business ideas, additional revenues are likely to be accessed which would also assist with attaining greater community benefits (European Commission, 2003).

8.3 Case Study Approach and the Profile of Participants

Two school PPP projects, Partnerships Victoria in Schools (PViS) and Hobsonville Schools (HS), based in Australia and New Zealand, were selected for case studies (The detailed background information of the two projects is given in Table 8.1). Semi-structured interviews are the primary data collection instrument. The details regarding the data collection is presented in Table 8.2. The stakeholders selected for the research include experts from central/state coordinating authority public agencies, the construction sector, facility manager, financial/legal advisors, and financiers. The selection of a cross section of the major stakeholders in PPP projects arises from the intention to gain a balanced view towards the PPP adoption and implementation (e.g. from both public and private sector side, pre-contract and post-contract phase). The research targeted practitioners who were familiar with the project development, procurement and/or contract administration of the PViS and HS project and the PPP policies of respective jurisdictions. All participants have extensive local or overseas PPP experience (more than 10 years) and currently hold middle or upper management positions in their organisations. The information obtained from document analysis and direct observation compliments and confirms the data collected from semi-structured interviews.
Table 8.1 Background characteristics of the case study projects

<table>
<thead>
<tr>
<th>Name</th>
<th>Partnerships Victoria in Schools</th>
<th>Hobsonville Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure type</td>
<td>Social</td>
<td>Social</td>
</tr>
<tr>
<td>Sector</td>
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<td>2 schools</td>
</tr>
<tr>
<td>Location</td>
<td>Melbourne</td>
<td>Hobsonville Point, north-west of Auckland</td>
</tr>
<tr>
<td>Current status</td>
<td>Operation</td>
<td>Construction</td>
</tr>
<tr>
<td>Contract value</td>
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<td>NZ$72.6 million</td>
</tr>
<tr>
<td></td>
<td>(About US$264.0 million)</td>
<td>About US$59.1 million</td>
</tr>
<tr>
<td>Year of contract award</td>
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<td>2012</td>
</tr>
<tr>
<td>Concession period</td>
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<td>25 years</td>
</tr>
<tr>
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<td>Within budget</td>
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</tr>
<tr>
<td>Time performance</td>
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</tr>
<tr>
<td>Procurement duration</td>
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Table 8.2 Profile of data collection

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<td>HS</td>
<td>Media release; official website information</td>
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8.4 Description of case studies

8.4.1 Case study 1: Partnerships Victoria in Schools

Although PPPs have been adopted for school development in other states across Australia such as New South Wales and Queensland, the PVIS project was the first PPP attempt made by the State of Victoria in the school sector. The project was undertaken in compliance with the National PPP Policy and Guidelines and supplementary Victorian PPP guidance material (DEECD, 2009).

The PViS project consists of eleven new government schools to be built in key growth areas of Melbourne (DEECD, 2009). Scheduled to open in 2010 and 2011 school years, the project formed critical infrastructure for outer Melbourne communities with ecologically sustainable features (DEECD, 2009). The YMCA facilities built at six school sites were the innovative aspects of the project, which was in line with the government’s policy to facilitate community use and children services at the same location (DEECD, 2009). Being the fastest closed PPP transaction in Australia, the project won the National Infrastructure Awards, Infrastructure Partnerships Australia 2009 (MinterEllison Lawyers, 2011).

The project was procured under a Public-Private Partnership arrangement in which the State entered into a Project Agreement with a private consortium – Axiom – to design, build, finance and maintain the new schools, whilst the Victorian government retaining the responsibility for core services, including teaching and school curriculum (DEECD, 2009). In particular, the State leases the facilities to YMCA to deliver various YMCA programmes ranging from long day care to community activities. An illustration of the contractual arrangement of the project is shown in Figure 1.
The State pays for the services provided by Axiom in the form of quarterly service payment (QSP) which will be adjusted for customer price index (CPI) and labour price index (LPI) movement. Financial deductions may be enforced if the private sector partner fails to deliver services specified in the service specifications (DEECD, 2009). When financial deductions occur, the QSP will be abated according to a pre-determined formula set out in the Project Agreement against to the degree to which the private sector fails to provide the services to the required standards.

8.4.2 Case Study 2: Hobsonville Schools

The Hobsonville Schools project is New Zealand’s first PPP school attempt and it is the nation’s second pilot project following a Men’s Prison project to be built at Wiri (Department of Corrections, 2011e). The HS project encompasses a primary school (year 1-8) and a secondary school (year 9-13) expected to accommodate 690 and 1500 students respectively. The primary school is scheduled to open in 2013. The Year 9 of the secondary school to open in 2014 and other year levels in subsequent years (Ministry of Education, 2011).
The school buildings and associated services will be delivered via a PPP. A private sector partner – Learning Infrastructure Partners was appointed to design, build, finance and maintain the new schools under a 25-year PPP contract. The Government will own the land and buildings throughout the contract term. The educational services rest with the principal and the Board of trustees (Ministry of Education, 2011). A detailed contractual arrangement of HS school is presented in Figure 2.

Figure 8.2 Contractual arrangement of the HS project

**8.5 Results**

An investigation of the PPP processes and organisation of the *Partnerships Victoria* in Schools (PViS) and Hobsonville Schools (HS) project in Australia and New Zealand respectively, identifies the critical factors influencing PPP implementation in the school sector.

**8.5.1 Business case development**

Six participants (two of the PViS and four of HS) stressed the importance of undertaking a well-identified service need at both programme and project level. For example, Participant HA1 argued, “people blame [the use of] PPPs for unsuccessful projects. Sometimes it is [because] the school’s service need is not well addressed.” The initiation of school projects is driven by growth in the school-aged population and the student-to-teacher ratio policy (National Infrastructure Unit, 2010). The accuracy of population projection therefore has a key influence on the robustness of service need
analysis. However, some other factors such as different patterns of population changes in different locations and changes in migration patterns and birth rates further complicate the forecasting of school-aged population. It is therefore important to focus on specifying service needs by understanding the status quo, conducting accurate projections and identifying the deficiencies in current provision.

An analysis at programme level is required for school projects, especially when PPPs are considered as possible delivery methods. Participant HP1 and HA2 asserted that when the government embarking on a school PPP, much focus was centred on whether the project has the sufficient size to attract the market as school projects tend to be of small capital value, generally without particular technical challenges. The viability of PPPs mainly depends on the market’s interest with regard to the high bid costs. A programme-level analysis, based on which a number of suitable primary or secondary schools are bundled, would increase the capital volume needed to justify a PPP and enhance the attractiveness of the intended project. In the two cases examined, eleven and two schools were bundled for respective PPP project to sustain a viable PPP.

Three New Zealand participants (HA1, HA2, and HP1) emphasised the necessity of undertaking a thorough affordability analysis for school PPPs. As maintained by Participant HA2, “the biggest impediment of PPPs is the affordability. It is the value for money of finance, which is the key thing, the affordability implications” Participant HA1 further stressed that in most cases, affordability issues are the main reason for causing delays.

8.5.2 Procurement process

All participants emphasised that the project team should take their time to develop high-quality project briefs. Participant PP1 and PC1 acknowledged the difficulty of developing and interpreting output specification for the PViS project. As claimed by Participant PP1, “There are probably some lessons for us in terms of how to do that (output specification). Definitely we’ve provided that.”
Participant PC1 further elaborated on the challenges that the project brief documents, “the output specification and services specifications sometimes were contradictory to each other, leaving much room for the Project Director to interpret the requirements.” (PC1) The participants of HS agreed that public agencies in New Zealand were willing to accept the concept of providing output specification, but found it difficult to implement in practice. For instance, Participant HA2 commented,

> It is not too difficult putting them into documents. They (procuring agencies) have to think about how people are going to interact in these buildings. It is the level of details and robustness over time that takes time and costs in the process (HA2).

All participants expressed concerns over the high transaction costs and lengthy procurement duration of PPPs given the generally small size and simple feature of school projects. For instance, Participant PP1 and HC1 admitted that without a sufficient scale, school PPPs may result in sub-optimal value for money as the cost savings generated from a whole-of-life approach and innovations cannot offset the high transaction costs. Participant PC1 also highlighted the time pressure to design and build under school PPPs:

> All schools had to be opened by the start of the school year. This therefore put a lot of pressure on the government to let the works in a timely manner. They (the government) need to reduce the tender duration to ensure the contract was let in enough time to design and build. (PC1)

Having been aware of the concern for procurement duration, all participants highlighted the importance of structuring a size-adjusted and streamlined tendering process to accommodate the features of school projects. As suggested by the participants (PP1, HT1, HA1, and HA2), a commensurate procurement procedure is preferred. “We (the government) are always considering how we need to streamline the process or make the process more efficient to make the small projects work. (HT1)” Participant PS1 and HA1 elaborated that a streamlined process is basically reflected in lower level of details in bid requirements, short-listing to no more than three proponents, and moving...
fast to the preferred bidder stage. Participant HA2 elaborated on the means adopted to streamline the procurement of HS:

We reviewed the bid requirements and try to get a balance between asking for everything and getting it sensible… We did things like geotechnical investigations and paying for site surveys so the bidders don’t need to do it themselves. (HA2)

The fast-tracked procurement of PViS (9 months) and HS (10 months) demonstrates the respective government’s determination to structure and implement a size-adjusted and streamlined tendering exercise. Six participants (two of PViS and four of HS) insisted that it was of equal importance to maintain a sufficient level of competition. This is especially the case for the New Zealand project. Unlike the Victoria State, where a number of PPP projects have been undertaken and a relatively mature market has developed, New Zealand’s general economic conditions – small size of project and lacking of a pipeline of infrastructure projects – are not conducive to attracting prospective private entities in participating in PPPs. Given limited PPP experiences, not sufficient time has passed for private companies to build up confidence and the required expertise to invest in New Zealand’s PPPs. The participants of HS (HT1, HP1, HA1 and HA2) stated that the private sector players therefore tended to push the New Zealand government to structure a quick PPP procurement. However, the participants were of a view that the streamlining should not threaten the competition situation. In both cases, the government tried to achieve the balance by keeping constant contacts with main market players, undertaking extensive marketing sounding and conducting an interactive tendering procedure. Participant PP2 also pointed out that a useful means to improve the effectiveness of tendering is to keep the bidders informed at various stages by holding a series of interactive sessions of communication in the presence of probity officers. Participant HP1 reinforced that without compromising competition and bidders’ intellectual properties, the procuring authority should disclose as much information as possible to the bidders in the interactive workshops so that they can be better equipped to prepare bid submissions.
Ten participants (Four of PVIs and six of HS) stressed that governments’ consistent and standardised approach to the use of PPPs contributes to lowering private entities’ barriers to entry and reducing bid costs. Participants of PVIS held a positive view towards the Victoria State’s PPP model. As Participant PP1 commented, “We reduce the transaction costs by having a well-understood model in the marketplace. Victorian model has been around [for] many years. It has been very stable. People (the industry) know what Victorian system is.” Participant PP2 complemented, “the Victorian Government’s approach is very pragmatic.” Although New Zealand has just started its PPP programme and development of policy and guidelines, the participants of HS (HC1, HC2, HA1 and HA2) believed that the Draft Public-Private Partnership (PPPs) Standard Contract delivers a clear message on the government’s commercial position in a PPP transaction. If applied consistently and updated as best practices are incorporated, providing a template for future PPP projects.

8.5.3 Public sector capacity

All participants claimed that the success of a school PPP largely depends on the public sector capacity and culture. For both procuring authorities (the Department of Education and Early Childhood Development and the Ministry of Education), the PVIs and HS project were their first PPP attempts. Participant PC1 argued, based on his observation, that a PPP can easily become a failure if the public sector is unfair. Participant PP2 articulated that the project team’s skills, knowledge and experience is critical to ensuring the planning, implementation and contract management to be undertaken in a structured and monitored manner. Participants of HS (HT1, HA1, HA2, and HE1) agreed with the Australian practitioners and added that the government’s consistent and stable approach towards PPPs and political champion is particularly important for New Zealand PPPs. It is likely that the current government favours a PPP approach, understands the model well and signs a PPP contract with a private sector partner. However, when the change of government occurs, the political champion may be unavailable due to the different mindsets about PPPs. This is incompatible with the long-term nature of PPP contracts, requiring consistent and stable public sector environment.
All participants pointed out the support from central coordinating authorities greatly helps to raise the public sector leadership. In both cases, the experts from Department of Treasury and Finance and National Infrastructure Unit, respectively, were intensively involved in project development to assist the agencies with the commercial and financial aspects of each project. Participant PP2 commented on the crucial role of experienced experts in the procurement of PViS, “there are a couple of senior people on board who know PPPs very well. They allow us to do the procurement in a very short time.” Participant PC1 also agreed that the delivery team in the government shows real understanding of the intent of a PPP and the relevant roles and responsibilities of each party involved. Lacking of established practices as Victorian Government has, the participants of HS suggested that the Ministry should closely collaborate and well consult with advisors from the NIU to manage the pilot project. As commented by Participant HT1, “we are holding their hand through the process to make sure that the documentation is saying the right things to the market and we are sending the right messages.”

**8.5.4 Private sector market depth and capability**

Eight participants (three of PViS and five of HS) felt that school PPPs present business communities both opportunities and challenges. The Australian participants indicated a lack of depth in facility management industry. For instance, Participant PC1 reported, “there are limited facility management companies that can handle placing a risk profile on 25-year maintenance.” Participant PF1 agreed with the point, arguing that there are only probably three to four organisations with the capacity to engage with a PPP.

When you taking life cycle risk over a period of 25 years, you need to have a level of understanding what maintenance cycle applies to that equipment. So from our perspective, we certainly have to bring in a lot of engineering support, compared to our normal, less important maintenance contracts. (PF1)
The New Zealand participants (HT1, HA1, and HC1) strengthened the challenge with the depth of market. “There is no very sophisticated private sector market, which basically means that you have to be very careful about your project in the market and the market’s ability to respond to it.” (HA1) With regard to the limited private sector players, three participants (PF1, HC1, and HC2) maintained that private companies should be clear about their objectives to engage with PPPs and a strategic development scheme needs to be adopted accordingly.

A long-term contract is a good way to provide a stable business opportunity. PPPs are predominantly government contracts. So we also consider being involved in a PPP (because it) gives us access to market more generally even PPPs are not necessarily involved. (PF1)

Driven by a long-term, strategic business development scheme, private companies are likely to utilise alternative mechanisms to build up their capacity, such as referring to external advisors and employing experienced internal staff. Also, private companies are suggested to establish a sustainable and good partnership with other organisations acting as different roles in a PPP. Being familiar with other partners’ strengths and weaknesses and working collectively, the private companies are more likely to prepare a robust submission for a PPP deal.

8.5.5 Financial arrangement

Six participants (two of PViS and four of HS) showed concerns over obtaining finance in capital market. Participant PP1 and PP2 claimed that the PViS reached financial prior to the GFC and therefore the effects of GFC were not reflected in the financial arrangement. Yet, they pointed out the cost of debt largely increased as a result of GFC and the bond became unavailable for funding PPP projects in Victoria. Participant PC1 also highlighted the issue of lacking of financiers acting as project sponsors, given the commonly used financier-led approach in Australia. “There are few financiers in the market that will take on this model, again restricting the number of consortia in the bid.” (PC1)
Participants of HS generally felt little impact of the GFC on financing this project, although they admitted that the bank sector in New Zealand lacks of depth to support multiple bidders and the terms and conditions tend to be tight for New Zealand PPPs, giving rise to refinancing issues. They further mentioned the potential constraint – no alternative financial instrument to bank debt (e.g., bond) for funding New Zealand PPPs, although not reflected in the HS project, is likely to limit a sustainable PPP programme. In addition to the concerns with debt finance, Participant HA1, HA2 and HP1 also stated that the New Zealand market has exhibited a scarcity of specialised equity providers to support PPP projects, posing constraints on accessing capitals and preparing bids.

Seven participants (two of PViS and five of HS) recommended ways to alleviate the impacts of the GFC on PPP projects and current constraints in obtaining funding. Participant PP2, HP1 and HA1 suggested that the government should not request committed finance prior to Request for Proposal stage as it is comparatively difficult to support multiple bidders in competition. With respect to obtaining equity finance, Participant HE1 and HA1 advised that median- or small-sized PPPs like school projects are suitable investment opportunities for pension funds such as Superannuation Funds and Accident Compensation Corporation (ACC). For example, the Public Infrastructure Fund, with New Zealand Superannuation Funds as the main investor, invested in the HS project as the equity provider.

8.5.6 Stakeholder engagement

All participants from the public sector side agreed that satisfying the stakeholders’ needs and addressing their concerns were the priorities in their planning and decision making. As maintained by Participant PP2 and PA2, for both projects, the public sector tackled the issues by extensively involving various stakeholders in the project preparation, procurement and execution. Participant PP1 and PP2 reported that the eleven schools of the PViS project were greenfield projects without existing stakeholders such as principals, teachers and communities. Risks arose that the outcomes specified were not favoured by the students, teachers and other stakeholders. An education reference group
comprising of some school principals and independent education experts was therefore set up to provide inputs in specifying the outputs. Participant PP2 added, “We use that reference group to guide us to put the brief together”.

Likewise, in the case of HS, the stakeholder issue was heavily emphasised by the participants, in light of existing institutional arrangements for the school services provision. In New Zealand, the responsibilities of infrastructure investment and management of state primary and secondary schools are shared by the Ministry of Education and individual Boards of Trustees (Kensington Swan and NZCID, 2006). Participant HA1 and HA2 commented on the problems embedded in such practices that apply to the most state schools:

…the key thing in New Zealand is that Board of Trustees get appointed but they have no property experience whatsoever. And they start to control the development of 50 or 60 million dollars’ assets, which is fundamentally wrong as they should not be able to do it… You don’t need to be a property expert to get onto a Board of Trustees. So it is completely skill gap missing. This process gives them influence on the property stuff, but less focused on what they do, which is teaching students and communities. (Synthesis of views from HA1 and HA2)

As for a PPP, like the HS project, the Board’s role is different, being focused on education delivery rather than property maintenance. Despite the different role of the board, a series of arrangements were in place by the Ministry to capture the needs of the various stakeholders and ensure that the PPPs are contributing to better service quality. In the case of HS, The Board of Trustees including two appointed principals, teachers and wider school communities such as parents, was established at early stage. Participant HA2 commented on the Board’s involvement

The Board of Trustees was consulted in the development of output specifications. They were informed in some of the procurement stages. The Board was invited to help to assess the tenders. So they contributed to the work streams that are relevant to them, in the design,
construction and whole-of-life service specifications. They are quite involved, but it is a different involvement. Their focus is very much on the educational delivery (HA1)

In addition to engagement at critical decision making, the government attempted to make the board to be acquainted with the uniqueness of the project (the philosophies of PPPs and the implications for school development) since the appointment process. According to Participant HT1, HP1 and HA2 confirmed that the Board has been comfortable and satisfied with their involvement in a PPP school. “They like the fact that if something breaks, they can pick up the phone and call and get someone fix it. It is already all paid for and no need for negotiation.” (HA1)

8.5.7 Governance structure and contract administration and management

Seven participants (three of PViS and four of HS) stressed that an effective governance structure with clear lines of communication is vital to ensure that all key decisions are made in accordance with the schedules and the contract is administered in an organised and efficient way. Participant PP2 elaborated on the features of an effective governance structure of procurement:

You set up a steering committee to oversee the project. In some cases, we set up a project board. There are a range of stakeholders involved in the steering committee. They probably meet every month. At key milestones you need key decisions from the government, a project board is set up… try to keep the decisions made within the government. Then when we get on the Cabinet agenda, we ask the Cabinet to set up a sub-committee.

During the contract management phase, an effective inter-firm organisational structure needs to be in place. The participants (PC1, PF1, HP1, HA1 and HA2) recommended the establishment of clear lines of communication, based on which constant contacts and communications can be done. Regular meetings attended by various parties are useful tools to ensure the communication to be undertaken in an efficient way. Written interim reports benchmarking the actual performances against the Key
Performance Indicators (KPIs) specified in PPP contract provide feasible means to enforce the rewards and penalties of payment mechanisms, which are central to ensure the private sector’s compliance. The private consortium sometimes contracted with subcontractors for routine jobs, such as cleaning and general maintenance. The interviewees from the private sector side indicated that their contract management with the subcontractors were not a particular issue for PPPs. An advanced information system with high level of automation is required to complete, store and keep track records of the reports. As commented by Participant HA2:

The reporting comes from the help desk. The whole thing is automatic. There is a person responsible for it. The school operator has a role on site to call the help desk and so on. If the call goes to the help desk, it gets recorded and there is a report generated every time. So it is fully documented. The contract administrator doesn’t need to be on site every moment. (HA2)

All participants acknowledged the issue of interface management between various stakeholders – the government’s contract management team, educational staff (Board of Trustees) and the private sector partner. Conflicts are likely to arise due to the varied mind-sets, culture and objectives between different organisations. For instance, Participant PC1 and PP2 highlighted the challenge of interface between various parties:

The problem of this particular contract is that the private company designed and built 11 schools, all of which have strong-headed principals operating the schools. They all have totally different ideas on how they want to operate their schools. Being a brand new model for schools, the operations manager and end-users, sometimes, struggle to understand their obligations and the private sector’s obligations. (Synthesis of views from PC1 and PP2)

The interface issue is referred by the New Zealand participants as a potential challenge for running the HS project, especially in the presence of the Board of Trustees, acting as a different role in a PPP than in a traditionally procured school. The participants therefore emphasised the partnering philosophy in
school operation. Participant PP2 argued, “In addition to a contractual-based mechanism, enhanced partnership is encouraged for the project.” Participant HA1 added, “It is much about the school operator, the Board of Trustees, and the Ministry working together. The Board is on site all the time. This is where the primary day-to-day relationship needs to be from – genuine living arrangements.” Participant PC1 maintained that the best way for the private sector partner to encounter disagreements or misunderstandings occurred during the operational phase was “constant communication and reasoning of what the intent is, and to convince them that what we designed and built is of long term interest rather than a wish list” (PC1)

8.6 Discussion

Existing literature on PPPs identified that a thorough and accurate cost-benefit economic analysis is a pre-condition for a successful PPP (Li et al., 2005b, Qiao et al., 2001). The practices of school PPPs strengthen this point and emphasises that in addition to an accurate cost-benefit analysis at project level, it is of equal importance to undertake a programme-level assessment. Bundling a number of school projects based on a programme approach helps to ensure the project’s economic viability, which is highly stressed in PPP literature (Li et al., 2005b, Zhang, 2005a). Unlike economic infrastructure projects such as toll roads, where user pays are main revenue sources, social infrastructure sectors like schools are ultimately funded by the government, on a regular basis, once the services are available. Affordability issues therefore are raised concerning the government’s fiscal ability to make the payments as specified in contract. The affordability and value for money are benchmarks for PPP viability. As claimed by Hurst and Reeves (2004), the first pilot school PPP projects in Ireland not achieving the expected outcomes was partly attributed to failure to address the affordability issues. This research further confirms that the affordability is a central issue in initiating and planning school PPP projects. Not specific to PPPs, affordability relates to government expenditure activities in general. Assessment of affordability is a critical step to evaluate the impacts of a proposed project on the government’s fiscal position (The New Zealand Treasury, 2011). The
affordability of PPPs, compared to that of traditional procurement, is mainly concerned about interest rate and efficiency differentials. Reaching a balance between the profit-oriented, self-structured company and a public interest-oriented government is the solution to the affordability issue.

