Perfecting Procurement Practices of Public Private Partnerships

Thesis submitted by
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in the Faculty of Business and Law
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STATEMENT OF ORIGINALITY

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository**, subject to the provisions of the Copyright Act 1968.

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“Opening up yet another fragment on the frontier of beauty” Einstein

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First and foremost I wish to thank my beautiful wife Linda; she has been my one-person fan club throughout the journey. She has waited patiently, putting her own life on hold whilst providing the inspiration and motivation for me to continue. This represents her efforts as much as it does mine. Thank you for your love and support.

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My supervisor Dr David Clark-Murphy, who focused me when I needed it the most, kept the bureaucracy to a minimum and offered nothing but support through the process. Thank you for your pragmatic guidance.

“Give me a place to stand on, and I will move the Earth” Archimedes
# TABLE OF CONTENTS

**STATEMENT OF ORIGINALITY** ........................................................................... i

**ACKNOWLEDGEMENTS** ......................................................................................... ii

**TABLE OF CONTENTS** ............................................................................................. iii

**SYNOPSIS** .................................................................................................................. vi

**CHAPTER 1: INTRODUCTION** ................................................................................... 1

1.1 Background ........................................................................................................... 1

1.2 Research Aims and Objectives ............................................................................ 3

1.3 Research Methodology ....................................................................................... 5

1.4 Dissertation Structure ......................................................................................... 6

1.5 Significance of Research .................................................................................... 9

1.6 Assumptions and Limitations ............................................................................ 15

1.7 Summary ............................................................................................................. 16

**CHAPTER 2: LITERATURE REVIEW** ....................................................................... 17

2.1 Introduction ......................................................................................................... 17

2.2 History and Definition of a Public Private Partnership (PPP) ......................... 20

2.3 Comparative Review of Traditional Procurement ........................................... 27

2.4 Situation in Mature Markets ............................................................................. 34

2.5 Situation in Other Markets ............................................................................... 48

2.6 Studies of Success Patterns .............................................................................. 55

2.7 Typical Failure Mechanisms ............................................................................. 66

2.8 Government Perspective ................................................................................... 74

2.9 Private Perspective ............................................................................................ 80

2.10 Trends ............................................................................................................. 87

2.11 Literature Gap ................................................................................................ 94

2.12 The Research Question .................................................................................. 96

2.13 Conclusions .................................................................................................... 98

**CHAPTER 3: RESEARCH METHODS** ..................................................................... 102

3.1 Introduction ....................................................................................................... 102

3.2 Research Methods ........................................................................................... 102

3.3 Research Design ............................................................................................. 103

3.4 Questionnaire Design ...................................................................................... 114

3.5 Data Collection ............................................................................................... 116

3.6 The Scaling Sequence ..................................................................................... 118

3.7 Sampling Method ........................................................................................... 120

3.8 Sample Size ................................................................................................... 120
Perfecting Procurement Practices of Public Private Partnerships

3.9 Data Analysis Techniques .................................................................................................................. 121
3.10 Case Study Analysis ......................................................................................................................... 126
3.11 Ethical Implications of the Research ............................................................................................... 128
3.12 Conclusion ........................................................................................................................................ 130

CHAPTER 4: DATA ANALYSIS .................................................................................................................. 132
4.1 Introduction ......................................................................................................................................... 132
4.2 Survey Results .................................................................................................................................. 134
4.3 Interview Results ............................................................................................................................... 147
4.4 Qualitative Analysis .......................................................................................................................... 167
4.5 Quantitative Analysis ......................................................................................................................... 176
4.6 Case Study Analysis .......................................................................................................................... 180
4.7 Conclusion ......................................................................................................................................... 197

CHAPTER 5: CONCLUSIONS .................................................................................................................... 202
5.1 Discussion ........................................................................................................................................... 202
5.2 Limitations ......................................................................................................................................... 210
5.3 Recommendations for Further Research .......................................................................................... 214
5.4 Recommendations for Improving the Current Model ....................................................................... 220
5.5 Conclusion ......................................................................................................................................... 229

REFERENCES ........................................................................................................................................... 236

APPENDICIES ......................................................................................................................................... 251
Appendix 1.1 Transcript of Interview with Private Enterprise ................................................................. 252
Appendix 1.2 Transcript of Interview with Public Enterprise ................................................................. 276
Appendix 2 Correlations ........................................................................................................................... 291