The tendering practice of school PPPs is in line with Zhang (2005b) and Chan’s (2010a) finding that an efficient and competitive procurement framework is vital for ensuring value for money in PPPs. It also confirms Aziz (2007) and Akintoye’s (2003a) assertion that a standardised process and well-established approach to PPPs contributes to enhancing procurement efficiency in PPPs. Compared to other infrastructure projects with higher capital value or involving operational services, such as land transport, urban rail and prisons, relatively small-sized school PPPs emphasise a size-adjusted and streamlined procurement process. Despite the possible push by the private sector to simplify the procedures, the public sector must not rush to the preferred bidder stage and get into a non-competition situation. Instead, the project team is suggested to focus on developing high-quality and coherent project briefs, conducting an extensive market sounding, and structuring an effective interactive tendering exercise.

Having a committed, highly-skilled and experienced public procuring authority is desirable for PPP implementation in general (Ahadzi and Bowles, 2004, Akintoye et al., 2003b) and the practice in school sector is not an exception. This research finds that lacking an experienced and skilful project team is common, such as the case of PViS and HS. As for PPP projects in which the procuring agency does not have previous PPP experience, a cultural shift encompassing being open to alternative procurement options and taking a rigorous approach towards asset and service delivery is recommended. In terms of capacity building, apart from referring to external advisors, public procuring authorities are suggested to consult with and intensively involve experts from central coordinating authority in order to obtain the required capability to structure and manage PPPs.

A strong private sector with technical and managerial capabilities is broadly recognised as a critical success factor for PPPs (Birnie, 1999, Jefferies et al., 2002). The practices of school PPPs also
highlighted the issue in relation to the depth of relevant service sectors, business strategy shift and capacity building. As opposed to PPPs in other infrastructure sectors with sufficient scale to attract international experienced private companies, school projects open up the opportunities for local firms to participate in PPPs.

The participants’ opinions reinforce Zhang (2005a) and Regan’s (2011) point that accessibility to capital market and a sound financial arrangement are instrumental to secure a viable PPP deal. Compared to large-size infrastructure projects with enough attractions to international investors (e.g., banks and equity providers), school PPPs seem to be more difficult to acquire debt and equity finance. In this case, governments may require a lower level of committed finance at the competitive stage. Despite lacking of international appetite, local pension funds, such as PIP Fund in this case, provide a viable vehicle for school PPPs to access to equity finance. Compared to other infrastructure projects with demand risk such as toll roads and urban rails, school PPPs entail relatively low risks. Banks are therefore suggested to take on more risks and be less rigorous in school PPPs’ due diligence.

Early engagement of stakeholders and acquiring community’ inputs confirms El-Gohary (2006) and Papajohn et al.’s (2011) point that gaining communities’ and wider public support is central for the fruition of PPP transactions. Particularly, the principals, teachers, parents and communities’ views and needs should be captured for developing a school PPP to match the infrastructure delivery and asset management with optimum educational outcomes. Compared to other economic infrastructure sector, such as land transport, in which operating services are relatively simple as opposed to construction works, school PPP developers are required to extensively interact with relevant stakeholders throughout the project development due to the large operation and maintenance component of school development, and the policy emphasis on high-quality educational outcomes.

The practices of PViS and HS reinforce the previous research findings that good governance structure is necessary for a successful PPP (Li et al., 2005b, Mahalingam, 2010). In addition to setting up and maintaining an effective governance structure at procurement phase, school PPPs focus on
establishing an appropriate governance and inter-firm organisational structure at contract management stage to guarantee the private sector’s performance specified in PPP contracts. Compared to infrastructure projects where the private operator is in charge of operation, such as toll roads, exhibition and event venues, the interface issue seems to be of particular importance for school PPPs. An effective contract management mechanism is considered crucial for a school PPP. The research result is consonant Gibson and Davies’s (2008) finding, based on an in-depth case study of Victoria Dock Primary School project in the UK, that a partnering approach rather than merely administering a contract lies at the heart for achieving successes in PPP schools. It also reinforces Reeves’ (2008) assertion that a relational approach is preferred to govern the relationships between schools and the private contractor.

### 8.7 Strategies for Using PPPs in School Development

By examining two school PPP projects from a comparative perspective, the research finds that the key dimensions affecting venue PPP application have deviations with general PPP practices, as a result of the special characteristics of building and management of schools. The relatively small capital size of school projects determines that a programme approach should be opted for at business case stage, as bundling a number of projects can increase project scale, which is central to justify a PPP and attract potential private bidders. Also, in light of the tight timeframes to meet the open date, a size-adjusted and streamlined procurement process is advocated. However, it is noteworthy that the streamlining should not be achieved by compromising the competition and the quality of relevant specifications. Lacking of a sufficient scale to attract international private entities, school PPP projects provide long-term stable business opportunities for local companies. School PPPs are viable for local firms as school projects are usually characterised by comparatively simple design and operational requirements without particular technical challenges. Given the large operation and management component of school projects, a well-defined project brief, such as output specification and service specifications are necessary to ensure private sector compliance. Effective governance structure with
clear lines of communication is perceived essential for ensuring the services are delivered to required standards. With respect to the multiple stakeholders involved in school services, this research finds that extensive engagement with the end users and community is instrumental during the project development and procurement to ensure that their needs are fully addressed and taken care of in the design and construction. A relational approach is instrumental to ensure the interface issues can be well addressed and all parties can work collectively.

The research proposes that governments embarking on PPPs for delivering school assets and services should undertake a sound business case development, focusing on a well-grounded service need forecast and a comprehensive economic analysis at both programme and project level. An affordability analysis examining the government’s fiscal conditions is a critical step at business case stage. School PPPs also require a robust project development, during which a high-quality project brief needs to be developed with the assistance of end users and communities. Governments are required to structure a size-adjusted and streamlined procurement process as well as maintaining competition and transparency. A consistent and standardised approach towards PPPs and a well-structured interactive tendering procedure are useful means to achieve the desirable procurement process. Having a committed and supportive public sector, especially conducive public sector culture is essential to develop a sustainable PPP programme. In addition, the procuring authorities should seek to enhance their capacity and leadership by involving the experts from central coordinating unit and consistently applying the policy frameworks. Governments are suggested to choose local private companies to participate in school PPPs and involve pension funds such as Superannuation Funds as equity providers. Throughout project development and execution, an effective governance and organisational structure needs to be established to provide a platform on which all parties can maximise their capabilities to boost the service performance. It is notable that all parties are suggested to take a partnering approach in school PPPs, based on which mutual understanding and trust can be established.
Chapter 9  General Discussion and Research Synthesis

In this chapter, the literature review, document analysis and the results from interviews and multiple case studies are drawn together, synthesised and compared across jurisdictions and sectors, using the themes and critical factors identified. The similarities and differences between the jurisdictions and sectors are explained. Recommendations for New Zealand on improved use of PPPs are made.

9.1 General political, legal and economic conditions

This section compares the general political, legal and economic conditions for PPPs across jurisdictions and sectors. The comparison focuses on three critical issues: (1) political and wider public concerns; (2) legal and regulatory arrangements; and (3) general economic conditions.

9.1.1 Comparison across jurisdictions

9.1.1.1 Political and wider public concerns

According to Chan et al (2010a), Li et al (2005c) and Carrillo et al (2008), the political acceptance and support, largely influenced by the general public opinion, has great bearing on the adoption and fruition of PPP contracts. This is confirmed in the industry-wide interviews conducted with New Zealand practitioners. As presented in Chapter Five, the New Zealand government has clearly signalled the promotion of PPPs to advance public assets and services when the value for money criterion is met. However, in light of the short election cycle, the availability of long-term political champion of PPPs is questionable. The problem is exacerbated by the general public’s sceptical views of PPPs, arising from a lack of understanding of PPPs, together with New Zealanders’ negative attitudes towards spending on infrastructure. The general public’s opposition may affect the politicians’ decisions on whether PPPs are adopted.

Likewise, the Hong Kong government generally favours a PPP approach, as indicated in Section 3.5.3.2. However, political considerations are heavily influenced by public opinion, which tend to
object to PPPs, given the lack of understanding of PPPs and the uncertainties surrounding transparency and accountability issues. This partly explains that in Hong Kong, few PPP schemes came to the contract stage after a lengthy and continual public debate (Hayllar, 2010). Compared to the New Zealand case, the Hong Kong PPP practices are more susceptible to the debate at the general public level. Some PPP proposals, such as the Western Kowloon Cultural District project, were abandoned due to the intense public opposition faced at key decision-making points in the project development phase. The differences in the public opinion about PPPs between the two jurisdictions may be attributable to the varied history of PPP usage. In New Zealand, few PPP projects have been undertaken to date. The public is uncertain about the suitability of PPPs. However, in Hong Kong, there has been a track record of some PPP projects deemed as failure (e.g., the Western Harbour Crossing), resulting in the general public’s loss of confidence in PPPs (Cheung, 2009).

In addition to supporting the PPP programme, as stated in the New Zealand and Hong Kong’s PPP policies, the Australian government holds a favourable and consistent approach to PPP adoption, with clearly specified criteria, under which PPPs can be considered a viable procurement option (Infrastructure Australia, 2008). Having seen some successful PPPs and benefited directly or indirectly from those cases, the community and general public generally have a better understanding of PPPs. The favourable political and social environments for PPPs in Australia are in line with its extensive PPP experiences and relatively long history of using PPPs. A well-established PPP market with a high level of sophistication has been developed, giving the politicians and communities some certainties around the implications of PPP arrangements (New Zealand Office of the Auditor-General, 2011). The case studies of Ararat Prison and Partnerships Victoria in Schools projects showed that the market has been clear about the government’s approach and positions in a PPP, leading to a better mutual understanding and the establishment of a partnering relationship.

The comparative analysis shows that the availability of a political champion for PPPs needs time and a good track record of PPP application. This seems to be impossible for New Zealand’s pilot PPP
projects. In the absence of PPP experiences, the government is suggested to be open to alternative procurement methodologies (e.g., PPPs) rather than relying on traditional procurement. Also, a more transparent and consistent approach towards the selection of PPPs is advocated to give the private sector partner a clear message regarding the government’s standings.

**9.1.1.2 Legal and regulatory arrangements**

An enabling legal and regulatory framework is widely regarded as a pre-condition for the smooth implementation of PPPs (Mahalingam, 2010, Zhang, 2005b). In countries, such as China and India, PPPs would be impossible without an enabling framework, as some relevant Acts prevent the private sector from participating in the provision of public assets and services (Adams et al., 2006). In comparison, the New Zealand’s legal system basically allows private sector involvement in the provision of public services. Some Acts, such as the Resource Management Act 1991 and the Public Works Act 1981, nonetheless place procedural requirements on obtaining resource consent and land approvals, which may prolong the tendering and negotiation durations of PPPs. It should be noted that New Zealand’s special legal document, the Treaty of Waitangi, which allows the local tribes for compensatory claims of historic ownership of land and access to resources, may lead to particular legal issues if a land access or use claim was instituted at an advanced stage of a PPP negotiation. Such legal issues are likely to complicate and postpone the procurement process.

Similar to New Zealand, the Hong Kong’s legislation does not prevent the use of PPPs. However, it does not cater for the use of PPPs either, with provisions limiting the private sector to financing public services and imposing procedural constraints on the progression of PPP projects (Efficiency Unit, 2007b). The Public Finance Ordinance, for instance, requires that “except where otherwise provided by this Ordinance or any other enactment, any monies raised or received by or for the purposes of the Government shall form part of the general revenue”. This requirement restricts the private finance for advancing public works.
By contrast, in Australia, an enabling legal framework has been available, facilitating the development of PPP programme (Cheung, 2009). The differences in the legal environment for PPPs between Australia and the other two jurisdictions may arise from the varied degrees of PPP experiences. By extracting lessons from past PPP practices, some Australia’s legislative provisions hindering PPP processes have been removed to accommodate the PPP use.

With regard to the possible legal constraints for using PPPs in New Zealand, the government is encouraged to continue its previous action that presenting the relevant Acts to the Parliament for review and removing the prohibitive provisions on PPPs. For instance, the restrictions on private sector management of prison services under the Corrections Act 2004 and limitations on concession period of private sector operation of water projects specified in the Local Government Act 2002, have been removed in legislation, allowing the use of PPPs in prison and water sectors (National Infrastructure Unit, 2010). In terms of the procedural constraints posed by the RMA, as have manifested in the Vector Arena and Wiri Prison projects, the government is recommended to assist with obtaining the consents at a early stage of project development (Cheung, 2009).

9.1.1.3 General economic conditions

A country’s general economic conditions are a critical factor affecting the attractiveness of its PPP market, and the viability and sustainability of PPP projects (Zhang, 2005b, Li et al., 2005b). The interview results presented in Chapter Five strengthen this point, showing that the most challenging issue for New Zealand in implementing PPPs is the small size of its economy, characterised by a lack of pipelines, small project size and insufficient infrastructure needs. Especially, the reconstruction following the recent Christchurch earthquakes requires considerable capital investments, posing budgetary constraints on the government’s infrastructure spending. Without a steady infrastructure investment programme, the use of PPPs will be largely hindered.
The situation in Australia is better than that of New Zealand due to the larger market and higher infrastructure needs. However, compared to countries, such as Canada and the UK, a lack of project pipelines is reported as a hurdle for PPP development in Australia (KPMG, 2010b). In addition to the relatively small size of its economy, the budgeting process for capital projects also account for the lack of pipelines. The requirement that the choice of procurement options should be undertaken after budgetary allocations have been made, limits the possibilities for PPP use. Insufficient infrastructure needs, as reflected in less traffic volume than anticipation in some toll roads (e.g., Sydney Cross City Tunnel), held back private sector investors’ interest in participating in Australian PPPs, especially in toll roads.

Hong Kong does not have a steady PPP pipeline. However, in comparison with New Zealand and Australia, the availability of a PPP pipeline is less of a concern. As a gateway to mainland China, Hong Kong provides a stable and vibrant environment for business, which is a major attraction for international private investors to participate in its PPP activities (Chan et al., 2010b).

For New Zealand PPPs, without a stable infrastructure development programme and project pipelines, it is difficult to attract private sector investors to sustain a competitive market. Lacking an advantageous geographical location of strategic importance, such as Hong Kong, the New Zealand government should be committed to setting up efficient and effective processes and structures to maintain the market interest. It is suggested that the government continues to invest in infrastructure, rather than reducing infrastructure spending due to market shocks. Also, a clear message regarding the possible project pipeline should be delivered, giving the market information about potential business opportunities. It should be noted that the government needs to maintain credibility around publicising project pipelines.
9.1.2 Comparison across sectors

In addition to examining general PPP application in the three jurisdictions, this research takes a special focus on three infrastructure sectors, exhibition and event venues, prisons and schools. This section compares the implications of general political, legal and economic conditions on the use of PPPs across sectors.

9.1.2.1 Political and wider public concerns

This research shows that in line with general PPP practices, the use of PPPs in venue development is subjected to continual political debate, owing to possible opposition from diverse groups of stakeholders. As pointed out in Chapter Six, concerns are usually raised that a venue only benefits a group of people (e.g., conference attendees, ticket buyers). Communities may object to spending taxpayers’ money on building and running venues. The continuing debate is likely to result in a prolonged decision-making process required for bringing forward a new venue.

For prison and school projects, the implications of political issues are different to that of venues. The initiation of new prisons and schools is generally acceptable by the wider community, as the associated services are within the realms of social services. However, concerns are raised over the legitimacy of the government engaging with the private sector for the provision of correctional or educational services, which are often deemed within the responsibilities of the state. The social concerns are of particular importance for school projects as the relevant stakeholders (e.g., Board of Trustees) have a key influence on the government’s decision-making. Their doubt on the suitability of involving private firms in the building and management of school assets may prevent the government from adopting PPP options.

In the AsiaWorld-Expo and Vector Arena projects, the governments attempted to address the wider community’ concerns by intensively involving and consulting the relevant stakeholders throughout the project development phase. At the operating stage, the private operators in both cases have
organised a series of community events, contributing to enhance their reputation and obtaining support from the communities. The extensive community engagement, coupled with the care for community events were deemed as effective means to tackle the social concerns, which are recommended in future practices. The stakeholder engagement is also stressed for school and prison PPPs. For example, in the cases of Partnerships Victoria in Schools and Hobsonville Schools projects, the Board of Trustees, or the teachers, principals and parents, were educated on the principles and implications of PPP approaches, and well consulted throughout the PPP processes. Such actions were believed to have taken effect in reducing the community’s misunderstanding of PPPs and enhancing their cooperation with the private sector to increase the service quality.

9.1.2.2 Legal and regulatory arrangements

Given the strategic importance of the location of venues, legal requirements may impose procedural restrictions on land acquisition for venue development. For example, in the case of the Vector Arena project, the delegation process required by the RMA greatly protracted the development and procurement processes of the project.

The availability of an enabling legal and regulatory framework seems to be particularly important for initiating and structuring prison PPPs. For example, in the case study the Auckland Central Remand Prison project, as presented in Chapter 3, the private management of the prison was handed back to the Department of Corrections in 2005, because of the passing of the Corrections Act 2004. Again, the Department contracted out the management of the prison to a private firm in 2010, as empowered by the Corrections Amendment Act 2009. In addition to conforming to the legislation determining the legitimacy of private sector participation, prison PPPs are usually governed by a wide range of legal and regulatory frameworks, such as the relevant Acts, international obligations and policies and regulations within the government, complicating the structures and processes of PPP transactions, and limiting the possibilities of obtaining private sector innovation.
By contrast, the initiation and execution of school PPPs in Australia and New Zealand are not subjected to particular legal and regulatory constraints, based on the case studies in Chapter Eight. However, it should be noted that it may not be the case in other jurisdictions. For example, in countries, such as China, PPPs are not allowed by the legislation for school development (Adams et al., 2006).

This research reveals that when the New Zealand government is embarking on venue PPP projects (possibly the proposed convention centre in Christchurch), special attention should be paid on obtaining resource consents as required by the RMA, to avoid the unnecessary delays occurred in the Vector Arena project. As for prison development, the government needs to carefully consider the necessity of private sector compliance to all relevant policies and regulations. Some protocols in the Department’s Operating Manual, which specifies the methodologies and procedures the public sector operator needs to follow, may be removed from the requirements to streamline the PPP transaction and facilitate private sector innovation at the operating stage.

9.1.2.3 General economic conditions

An examination of three venue PPP projects in this research affirms the previous findings on general PPP application that a favourable macro-economic environment is critical for the success of a PPP (Zhang, 2005b, Li et al., 2005b). Given the close connection between the location of venues and business performance, the sites are usually close to other business attractions and well connected with public transport. The central issue of venue PPPs, economic viability, is therefore mostly determined by the macro-economic conditions of the host country or region as the demands of venue events are highly influenced by the attraction of the whole area and the region’s infrastructure needs.

In comparison, private sector partners of prison and school PPPs are not particularly concerned about the infrastructure needs, as a performance-based payment mechanism is commonly used for social infrastructure PPPs. This probably partly explains why both the New Zealand government and the
industry are currently focused on using PPPs for social infrastructure projects. Without a sophisticated PPP market and sufficient infrastructure needs, the private sector is mainly interested in PPP projects with steady revenue streams, as indicated by the interview participants shown in Chapter Five.

Despite the focus on social infrastructure projects, the New Zealand government does not exclude the opportunities for economic infrastructure PPPs, such as venue development. Under the conditions that the public sector has no venue operation experience and intends to introduce private sector expertise, as was the case of Vector Arena project, a venue PPP with demand risks would be an optimum solution. Under such circumstances, the government needs to make great effort to facilitate the venue operation. For example, in the case of AsiaWorld-Expo, the Hong Kong government attempted to address the issue by providing a public transport network linking the venue to other business attractions, such as city centre and shopping areas, and bringing in more conferences and conventions to Hong Kong. By adopting such means in New Zealand, the likelihood of achieving a successful venue PPP will be increased.

9.2 Business case development

The literature review Chapter Two shows that the business case development consists of three main components: (1) service need identification and cost-benefit analysis; (2) procurement option analysis; and (3) affordability test. This section draws the findings from the results chapters and makes a comparison across jurisdictions and sectors.

9.2.1 Comparison across jurisdictions

9.2.1.1 Service need identification and cost-benefit analysis

Conducting a well-elaborated service need and an accurate and realistic cost-benefit analysis is crucial for designing a viable and sustainable PPP deal (Qiao et al., 2001, Ye and Tiong, 2003, Zhang, 2005a). This research suggests that it is also the case for the three jurisdictions examined. As shown in
Chapter Five, the interview participants pointed out the problem with the public sector procurement in New Zealand, being that the service need identification is undertaken on a fragmented basis, without a strategic and coordinated approach. Also, the cost-benefit analysis is mostly centred on the construction phase, lacking of a whole-of-life consideration.

The similar challenge was also felt in Hong Kong, where the service need identification for capital projects is mainly conducted on an individual basis (Efficiency Unit, 2008). The capital and operating costs are generally considered separately, rather than being calculated using a whole-of-life costing strategy (Efficiency Unit, 2007b). It is notable that selecting an appropriate site is particularly important in Hong Kong as land is especially precious and scarce. The land selection is therefore placed as a high priority in identifying service need.

In comparison, a relatively mature capital asset management framework has been established in Australia (Cheung, 2009), in which emphasis is placed on identifying the asset investment need, in accordance with the government’s overall framework. Although practices vary between the states, a comprehensive analysis of service objectives, financial and risk analysis are incorporated in the business case. The availability of a transparent and consistent asset management framework reflects Australia’s sophisticated public sector procurement methodologies. The experiences of using innovative delivery models, such as alliance and PPPs, were believed to be instrumental in improving the government’s asset delivery and management practices. The interviewees in the Australian case studies stated that the enforcement of such well-established frameworks added rigour and transparency to the government’s approach to procurement.

In face of the deficiencies in New Zealand’s current practices regarding service need and economic analysis, the interview participants supported the government’s initiative to develop a sound business case before bringing a PPP to the market. The Better Business Cases guide underscores a strategic and whole-of-government approach to infrastructure investment. The cost-benefit analysis needs to be undertaken from a national economic perspective to evaluate the economic implications of a capital
spending proposal. Also, the public sector should ensure the services to be viable and meaningful for long term. Through gaining experience with using alternative procurement methodologies (not necessarily PPPs) and incorporating the emerged best practices, the sophistication level of the government’s asset management approach will be increased, as is the case of Australia.

9.2.1.2 Procurement option analysis

Aziz (2007) and Garvin (2010) were of a view that having clear assessment criteria and techniques for the selection of PPP projects is essential in sustaining a PPP programme. In the three jurisdictions examined, clear criteria, under which a PPP is considered, are specified in each government’s policies. For example, in New Zealand, a capital value of NZ$25 million is a threshold for including PPPs in the procurement option analysis. Similarly, as described in literature chapter, criteria, such as a sufficient scale, need for additional funding, and being able to be costed on a whole-of-life basis, are specified in Hong Kong and Australia’s policies for selecting PPP projects (Hong Kong Institute of Surveyors, 2009, Infrastructure Australia, 2008).

A similarity observed across the three jurisdictions is the adoption of a quantitative PSC approach to assess the value for money results once PPPs are considered as a possible procurement option. First introduced by the UK, the PSC method has been widely used across Australia, as a must-do exercise to justify the use of PPPs (Garvin, 2010). Although being criticised for lacking of robustness and being too sensitive to the discount rate chosen, a PSC approach is still advocated in New Zealand and Hong Kong as it provides a methodical and structured way to assess a PPP against traditional procurement methods.

It is noteworthy that practitioners across the three jurisdictions have recognised that in addition to a quantitative assessment, other qualitative factors need to be taken into account. For instance, in New Zealand, a critical aspect to be considered is whether the adoption of PPPs is aligned with the government’s policy objectives. The general public opinion is heavily weighted in decision-making in
Hong Kong (Hayllar, 2010). As for Australia PPPs, market responses and the public interest are influential factors to be considered before adopting PPPs (Infrastructure Australia, 2008).

A market sounding is required for PPPs across the three jurisdictions, and this exercise is particularly stressed in New Zealand. Lacking of projects with a sufficient scale, the viability of a PPP proposal needs to be tested by approaching the potential market and capturing their responses and feedback to the project.

PPPs have been rejected in New Zealand for ideological reasons. Some misunderstandings exist at the public sector side, such as seeing PPPs only as a vehicle for obtaining private finance, and viewing toll-road as the only PPP model. Based on the experiences of Hong Kong and Australia, this research suggests that the New Zealand government needs to adopt PPPs for the “right” reason, value for money, and be aware of the variety of PPP models (e.g., availability-based models). An accurate quantitative assessment, as well as a range of qualitative considerations, should be conducted before choosing a PPP. Also, an extensive market sounding exercise is necessary to gauge the market’s interest, and possibly reconfigure the PPP deal to increase its viability.

9.2.1.3 Affordability test

Reeves and Ryan (2007) and Carrillo et al. (2008) found that the affordability issues may significantly affect the outcomes of a PPP, which is consistent with the findings of this research. As indicated by the interview participants, a well-articulated affordability analysis, examining the government’s fiscal position over the appraisal period, is mandatory under New Zealand’s current policies. Such requirements were encouraged by the interviewees, and were believed to be a key for achieving success in PPPs, as the government needs to make sure that it has the financial capability to make the periodic payments as specified in the PPP contract (particularly for social infrastructure projects).

The Hong Kong policies also require the affordability implications for a PPP proposal to be assessed in the process of applying for funding approval, granted by the Finance Committee, within the
Legislative Council (Efficiency Unit, 2008). The rigorous investigation on the AsiaWorld-Expo project at the funding approval stage demonstrated the government’s emphasis on this exercise. The interviewees of the case study maintained that the affordability analysis was conducive to confirming the business need and coming up with a better solution.

In comparison, the affordability has no direct bearing on the choice of PPP proposals in Australia. This is because budgetary allocations for capital projects have been obtained before moving forward with procurement option analysis. Utilising private finance is therefore not a driver for selecting PPPs and the affordability issue seems not to be a main concern for the procuring authority when conducting procurement option analysis.

Given New Zealand’s current budgeting process for capital projects, it is suggested that the government continues its focus on conducting a well-elaborated affordability analysis for a PPP proposal. Modelling a prospective private sector bid, including life-cycle costs and cost of finance, is recommended prior to commencing procurement to gain a realistic view about the affordability. A sensitivity analysis is required to test the impacts of key issues, such as cost of finance and incomes from general tax, on the affordability implications.

In face of a mid-term budgetary constraint, and the funding pressure of Christchurch rebuild, a thorough examination of the government’s fiscal situation is highly recommended for New Zealand.

9.2.2 Comparison across sectors

The investigations on using PPPs for venue, prison and school development, which are presented in Chapter Six, Seven and Eight respectively, suggested that a well-articulated business case is critical in implementing PPPs in the three sectors, although the implications may vary owing to their special characteristics. By drawing results from the proceeding case study chapters, this section compares the patterns for business case development across sectors.
9.2.2.1 Service need identification and cost-benefit analysis

In the service need analysis for venue projects, the selection of site is an essential issue as the attraction of venues is heavily influenced by their location. In the cases of AsiaWorld-Expo, Vector Arena and Sydney SuperDome, as presented in Chapter Six, the land selection of received much attention. Factors, such as the integration with long-term urban development, connection with other business attractions and accessibility to public transport, were taken into account during the decision-making. The interviewees of the case studies highlighted the issue of economic cost-benefit analysis for venue projects. With deep uncertainties underlying the assumptions used for the calculation, as argued by interviewees of AsiaWorld-Expo, an initial cost-benefit analysis is mostly likely to reach a conclusion that venue projects are financially unviable. However, a new venue is still initiated, with regard to the wider social and economic benefits in association with the project, such as boosting the tourist industry and enhancing the reputation of the whole region.

The service need identification for prison projects is focused on an accurate forecast of prison populations, which is closely linked to the government’s policies on community safety and enforcement of punishment. As shown in the Wiri Prison case, a service need analysis undertaken merely at a project-level may lead to the abandonment of the project. However, as pointed out by the interviewees of the case study, the project is strongly needed considering the conditions of country’s wider prison system networks.

Similar to prison projects, the robustness of the service need analysis for schools is mainly dependent on the accuracy of population projections. It is notable that both school projects examined bundled a few primary and secondary schools to increase the capital volume to justify a PPP approach.

This research recommends that if the New Zealand government is initiating a venue PPP, emphasis needs to be place on the wider social and economic benefits brought by the intended project, rather than focusing on the economic viability on an individual basis. It is suggested that the government
selects a land that is close to existing or planned business centres and integrated with other business sectors and public transport networks. Taking a programme approach is required for both prison and school PPPs. For prisons, examining the alignment with the client organisation’s overall development strategy and the conditions of the wider prison network is of importance to ensure a sound business case development. Bundling a number of primary or secondary schools is suggested for school development to increase the attractiveness of school PPPs.

9.2.2.2 Procurement option analysis

The case study chapters showed that a PSC approach has been commonly used for prison and school projects. The interviewees have seen the merits of conducting such an exercise. However, a PSC was not used in the venue projects examined in the research. This might be explained by the governments’ drivers to use PPPs for venue development, which are to utilise the private sector’s commercial capability, expertise and skills to operate the venues. Given the large operation component and the complexity involved in the venue operation, transferring the risks to the private sector to a maximum extent and integrating the various service elements may be much more efficient than procuring it via traditional procurement. Another possibility was that the venue projects examined were initiated prior to the release of current PPP policies of each jurisdiction, under which a less structured approach was used for PPPs. It is foreseeable that as the PPP market matures, a methodical assessment (PSC) will be employed for venue development.

Since there are only a limited number of private players with the capacity to fund the operate venue projects, an extensive market sounding exercise is of great importance to attract international private investors to participate in venue PPPs, which is vital to maintain competition at the tendering stage. For prison PPPs, particularly when a full-package PPP model is adopted, a market sounding exercise is essential given the limited number of international private prison operators. The reasons for emphasising on a market sounding for school PPPs are slightly different to that for venues and prisons. The market interest needs to be gauged as school projects are not technically challenging and lacking
of a sufficient scale to attract private sector players. From the market’s response and feedback, the procuring authority can modify the PPP package to increase its viability.

If the New Zealand government is engaging with a prison or school PPP, a PSC approach is recommended to be adopted. A further analysis to decide whether to incorporate custodial services is required for prison PPPs due to the availability of both full-package and non-core services models. However, in venue development, a quantitative assessment of may be subordinate to other qualitative considerations, such as the public sector’s experience with venue operation and the ability to take on operating risk. In the absence of experience in running venues, it is suggested the government organises an international road show to promote the project and receive feedback, as have been exercised in the case of the AsiaWorld-Expo project.

9.2.2.3 Affordability test

The affordability issue is of importance for prison and school PPPs as the performance-based payment mechanism means that the government needs to make sure that its fiscal position can afford the service payments over the concession period. It is particularly important for prisons due to their relatively higher capital costs than school projects. Affordability implications seem to be of less concern for venue PPPs over long term, although budgetary allocations need to be obtained prior to tendering if the government is making capital injections.

It is suggested that the New Zealand government continues its requirements for conducting a well-articulated affordability test when engaging with prison and school PPPs, as have occurred in the Wiri Prison and Hobsonville Schools projects.

9.3 Procurement process

This section aims to scrutinise the similarities and differences in the practices of procurement process across jurisdictions and sectors. The comparative analysis of the procurement process mainly
concentrates on three critical aspects: (1) Project brief development (especially output specifications); (2) tendering procedures; and (3) balance between streamlining the process and maintaining competition.

9.3.1 Comparison across jurisdictions

9.3.1.1 Project brief development

A key distinguishing feature of PPPs is the use of output-based specifications (Grimsey and Lewis, 2004). This research found that preparing a high-quality project brief, with a special focus on output specifications, is highlighted in the PPP practices in all jurisdictions examined. As stated in Chapter Five, in New Zealand, the concept of output specification is accepted. However, it is difficult to achieve it in practice. The interviewees raised a concern that the specifications cannot be consistently interpreted by various parties, or may restrict private sector innovation over time. A similar problem was found in Hong Kong, where confusions usually arise over the government objectives and evaluation criteria, creating difficulties in mutual understanding at tendering and negotiation stages (Chan et al., 2010b). Although Australia has extensive PPP experiences, problems exist, as illustrated in the case studies chapters, that the output specifications and service specifications have contradictory elements, leaving room for different interpretations of the relevant terms by the project director. Having undertaken a previous PPP of a similar nature, the public sector tends to apply the bid requirements to a new project, without making necessary modifications. If such situation occurs, the bidders are likely to be confused and lose confidence in the project.

The comparative analysis suggests that lacking a well-developed project brief is a common challenge facing public procuring authorities across jurisdictions. Despite the recognised difficulty, the public sector in New Zealand should endeavour to develop transparent bid requirements and evaluation criteria that can be consistently interpreted by different parties. Consulting end users and relevant communities, as highly encouraged in Hong Kong and Australia PPP practices, is recommended as a
means of improving the quality of the project brief. Being aware of the possible restrictions on PPP use in long term, the public sector is suggested to design incentives and mechanisms to allow the private sector partner to innovate over time.

9.3.1.2 Tendering procedures

Inefficient procurement processes featuring high transaction costs and lengthy duration have been criticised as a barrier impeding the achievement of value for money in PPPs (Chan et al., 2010b, Carrillo et al., 2008, Zhang, 2005b). This research finds that the governments of the three jurisdictions have paid much attention on structuring an efficient tendering procedure and a multi-stage tendering procedure has been adopted. In particular, an Interactive Tendering is used in New Zealand and Australia, with an emphasis on promoting constructive dialogue between the project team and private bidders. Likewise, effective communication is also stressed in Hong Kong PPP practices (Efficiency Unit, 2008). In addition, the three governments are making great effort in standardising the PPP processes and contracts, as shown in Chapter Three.

With respect to the small size of its economy and generally small project size, there is a strong need for the New Zealand government to structure and implement an efficient tendering process. The adoption of an Interactive Tendering exercise, focusing on effective communication, is a good start. The government should introduce the established protocols used in Australia’s Interactive Tendering, such as a series of workshops, briefings, site inspections, to New Zealand to increase the effectiveness of the communication. Also, the public sector should be consistent with their commitment made in the briefings, and adhere to the established timeframes and meet the milestones. It should be noted that during contacts with private bidders, the public sector should introduce robust proprietary management protocols to protect their proprietary rights.
9.3.1.3 Balance between streamlining the process and maintaining competition

Researchers have pointed out competition at the procurement stage is a key driver for value for money in PPP projects (Dixon et al., 2005, Qiao et al., 2001). The literature review chapter showed that in the European Union, the PPP policies underpinned competition by enforcing the Competitive Dialogue tendering procedure (KPMG, 2010a). The results of this research highlight the issue of a trade-off between streamlining the process and maintaining competition. In New Zealand, the government has been pushed by private sector players to streamline the procurement process, with regard to the small size of projects and high bid costs and lengthy transaction time involved in a PPP. A streamlined process has taken priority over a high-level competition. The interviewees from New Zealand agreed that the policy direction in streamlining the PPP procurement is in line with the current PPP development status, where capable and experienced market players are lacking.

Unlike New Zealand, a good level of competition is required in Hong Kong, in accordance with the requirements set out in the World Trade Organisation Government Procurement Agreement (WTO GPA) (Efficiency Unit, 2007a). Hong Kong’s emphasis on competition is in line with its important geographical, economic and trade positions in the world. As a market with a high level of openness, Hong Kong attracts international private players to participate in its PPPs and, is able to maintain the required competition. This is reflected in the case of the AsiaWorld-Expo project, in which multiple market response were received from leading international firms, which was helpful to create an innovative and optimum service solutions, as illustrated in Chapter Six.

Different to the case of New Zealand and Hong Kong, there has been a balance between a streamlined process and a good level of competition (KPMG, 2010b). Owing to the long history of PPP development and a well-established market, the market has a good understanding of the government’s approach and position in a PPP transaction. The PPP procurement processes in Australia are relatively streamlined and a required level of competition has been achieved, as argued by the interviewees of the Australian case studies.
It is recommended in this research that the New Zealand government places emphasis on structuring a streamlined PPP procurement process. As shown in Chapter Five, a streamlined process can be achieved by appointing the preferred bidder at an earlier stage, short-listing two or three bidders and tailoring the level of details needed in bid requirements depending on the size of project. It is notable that this should be done under the conditions that the required level of competition and transparency is maintained to ensure the value for money results. It is foreseeable that as the PPP experience increases in New Zealand, a higher level of competition will be necessary. The government is suggested to learn from the Australian practices to adhere to and update the standardised documents, and take a consistent approach in a PPP transaction.

9.3.2 Comparison across sectors

9.3.2.1 Project brief development

Development of the project brief, especially output specifications plays an important role in using PPPs in venue development. The three case studies presented in Chapter Six indicates that the bid requirements for venue PPPs featured a high level of flexibility and much room for proposing innovative solutions. The interviewees maintained that this was in line with the high aesthetic requirements in architectural design and the commercial creativity required for venue operation.

For prison and school PPPs, clear and consistent specifications were stressed, as shown in Chapter Seven and Eight. The stress on a high-quality project brief was due to the common use of performance-based payment mechanisms for prison and school PPPs. A series of KPIs provide useful measurements for judging whether the specified service requirements are met, based on which payments can be made. It is notable that in a full-package PPP project, such as the case of Wiri project, the public sector tended to require the private sector to conform to the public sector’s previous operational protocols, which may greatly limit the potential for private sector innovation.
Bid requirements allowing high degree of flexibility and room for bidders’ proposals are desirable when the New Zealand government is initiating a venue project. Involving stakeholders from relevant business partners is conducive to increasing the quality of the specifications. In terms of using PPPs for prison and school development, the case studies indicated that stakeholder involvement is also a suggested exercise to increase the quality of the project brief documents. End users, such as operating staff, prisoners, principals, and teachers, and relevant communities are suggested to be involved and well consulted in the preparation of relevant specifications. Also, appropriate reward and abatement mechanisms were deemed necessary to ensure effective contract enforcement and private sector compliance. In particular, as for full-packaged prison PPPs, the bid requirements should remove the constraints to comply with the public sectors existing operational protocols and allow the bidders to propose innovative solutions.

9.3.2.2 Tendering procedures

Based on the findings presented in Chapter Seven and Eight, a relatively structured tendering procedure (Interactive Tendering) has been adopted for prison and school PPP projects, whereas a less rigorous procedure was chosen for venue development, shown in Chapter Six. The difference may be attributable to the limited number of capable international venue operators and the marked uncertainties and complexities surrounding venue operation. Tender evaluation, with a special focus on the ability of the private consortia to develop the proposed facilities and run the business rather than only looking at lowest price, is specifically recommended for venue PPPs.

9.3.2.3 Balance between streamlining the process and maintaining competition

The procurement durations of venue and prison PPPs tend to be lengthy. However, the reasons underlying the long procurement seem to be different. For venue PPPs, as shown in the three venue case studies in Chapter Six, the extensive and prolonged negotiation was a result of proposing and responding to various innovative approaches. Compared to school projects, the procurement process
for which is generally fast-tracked, prison PPPs usually have longer procurement durations, as can be seen from Chapter Seven and Eight. This may be arising from its relatively larger project size and a higher level of details required.

It is notable that a good competition level is desired for PPP procurement across sectors. As observed in case studies presented in Chapter Six and Seven, limited international players restricted the possibilities of achieving competition for venue and full-package prison PPPs. The unbalanced number of private sector players acting in different roles in a PPP (e.g., facility management companies, construction contractors, sponsors) created difficulties in structuring a competitive process in school and non-core service prisons.

This research suggests that implementing a streamlined PPP process for venue and prison projects seems to be difficult. Strategies used for general PPP application, such as promoting standardisation and taking a consistent approach, are still recommended for venue and prison development. In the case of school PPPs, which generally feature small capital value, a size–adjusted and streamlined tendering process is largely advocated. It should be noted that the streamlining does not create a non-competitive situation.

### 9.4 Contract administration and management

#### 9.4.1 Comparison across jurisdictions

An investigation into PPP practices in the three jurisdictions agreed with previous findings that the success of a PPP is highly dependent on the effectiveness of contract administration and management (English and Baxter, 2010). The literature review chapter indicated that contract administration and management for PPPs embodies both contractual and partnering mechanisms. Based on the results of the case studies, the more developed the PPP market is, the greater is the emphasis on using partnering philosophies in contract management. In New Zealand, the interviewees stressed that, given the relatively early stage of PPP development, the government tends to opt for a contractual
mechanism to ensure private sector compliance. Lacking a track record of both the public and private sectors working together in a PPP, it is uncertain whether mutual trust can be established in the first few PPP projects. From the private sector’s view, the availability of a political champion over a long-term contract management is questionable due to the short election cycle. Private sector firms have, therefore relied heavily on strict conformance to contractual provisions to protect their interests and ensure the profitability in a PPP.

In addition to the use of a contractual mechanism in Hong Kong, much effort has been made in maintaining a good relationship. For example, in the case of AsiaWorld-Expo, the government provided substantial support to the private sector partner at the contract management stage to bring business and increase venue operation performance. On the other side, the private company organised a series of community programmes, which benefited the wider community. The establishment of a close relationship and mutual trust between the government and private sector companies may be due to their long-term collaboration in the provision of public works (Cheung, 2009).

In Australia, more focus is given on the partnership component in contract management practices, as opposed to that of New Zealand and Hong Kong. Since the Partnerships Victoria policy framework was established in 2000, there has been a trend towards building a collaborative relationship. For early PPP projects in Australia, the contract management relied heavily on contractual provisions (English and Baxter, 2010). As the PPP policies evolved and the PPP practices were gained, there has been a shift from depending on contractual mechanisms to establishing and sustaining a partnering relationship.

The comparative analysis suggests that when a PPP programme has not been well-established, or lacks a track record of collaboration between the government and business sectors, as is the case in New Zealand, it is essential to make sure that an effective contractual mechanism is designed and enforced. A good record of the service performance should be kept to ensure that the services are monitored effectively. Also, as learned from the Australian cases, good governance structures and
clear lines of communication should be set up within the public sector to guarantee the reporting and evaluations are undertaken efficiently. It is also suggested that in New Zealand, both parties should bear in mind that sustaining a partnering relationship is the core philosophy of PPP arrangements. Building mutual trust is the cornerstone for a partnering relationship. Conducive and constant communication should be maintained, especially when changes occur. In addition, there is a strong need for a political champion in New Zealand over long term to encourage the establishment and maintenance of the partnership.

9.4.2 Comparison across sectors

According to the case studies presented in Chapter Six, Seven and Eight, the implications of contract management and administration for PPP implementation vary between sectors. For venue PPPs, the private sector usually has greater freedom for venue operation. The contract management centres on whether the private sector partner can deliver the facility on time and within budget. Given the complexities and high risk involved in venue operation, maintaining a partnering relationship is crucial. As manifested in the case of AsiaWorld-Expo, the two contracted parties committed to working collaboratively to achieve mutual goals.

The case studies results indicate that effective contract management using a contractual mechanism lies at the heart of prison and school PPPs, due to the large operation component and performance-based payment mechanisms. Establishing clear lines of communication and utilising appropriate documentation are critical to ensure that the contractual mechanism is effectively administered and enforced, as reflected in the case studies in Chapter Seven and Eight.

It is worth noting that the interface issue is raised for “non-core services” prison models, due to the institutional arrangements for the delivery of prison infrastructure and associated services. As shown in the Ararat Prison case, different divisions within the Department of Justice are responsible for the provision of prison facilities and correctional services respectively. With different philosophies of
operating staff, the private sector and the procuring team, conflicts and misunderstanding are likely to occur at the contract management stage. The cost overruns and time delays in the Ararat project were partly due to the interface issue between the private sector and the existing stakeholders. In parallel with the “non-core services” prison PPP model, the interface issue also manifests in school projects. Since teaching staff, communities and the private sector partner are all involved in the school operation and management, conflicts are likely to arise due to the varied mind-sets, culture and objectives between different organisations.

To address the interface issues in prison and school PPPs, constant and effective communication and establishing trust between the parties are considered essential. Specific to prison projects, the public sector culture and objectives between the procurement and operating teams should be aligned to encourage and allow a better understanding of each other’s approaches.