LIST OF TABLES
Table 1.3 Research Methodology Used .................................................................................................... 6
Table 2.3: Typical differences noted between the financial considerations of traditional and PPP approaches for the procurement of large scale projects ......................................................... 32
Table 2.6 Governance Key Components ................................................................................................. 63
Table 4.2 Summary of survey respondents ............................................................................................. 134
Table 4.2.2 Key Themes identified for successful Public Private partnerships ......................................... 138
Table 4.2.3 Key themes identified in reporting and communication to achieve better public buy-in. ...... 140
Table 4.2.4 Identified patterns that can facilitate a better success rate in immature markets ................. 142
Table 4.2.5 Optimum role of concessionaires in successful projects ....................................................... 144
Table 4.2.6 Identified success factors related to the availability of a “bank of experts” ......................... 146
Table 5.1.5 Summary of Research Findings ............................................................................................ 208
LIST OF FIGURES
Figure 2.2: Project Matrix showing relationships between Government, Concessionaire, Finance and Manufacturing entities ................................................................. 26
Figure 2.5: Total investment in PPPs in developing countries ........................................ 48
Figure 2.5.2: PPP Specific Procedure Toolbox ................................................................ 52
Figure 2.6: Contractual Relationships ........................................................................... 60
Figure 2.9: Showing relationship between construction and concession periods on cash flow risk ........ 82
Figure 4.2.1 Nature of business involved: ........................................................................ 135
Figure 4.2.2 Types of projects the participants have been involved in: ................................ 135
Figure 4.2.3 Years of PPP Experience: ........................................................................... 136
Figure 4.2.4 Key Themes identified for successful Public Private Partnerships .................. 137
Figure 4.2.5 Key themes identified in reporting and communication to achieve better public buy-in .... 139
Figure 4.2.6 Identified patterns that can facilitate a better success rate in immature markets ......... 141
Figure 4.2.7 Optimum role of concessionaires in successful projects ................................. 143
Figure 4.2.8 Identified success factors related to the availability of a “bank of experts” ........... 145
Figure 4.4: Relationships of responses to questions .......................................................... 168
Figure 4.4.1: Polarisation between Public and Private Sectors ........................................... 175
Figure 4.5 Positive / Negative Responses to Questions .................................................... 179
Figure 4.6: Relationships of PPP units worldwide ............................................................. 181
Figure 4.7: Common Themes .......................................................................................... 201
Figure 5: Proposed Model .............................................................................................. 216
SYNOPSIS

This dissertation represents a comprehensive study of the decision processes within the procurement of Public Private Partnerships (PPPs). The PPP style of contract is a complex but effective method for the delivery of much needed infrastructure and services for governments around the globe. The prime advantage is the use of private capital, minimising the burden on government coffers and the tax payer.

This research focuses on the methodologies and maturity levels of PPPs on a multi-national scale. Critical success factors and failure mechanisms identified in previous projects were reviewed, based on the procurement and implementation of the contract itself rather than on the provision of infrastructure or a service.

This research identifies gaps in the extant literature and practices within the delivery of PPPs, and develops a ‘lessons learned’ framework to guide the research and to close the gaps for future projects. This research principally adopts a content analysis methodology. It involves a mixed-methods approach, incorporating qualitative and quantitative reviews of the survey and a semi-structured interview protocol, augmented by in-depth case study analysis.

The area of risk management and ownership within the PPP project presents itself as a common theme throughout the research. This area represents an opportunity for improvement throughout the contracting process, from feasibility to construction. The rules of assignment of risk to the entity that is best prepared to manage that risk have blurred. This adds undue complexity to a project that is already convoluted by nature.

The culmination of the study offers a new model that can be used to increase the opportunity for success in the delivery of projects. This model focuses on the management of the contract. PPPs are unique in the way that they are financed and in the financial models that are employed during their delivery and through life service; however, the contract and management thereof share the same principles.
CHAPTER 1: INTRODUCTION

1.1 Background

1.1.1 For several decades the Public Private Partnership (PPP) model has offered an attractive alternative to public funding. Within Australia and Great Britain this type of project funding has seen a great deal of success; however, there are still many failures that leave a bitter taste in the public’s mouth. The transfer of risk from the public coffers to that of private enterprise is still seen as one of the most attractive reasons for entering into this type of partnership.