9.5 Public sector capacity and governance structure

This section presents a comparative analysis of PPP practices across jurisdictions and sectors, under the theme “Public sector capacity and government structure” The comparison encompasses two critical aspects, public sector capacity and governance structure.

9.5.1 Comparison across jurisdictions

9.5.1.1 Public sector capacity

For PPP projects, the public sector acts both as a contracting party and a regulating authority. The public sector’s skills and experience of PPPs have a key influence on the success of projects (Kwak et al., 2009). The research results affirm that it is also the case for New Zealand PPPs. Having witnessed PPP development overseas for many years, public sector bodies in New Zealand have a general understanding of PPPs, according to the interview results presented in Chapter Five. However, inaccurate perceptions still exist within departments and public agencies, such as PPPs being
financing techniques rather than procurement methodologies. Due to the scarcity of PPP activities, there is a lack of expertise and experience in running PPP projects.

A similar problem was experienced in Hong Kong (Efficiency Unit, 2008). Although the Hong Kong market is attractive enough for highly-skilled and experienced advisors to provide commercial and legal advice to the public sector, the departments or other public agencies have limited PPP experience and insufficient understanding of PPPs (Hayllar, 2010). The public sector’s lack of skills and experience required for PPPs may partly explain why only a few PPP proposals reached the contract stage.

In contrast, for Australian departments with extensive experience in running PPP projects, a number of highly-capable PPP specialists are available within the public sector, driving the PPP processes. There has been a sharing mechanism in terms of PPP specialists across public sector departments. When departments with less experience are initiating a PPP, such as the case of Partnerships Victoria in Schools project, PPP specialists from other departments will be involved in the project team to bridge the capacity gap. There was a consensus among the interviewees from Australia that the public sector has the required skills and capabilities to run a PPP.

The PPP practices in the three jurisdictions underlined the important role of the central PPP unit. In New Zealand, the NIU assisted the public sector by publishing policies and being involved in project development and procurement. The availability of policy and guidelines was perceived as instrumental in standardising the PPP transaction and facilitating a consistent approach towards PPP application. In addition to the two documents specific to PPPs, a wider guidance framework regarding infrastructure investment, asset management and business case development for capital projects has been established to complement the PPP policies to guide PPP implementation. In the two pilot projects, the experts from the NIU were involved in the core project team, acting as commercial advisors, to ensure smooth progression of the projects. Likewise, the central PPP unit in Hong Kong, the EU, helped to promote the PPP programme by releasing a suite of guidelines under the theme of
“Serving the Community by Using the Private Sector”. These documents describe the government’s overall approach to private sector involvement and the special characteristics, facilitating the engagement of public sector bodies with PPPs in future (Hayllar, 2010). In Australia, as suggested in the case studies, the specialist PPP unit within the Treasury has been actively involved in advising on procurement and establishing PPP policies. It is notable that since the establishment of Infrastructure Australia, the national PPP guidelines are available to promote a consistent approach to PPPs across States. This research shows that the guidelines provide the basis for the market to understand the government’s consistent approach to PPPs.

Despite lacking of experienced professionals with local PPP experience, the New Zealand government addressed this issue by appointing specialists with overseas PPP experience. As presented in Chapter Seven and Eight, a highly-qualified project team was set up in the two pilot PPP projects. Such practices were in line with New Zealand’s current PPP development status, and are recommended for subsequent PPP projects. It is notable that having a specialist PPP unit and intensively involving them in PPP planning and execution represent best practices. It is strongly recommended that public sector bodies in New Zealand refer to the NIU for assistance with the selection and implementation of PPP projects. In addition, the NIU should continue to update the “PPP Toolkit” and the National Infrastructure Plan to facilitate the PPP programme, and wider public sector procurement.

9.5.1.2 Governance structure

The research results resonate with Li et al (2005b) and Martins et al (2011), who found that a good governance structure is a critical success factor for PPPs. The results from interviews and case studies suggest that establishing an effective governance structure has been highlighted in the three jurisdictions. In the planning and procurement of the New Zealand’s PPP projects, as indicated in the case studies chapters, the public sector has endeavoured to make sure that good governance structures were in place to reflect on emerging issues, so that informed and prompt decisions can be made at various key decision-making points.
Establishing an effective governance structure is emphasised in Hong Kong’s PPPs. Under the PPP policies, a project steering committee is required to be set up to oversee project progress. The Legislative Council is usually involved in the feasibility and procurement process (Efficiency Unit, 2008). For example, in the case of AsiaWorld-Expo, the Legislative Council Panel on Commerce and Industry met on a regular basis to address emerging concerns at different stages. The interviewees reported that the meetings served as a useful vehicle for communication between the various stakeholders.

Similarly, the case studies in Australia reveal that a good governance structure with clear lines of communication was instrumental for ensuring the success of PPPs. In the cases of Ararat Prison and Partnerships Victoria in Schools projects, a multi-level governance structure, including PPP specialists, a project steering committee, Ministers and members in Cabinet sub-committee was set up. This governance structure was believed to be effective in ensuring an efficient procurement process by giving timely approvals at various decision-making points.

Based on a comparative analysis across jurisdictions, this research suggests that in New Zealand, the public sector needs to establish an effective governance structure to facilitate timely decision-making and ensure that the challenges encountered are promptly tackled. In addition to a good governance structure, strong public sector leadership should be maintained for prompt decision making. Again, appointing highly-skilled PPP specialists and involving experts from the NIU are both conducive to enhancing leadership.

9.5.2 Comparison across sectors

9.5.2.1 Public sector capacity

Although lack of experience and expertise is common for public sector bodies starting to use PPPs, this research showed that there are no special requirements on the public sector capacity in using PPPs for prison and school development. However, Chapter Six revealed that a shortage of skills and
expertise within the public sector in structuring and managing venue PPPs was a great concern for venue PPPs. The shortage of capacity mainly arises from the uncertainties and complexities involved in venue operation. Since much room is left for the bidders to submit innovative solutions, the complicated and lengthy bid evaluation and negotiation poses considerable constraints for the public sector capacity.

The strategies recommended to the New Zealand government about the use of PPPs in venue, prison and school development are not different to those for general PPP application. Strategies such as appointing highly-qualified experts and engaging specialists from the NIU are appropriate and usable. It is notable that for venue PPPs, the public sector is suggested to appoint advisors with special expertise in advising on running venue business.

9.5.2.2 Governance structure

The case studies chapters indicated that an effective governance structure is desirable for PPP development across the three sectors examined. However, the emphasis is slightly different between the sectors. As for venue projects, effective governance structures is critical to ensure timely decision making in project initiation, development and procurement as it usually takes lengthy duration to reach decisions on bringing forward venue projects. As for prison and school PPPs, in addition to setting up an effective governance structure at the pre-contract phase, a clear and responsive governance structure with clear lines of reporting and communication needs to be maintained at the contract management stage. This emphasis is in line with the use of payment mechanism, performance-based payment. Lacking an effective governance structure, the relevant reporting and performance assessment is likely to be hindered. The associated financial rewards and deductions, included in the payment mechanism, may not fully achieve their purposes, incentivising the private sector to maximise service performance.
9.6 Private sector market depth, capability and structure

This section summarises a comparative analysis of the private sector market depth, capability and structure for PPPs across jurisdictions and sectors. The critical issues discussed under this theme are private sector market depth and capability and private consortium structure.

9.6.1 Comparison across jurisdictions

9.6.1.1 Private sector market depth and capability

The research results accord with previous findings that a strong and competitive private sector market is a critical success factor for PPPs (KPMG, 2010b, European Commission, 2003). Chapter Five showed that, given the status of New Zealand’s PPP development, the competence and maturity of the market is questionable. There has been a shortage of facility management firms and project sponsors. Local firms’ capability to participate in PPPs is uncertain due to lack of understanding and expertise. International private investors may bid for New Zealand PPPs if the size of the project is sufficient or if a pipeline of projects is available to capture their interest. However, owing to the isolated geographical location and small economy, the attraction of New Zealand PPPs to international companies is limited, mainly to Australian firms. In terms of the financial market, the banks generally have the capacity to invest in PPPs although it is difficult to fund multiple bidders if committed finance is required. There is no bond market so far. Despite the establishment of the Social Infrastructure Fund, equity providers seem to be lacking. Because no PPP projects were brought to market during the GFC, there was essentially no direct impact of the GFC on New Zealand’s PPP financial market. However, debt finance terms tend to be short, giving rise to refinancing risks.

Similar to New Zealand, the private sector market in Hong Kong lacks depth. Only a limited number of contractors are capable of engaging with PPPs (Cheung, 2009). However, Hong Kong accesses the competitive bid market because it is an attractive destination for international firms to invest in. As a gateway to China, Hong Kong has offices of many well-known international firms (Chan et al.,
However, in New Zealand, where the financial market lacks depth, there is almost no financial market for PPPs. The difference may be attributable to the fact that the banks in New Zealand are mainly subsidiaries of Australian banks. With experience in participating in Australia PPPs, the New Zealand banks essentially have the capability to assess the financial package and put up a bid with other parties. By contrast, lacking enough PPP experience, the financial institutions in Hong Kong have a comparatively low perception level of PPPs. This is reflected in high financial market risk (Chiang and Cheng, 2009). Since no PPP projects reached financial close during the GFC, the influences of the GFC were not felt, as was also the case of New Zealand. It is uncertain whether bank loans with favourable terms and conditions will be available in future PPP attempts.

As opposed to the private sector market of New Zealand and Hong Kong, a PPP market with a high level of sophistication has been developed in Australia, as argued by Australian interviewees (shown in Chapter Seven and Eight). It is notable that both Australian and New Zealand’s facility management markets lack depth. Despite the relatively capable private sector market, the initial investments in capacity building and bid costs have been reported to impede the entry of potential private players to the Australian PPP market (KPMG, 2010b). This is because New Zealand is usually seen as part of domestic market for Australia. The GFC had significant impact on the financial market of Australian PPPs, which was well-established at pre-GFC stages. Currently, the Australian case studies showed that the bond market is not available. Although bank loans are accessible, banks generally restrict their PPP activities. The term of debt finance is shorter, giving rise to refinancing risk.

Based on a comparative examination, this research suggests that a deeper and more competitive private sector market can be established as more PPP experience is gained. At the present stage of PPP development, it is therefore necessary for New Zealand’s private sector firms to invest money and time to equip the required capability to bid for and execute PPP contracts. As shown in the case study chapters, sometimes private sector firms do not participate in PPPs because of their risk-averse
attitude and lack of a strategic view of development. It is therefore suggested that the private sector companies adopt a strategic development scheme, and be clear about their objectives to engage with PPPs. Establishing good and sustainable relationships with business partners is another strategy for private firms intending to become involved in New Zealand PPPs.

9.6.1.2 Private consortium structure

According to the literature review chapter, based on the type of sponsors who take the lead in organising the SPV and putting up the bids, the structure of the private consortium is formed via two approaches, subcontractor (construction contractor, facility manager, or operator) – led and financier – led. In this research, differences in the structure of private consortium were observed across the three jurisdictions. In Hong Kong, a subcontractor-led approach has been adopted. For example, in the case of the AsiaWorld-Expo, a construction contractor-led private consortium was chosen for the venue development. By contrast, there has been a trend of increasing use of a financier-led approach in Australia’s PPP deals, and such approach predominates in the current PPP market. Both the Ararat Prison and Partnerships Victoria in Schools projects adopted a financier-led approach. As opposed to Hong Kong and Australia, there has been a mixed use of both approaches in New Zealand. For example, the Wiri Prison and Hobsonville Schools projects used a subcontractor-led and financier-led approach respectively. The reason for the differences across jurisdictions can be traced back to the maturity of PPP market, especially the financial market. According to the Australian interviewees, as presented in Chapter Seven, due to their extensive experience in running PPP projects, financiers have been familiar with the design, construction and management aspects of a PPP, and are used to leading the bids by drawing the skills from different service providers. Although New Zealand’s PPPs are in their infancy, there are no substantial barriers for Australian banks or equity providers to bid for New Zealand projects, enabling the adoption of a financier-led approach in New Zealand.

Having a properly-structured private consortium has been highlighted in previous literature as an important enabler for achieving the anticipated outcomes in PPPs (Li et al., 2005b, Zhang, 2005b).
This research added to this argument, suggesting that the structure of the private sector consortium should be commensurate with the region’s PPP development level and the characteristics of the intended project. The private sector partners need to be familiar with each other’s strengths and weaknesses and utilise each party’s strengths to prepare bid submissions and carry out PPP contracts.

9.6.2 Comparison across sectors

9.6.2.1 Private sector market depth and capability

This research finds that the private sector market depth and capability for PPPs has different implications for PPP projects in different sectors. As shown in the case studies presented in Chapter Six, due to the complexity of venue operation, there is a small pool of international private operators, with the capacity and expertise to run the venue business. However, the success of venue PPPs relies heavily on the private sector partner’s business and commercial creativity. Without a highly-capable private sector partner, venue PPPs are highly likely to fail. As shown in all case studies in the venue sector, the private sector partner’s strong capability to run the venue business was a critical success factor. It is therefore of great importance to select the right partner at the tendering stage. Also, it is suggested that all parties within the private consortium be strategically aligned to synergise and exploit their individual strengths to increase the business performance.

A shortage of facility managers is reported for prison and school PPPs. The lack of facility management firms and their negative view towards taking on long-term risk profile account for the shortage, as argued by the interviewees in Chapter Seven and Eight. The problem is particularly critical for school PPPs as school projects are generally small and not particularly technical, facility managers may not be interested in participating in small projects whilst retaining long-term maintenance risk. In light of the shortage of facility managers, it is suggested that private firms should take a long-term perspective in deciding on whether to participate in PPPs. In particular, local firms with fewer strengths and capabilities may be given opportunities to participate in school PPPs.
9.6.2.2 Private consortium structure

In light of the high risks involved in venue operation and large capital investment, a subcontractor-led consortium is preferred for venue PPPs with both the governments and sponsors providing equity injection. The case studies in the venue sector revealed that such an approach is suitable. In terms of the private consortium structure for prison PPPs, both financier-led and sub-contractor-led approaches are being used, the selection of which is determined by the PPP models adopted and the country’s PPP development status. A country with a more sophisticated financial market for PPPs is more likely to opt for a financier-led structure. A financier-led approach is usually adopted for school PPPs, as shown in the case studies in Chapter Eight. The common use of financier-led structures for school projects may arise from their simplicity and small capital value. It creates few difficulties for financiers to arrange financing and put up a bid. Pension funds are encouraged to be involved in school PPPs, given the relatively stable revenue streams over the long term.

9.7 Risk analysis and allocation

9.7.1 Comparison across jurisdictions

Equitable risk allocation has been recognised as the key to achieving value for money in PPP projects (Li et al., 2005a, Loosemore, 2007). An investigation of PPP practices in the three jurisdictions confirms the important role of risk allocation. Although the risk allocation scheme varies in different projects, there are some general principles underlying risk allocation in different jurisdictions. This research finds that lacking a favourable environment for PPPs in New Zealand, the government tended to take on or share more risks in a PPP. For example, in the Wiri Prison project, the government took the political and legal risks by promising cost reimbursement to a capped amount to the bidders if the project was cancelled due to changes of government or law. Similarly, the Hong Kong government is required to take on or share risks that arise from political or public debate, as the private sector partner is usually exposed to the risks that a PPP proposal will not reach fruition (Chan
et al., 2010b). The allocation of political risk seemed to be less of a concern for Australian PPPs, owing to its relatively stable political environment for PPPs.

The New Zealand interviewees agreed that the toll-road model, under which the demand risk is transferred to the private sector, will not be used at the current stage of PPP development, given the relatively low and unforeseeable infrastructure demands. Likewise, a PPP with demand risk is not promoted in Australia. The failure of some toll roads (e.g., Cross City and Lane Cove Tunnel projects) indicated that, despite larger infrastructure needs than New Zealand, PPP projects with demand risks seem to be not feasible. As such, under Australia’s current PPP policies, the “non-core service” model prevails in the PPP use. As opposed to that of New Zealand and Australia, there has been mixed results of PPP projects with demand risk, as shown in Chapter Three. Although the private sector tends to be cautious in entering into PPPs of such type, there is potential for using it in the future.

Despite the availability of financial market, there is still high financial risk in New Zealand. This is because the bank sector cannot support multiple bids if committed finance is required. Also, the shorter loan term, as has observed in the pilot projects, may lead to re-financing risk. As opposed to the situation in New Zealand, Australia has a deeper and more established financial market. However, the financial risk has significantly increased due to the effects of the GFC. The issue with financial risk is more emphasised in Hong Kong. Due to the high perceived financial risks, financiers tend to be cautious and reluctant to step into PPPs. Without government guarantees or other forms of support, such as capital injection, a PPP proposal is likely to be cancelled (Chiang and Cheng, 2009).

Based on a comparative analysis regarding the risk allocation across jurisdictions, it is important that the various parties be reasonable and equitable towards risk allocation and sharing in PPPs. Specific to New Zealand, it is suggested that the public sector acknowledges the political and legal risk and retains the risk. It is recommended that the public sector shares the risk in relation to obtaining resource consent by providing necessary assistance. In addition, committed finance is not preferred in New Zealand. Facing the effects of the GFC, some models, such as the Supported Debt Model, which
has been used in Australia, may be introduced to New Zealand to increase the ability to finance its PPPs.

9.7.2 Comparison across sectors

The major difference between venue PPPs and prison and school PPPs is whether the demand risk is transferred to the private sector. Under venue PPPs, the private sector partner takes on the demand risks, giving them incentives to exert their commercial capability. However, taking on demand risk poses challenges given the complexity and uncertainty of running venue events. In the circumstances that lenders are involved, a rigorous due diligence is usually conducted due to the uncertainties around the revenues over the appraisal period. Since the venue project’s economic viability cannot be ensured if financed, built and operated solely by the private sector, the government usually provides more guarantees such as direct capital grants, as shown in the three case studies in Chapter Six.

As for prison and school PPPs, the private sector basically does not take demand risk. A steady revenue stream can be guaranteed at the operating stage. The relatively low risks therefore capture strong interest from financiers, including commercial banks and equity providers, as observed in the prison and school case studies. Under the “non-core service” model with no demand risk, there has been a trend to transfer more risks to the private sector. For example, in the Ararat Prison project, the risk related to energy volume was shared by both parties. It is believed that such risk transfer was in line with Australia’s PPP development level and helped to increase the value for money outcomes, although it presented higher compliance requirements to the private sector. It is suggested from this research that to undertake prison or school PPPs in New Zealand, the financiers should be less rigorous in the due diligence in order to streamline the PPP process. As the PPP programme expands, more risks may be transferred to the private sector under the principle of “maximising value for money”.

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9.8 Developing Best Practice Guidelines for Implementing PPPs in New Zealand

In New Zealand, a guideline document, *Guidance for Public Private Partnerships (PPPs) in New Zealand*, has been released by the NIU. The document was aimed at providing general directions and principles to be adopted, the processes to be followed and a framework to assess the suitability of PPPs (National Infrastructure Unit, 2009b). As stated by the interviewees from New Zealand (presented in Chapter Five), the *Guidance* is a good first-tier document. However, it is fairly high-level and too general, lacking of enough details to guide the practitioners when engaging with PPP procurement. The *Guidance* is mainly task-based, rather than directions for use. Therefore, this research developed an extensive set of usable guidelines, in accordance with previously-identified themes. The best practice guidelines were then subjected to a validation exercise. The guidelines developed from this research can be used as complementary guidance material to the government *Guidance* for New Zealand PPP practitioners. It is notable that some recommendations derived from this research are beyond the objectives of this research. They are recognised as: (1) tangential insights that add richness; and (2) unexpected but useful findings.

9.8.1 Best practice guidelines for using PPPs in New Zealand

The government’s *Guidance* provides a process for developing an individual PPP project. It lists the tasks and main issues involved at various stages. However, it does not consider the implications of general political, legal and economic conditions on the PPP use in New Zealand. Little is known about what the government should do at a programme level to promote PPP development. This research bridged this gap by proposing six recommendations (shown in Table 9.1) to policy makers and public agencies on how to improve the PPP outcomes at a programme level.
Table 9.1 Best practice guidelines under the theme “General political, legal and economic conditions”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
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<tbody>
<tr>
<td>1</td>
<td>The government should be open to alternative procurement methodologies (e.g., PPPs) rather than relying on traditional procurement.</td>
<td>Section 5.4.11</td>
</tr>
<tr>
<td>2</td>
<td>The government should take a transparent and consistent approach towards the selection of PPPs.</td>
<td>Section 3.3.1</td>
</tr>
<tr>
<td>3</td>
<td>The government should continue to present the relevant legislation to the Parliament for review and remove the prohibitive legal provisions on the use of PPPs.</td>
<td>Section 3.3.2</td>
</tr>
<tr>
<td>4</td>
<td>The government should deliver a clear message regarding the possible project pipeline to give the market information about the potential business opportunities.</td>
<td>Section 5.4.6</td>
</tr>
<tr>
<td>5</td>
<td>The government should maintain credibility around publicising the project pipeline.</td>
<td>Section 5.4.6</td>
</tr>
<tr>
<td>6</td>
<td>The government is advised to continue to invest in infrastructure, rather than reducing infrastructure spending due to recent market shocks (e.g., the Christchurch earthquakes).</td>
<td>Section 5.4.1</td>
</tr>
</tbody>
</table>

The main tasks involved in the business case development are presented in the *Guidance*. However, the exercises mentioned in the document are too descriptive and referring too much to the UK and Australia’s policies. It is not clear how to engage with each task in order to obtain better value for money from doing a PPP. For example, when describing the exercise of “Public Sector Comparator”, the document focuses on presenting the principles and steps for the PSC calculation, with direct reference to *Infrastructure Australia*’s guidelines. However, it is unknown about the implications of such an exercise on New Zealand’s PPP practices. This research therefore addressed this gap by providing a series of best practice guidelines under the theme “Business case development”, which is presented in Table 9.2.
Table 9.2 Best practice guidelines under the theme “Business case development”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The government should plan the investment portfolio at a programme level rather than investing on an individual and fragmented basis.</td>
<td>Section 3.4.2; Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>2</td>
<td>The public sector should conduct a well-identified service need analysis, instead of rushing to the procurement options stage.</td>
<td>Section 5.4.9; Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>3</td>
<td>The public sector must conduct the service need analysis from a whole-of-government perspective, rather than focusing on a particular project or a particular department’s needs.</td>
<td>Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>4</td>
<td>The public sector needs to ensure the services are viable and meaningful for the long term.</td>
<td>Section 3.4.2; Section 5.4.9</td>
</tr>
<tr>
<td>5</td>
<td>The public sector should adopt PPPs for the right” reasons – achieving value for money, rather than just obtaining private financing.</td>
<td>Section 5.4.11</td>
</tr>
<tr>
<td>6</td>
<td>The public sector must be aware of the variety of PPP models (e.g., the availability-based model), rather than perceiving PPPs as just a toll-road model.</td>
<td>Section 5.4.4</td>
</tr>
<tr>
<td>7</td>
<td>The public sector must conduct a meticulous economic cost-benefit analysis from a national, economic perspective.</td>
<td>Section 6.5.1; Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>8</td>
<td>The public sector needs to evaluate the delivery options based on thorough consideration and solid calculation using quantitative assessment techniques (e.g., Public Sector Comparator).</td>
<td>Section 5.4.9; Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>9</td>
<td>The public sector should take qualitative factors into procurement option analysis with an emphasis on the value from pursuing PPPs (e.g., room for innovation during operational phase).</td>
<td>Section 6.5.1; Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>10</td>
<td>The public sector should conduct an extensive market sounding exercise to capture the market’s needs and interest.</td>
<td>Section 3.4.2; Section 5.4.9</td>
</tr>
<tr>
<td>11</td>
<td>The public sector should conduct a well-articulated sensitivity analysis by thoroughly considering the uncertainties involved in the analysis.</td>
<td>Section 5.4.9; Section 6.5.1</td>
</tr>
<tr>
<td>12</td>
<td>The public sector must conduct a well-elaborated affordability analysis to examine the government’s fiscal situation.</td>
<td>Section 5.4.9; Section 7.5.1; Section 8.5.1</td>
</tr>
</tbody>
</table>
The main stages and related tasks embodied in the PPP procurement process are briefly described in the *Guidance*. However, the description is too general and does not reflect on the current issues associated with the PPP procurement in New Zealand. With regard to the small size of project and lack of pipelines, there has been pressure for the government to structure a streamlined PPP procurement. Without discussing these key issues, it remains unknown about how the government should undertake relevant activities in order to achieve an efficient and effective PPP procurement. This research hence contributes to filling this gap by developing a list of recommendations under the theme “procurement process” (shown in Table 9.3).
### Table 9.3 Best practice guidelines under the theme “procurement process”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It is recommended that the public sector consult end users and relevant communities in the development of the project brief.</td>
<td>Section 5.4.3; Section 6.5.1; Section 7.5.2; Section 8.5.5</td>
</tr>
<tr>
<td>2</td>
<td>The public sector needs to develop transparent bid requirements and evaluation criteria that can be consistently interpreted by different parties.</td>
<td>Section 5.4.2; Section 6.5.2; Section 7.5.2; Section 8.5.2</td>
</tr>
<tr>
<td>3</td>
<td>The public sector is advised to design incentives and mechanisms to allow the private sector partner to innovate over time.</td>
<td>Section 5.4.2; Section 7.5.2; Section 8.5.2</td>
</tr>
<tr>
<td>4</td>
<td>It is suggested the public sector follows an interactive tendering procedure.</td>
<td>Section 5.4.2; Section 7.5.2; Section 8.5.2</td>
</tr>
<tr>
<td>5</td>
<td>Effective communication needs to be sustained between the project team and the bidders.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>6</td>
<td>Robust proprietary management protocols need to be introduced to protect the private bidders’ proprietary rights.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>7</td>
<td>The public sector’s decisions should be consistent its commitments.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>8</td>
<td>The public sector should adhere to the established timeframes and meet the milestones.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>9</td>
<td>The public sector is suggested to appoint the preferred bidder earlier without creating a non-competitive situation.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>10</td>
<td>The public sector is advised to shortlist two or three bidders.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>11</td>
<td>The public sector should tailor the level of detail needed in bid requirements depending on the size of project.</td>
<td>Section 5.4.2</td>
</tr>
<tr>
<td>12</td>
<td>The public sector is encouraged to adopt and adhere to standardized contract documents.</td>
<td>Section 5.4.7</td>
</tr>
<tr>
<td>13</td>
<td>The public sector is required to take a consistent approach in a PPP.</td>
<td>Section 5.4.6</td>
</tr>
</tbody>
</table>

Regarding the contract administration and management, the *Guidance* lists three relevant activities: (1) Formalise management responsibilities; (2) Monitor contract performance; and (3) Manage variations (National Infrastructure Unit, 2009b). However, it is rather vague about by what means the above mentioned activities are undertaken to ensure an effective contract administration and management. In
In light of this gap, this research proposes five recommendations (presented in Table 9.4), providing guidance to the government when designing and managing PPP contracts.

Table 9.4 Best practice guidelines under the theme “Contract administration and management”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A good record of the service performance should be kept to ensure that the services are monitored effectively.</td>
<td>Section 7.5.3; Section 8.3.3</td>
</tr>
<tr>
<td>2</td>
<td>Effective governance structure and clear line of communications should be set up to avoid duplicated roles and responsibilities.</td>
<td>Section 7.5.3; Section 8.5.6</td>
</tr>
<tr>
<td>3</td>
<td>It is suggested the contracted parties sustain partnering relationships based on mutual trust.</td>
<td>Section 6.5.5; Section 7.5.3; Section 8.5.6</td>
</tr>
<tr>
<td>4</td>
<td>Conducive and constant communication should be maintained especially when changes occur.</td>
<td>Section 7.5.3; Section 8.5.3</td>
</tr>
<tr>
<td>5</td>
<td>Political champion needs to be maintained over long-term contract management.</td>
<td>Section 7.5.3</td>
</tr>
</tbody>
</table>

International PPP literature found out that the public sector capacity and governance structure largely influences the PPP performance (Kwak et al., 2009, Martins et al., 2011). However, based on the government’s Guidance, not enough is known about whether the public sector has the required capacity to run a PPP and how to bridge the capacity gap if lacking of such capacity. This research therefore suggests six recommendations to address this issue, as presented in Table 9.5.
Table 9.5 Best practice guidelines under the theme “Public sector capacity and governance structure”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A dedicated project team with the relevant skills, expertise and knowledge needs to be set up.</td>
<td>Section 5.4.5</td>
</tr>
<tr>
<td>2</td>
<td>The public sector needs to establish effective governance structure to facilitate timely decision-making and ensure that the challenges encountered are promptly tackled.</td>
<td>Section 5.4.8; Section 6.5.4; Section 7.5.4; Section 8.5.6</td>
</tr>
<tr>
<td>3</td>
<td>Strong public sector leadership should be maintained for decision making.</td>
<td>Section 5.4.6; Section 7.5.1; Section 8.5.1</td>
</tr>
<tr>
<td>4</td>
<td>Experts from the NIU should be strongly involved in the core project team, acting as commercial advisors to the public sector.</td>
<td>Section 5.4.5</td>
</tr>
<tr>
<td>5</td>
<td>The government must develop and update the National Infrastructure Plan to provide an overview of infrastructure development.</td>
<td>Section 5.4.7</td>
</tr>
<tr>
<td>6</td>
<td>The government is suggested to continue to update the “PPP Toolkit” including a suite of guideline documents for PPPs.</td>
<td>Section 5.4.7</td>
</tr>
</tbody>
</table>

Extensive PPP literature revealed that the private sector market depth, capability and structure is a critical factor affecting the PPP implementation (Li et al., 2005b, Zhang, 2005b). However, the government’s Guidance does not attempt to examine the private sector market in New Zealand. It is therefore unclear whether the New Zealand’s private sector market has sufficient depth and capability to participate in PPPs and sustain a competitive environment. It is also unknown what type of private consortium structure is desirable for New Zealand. This research fills this gap by recommending four best practice guidelines to private sectors intending to engage with New Zealand PPPs, which are shown in Table 9.6.
Table 9.6 Best practice guidelines under the theme “Private sector market depth, capability and structure”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The private sector companies should be clear about their objectives in setting up PPPs and adopt a strategic development scheme.</td>
<td>Section 6.5.4; Section; 7.5.5; Section 8.5.4</td>
</tr>
<tr>
<td>2</td>
<td>The private sector companies should establish strong, sustainable and partnering relationships.</td>
<td>Section 6.5.4; Section; 7.5.5; Section 8.5.4</td>
</tr>
<tr>
<td>3</td>
<td>A properly structured private sector consortium should be adopted. Whether a sub-contractor-led or a financial-led approach is used is determined by the region’s PPP development level and the characteristics of the intended project.</td>
<td>Section 6.5.4; Section; 7.5.5; Section 8.5.4</td>
</tr>
<tr>
<td>4</td>
<td>The private sector partners need to be familiar with each other’s strengths and weaknesses and utilise each party’s strengths to prepare bid submissions and carry out PPP contracts.</td>
<td>Section 6.5.4; Section; 7.5.5; Section 8.5.4</td>
</tr>
</tbody>
</table>

The central issue of PPPs, risk analysis and allocation, has been widely recognised as crucial for achieving value for money outcomes for PPPs (Li et al., 2005a, Loosemore, 2007). The Guidance covers the issue of risk allocation and refers to the Australian policies for further guidance. It is notable that the Guidance mainly concentrates on the basic principles underlying the risk allocation. It does not recommend on each party’s position given the New Zealand’s special social, economic and political environments. This research hence adds to the continual debate on risk allocation in New Zealand by providing six recommendations, which are shown in Table 9.7.
Table 9.7 Best practice guidelines under the theme “Risk analysis and allocation”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The various parties should be reasonable and equitable towards risk allocation and risk sharing.</td>
<td>Section 3.4.2; Section 5.4.10; Section 6.5.5; Section 7.5.6</td>
</tr>
<tr>
<td>2</td>
<td>The public sector should not ask for committed finance. Guarantees such as the Indicative Term Sheet may be acceptable.</td>
<td>Section 5.4.10</td>
</tr>
<tr>
<td>3</td>
<td>The public sector should acknowledge the political risk and retain the risk by compensating private sector bidders if the project is cancelled at procurement stage.</td>
<td>Section 5.4.10</td>
</tr>
<tr>
<td>4</td>
<td>The public sector is suggested to take on risks in relation to site investigation and make the relevant reports available to potential bidders rather than transferring the risk to the private bidders.</td>
<td>Section 5.4.10; Section 8.5.2</td>
</tr>
<tr>
<td>5</td>
<td>The public sector is suggested to assist with obtaining consents as required by the Resource Management Act 1991.</td>
<td>Section 5.4.14; Section 6.5.1; Section 7.5.1</td>
</tr>
<tr>
<td>6</td>
<td>Under PPP models without demand risk, the financiers are suggested to be less rigorous in the due diligence, to streamline the PPP process.</td>
<td>Section 5.4.10</td>
</tr>
</tbody>
</table>

9.8.2 Specific recommendations for using PPPs in the venue, prison and school sector

In addition to the best practice guidelines that apply to general PPP application in New Zealand, this research proposes specific recommendations for implementing PPPs in each sector investigated, including exhibitions and events venue, prisons and schools. The recommendations are shown in the following tables.
Table 9.8 Specific recommendations for using PPPs in the exhibition and event venue sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>During the business case development, the government is advised to place much emphasis on the wider social and economic benefits brought by the intended project, rather than focusing on the economic viability of the project itself.</td>
<td>Section 6.5.1</td>
</tr>
<tr>
<td>2</td>
<td>The government is suggested to select land close to existing or planned business centres and integrated with other business sectors and public transport networks.</td>
<td>Section 6.5.1</td>
</tr>
<tr>
<td>3</td>
<td>The government is recommended to provide capital grants or other types of support to increase the project’s financial viability.</td>
<td>Section 6.5.2</td>
</tr>
<tr>
<td>4</td>
<td>Streamlined financing arrangements are preferred. The sponsors are recommended to provide significant equity injection or provide guarantees to banks for debt financing.</td>
<td>Section 6.5.2</td>
</tr>
<tr>
<td>5</td>
<td>In bid requirements, sufficient room should be allowed to encourage the bidders to propose innovative solutions.</td>
<td>Section 6.5.3</td>
</tr>
<tr>
<td>6</td>
<td>Tender evaluation should be based on the ability of the private consortia to develop the proposed facilities and run the business, rather than focusing on the lowest price.</td>
<td>Section 6.5.3</td>
</tr>
<tr>
<td>7</td>
<td>All parties within the private consortia should be strategically aligned to synergise and exploit their individual strengths.</td>
<td>Section 6.5.4</td>
</tr>
<tr>
<td>8</td>
<td>The government is suggested to lend supports at operating phase by coordinating with competing facilities and enhancing the public transport connecting to the venue.</td>
<td>Section 6.5.5</td>
</tr>
<tr>
<td>9</td>
<td>The private sector should maximise commercial strength and creativity to increase business performance.</td>
<td>Section 6.5.5</td>
</tr>
<tr>
<td>10</td>
<td>The private sector is suggested to organise community events during venue operation to enhance its reputation and obtain supports from the communities.</td>
<td>Section 6.5.5</td>
</tr>
</tbody>
</table>
Table 9.9 Specific recommendations for using PPPs in the prison sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The public sector should conduct accurate projection of prison populations and an estimation of growth trends in light of the policy decisions.</td>
<td>Section 7.5.1</td>
</tr>
<tr>
<td>2</td>
<td>A programme approach should be adopted for conducting the service need analysis. The public sector needs to consider the government’s overall development scheme and wider prison network rather than focusing on a particular project.</td>
<td>Section 7.5.1</td>
</tr>
<tr>
<td>3</td>
<td>For the procurement option analysis, the public sector should consider all possible PPP models, including full-packaged and non-core service models and select an appropriate model with regard to the government’s policy objectives.</td>
<td>Section 7.5.1</td>
</tr>
<tr>
<td>4</td>
<td>For full-packaged PPP prisons, the government is encouraged to emphasise better operational results through introducing private sector innovation, rather than limiting potential innovation by setting excessive requirements in bid documents.</td>
<td>Section 7.5.2</td>
</tr>
<tr>
<td>5</td>
<td>The public sector is required to remove the constraints to comply with the public sector’s previous operational protocols to encourage innovation.</td>
<td>Section 7.5.2</td>
</tr>
<tr>
<td>6</td>
<td>At contract management stage, effective inter-organisational communication channels need to be created. Especially, the public sector’s operating staff and the private sector partner should maintain effective and constant communication.</td>
<td>Section 7.5.3</td>
</tr>
<tr>
<td>7</td>
<td>The public sector culture and objectives between the procurement and operating teams should be aligned, rather than lacking connection and having different philosophies.</td>
<td>Section 7.5.3</td>
</tr>
<tr>
<td>8</td>
<td>The private sector should be given more flexibility or room to innovate at the operational stage.</td>
<td>Section 7.5.6</td>
</tr>
<tr>
<td>9</td>
<td>The private sector is suggested to create automatic documentation system to facilitate reporting at contract management stage.</td>
<td>Section 7.5.3</td>
</tr>
</tbody>
</table>
Table 9.10 Specific recommendations for using PPPs in the school sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The public sector should take a programme approach towards school assets delivery, and may bundle a number of projects when necessary to increase the viability of PPPs.</td>
<td>Section 8.5.1</td>
</tr>
<tr>
<td>2</td>
<td>The public sector is suggested to adopt a size-adjusted and streamlined tendering process.</td>
<td>Section 8.5.2</td>
</tr>
<tr>
<td>3</td>
<td>The private sector is suggested to create automatic documentation system to facilitate reporting at contract management stage.</td>
<td>Section 8.5.6</td>
</tr>
<tr>
<td>4</td>
<td>The public sector is suggested to involve local private sector partner with the required capability of participating in school PPPs.</td>
<td>Section 8.5.4</td>
</tr>
<tr>
<td>5</td>
<td>Private sector companies should be clear about their objectives and take a strategic and long-term view towards entering into PPPs.</td>
<td>Section 8.5.4</td>
</tr>
<tr>
<td>6</td>
<td>The school board consisting of principals, teachers and representatives of the community should be extensively consulted and engaged at all stages.</td>
<td>Section 8.5.5</td>
</tr>
<tr>
<td>7</td>
<td>The Board of Trustees, or the principals, teachers and parents, should be educated on the principles and implications of PPP approaches at early stages.</td>
<td>Section 8.5.5</td>
</tr>
</tbody>
</table>

9.8.3 Validation results

Following a validation procedure described in Section 4.5.5, a questionnaire incorporating the best practice guidelines and specific recommendations for each sector, shown in Appendix A3, was sent to five subject matter experts for validation purposes.

Table 9.11 shows the results (mean value of the responses) from the validation exercise, conducted with the participants mentioned in Table 4.11. It is evident that the mean value of all responses is above 3, validating the best practice guidelines and specific recommendations for venues, prisons and schools developed based on this research. It is notable that the degree of practicality of recommendations for schools is slightly above 3. During the validation interviews, the participants indicate that the reasons for the relatively low ranking is that the PPP development is just in its infancy in New Zealand, more practical solutions will emerge as more PPP experiences are gained.
Table 9.11 Validation results (mean value of the responses)

<table>
<thead>
<tr>
<th>Validation Aspect</th>
<th>Best practice guidelines</th>
<th>Recommendations for venues</th>
<th>Recommendations for prisons</th>
<th>Recommendations for schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Degree of appropriateness</td>
<td>3.8</td>
<td>4</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>2. Degree of objectivity</td>
<td>3.6</td>
<td>3.8</td>
<td>3.8</td>
<td>4</td>
</tr>
<tr>
<td>3. Degree of replicability</td>
<td>4</td>
<td>4</td>
<td>3.8</td>
<td>3.6</td>
</tr>
<tr>
<td>4. Degree of practicality</td>
<td>3.6</td>
<td>4.2</td>
<td>3.6</td>
<td>3.2</td>
</tr>
<tr>
<td>5. Overall reliability</td>
<td>3.8</td>
<td>3.6</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>6. Overall suitability for New Zealand</td>
<td>4.2</td>
<td>4.2</td>
<td>4.2</td>
<td>3.8</td>
</tr>
</tbody>
</table>

This chapter has brought together the findings of the thesis into a comprehensive, and useful, format so that New Zealand can start to develop meaningful ways of progressing future PPPs. The chapter shows that different sectors need to focus on different attributes. For example, a PSC method is commonly used in the procurement option analysis for prison and school projects, whereas qualitative considerations, such as utilising private sector expertise and risk transfer, are heavily weighted when deciding whether PPPs should be adopted for venue development. Validation of the results with experts in the PPP market shows the relevance and significance of the findings. Indeed, the validation results show a consistency in the responses to the usefulness of the findings to PPP development. It is anticipated that the findings from this thesis will be embedded in future documentation for PPP development in New Zealand.
Chapter 10 Conclusions and Recommendations for Future Research

10.1 Introduction

This chapter reviews the research objectives and how they were achieved through the research. It then outlines the original contributions to the best practice framework of PPP application around the globe. The chapter concludes with recommendations for possible areas for future research that will extend the current study.

10.2 Review of Objectives

Objective 1: Examine the past experiences, current application status and policy settings of PPPs in New Zealand and review the continuous debate on PPPs in New Zealand

New Zealand’s current application status and policy context of PPPs was examined by reviewing the government policy papers, academic studies and project reports. Section 3.2 showed that the private sector has been involved in the provision of public infrastructure and services for many years in New Zealand. The experiences with PPPs are nonetheless very limited. The scarcity of PPP practices was partly due to the New Zealand government’s sceptical view of the adoption of PPPs. The industry was also concerned with the suitability of PPPs in the New Zealand market. However, since the government announced its infrastructure development policy, the use of PPPs has been on the policy agenda. A PPP project will proceed if it can demonstrate value for money. Relevant policy settings have evolved around PPPs to facilitate the PPP implementation. By reviewing the literature of PPPs with a special focus on New Zealand, an understanding of the industry-wide debate concerning PPPs is obtained. Also, a quasi-PPP project in New Zealand was studied by reviewing the relevant documents to draw on lessons that may be applied in future PPP application.
**Objective 2:** Identify the drivers for New Zealand to adopt PPPs for the provision of public assets and associated services

Industry-wide, semi-structured interviews were used as the main research method to identify the drivers for using PPPs in New Zealand. The interview results were supplemented and confirmed by attendees’ comments and opinions at industry workshops/seminars that the researcher attended. Chapter 5 presented the results and an overview of the drivers for using PPPs in New Zealand was shown in Table 10.1, which are compared with the drivers extracted from literature.

### 10.1 A comparison between drivers identified from literature and general interviews

<table>
<thead>
<tr>
<th>Similarities</th>
<th>Drivers identified from literature</th>
<th>Drivers identified from general interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acceleration of infrastructure provision</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Better risk allocation</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Whole-of-life cost savings</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Improved quality of services</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Differences</th>
<th>Benefits for local economic and social development</th>
<th>Private sector innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Driver to change across the public sector</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results show that the drivers for New Zealand to adopt PPPs are not much different with other countries, as identified in the existing literature. As a late starter of PPPs, the New Zealand government’s drivers for using PPPs are different from the UK’s initial intentions with the introduction of PPPs, which were mainly about removing the government’s budgetary constraints and achieving “off-balance sheet financing”. Instead, the drivers for New Zealand are more about gaining “efficiency” and “adding value” to public services rather than financing reasons.

Whole-of-life consideration and integrated solution are perceived as a desired benefit from using PPPs. The New Zealand government also intends to utilise the experience gained from engaging with PPPs to enhance the overall efficiency in public sector procurement. Also, the New Zealand government is
interested in utilising the private sector’s expertise and skills to create innovative approaches to public asset and service provision, especially the operational innovations, and thus enhance the service level. Similar to other countries, achieving optimum risk transfer and risk allocation is recognised as a core driver for value for money under PPPs.

Although it is clear that financing reasons are not a primary determinant for entering into PPPs, PPPs offer attractive mechanisms to alleviate the current budgetary constraints arising from the economic downturn since 2008 and the recent Christchurch earthquakes. Unlike some developing countries, where the introduction of PPPs are seen as a vehicle to boost the region’s social and economic development, the New Zealand government would like to drive a change across the public sector, through the involvement of the private sector via a PPP.

**Objective 3:** Investigate the critical factors that impact on the successful implementation of PPPs in New Zealand

The critical factors that impact on the successful implementation of PPPs in New Zealand were identified mainly through general interviews conducted with practitioners, confirmed and supplemented by the discussions held in the industry workshops/seminars. The interview results were presented in Chapter 5 and an overview of the critical factors identified, with a comparison with those extracted from existing literature is shown in Table 10.2.
A comparison between critical factors identified from literature and general interviews

<table>
<thead>
<tr>
<th>Categories of critical factors identified from literature</th>
<th>Categories of critical factors identified from general interviews</th>
<th>Critical factors identified from general interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>General political, legal and economic conditions</td>
<td>Size of economy</td>
<td></td>
</tr>
<tr>
<td><strong>Similarities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business case development</td>
<td>Business case development</td>
<td></td>
</tr>
<tr>
<td>Procurement process</td>
<td>Procurement process</td>
<td></td>
</tr>
<tr>
<td>Public sector capacity and governance structure</td>
<td>Public sector capacity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Role of National Infrastructure Unit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Governance structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Availability of policy and guideline documents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public sector leadership</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public sector’s culture and approach to procurement</td>
<td></td>
</tr>
<tr>
<td><strong>Differences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract administration and management</td>
<td>Not identified</td>
<td>Not identified</td>
</tr>
<tr>
<td>Private sector market depth, capability and structure</td>
<td>Private sector market depth and capability</td>
<td>Private sector market depth and capability</td>
</tr>
<tr>
<td></td>
<td>Capital market depth</td>
<td></td>
</tr>
</tbody>
</table>

The interview findings confirm that critical factors identified in New Zealand generally fall into the categories extracted from existing literature. However, the implications of the generic factors are, to some degree, different in New Zealand context. For example, in countries such as China and India, PPPs would be impossible without enabling legislation as some of the relevant acts prevent the private sector from participation in the provision of infrastructure related services (Adams et al., 2006, Chen,
In New Zealand, the constraints imposed by existing legislation and regulation are of less significance because the impediments can be technically addressed by more careful circulation and taking mitigating measures.

In terms of the public sector capacity, it is always difficult with the country’s first few PPPs due to the lack of experience and knowledge (Akintoye et al., 2003b). In New Zealand, the public sector has a general understanding of PPPs. PPPs are within their procurement options and they are willing to adopt the concept of output specification. The multi-layer structure of the public sector aggravates the difficulty with proceeding with decisions to pursue PPPs. The NIU plays a pro-active and leading role in PPPs by establishing a best practices framework in the form of policy and guideline documents and assisting with actual project implementation to bridge the public sector capacity gap. Assisted by the NIU, public procuring authorities in New Zealand need to develop strong leadership when embarking on PPPs. The public procuring authorities are required to deliver their commitments along the process, stick to the specified timetables, and ensure effective communication with the private sector participants. The research shows that in New Zealand, in the absence of experience and expertise in running PPPs, the procuring authorities must have a dedicated project team to ensure that the first few PPP projects deliver the expected objectives. An effective governance structure is also needed within the public sector, as suggested by the interviewees. With different level of government officials involved in varied level of the governance structure, clear communication lines can be established, facilitating the decision-making process.

The research reveals that the real challenge to New Zealand is the small size of economy. Experienced international private players including the financiers are mainly concerned with the project pipeline and deal flow in New Zealand. Lacking of continuous investment opportunities, the international bidders will not be interested in New Zealand market. In light of the limited local market capacity, the private sector market depth and capability to enter into PPPs is questionable, which will largely influence the value for money outcomes.
Compared to countries such as the UK and Canada, where a steady stream of PPP projects are available (KPMG, 2010b), New Zealand is much concerned with examining the suitability of PPPs for capital projects, requiring a sound business case development to be undertaken. In addition to explicit criteria specifying the conditions under which PPPs should be considered, a rigorous quantitative assessment is adopted in New Zealand to investigate the suitability of PPPs. In light of the small size of New Zealand PPP projects in general, a streamlined and robust procurement process should be in place to ensure that the PPP options represent optimum value for money. Whilst ensuring the requirement of competition and transparency, New Zealand PPPs prefers a streamlined procurement process, reflected in lower level of details required for bid submissions, commensurate procurement duration in accordance with project size, and no requirement of committed finance.

Reasonable risk allocation is identified as the key for New Zealand PPPs. Compared to other countries such as the UK, Australia and Canada where mature PPP markets with a high level of sophistication have been developed, the New Zealand government is required to assume or share more risks, such as risks in relation to obtaining consents, investigating geological conditions, land acquisition, and political environment, as the industry is generally uncertain about the New Zealand’s PPP market and tends to hold a sceptical view towards the viability and continuity of PPP programme. It is also notable that the critical factor “contract administration and management”, identified in the existing literature was not highlighted by the New Zealand practitioners.

**Objective 4:** Evaluate representative case studies in Hong Kong Special Administrative Region, Australia and New Zealand in the sector of exhibition and event venue, prison and school to analyse the critical factors affecting the successful implementation of PPPs.

This research employed comparative case studies to accomplish Objective 4. Selective PPP projects from HKSAR, Australia, and New Zealand were examined to evaluate the PPP application and extract critical factors deemed important for the PPP implementation in the particular sector. Since no prison or school PPPs have been undertaken in Hong Kong to date, PPP projects from New Zealand and
Australia were selected for the case studies in the prison and school sector. The comparative case studies for each sector were presented in Chapter 6, 7, 8 respectively. The critical factors affecting the use of PPPs in different sectors are summarised in Table 10.3, and the identified factors are listed against the critical factors extracted from literature.

10.3 A comparison of critical factors between venue, prison, school PPPs and generic PPPs

<table>
<thead>
<tr>
<th>Similarities</th>
<th>Critical factors (literature)</th>
<th>Critical factors (venue)</th>
<th>Critical factors (prison)</th>
<th>Critical factors (school)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract administration and management</strong></td>
<td>Business case development</td>
<td>Procurement process</td>
<td>Contract administration and management</td>
<td>Contract administration and management</td>
</tr>
<tr>
<td><strong>Public sector capacity and governance structure</strong></td>
<td>Governance structure</td>
<td>Public sector capacity and governance structure</td>
<td>Public sector capacity and governance structure</td>
<td>Public sector capacity and governance structure</td>
</tr>
<tr>
<td><strong>Private sector market depth, capacity and structure</strong></td>
<td>Private sector structure</td>
<td>Private sector market depth, capability and structure</td>
<td>Private sector market depth and capability</td>
<td>Private sector market depth and capability</td>
</tr>
<tr>
<td><strong>Risk analysis and allocation</strong></td>
<td>Not identified</td>
<td>Not identified</td>
<td>Not identified</td>
<td>Not identified</td>
</tr>
<tr>
<td><strong>Financial arrangements</strong></td>
<td>Not identified</td>
<td>Not identified</td>
<td>Not identified</td>
<td>Stakeholder engagement</td>
</tr>
</tbody>
</table>

Given the differences in characteristics for the provision of relevant assets and services, the critical factors that impact on the successful implementation of PPPs in different sectors vary. The strategies
derived for using PPPs in different sectors are varied. For using PPPs to advance exhibition and event venues, the research proposes that governments should take a cautious approach to identifying service need. A thorough and accurate cost-benefit analysis coupled with sensitivity tests are required to ensure a well-defined service need. The analysis should incorporate quantitative calculations as well as qualitative factors such as economic and social benefits to the wider community. Extensive consultation with the relevant stakeholders is necessary to mitigate the potential risks of public opposition. For land selection, an ideal site would be close to existing or planned business centres and integrated with other business sectors and public transport networks. In order to make venue PPPs viable and attractive to private investors, governments are required to provide support to the project. Providing capital grants is one way of achieving this. In the cases where debt finance is used, streamlined financing processes by providing guarantees are favoured. Given the tight timeframes of venues, a robust tendering exercise should be structured to select the best private consortium for carrying out the venue projects. Conducting extensive market sounding, allowing room for innovation in bid requirements and adopting value-based bid evaluation methods are useful means to ensure an efficient, competitive and transparent procurement process. Sustaining an effective public sector governance structure and leadership is of equal importance to guarantee a robust procurement process and achieve long-term relationships underpinning the success of PPPs. A workable project organisational structure should be created within the private consortia and all parties should be strategically aligned to synergise and exploit their individual strengths. Optimum risk allocation lies at the core of PPPs and the application in venue development is not an exception. Governments are required to retain more risks beyond the control of the private sector such as land acquisition and obtaining the relevant approvals. It is crucial that governments lend support at the operating phase to mitigate the demand risk by coordinating with competing facilities. Meanwhile, the private operator must maximise its commercial strength and creativity to increase business performance. Care for community events is one of the strategies private operators can adopt to improve their reputation and secure on-going and stable operation of the business.
Governments engaging with PPPs for the provision of prison facilities and assets should clearly identify the service need at both project and programme level grounding in precise cost-benefit analysis. A thorough and careful procurement option analysis should be followed, based on quantitative value for money assessment and qualitative evaluation. All available PPP models for prison development should be taken into consideration when conducting the option analysis. In addition to economic appraisal, affordability analysis focusing on financial costing needs to be elaborated in prison PPPs as the long-term viability of PPPs, to a large degree, depends on the governments’ fiscal situation over the appraisal time. Since the quality of output specification determines the extent to which private sector partners can exert their design and operational innovations, governments should make greater efforts to provide high-quality output specifications by involving diverse stakeholders’ opinions. During the project development stage, an appropriate payment mechanism, coupled with reward and abatement schemes, need to be set up to ensure effective contract management and monitoring. A standardised tendering exercise and streamlined procurement process are desirable for prison PPPs and an interactive dialogue procedure would contribute to optimum bid submissions in response to the governments’ service requirement. Practices of prison PPPs place much emphasis on contract management and administration as the operational performances significantly influence the ability to achieve value for money objectives. This research proposes an appropriate documentation system and constant and effective communication in order to establish operational contract management best practice guidelines. Although equitable risk allocation has been widely advocated in PPP practices, the prison PPPs tend to transfer more risks to the private sector as there is low demand risk involved in the private sector partner’s risk profile. A good governance structure is favourable for prison PPPs throughout the planning and execution stages and strong public leadership is required. On the private sector side, setting up a properly-structured consortium and maintaining the long-term partnership would help to achieve their long-term business strategies in the countries’ PPP market.
As for PPP application in the school sector, the research proposes governments should undertake a sound business case development, focusing on a well-grounded service needs forecast and a comprehensive economic analysis at both programme and project level. An affordability analysis examining the government’s fiscal conditions is a critical step at the business case stage. School PPPs also require a robust project development during which a high-quality project brief needs to be developed with the assistance of end users and communities. Governments are required to structure a size-adjusted and streamlined procurement process as well as maintaining competition and transparency. A consistent and standardised approach towards PPPs and a well-structured interactive tendering procedure are useful means to achieve the desirable procurement process. Having a committed and supportive public sector, especially a conducive public sector culture is essential to develop a sustainable PPP programme. In addition, the procuring authorities should seek to enhance their capacity and leadership by involving the experts from central coordinating unit and consistently applying the policy frameworks. Governments are suggested to choose local private companies to participate in school PPPs and involve pension funds such as Superannuation Funds as equity providers. Throughout project development and execution, an effective governance and organisational structure needs to be established to provide a platform on which all parties can maximise their capabilities to boost the service performance. It is recommended that all parties should take a partnering approach in school PPPs, based on which mutual understanding and trust can be established.

**Objective 5:** Synthesise the research findings to develop best practice guidelines for implementing PPPs in New Zealand with specific recommendations on the sector of exhibition and event venue, prison and school

This objective was achieved by synthesising all information collated from literature review, document analysis, general interviews, and international and local case studies. The best practice guidelines and specific recommendations for each sector were presented in Chapter 9.
10.3 Original Contributions and Significance of the Research

PPPs have been practised around the globe for nearly two decades. However, New Zealand has just started promoting PPP programmes. Little is known about the implications of PPPs in New Zealand, especially under current policy settings. This study is the first sophisticated research investigation to examine the environment of New Zealand for sustaining PPPs, identify the challenges for implementing PPPs and to propose measures and strategies to enhance the likelihood of achieving success in PPP projects.

The research adds to the continual debate on the suitability of using PPPs and how to use PPPs to maximise the outcomes of value for money. The findings of this research contribute to enriching the PPP knowledge by adding the New Zealand case to the best practice framework. In addition, this research takes a sectoral view to examine the PPP application, focusing on exhibition and event venue, prison and school sector, leading to enhancing the PPP knowledge area by taking the special requirements of the provision of services associated with a specific sector into consideration.

The best practice guidelines specific to New Zealand, introduced by this research, will provide both the public procuring authorities and prospective private sector participants with guidance on how to engage with New Zealand PPPs. Furthermore, the specific recommendations for using PPPs in venue, prison and school development offer practitioners detailed guidelines when participating in PPPs in a particular sector. The best practice guidelines and specific recommendations were developed by incorporating the practices of Hong Kong and Australia and tailoring the overseas experiences to fit in New Zealand. Learning from overseas experiences assists the New Zealand practitioners by broadening their understanding of PPPs and ways to handle PPP projects.
10.4 Research Limitations and Recommendations for Future Research

It is important to be aware of the limitations of the current research. Recommendations are therefore made for the directions of future research to advance the knowledge and best practice framework of PPP application in New Zealand and other jurisdictions.

- **Evaluate the PPP performance in New Zealand and for specific sectors.** This research investigated the desired benefits for adopting PPP options and critical factors that influence the performance of PPP projects in New Zealand. Due to the lack of PPP experience and available data in various performance regimes, such as cost and time performances and stakeholders’ satisfaction, the current research cannot reach conclusions regarding PPP performance based on empirical data. However, in countries with extensive PPP experiences, such as the UK and Australia, research reports examining the PPP performance in general and also for specific sectors are available to provide reference to decision makers to determine the suitability of PPPs. It is therefore critical to conduct similar research in New Zealand to evaluate the effectiveness and efficiency of PPP projects, identify the emerging issues hindering PPP use and suggest possible measures to address the identified issues.

- **Collect quantitative data to provide weights for the “best practice guidelines” and identify their inter-relationship.** Since New Zealand has just started the development of PPP programme, this research is essentially an exploratory study in nature. The research findings were primarily acquired through qualitative data collection methods. The best practice guidelines and specific recommendations for exhibition and event venue, prison and school sector are presented in a list of “recommendations” that the practitioners may consider when engaging with PPP projects in New Zealand. However, there are no weights given for each factor due to the absence of quantitative data. This is commensurate with the current PPP development status in New Zealand in that not many practitioners have sufficient knowledge about the theories and practices of PPPs and the
specific environment in New Zealand for PPPs. Due to the limited number of potential participants, collecting quantitative data using statistical sampling and conducting corresponding statistical analysis was inappropriate and unrealistic.

As New Zealand gains more experience with PPPs, the number of practitioners who can comment on the PPP application will increase owing to the enhanced level of sophistication of the PPP market and improved knowledge about PPPs. It is therefore possible for a future researcher to collect quantitative data by administering an industry-wide questionnaire in New Zealand. The best practice guidelines may be further enriched by identifying the relative importance of each factor and the inter-relationships of the factors.

- **Expand the list of “best practice guidelines” at contract management stage.** In the current form of best practice guidelines, the main focus is on the business case development and tendering process, and the “best practice guidelines” for contract management stage seem to be limited. This is in accordance with the current development stage of PPPs in New Zealand. The two pilot projects have just reached contract management or project finalisation stages and not enough time has passed to evaluate the practices and extract lessons during contract management.

After some time (e.g., three years), a research project could investigate the main factors or parameters that affect the success of PPP implementation at the contract management stage. The data may be collected by gathering the insights and perspectives from contract manager in the public sector, representatives from the facility management companies, operators, architects and construction companies. Such an investigation will enrich the best practice guidelines derived from the current research.

- **Conduct case studies in a particular sector in other jurisdictions.** This research examined the PPP application in the sector of exhibition and event venue, prison and school in New Zealand, Hong Kong and Australia. A comparative perspective is adopted to investigate the critical factors impacting on the PPP implementation for specific sectors considering the different policy contexts.
of different jurisdictions. This research can be further extended by conducting case studies in a particular sector in other jurisdictions following a similar case study protocol. By comparing the PPP application in other jurisdictions with the current research findings, the differences of PPP practices across jurisdictions and changes over time can be captured, which will contribute to advancing the knowledge and best practice framework of PPP application.

- **Delve deeper into the key facets in relation to PPP transaction, such as risk allocation, payment mechanism, financial arrangements and tendering processes.** Given the limited understanding of PPPs in New Zealand, this research could not delve deeper into the key facets in relation to PPP transactions. For example, in order to determine the unitary charge to the public sector over the payment period, relevant data on the key parameters should be available before developing a practical model to assist practitioners to establish an optimum unitary charge. However, this was not viable for this research due to the scarcity of data required. Future research may therefore only focus on a particular facet of a PPP transaction and examine it with a higher level of details to provide more detailed and specific guidance to practitioners in New Zealand.

Given the limited time and resource for the current research, it has been difficult to fully get to the bottom of the research topic. However, this is compensated for by the degree of induced findings that were perhaps not originally sought but have enriched the work.
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Appendix A: Interview Documents

Appendix A1: Interview questions and discussion areas (Industry-wide interviews within New Zealand)

1. What are the reasons for New Zealand to opt for PPPs? Do you consider the perceived benefits of PPPs, such as whole-of-life cost savings, enhanced innovation and increased level of service quality, can be achieved in New Zealand?

2. Do you consider New Zealand’s political fragility and wider public’s acceptance will affect the adoption and potential success of the PPP projects?

3. What are the factors associated with the general economic and commercial conditions that could affect the attractiveness of PPP projects in New Zealand (e.g. small size of economy and limited infrastructure demands, lack of a strong capital market, uncertainties in the demand and supply during the long contract period)? If these factors posed constraints to the use of PPPs, how to address them in order to promote the PPP development?

4. Is the current public sector culture conducive to the use of PPPs? Are the public agencies comfortable with and capable of providing output specification? If not, how can the National Infrastructure Unit help in this regard? Are there any other measures to assist the public agencies to perform better under a PPP?

5. Do you consider there would be substantive barriers to entry within the New Zealand’s PPP market and, if so, what are they? Are there any means which could help to remove these barriers and ensure the competitiveness of the procurement process?
6. Will the nature of New Zealand’s PPP allow for effective risk sharing during the PPP life cycle?

7. How do you perceive the availability of debt and equity for New Zealand’s PPPs especially with regard to the global economic crisis and capital market collapse?

8. Apart from the issues mentioned above, are there any other considerations that need to be taken into account when selecting and structuring New Zealand’s PPP? If yes, by what means, these concerns can be addressed?
### Table B2: Interview questions and discussion areas

<table>
<thead>
<tr>
<th>Interview questions</th>
<th>Discussion areas or probes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given the role of your organisation or your research experience, how do you describe the main initiatives to adopt or step into PPPs for venue/prison/school development? Have the desired benefits achieved so far based on your experience or observation?</td>
<td>• Utilise the private sector skills and expertise&lt;br&gt;• Alleviate budgetary constraints&lt;br&gt;• Risk transfer&lt;br&gt;• Encourage innovations and enhance service quality&lt;br&gt;• Decision-making and procurement process&lt;br&gt;• Contract management and progress achieved so far&lt;br&gt;• Contractual arrangements&lt;br&gt;• Financial arrangements&lt;br&gt;• Risk management strategy&lt;br&gt;• Payment mechanism&lt;br&gt;• Service need identification&lt;br&gt;• Economic cost-benefit analysis&lt;br&gt;• Land selection&lt;br&gt;• Stakeholder involvement&lt;br&gt;• Transaction cost and duration&lt;br&gt;• Arrangement of financial package&lt;br&gt;• Public sector capacity and governance structure&lt;br&gt;• Structure of private sector consortium&lt;br&gt;• Risk allocation</td>
</tr>
<tr>
<td>Could you describe the arrangements regarding the key facets of the PPP transaction?</td>
<td></td>
</tr>
<tr>
<td>What are the challenges encountered when initiating, planning, delivering and managing the venue/prison/school PPPs? What are the initiatives taken to address the challenges emerged? How do you evaluate their effectiveness?</td>
<td></td>
</tr>
<tr>
<td>Could you suggest additional strategies and means to facilitate the implementation of PPPs in venue development and increase the likelihood for achieving success?</td>
<td></td>
</tr>
</tbody>
</table>
Appendix A3: Validation questionnaire

Questionnaire for Validating Research Findings of Doctoral Research Project “Paving the Way for Public-private Partnerships (PPPs) in New Zealand”

This questionnaire is part of a research effort to inform research into the introduction of the Public-private Partnerships (PPPs) procurement methodology into the New Zealand infrastructure market. The objective of the questionnaire is to validate the best practice guidelines for using PPPs developed from this research.

Research Background

The best practice guidelines were developed as part of the deliverables of a doctoral study “Paving the way for Public-Private Partnerships in New Zealand” conducted at the University of Auckland by Ms Tingting Liu

General Description

This questionnaire is a follow-up exercise to industry-wide interviews with PPP practitioners conducted from Nov 2010 to Apr 2011. The data from the interviews have been analysed and the results are now presented to you for validation and additional input.

The best practice guidelines are presented in the form of a list of recommendations under seven themes identified from this research. Also, specific recommendations for using PPPs for large-scale venue, prison and school development are presented below. Please read through the questionnaire and complete the assessment sheet. Please provide additional comments which you may find useful based on your experience. Completion of the questionnaire should take approximately 15-20 minutes.

Contact Information

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Supervisor: Associate Prof. Suzanne Wilkinson, Email: s.wilkinson@auckland.ac.nz
Part 1 Best Practice Guidelines Developed Based on the PhD Research

Table 1 Best practice guidelines under Theme “General political, legal and economic conditions”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The government should be open to alternative procurement methodologies (e.g., PPPs) rather than relying on traditional procurement.</td>
</tr>
<tr>
<td>2</td>
<td>The government should take a transparent and consistent approach towards the selection of PPPs.</td>
</tr>
<tr>
<td>3</td>
<td>The government should continue to present the relevant legislation to the Parliament for review and remove the prohibitive legal provisions on the use of PPPs.</td>
</tr>
<tr>
<td>4</td>
<td>The government should deliver a clear message regarding the possible project pipeline to give the market information about the potential business opportunities.</td>
</tr>
<tr>
<td>5</td>
<td>The government should maintain credibility around publicising the project pipeline.</td>
</tr>
<tr>
<td>6</td>
<td>The government is advised to continue to invest in infrastructure, rather than reducing infrastructure spending due to recent market shocks (e.g., the Christchurch earthquakes).</td>
</tr>
</tbody>
</table>

Table 2 Best practice guidelines under Theme “Business case development”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The government should plan the investment portfolio at a programme level rather than investing on an individual and fragmented basis.</td>
</tr>
<tr>
<td>2</td>
<td>The public sector should conduct a well-identified service need analysis, instead of rushing to the procurement options stage.</td>
</tr>
<tr>
<td>3</td>
<td>The public sector must conduct the service need analysis from a whole-of-government perspective, rather than focusing on a particular project or a particular department’s needs.</td>
</tr>
<tr>
<td>4</td>
<td>The public sector needs to ensure the services are viable and meaningful for the long term.</td>
</tr>
<tr>
<td>5</td>
<td>The public sector should adopt PPPs for the right” reasons – achieving value for money, rather than just obtaining private financing.</td>
</tr>
<tr>
<td>6</td>
<td>The public sector must be aware of the variety of PPP models (e.g., the availability-based model), rather than perceiving PPPs as just a toll-road model.</td>
</tr>
<tr>
<td>7</td>
<td>The public sector must conduct a meticulous economic cost-benefit analysis from a national, economic perspective.</td>
</tr>
<tr>
<td>8</td>
<td>The public sector needs to evaluate the delivery options based on thorough consideration and solid calculation using quantitative assessment techniques (e.g., Public Sector Comparator).</td>
</tr>
<tr>
<td>9</td>
<td>The public sector should take qualitative factors into procurement option analysis with an emphasis on the value from pursuing PPPs (e.g., room for innovation during operational phase).</td>
</tr>
<tr>
<td>10</td>
<td>The public sector should conduct an extensive market sounding exercise to capture the market’s needs and interest.</td>
</tr>
<tr>
<td>11</td>
<td>The public sector should conduct a well-articulated sensitivity analysis by thoroughly considering the uncertainties involved in the analysis.</td>
</tr>
<tr>
<td>12</td>
<td>The public sector must conduct a well-elaborated affordability analysis to examine the government’s fiscal situation.</td>
</tr>
</tbody>
</table>
Table 3 Best practice guidelines under Theme “procurement process”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It is recommended that the public sector consult end users and relevant communities in the development of the project brief.</td>
</tr>
<tr>
<td>2</td>
<td>The public sector needs to develop transparent bid requirements and evaluation criteria that can be consistently interpreted by different parties.</td>
</tr>
<tr>
<td>3</td>
<td>The public sector is advised to design incentives and mechanisms to allow the private sector partner to innovate over time.</td>
</tr>
<tr>
<td>4</td>
<td>It is suggested the public sector follows an interactive tendering procedure.</td>
</tr>
<tr>
<td>5</td>
<td>Effective communication needs to be sustained between the project team and the bidders.</td>
</tr>
<tr>
<td>6</td>
<td>Robust proprietary management protocols need to be introduced to protect the private bidders’ proprietary rights.</td>
</tr>
<tr>
<td>7</td>
<td>The public sector’s decisions should be consistent its commitments.</td>
</tr>
<tr>
<td>8</td>
<td>The public sector should adhere to the established timeframes and meet the milestones.</td>
</tr>
<tr>
<td>9</td>
<td>The public sector is suggested to appoint the preferred bidder earlier without creating a non-competitive situation.</td>
</tr>
<tr>
<td>10</td>
<td>The public sector is advised to shortlist two or three bidders.</td>
</tr>
<tr>
<td>11</td>
<td>The public sector should tailor the level of detail needed in bid requirements depending on the size of project.</td>
</tr>
<tr>
<td>12</td>
<td>The public sector is encouraged to adopt and adhere to standardized contract documents.</td>
</tr>
<tr>
<td>13</td>
<td>The public sector is required to take a consistent approach in a PPP.</td>
</tr>
</tbody>
</table>

Table 4 Best practice guidelines under Theme “Contract administration and management”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A good record of the service performance should be kept to ensure that the services are monitored effectively.</td>
</tr>
<tr>
<td>2</td>
<td>Effective governance structure and clear line of communications should be set up to avoid duplicated roles and responsibilities.</td>
</tr>
<tr>
<td>3</td>
<td>It is suggested the contracted parties sustain partnering relationships based on mutual trust.</td>
</tr>
<tr>
<td>4</td>
<td>Conducive and constant communication should be maintained especially when changes occur.</td>
</tr>
<tr>
<td>5</td>
<td>Political champion needs to be maintained over long-term contract management.</td>
</tr>
</tbody>
</table>
Table 5 Best practice guidelines under Theme “Public sector capacity and governance structure”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A dedicated project team with the relevant skills, expertise and knowledge needs to be set up.</td>
</tr>
<tr>
<td>2</td>
<td>The public sector needs to establish effective governance structure to facilitate timely decision-making and ensure that the challenges encountered are promptly tackled.</td>
</tr>
<tr>
<td>3</td>
<td>Strong public sector leadership should be maintained for decision making.</td>
</tr>
<tr>
<td>4</td>
<td>Experts from the NIU should be strongly involved in the core project team, acting as commercial advisors to the public sector.</td>
</tr>
<tr>
<td>5</td>
<td>The government must develop and update the National Infrastructure Plan to provide an overview of infrastructure development.</td>
</tr>
<tr>
<td>6</td>
<td>The government is suggested to continue to update the “PPP Toolkit” including a suite of guideline documents for PPPs.</td>
</tr>
</tbody>
</table>

Table 6 Best practice guidelines under Theme “Private sector market, structure and capability”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The private sector companies should be clear about their objectives in setting up PPPs and adopt a strategic development scheme.</td>
</tr>
<tr>
<td>2</td>
<td>The private sector companies should establish strong, sustainable and partnering relationships.</td>
</tr>
<tr>
<td>3</td>
<td>A properly structured private sector consortium should be adopted. Whether a sub-contractor-led or a financial-led approach is used is determined by the region’s PPP development level and the characteristics of the intended project.</td>
</tr>
<tr>
<td>4</td>
<td>The private sector partners need to be familiar with each other’s strengths and weaknesses and utilise each party’s strengths to prepare bid submissions and carry out PPP contracts.</td>
</tr>
</tbody>
</table>

Table 7 Best practice guidelines under Theme “Risk analysis and allocation”

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The various parties should be reasonable and equitable towards risk allocation and risk sharing.</td>
</tr>
<tr>
<td>2</td>
<td>The public sector should not ask for committed finance. Guarantees such as the Indicative Term Sheet may be acceptable.</td>
</tr>
<tr>
<td>3</td>
<td>The public sector should acknowledge the political risk and retain the risk by compensating private sector bidders if the project is cancelled at procurement stage.</td>
</tr>
<tr>
<td>4</td>
<td>The public sector is suggested to take on risks in relation to site investigation and make the relevant reports available to potential bidders rather than transferring the risk to the private bidders.</td>
</tr>
<tr>
<td>5</td>
<td>The public sector is suggested to assist with obtaining consents as required by the Resource Management Act 1991.</td>
</tr>
<tr>
<td>6</td>
<td>Under PPP models without demand risk, the financiers are suggested to be less rigorous in the due diligence, to streamline the PPP process.</td>
</tr>
</tbody>
</table>
Part 2 Specific Recommendations for Using PPPs for Venue, Prison and School Development

In addition to the best practice guidelines that apply to general PPP application in New Zealand, this research proposes specific recommendations for implementing PPPs in each sector investigated, including exhibition and event venue, prison and school. The recommendations are shown in the following tables.

Table 8 Specific recommendations for using PPPs in the exhibition and event venue sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>During the business case development, the government is advised to place much emphasis on the wider social and economic benefits brought by the intended project, rather than focusing on the economic viability of the project itself.</td>
</tr>
<tr>
<td>2</td>
<td>The government is suggested to select land close to existing or planned business centres and integrated with other business sectors and public transport networks.</td>
</tr>
<tr>
<td>3</td>
<td>The government is recommended to provide capital grants or other types of support to increase the project’s financial viability.</td>
</tr>
<tr>
<td>4</td>
<td>Streamlined financing arrangements are preferred. The sponsors are recommended to provide significant equity injection or provide guarantees to banks for debt financing.</td>
</tr>
<tr>
<td>5</td>
<td>In bid requirements, sufficient room should be allowed to encourage the bidders to propose innovative solutions.</td>
</tr>
<tr>
<td>6</td>
<td>Tender evaluation should be based on the ability of the private consortia to develop the proposed facilities and run the business, rather than focusing on the lowest price.</td>
</tr>
<tr>
<td>7</td>
<td>All parties within the private consortia should be strategically aligned to synergise and exploit their individual strengths.</td>
</tr>
<tr>
<td>8</td>
<td>The government is suggested to lend supports at operating phase by coordinating with competing facilities and enhancing the public transport connecting to the venue.</td>
</tr>
<tr>
<td>9</td>
<td>The private sector should maximise commercial strength and creativity to increase business performance.</td>
</tr>
<tr>
<td>10</td>
<td>The private sector is suggested to organise community events during venue operation to enhance its reputation and obtain supports from the communities.</td>
</tr>
</tbody>
</table>
Table 9 Specific recommendations for using PPPs in the prison sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The public sector should conduct accurate projection of prison populations and an estimation of growth trends in light of the policy decisions.</td>
</tr>
<tr>
<td>2</td>
<td>A programme approach should be adopted for conducting the service need analysis. The public sector needs to consider the government’s overall development scheme and wider prison network rather than focusing on a particular project.</td>
</tr>
<tr>
<td>3</td>
<td>For the procurement option analysis, the public sector should consider all possible PPP models, including full-packaged and non-core service models and select an appropriate model with regard to the government’s policy objectives.</td>
</tr>
<tr>
<td>4</td>
<td>For full-packaged PPP prisons, the government is encouraged to emphasise better operational results through introducing private sector innovation, rather than limiting potential innovation by setting excessive requirements in bid documents.</td>
</tr>
<tr>
<td>5</td>
<td>The public sector is required to remove the constraints to comply with the public sector’s previous operational protocols to encourage innovation.</td>
</tr>
<tr>
<td>6</td>
<td>At contract management stage, effective inter-organisational communication channels need to be created. Especially, the public sector’s operating staff and the private sector partner should maintain effective and constant communication.</td>
</tr>
<tr>
<td>7</td>
<td>The public sector culture and objectives between the procurement and operating teams should be aligned, rather than lacking connection and having different philosophies.</td>
</tr>
<tr>
<td>8</td>
<td>The private sector should be given more flexibility or room to innovate at the operational stage.</td>
</tr>
<tr>
<td>9</td>
<td>The private sector is suggested to create automatic documentation system to facilitate reporting at contract management stage.</td>
</tr>
</tbody>
</table>

Table 10 Specific recommendations for using PPPs in the school sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The public sector should take a programme approach towards school assets delivery, and may bundle a number of projects when necessary to increase the viability of PPPs.</td>
</tr>
<tr>
<td>2</td>
<td>The public sector is suggested to adopt a size-adjusted and streamlined tendering process.</td>
</tr>
<tr>
<td>3</td>
<td>The private sector is suggested to create automatic documentation system to facilitate reporting at contract management stage.</td>
</tr>
<tr>
<td>4</td>
<td>The public sector is suggested to involve local private sector partner with the required capability of participating in school PPPs.</td>
</tr>
<tr>
<td>5</td>
<td>Private sector companies should be clear about their objectives and take a strategic and long-term view towards entering into PPPs.</td>
</tr>
<tr>
<td>6</td>
<td>The school board consisting of principals, teachers and representatives of the community should be extensively consulted and engaged at all stages.</td>
</tr>
<tr>
<td>7</td>
<td>The Board of Trustees, or the principals, teachers and parents, should be educated on the principles and implications of PPP approaches at early stages.</td>
</tr>
</tbody>
</table>
## Part 3 Assessment Sheet

Please select the relative score for each validation aspect to present the extent of satisfaction (1 present “poor” and 5 represent “excellent”)

<table>
<thead>
<tr>
<th>Validation Aspects (Best practice guidelines)</th>
<th>Scoring Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>1</td>
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<tr>
<td>1. Degree of appropriateness</td>
<td></td>
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<tr>
<td>2. Degree of objectivity</td>
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<tr>
<td>3. Degree of replicability</td>
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<tr>
<td>4. Degree of practicality</td>
<td></td>
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<tr>
<td>5. Reliability</td>
<td></td>
</tr>
<tr>
<td>6. Suitability for PPP projects in New Zealand</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Validation Aspects (Specific recommendations for exhibition and event venue development)</th>
<th>Scoring Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
</tr>
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</tr>
<tr>
<td>5. Reliability</td>
<td></td>
</tr>
<tr>
<td>6. Suitability for PPP projects in New Zealand</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Validation Aspects (Specific recommendations for prison development)</th>
<th>Scoring Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>4. Degree of practicality</td>
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</tr>
<tr>
<td>5. Reliability</td>
<td></td>
</tr>
<tr>
<td>6. Suitability for PPP projects in New Zealand</td>
<td></td>
</tr>
</tbody>
</table>

| Validation Aspects (Specific recommendations for school development) | Scoring Scale |
|                                                                     | Poor | Excellent |
|                                                                     | 1    | 2    | 3    | 4    | 5    |
| 1. Degree of appropriateness                                        |      |      |      |      |      |
| 2. Degree of objectivity                                            |      |      |      |      |      |
| 3. Degree of replicability                                          |      |      |      |      |      |
| 4. Degree of practicality                                           |      |      |      |      |      |
| 5. Reliability                                                      |      |      |      |      |      |
| 6. Suitability for PPP projects in New Zealand                      |      |      |      |      |      |

Please provide additional comments which you may find useful based on your experience.
Appendix B: Sample of Interview Transcription

1. What are the reasons for New Zealand to opt for PPPs? Do you consider the perceived benefits of PPPs, such as whole-of-life cost savings, enhanced innovation and increased level of service quality, can be achieved in New Zealand?

Interviewee: Yes, obviously. The scale of those benefits depends on the sector, (and) the extent to which we are already getting them. Some (projects) like the prison, the scale of benefits is much greater because of the operational component in a sector where there are well-run contracting model. The opportunity in schools is different. To some degree, the evidence of the leaky school buildings in terms of whole-of-life. Generally, in New Zealand, the opportunity sets round PPPs, I guess two things. One is making better procurement decisions before you go down to the procurement routes. Typically, what I find around government is that most of the people have a default procurement method, and they just apply it to any kind of project without necessarily thinking about whether it is the best procurement method. That is changing under the Better Business Case Guidance. That is why I strongly support that because it does open conversation from the beginning. Second, it is the benefit of a competitive tender process that focuses on risk-adjusted whole-of-life cost because almost all around in New Zealand, we have focused on cheapest construction costs in Year 1, 2, and we somehow treat the long-term invisible when decision making. All of them have short-term life. The challenge always with PPPs is that the way you design them. You forecast the project over a period of life and you can track them through time. But there is no equivalent process that goes on for new hospitals, schools, and prisons because it is lost in a series of individual budget allocation decisions. They don’t track across. They only track as something within the vote. If you are outside the department, you never know. I think probably the third thing is the notion of moving away from asset-based focus to service focus. Payment for service making sure we got assets that are customized to services in a way that you want. I think the answer is yes. But it comes from where we are at the appointing time. We’ve had a history of being less mature in our approach to complex procurement compared to other jurisdictions. Most of the states in Australia are making big moves to have more
sophisticated decision process of the asset to choose the right method. Maybe through the first few PPPs, we don’t end up doing that many more. But we do end up doing it when you should do it. That will be a very good outcome. PPPs might open the door for a more sophisticated business case development. Just be smarter in the way we make this complex procurement decisions.

2. Do you consider New Zealand’s political fragility and wider public’s acceptance will affect the adoption and potential success of the PPP projects?

**Interviewee:** I think in terms of political fragility, in reality, it is less fragile than you might see. To some degree, it is sectorial dependent. It is sort of opposite with the UK strangely. Here, you’ve got a central government who is interested in doing social infrastructure because obviously the asset quality of social infrastructure is sub-optimal. Roading is less of a concern. In the UK, you are now seeing government cutting social infrastructure projects and focus on transport projects. What I think right now is that if there was a change of government: Certainly the noise we heard about Labour Government is they are pretty relaxed about PPPs in transport, less relaxed about social infrastructure. Now in Victoria, when they build their PPP schools, there are similar opposition. Once they are running, the teachers understand they no longer need to worry about property aspects. The principals become great acceptance of these projects which in turn influence the public’s view. So I think at the moment, general people don’t understand them. They understand a bit and they feel they don’t like them. They don’t understand the current status quo versus what PPPs can offer in terms of pay-for-service type model and whole-of-life focus. I know people seem to be relaxed about PPPs. I think the other aspect now comes to the table is that we are in period of physical constraint. The different cash flow models are being able to effectively have something on knowledge as opposed to have defined money right now. That is an additional driver. It is not the best driver. The best driver is risk-adjusted value for money. But it does help people understand some of the implications. You are at home and you take for granted that if you buy a house, a multi-decade investment. That is kind of thing you use debt for weekly groceries. I feel like the financial recognized situation will help the debate a little bit.
I also think people won’t really understand until these things are up and running. It is also important (that) the communication of how users are seeing what is actually going. What I observe is that in Victoria, same situation happened and there is people turnaround using schools. So that remains to be seen. From my perspective, the arguments I have seen is rather factually correct or not related to PPP. As reference to school, if you are the state and build the school at the wrong place. That was not the PPP decision firstly (which is wrong). Your service need decision was wrong. If you are now paying the private sector for the ongoing maintenance of schools, you are also paying the private sector profit margin for construction anyway under traditional approach. I agree that you could have multiple FM savings. So there could be some savings there. But in terms of the opportunity costs of government, money that is tied up with the property and capital cost and profit margin, you paid that anyway. It just happens that you don’t see that you pay it every year by year because you pay them a big lump. So in economic terms, I think they are very similar. It is just you know how to stretch the asset under a non-PPP approach that you pay for. So you pretend to yourself that it no longer costs. But obviously if you spend 100 million on that, that is the 100 million that you can spend on education, healthcare or anything else. And another argument is that if you make cost savings not worthwhile if you can only save 1% and you shouldn’t bother. I think I disagree. It is partly because if you can save 10 million, that is the money you can spend on something else, for example, teacher salaries. Equally, measuring the financial benefit alone, trying to measure the value for money equation, you also try to take on board the non-financial benefits that accrue to the project and the departments undertaking them. If you look at both equations in Education and Corrections, the benefit to them of undertaking these projects is more of the nature of smarter procurement than it is about a specific project. So both Corrections and Educations having done one project, (it will) improve their way of procuring every future school or prison whether or not they are going to do another PPP. That is a great benefit. So I think you need to take that into account as well as the monetary benefits. So whether or not there would be future PPP schools or prisons, there is always benefit for the government from having done the first one, from having learned through that process, things like output specifications, payment
mechanism and performance regimes. The output specification of something like a school, obviously that’s something that can be reused on every school in the future, to some degree. You can change the way they are procured.

3. What are the factors associated with the general economic and commercial conditions that could affect the attractiveness of PPP projects in New Zealand (e.g. small size of economy and limited infrastructure demands, lack of a strong capital market, uncertainties in the demand and supply during the long contract period)? If these factors posed constraints to the use of PPPs, how to address them in order to promote the PPP development?

Interviewee: Yes, the size of economy is an issue. I don’t think it is an issue as long as we are making good business case decisions. So we are testing with the market the deals that are likely to work. We make sure that there is market appetite at the scale we are going to. In terms of the small market, there are real benefits effectively being understating in Australia in terms of infrastructure market in general. So what you see in the prison is there are many overseas bidders. Certainly in the 400 million project, you will get global players coming for it. Projects that are below 100 million dollars are always going to be a little harder. You have to be smarter in the way you procure and in the way you try to manage the bid costs for bidders. Lack of capital market will affect bond if you want to use bond. But it won’t affect debt. In terms of senior debt, the big four banks are very keen to be involved as we have seen in the market today according to some conversation I had. There are other international banks for the right project will come to New Zealand. I think you have seen them in prison and you might see them in school. So the problem returns to senior debt. Certainly if you go to bigger project, then you tapping out a market that is less rich, such as Australian market, there are Asian banks playing in it. But if you are in a sort of 70 to 400 million, I think you can probably do okay on senior debt. Whether we can get bond for these New Zealand projects is another question. I think it will be difficult. Equity is always going to be relatively scarce. But so far equity doesn’t seem to be that limiting resource. There seems to be enough of it. New Zealand players have been set up to be in this space. Some Australian (players) are happy to come, seeing it as another state. I think one of the issues is probably
we have relatively undeveloped FM market compared to Australia, not just the providers, and even FM advisors. They didn’t exist in Australia before they develop their PPP market. So one of the challenges is that in the first few deals, we won’t get a deep FM service market. I think that will benefit generally anyway. That is one area we’ll keep an eye on in the market. I think the other one that is not there is probably advisors. We have a lot of people in New Zealand who have done alliance or done traditional forms of contract. But we don’t have a lot of PPP specialists in the market at the moment. It depends on the projects coming through. We’ll make those decisions on the basis of (overseas experiences). We have to make investment decisions to participate in the market. We do hope that the market continues. I think all of these issues come back to pipeline. How well the government can flag the pipeline of projects (is very important). They are likely to be PPPs, but they don’t have to be PPPs. That is always difficult because this lack of visibility and uncertainty overtime. The more the government can tell the market about what projects may be coming, the more the market can be ready, whether they are builders, they are FM or they are advisors. Lots of people making decisions come and settle in New Zealand. Also a lot of equity guys are putting people here part-time or full-time on the potential market. If the country doesn’t keep showing there are projects going on, they will go back. Most people have focused on large infrastructure procurement and most people specialized in PPPs, if they are not here, they will be in Australia, Asia or anywhere. So these people are in demand. Generally you get down to one or three (deals), you might be shortlisted and you get one or three chances. They understand the nature of the games. But they want the opportunities to work on the next one. If they are not good enough to get one or three, they will get out of the market. So I don’t think it is much an issue of one-off project. Again, I see this as a pipeline issue.

4. Is the current public sector culture conducive to the use of PPPs? Are the public agencies comfortable with and capable of providing output specification? If not, how can the National Infrastructure Unit help in this regard? Are there any other measures to assist the public agencies to perform better under a PPP?
**Interviewee:** I think there is a mixed answer of the question in reactions. There is no substitute for experience in terms of the business case development phase, understanding the contractual model, understanding risk sharing, understanding of payment mechanism. I think they work best when there is a cultural change. It is the cultural change wrapped up with project financing vehicle because of the fact that you are doing so much upfront in terms of your procurement decision and your project documentation and you will never do for a normal project. People who have gone through that can see the benefits of that. I think there are a number of people who are around public sector support PPPs for wrong reasons. They think it is free private sector money. I’ve got no money and I am not going to get it from budget but I want this to be built, therefore I consider PPPs. That is not the right reason for doing this (PPPs). These are going to be on balance sheet in New Zealand context. You still got to pay the unitary charge. I think the NIU is sending the right message in focusing on value for money. Focusing on business case first, making sure you got your service need absolutely known before you start going to your solution. Something that I have observed many times is that Department get solutions ahead and start rushing towards it without having said “Do I really need this? Are there other options that could reconfigure the output in a different way?” So people get excited about getting new assets. Often I have observed the Treasury have pushed people back saying, “Well, you have to demonstrate the service need strong before you turn to the assets you want.” So that is important. It won’t help anyone if we are building PPPs that don’t have a good service need. That is exactly what happened to our school projects. It ended up with strange asset that is underuse and not used. It gives PPP a bad nerve but it has nothing to do with PPPs. It is the service need analysis that wasn’t done properly. People spend long time inside the Department beforehand doing business case. I think most of the departments would be similar. There would be people who broadly understand them. The more you understand what they are (they are not panacea for everything. They are procurement methods that work for certain types of projects), the better… I think you far better trying to get to the position, which is you have to do the analysis and people try to pick up the right procurement route. The better business case is probably the best thing that the NIU could have done to
help people understand PPPs because through that process, if it is done properly, people will start to understand different procurement methods better.

5. Do you consider there would be substantive barriers to entry within the New Zealand’s PPP market and, if so, what are they? Are there any means which could help to remove these barriers and ensure the competitiveness of the procurement process?

**Interviewee:** Yes, that exists, to some degree. I guess the scale of projects that you are doing PPPs probably means there are barriers to entry existed anyway. If you are a second or third tier construction firm, are you able to afford the big costs? Probably not. There is additional investment of time and money in PPPs in terms of understanding what you have signed up to. That is probably the main barrier to entry. I know there are various players around who I talk to are keen to be involved, but don’t understand them very well. If I hire people who have already done it, they can explain to you what’s going on. You can get the advisors in. They can do the same. Or you invest the time yourself in understanding them. The complexity of the contractual model is probably the main barrier to entry. So there is an initial investment in terms of understanding that. Obviously if you are a construction firm, there is more risk to you being involved in these because it is not necessarily because it is PPPs, it is because you signed up to a fixed price contract with liquidated damages provisions, if you don’t finish it on time. So to that extent, they can happen under another one as well. It happens to under PPP assuming you are not involved in equity loan. So there is understanding what you have been signing up to in terms of the individual method of the consortium. Understanding of the nature of bid process because bid process is different in terms of the amount of information and the amount you have to do on your own risk. So bid costs are a factor. But I put them into the subset of things relating to the scale of the project. A second thing is the nature of knowledge of complex procurement method. It takes time and it takes experience. You can buy it (through appointing advisors), or you can develop in-house. For example, if you have equity, you could go along with the equity with a consortium. Put some equity in. Go for a right, not a big lead equity. Do you first one and figure out how it works and invests time and you will be a better position to do the second one. So
there are ways through, maybe not expensive to start. In New Zealand, we always have to be focused on bid costs and we are doing things to drive down bid costs or keep the costs for as few bidders as possible. So short-listing to one to three bidders is important. The time for procurement process is important. How long is it going to go for? The bid requirement that how much the information giving as opposed to really give you things that you can make your decisions on? How detailed the bid requirement in general and how much you are asking for? So keep in mind these things are always important because the reality is they don’t scale very well. 100 million project is not that much a lesson you need for 400 million project. These are things that you can scale. But a lot of stuff don’t. From our perspective, you still need the financial model done. You still need to know, particular now, generally people have read the contract and understand what commercial departures they might have because otherwise the uncertainties the government will take on become so high and you risk going from competitive position to non-competitive position with a lot of things re-open that ruin value for money. You have to do as much as you can do. I think you also have to be mindful that you are not undermining the process. What I have observed in the UK in the past was sometimes the agencies find it hard to make short listing decisions. They left too many players. They should have got rid of them and be honest to them. They should have gone down to three or sometimes two. You are so far behind. It is not worth letting you in because you just gonna spend a lot of money and we can’t see you are getting there. We have to be honest with bidders. In New Zealand, I found it hard to go into less than three right now. We are just very clear how sophisticated the bidders will be. If there are two bidders left and finding out one of them is not able to make them all the way and you are in non-competitive situation. I think that is too risky right now. I think if we have a track record and we know how experienced they were, sometimes we can get it to two.

6. Will the nature of New Zealand’s PPP allow for effective risk sharing during the PPP life cycle?

**Interviewee:** Yes. I don’t think there are particular issues there. There will be one issue I guess is the FM market. You need to be convinced that the FM firm is going to be around for the duration. Or
there are appropriate arrangements that wrapped around the firm so the consortium can be able to manage if anything happened.

7. How do you perceive the availability of debt and equity for New Zealand’s PPPs especially with regard to the global economic crisis and capital market collapse?

**Interviewee:** The availability of debt is fine. The reality is it is fine in terms of it gets to the project of a certain size. We have a billion dollar project. I don’t really get three competitive bids with three different banking. In terms of term, it is still short. Unlike the UK market where you can get debt that covers the whole term, we will probably have to have at least two refinancing during the period of transaction, which makes the price slightly uncertain. But the reality is that most businesses run are using short-term finance. Ultimately it is the market. As the public sector, you are exposing yourself to the market pricing the debt. As a reality, it affects the government all the time to some degree. You should have done sensitivity analysis to understand whether these things do represent value for money under the likely scenarios through the life. Probably the third point is long-term swaps like inflation swaps. We are going to have to accept the nature of New Zealand market place. One of the things you could do is to put some longer government bonds into the market place to give you better price and points like 10 year or 15 year bond. There is no equity market and it is expensive. So some of the things you can manage by the relative bidders choosing their own proportion that is inflation adjusted and the proportion that is not inflation adjusted. Hopefully they can have natural hedging. They don’t have to find a swap. You can’t do that obviously for debt. I guess the thing I have talked about before is the nature of the NIU’s role. I think focusing on business case is exactly right. Focusing on speeding up the process around business case would be good. The ability to communicate the pipeline is going to be the main issue – to give some certainty around future projects. If you go to Infrastructure Australia website, they show the projects that are becoming PPP projects and something like that. We need to make it as attractive as possible if we trying to run these projects. If stuff comes to the market and it doesn’t go through, you lose the credibility. Or for example, you cancel projects.
You lose a lot of credibility and market interest, because there are other things to pursue. So doing what we are doing and being committed to what we are doing is the right way.

8. Apart from the issues mentioned above, are there any other considerations that need to be taken into account when selecting and structuring New Zealand’s PPP? If yes, by what means, these concerns can be addressed?

**Interviewee:** No, I can’t think of any.
Appendix C2: Participant Information Sheet (Chief Executive Officer)

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
Faculty of Engineering

Engineering Building
20 Symonds Street,
Auckland, New Zealand
Telephone 64 9 373 7599 ext 8166
Facsimile 64 9 373 7462
www.cee.auckland.ac.nz

The University of Auckland
Private Bag 92019
Auckland, New Zealand

Participant Information Sheet (Chief Executive Officer)

Project Title: Paving the Way for Public-private Partnerships (PPPs) in New Zealand Infrastructure Development
Name of Researcher: Tingting Liu
Degree: PhD in Civil Engineering
Department: Civil & Environmental Engineering
Research Supervisor: Associate Professor Suzanne Wilkinson

Purpose of this Participant Information Sheet

The purpose of this Participant Information Sheet (PIS) is to seek your permission/authority to approach employees within your organisation to request their participation in research interviews. The objective of the interviews will be to inform research into the introduction of the Public-private Partnership procurement methodology into the New Zealand infrastructure market.

Research Background

This doctoral research project is undertaken by Ms. Tingting Liu from the University of Auckland. Infrastructure investment in New Zealand has lagged well behind many other OECD countries as a percentage of GDP for some time (NZCID, 2009). As a consequence, intervention economic analysts suggest that New Zealand infrastructure could be a limit on
future economic growth and productivity. Faced with this reality and a global economic recession, the New Zealand government has now placed considerable emphasis on enhancing the infrastructure adequacy level nationwide to better assist future economic growth and productivity. As a means of achieving this infrastructure development the Finance Minister indicated in his speech to the “Building Nations” symposium that future infrastructure should be built smarter and more efficiently (Wellington, Aug. 2009).

Public-private Partnerships, as innovative delivery models, have been used successfully around the globe for many years. While the New Zealand government has considerable experience in partnering with the private sector to deliver infrastructure, the use of PPP has not yet gained traction in the New Zealand infrastructure market. More recently, however, PPPs have attracted the government’s attention due to the advantages such as the early delivery of project benefits, the ability to optimise the project risk allocation, the encouragement of technical and managerial innovation, and whole-of-life cycle cost savings. This new acceptance of PPP approach as a procurement methodology in New Zealand is articulated in the first draft of the national infrastructure plan, where it states that “The government intends to use PPPs where they represent value for money to taxpayers” (National Infrastructure Unit, 2009).

While there are clearly many advantages in using PPP scheme as a procurement methodology, the inherent problems of PPPs such as the complex contractual arrangements and long tender duration which place considerable demands on both Client and industry resources. If these related problems are not well addressed, the application of PPPs in New Zealand will be hindered and the PPP projects would be unlikely to achieve success.

Under the current New Zealand environment, the policies and guidelines available for PPPs are not sufficient to guide the practitioners of PPPs. For example, the document Guidance for Public Private Partnerships (PPPs) in New Zealand prepared by the National Infrastructure Unit sets out the procedures for developing PPPs as a business case. It does not, however, provide detailed solutions on the “hot” issues about PPPs, such as how to develop a robust Public Sector Comparator (PSC), how to select the best concessionaire, and how to address risk allocation issues.

Furthermore, there is little research exploring the application of PPPs in the New Zealand environment. The most sophisticated investigation to date is a master thesis (Matthias Tomczak, 2005), which uses the case of a quasi-PPP project to demonstrate the PPP development process. This research does not include more resent updates in PPP practices so that it cannot provide a robust guide for future PPP development.
In summary, it is clear that both policies and guidelines and the academic research on PPPs in New Zealand are limited and therefore cannot provide workable nor operational guidance for PPP practitioners to effectively implement the model. This research therefore aims to fulfil the gap by establishing procurement protocols for PPPs in New Zealand infrastructure development.

**Data Collection**

Given the qualitative nature of the study, interviews will be adopted as the main method of data collection. Approximately 30 individuals will be selected to participate in the interviews. The research project involves two-stage data collection, and the process can be summarized as follows:

**Phase 1: Exploratory interviews**

This phase of the study has been designed to understand the current situation with respect to PPP application in New Zealand and to identify what the barriers for implementation are.

**Phase 2: In-depth interviews**

This phase will concentrate on capturing detailed insights and possible solutions to the impediments in PPP implementation based on the results of the first phase of interviews.

**Participation**

The intention is that employees from your organization will be invited to take part in the interviews and these would last approximately 45 min to 1 hour. Interviewees would be selected on the basis of their rich knowledge about PPPs, understanding of the New Zealand procurement environment and experience in construction industry.

Your endorsement will be informed to the employees who are invited to participate in this research, but they will still retain their rights to decide whether or not to participate. Furthermore, participants will retain the right to keep their response transcripts restricted from access/review by other members in your organisation (including yourself).

The recording of interviews will be made only with the consent of the participating employees. If the interview is taped, it will be transcribed by the researcher without third party’s assistance. The participants will not be offered the opportunity to review recordings of the interviews.

The data will be stored in the form of computer files and audio tapes. The computer files will be owned by the researcher only. The audio tapes will be stored in a secured locker within the university premises with limited access by the researcher and the supervisor only. The data
will be stored for 6 years because consideration is taken into some peer reviewed papers which may be further developed beyond the completeness of the research. After 6 years, the data will be destroyed through deleting computer files and cleaning up audio tapes.

Please confirm that participation, or non-participation, will not affect the employment status of the participants. The participants have the right to withdraw from participation at any time without any explanation. Moreover, they are able to withdraw the data they provided up to one month after undertaking the interviews.

The data the participants provide will be analyzed and presented in the research report in the form of doctoral thesis or published papers. But this will be done in a way that does not identify the source either by name, innuendo or inference. All results will appear in a generalized form. A draft of the report for this section will be made available to participating employees to review, to ensure they are satisfied with the information reported. The report will be made available to both yourself and participants of the study.

Queries
If you have more inquiries regarding to the interviews of the research project, please contact:

Researcher: Tingting Liu
Mobile: 021 0595323
Email: tliu054@aucklanduni.ac.nz

Supervisor: Associate Prof. Suzanne Wilkinson
Phone: 09 3737599 ext 88184
Email: s.wilkinson@auckland.ac.nz

Head of Department: Prof. Bruce Melville
Phone: 64 09 3737599 ext 88165
Email: b.melville@auckland.ac.nz

For any queries regarding ethical concerns you may contact:
The Chair, The University of Auckland Human Participants Ethics Committee
Phone: 09 373-7599 ext. 83711
Postal Address: The University of Auckland, Office of the Vice Chancellor, Private Bag 92019, Auckland 1042

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 3/12/2009 for 3 Year(s) from 2010 to 2012, Reference Number 2009/482.
CONSENT FORM (Chief Executive Officer)
THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Researcher: Tingting Liu
Project Title: Paving the Way for Public-private Partnerships (PPPs) in New Zealand Infrastructure Development

I have read the Participant Information Sheet and understood the nature of the research and why the interviewees have been selected, I have had the opportunity to ask questions and have had them answered to my satisfaction.

• I confirm that I hold the appropriate authority to provide consent for the following statements.
• I give permission for employees of my organization to take part in the research.
• I give permission for employees of my organization to provide information related to my organization to support this research. I understand that any such information will be treated confidentially and any reported information will appear in a general form.
• I confirm that the employees’ participation or non-participation in this research will not, in any way, affect their employment in my organization.
• I understand that the participating employees will not be provided with the opportunity to review the recording of the interview.
• I understand that employees will retain the right to keep their response transcript confidential from me and other members of my organization.
• I know that the data will be transcribed by the researcher herself without the assistance of any third party.
• I understand that data will be kept for 6 years, after which they will be destroyed.
• I understand that the data the interviewees provide will be stored securely within the university premises and only the researcher and supervisor can access to it.
• I understand that the participating employees will have the rights to review a draft report related to the information they provide to ensure that the information reported satisfies my organization’s confidentiality requirements.
• I understand the participating employees are free to withdraw their participation in this research at any time without giving any reasons.
• I understand that the participating employees are able to withdraw the data they provide up to one month after undertaking the interviews.
• I understand that although data the participants provide will be reported, it will be done in a way that does not identify the source either by name, innuendo or inference.
• I understand that I will be offered a copy of the research report.

Name:  

Signature: ........................................... Date: ...........................................  

Company / Organization name: ..........................................................................................  

Correspondence address: ........................................................................................................

........................................................................................................................................

Telephone: ........................................... Mobile telephone: ...........................................  

Fax: ...........................................  Email: ...........................................
Appendix C4: Participant Information Sheet (Participant)

Project Title: Paving the Way for Public-private Partnerships (PPPs) in New Zealand Infrastructure Development
Name of Researcher: Tingting Liu
Degree: PhD in Civil Engineering
Department: Civil & Environmental Engineering
Research Supervisor: Associate Professor Suzanne Wilkinson

Purpose of this Participant Information Sheet
The purpose of this Participant Information Sheet (PIS) is to invite you to participate in the research interviews. The objective of the interviews will be to inform research into the introduction of the Public-private Partnership procurement methodology into the New Zealand infrastructure market.

Research Background
This doctoral research project is undertaken by Ms. Tingting Liu from the University of Auckland. Infrastructure investment in New Zealand has lagged well behind many other OECD countries as a percentage of GDP for some time (NZCID, 2009). As a consequence, intervention economic analysts suggest that New Zealand infrastructure could be a limit on
future economic growth and productivity. Faced with this reality and a global economic recession, the New Zealand government has now placed considerable emphasis on enhancing the infrastructure adequacy level nationwide to better assist future economic growth and productivity. As a means of achieving this infrastructure development the Finance Minister indicated in his speech to the “Building Nations” symposium that future infrastructure should be built smarter and more efficiently (Wellington, Aug. 2009).

Public-private Partnerships, as innovative delivery models, have been used successfully around the globe for many years. While the New Zealand government has considerable experience in partnering with the private sector to deliver infrastructure, the use of PPP has not yet gained traction in the New Zealand infrastructure market. More recently, however, PPPs have attracted the government’s attention due to the advantages such as the early delivery of project benefits, the ability to optimise the project risk allocation, the encouragement of technical and managerial innovation, and whole-of-life cycle cost savings. This new acceptance of PPP approach as a procurement methodology in New Zealand is articulated in the first draft of the national infrastructure plan, where it states that “The government intends to use PPPs where they represent value for money to taxpayers” (National Infrastructure Unit, 2009).

While there are clearly many advantages in using PPP scheme as a procurement methodology, the inherent problems of PPPs such as the complex contractual arrangements and long tender duration which place considerable demands on both Client and industry resources. If these related problems are not well addressed, the application of PPPs in New Zealand will be hindered and the PPP projects would be unlikely to achieve success.

Under the current New Zealand environment, the policies and guidelines available for PPPs are not sufficient to guide the practitioners of PPPs. For example, the document Guidance for Public Private Partnerships (PPPs) in New Zealand prepared by the National Infrastructure Unit sets out the procedures for developing PPPs as a business case. It does not, however, provide detailed solutions on the “hot” issues about PPPs, such as how to develop a robust Public Sector Comparator (PSC), how to select the best concessionaire, and how to address risk allocation issues.

Furthermore, there is little research exploring the application of PPPs in the New Zealand environment. The most sophisticated investigation to date is a master thesis (Matthias Tomczak, 2005), which uses the case of a quasi-PPP project to demonstrate the PPP development process. This research does not include more recent updates in PPP practices so that it cannot provide a robust guide for future PPP development.
In summary, it is clear that both policies and guidelines and the academic research on PPPs in New Zealand are limited and therefore cannot provide workable nor operational guidance for PPP practitioners to effectively implement the model. This research therefore aims to fulfil the gap by establishing procurement protocols for PPPs in New Zealand infrastructure development.

Data Collection
Given the qualitative nature of the study, interviews will be adopted as the main method of data collection. Approximately 30 individuals will be selected to participate in the interviews. The research project involves two-stage data collection, and the process can be summarized as follows:

Phase 1: Exploratory interviews
This phase of the study has been designed to understand the current situation with respect to PPP application in New Zealand and to identify what the barriers for implementation are.

Phase 2: In-depth interviews
This phase will concentrate on capturing detailed insights and possible solutions to the impediments in PPP implementation based on the results of the first phase of interviews.

Participation
The interviews will last approximately 45 min to 1 hour. Your selection to participate is based on your rich knowledge about PPPs, understanding of New Zealand procurement environment and experience in construction industry.

Since the research is to be conducted within your organization, this Participant Information Sheet has also been provided to your Chief Executive Officer (or other suitably authorized company manager) to obtain permission/authority to access to you and the organization’s information. Endorsement has been acquired that the participation or non-participation will not affect your employment status. While your Chief Executive Officer (or other suitably authorized company manager) has given the permission, you still have the rights to decide whether or not to participate. Although the report of this research will be available to your employer, you will retain the right to keep the transcript of your response confidential from your employer and other members in your organization.
The recording of interviews will be made only with your agreement. Even if you agree to being recorded, you may choose to have the recorder turned off at any time. If the interview is taped, it will be transcribed by the researcher herself without third party’s assistance. You will not be provided the opportunity to review recording the interview.

The data will be stored in the form of computer files and audio tapes. The computer files will be owned by the researcher only. The audio tapes will be stored in a secured locker within the university premises with limited access by the researcher and the supervisor only. The data will be stored for 6 years because some peer reviewed papers which may be further developed beyond the completeness of the research. After 6 years, the data will be destroyed through deleting computer files and cleaning up audio tapes.

Please be aware that you have the right to withdraw from participation at any time without any explanation. Moreover, you are able to withdraw the data you provide up to one month after you undertake the interviews.

The data you provide will be analyzed and presented in the research report in the form of doctoral thesis or published papers. But this will be done in a way that does not identify the source either by name, innuendo or inference. All results will appear in a generalized form. A draft of the report for this section will be made available for you to review, to ensure that the reported information complies with your organization’s confidentiality requirements. The report will be made available to both yourself and the CEO (or other suitably authorized company manager) in your organization.

**Queries**

If you have more inquiries regarding to your participation to the research project, please contact:

Researcher: Tingting Liu  
Mobile: 021 0595323  
Email: tliu054@aucklanduni.ac.nz

Supervisor: Associate Prof. Suzanne Wilkinson  
Phone: 09 3737599 ext 88184  
Email: s.wilkinson@auckland.ac.nz

Head of Department: Prof. Bruce Melville  
Phone: 64 09 3737599 ext 88165
Email: b.melville@auckland.ac.nz

For any queries regarding ethical concerns you may contact:
The Chair, The University of Auckland Human Participants Ethics Committee
Phone: 09 373-7599 ext. 83711
Postal Address: The University of Auckland, Office of the Vice Chancellor, Private Bag 92019, Auckland 1042

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 3/12/2009 for 3 Year(s) from 2010 to 2012, Reference Number 2009/482.
CONSENT FORM (Participant)
THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Researcher: Tingting Liu
Project Title: Paving the Way for Public-private Partnerships (PPPs) in New Zealand Infrastructure Development

I agree to voluntarily take part in this research. I have read the Participant Information Sheet. I have understood the nature of the research and why I have been selected, I have had the opportunity to ask questions and have had them answered to my satisfaction.

- I agree / not agree to be audiotaped.
- I understand that even if I agree to being recorded, I may choose to have the recorder turned off at any time.
- I know that the data will be transcribed by the researcher herself without the assistance of any third party.
- I understand that I will not be offered the opportunity to review the recording of the interview.
- I understand that permission for my participation in this research has been given by the Chief Executive Officer (or other suitably authorized manager) of my organization.
• I understand that I will retain the right to keep their response transcript confidential from the CEO (or other suitably authorized manager) and other members of my organization.
• I understand that I am free to withdraw participation at any time without any explanation, and to withdraw any data traceable to me up to one month after the interview date.
• I understand that data will be kept for 6 years, after which they will be destroyed.
• I understand that the data I provide will be stored securely within the university premises and only the researcher and supervisor can access to it.
• I understand that I will have the right to review the draft report produced from the information I provide, in order to ensure that the level of reported information complies with my organization’s confidentiality requirements.
• I understand that although data the participants provide will be reported, it will be done in a way that does not identify the source either by name, innuendo or inference.
• I understand that my employer and I will be offered a copy of the report.

Name: ……………………………………..

Signature: …………………………………….. Date: ……………………………………..

Company / Organization name: ………………………………………………………………………..…..

Correspondence address: ……………………………………………………………………………………

………………………………………………………………………………………………………………..…..

Telephone: ……………………………….. Mobile telephone: ……………………………………..

Fax: …………………………………….. Email: ……………………………………..

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 3/12/2009 for 3 Year(s) from 2010 to 2012, Reference Number 2009/482.
Appendix D: List of Published Papers