1.1.2 Whilst there are many other advantages such as innovation, financial savings and efficiencies in project delivery, these still don’t guarantee project success. Value for money options are not always realised when projects are completed and also may not meet the expectations of both parties. It is sometimes forgotten that the government may simply not be in a position to deliver the projects at all, let alone under the same conditions by which the private sector operates.

1.1.3 PPP projects became favourable in times when government funding did not cover the infrastructure required to meet state or federal growth targets. This is when the private sector stood in to take on not only the risk associated with the delivery of the project, but also to bring to the party the things that made
private enterprise successful in the first place; innovation, efficiency, technology, motivation, and most importantly, finance.

1.1.4 The private sector was drawn to this style of project due to the fact that PPPs were generally large in both the cost of the project and the lifespan of concessionaire involvement, thus adding security and hopefully ongoing cash flow to the business. There have been many criticisms of this model, primarily by the suggestion that the private sector is over supported at a cost to the public purse. However, there are many infrastructure developments within Australia today that would not have been accomplished under a public growth regime, and the negativity is quickly forgotten once the benefits are realised.

1.1.5 Lack of knowledge in PPP practices is one of the reasons that some countries are lagging behind in this project model. Within Australia we also have our lagging states. Whilst Victoria may be seen as a world leader, this was driven by the fact that Victoria had significant financial constraints in the late 1990s and was heavily debt laden. In June 2000 they formed Partnerships Victoria (Partnerships Victoria 2010), to help them overcome some of this pressure. In contrast, Queensland was in the enviable position of being financially strong, and due to the state government regime at that time, shunned the PPP model. PPPs did not become popular in that state for another decade.
1.1.6 This study has looked at the current PPP market within Australia and in other areas, such as Great Britain, America, Canada and Asia, in order to understand the current knowledge in regards to project success and failure and to derive a framework for project success. PPPs are procurement based projects and there are many different levels of understanding of what practices are required at both the public and private level. Community understanding also plays a very large part in project success and has also been considered in this research.

1.1.7 Currently, differing levels of maturity around the globe mean that there is not a unified theory or model for the successful delivery of PPP projects. This research takes a step closer towards providing one.

1.2 Research Aims and Objectives

1.2.1 The research aims to provide a framework for best practice in the delivery of PPP projects by understanding the failure mechanisms still being enacted in mature markets and by identifying the success factors being realised in all areas. The research aims to provide an understanding of current mature market knowledge in order to assist less mature markets in their understandings of best practice. The research further aims to provide a variation to the current model of PPPs to stimulate further research in this area.
1.2.2 The research objectives include:

- A comparative review of traditional project procurement types, identifying the time line of change from Government funding to private funding.

- Analysis of case studies in order to identify key success factors and failure mechanisms, based on successful and seemingly failed PPP projects in Australia and by research carried out by others overseas.

- A review of the PPP models over time; how they have evolved, why and where they are today; from the early Build, Operate, Transfer (BOT) archetype through to the current model, which is in essence a Design, Build, Fund, Operate (DBFO) project.

- A review of public drivers and value for money options; the perspective of the government and the general public.

- A review of private drivers and value for money options; the perspective of the private sector and the ‘What’s in it for me’ (WIIFM) methodology of the corporate world.

- Evaluation of the data collected to derive a framework for project success; what continually works and isn’t region specific; that is, what can be applied to any project.
1.3 Research Methodology

1.3.1 The first stage of this research involved the identification of the research objectives; from this the research methodology design was determined. Significant effort was put into gaining background knowledge of the subject, from both primary and secondary sources of information. This was achieved by conducting a comprehensive literature review and undertaking further discussions with colleagues and lecturers.

1.3.2 The second stage was to collect the data necessary for analysis to derive conclusions. This data was taken from case study reviews, empirical survey questionnaires and interviews with experts within the PPP market.

1.3.3 Stage Three involved the analysis and interpretation of the collected data. This involved the use of both qualitative and quantitative methods including comparative analysis, content analysis, statistical analysis and triangulation of the results.

1.3.4 The final stage of the research included the presentation of the conclusions drawn from the research and the recommendations of the researcher. Recommendations for future research opportunities were also presented. This information is contained in Table following:
Table 1.3  Research Methodology Used

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<th>Stage of Research</th>
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<td>Research Objectives Research Methodology</td>
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<td>Conclusions Recommendations Future Research Opportunities</td>
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1.4  Dissertation Structure

1.4.1  The structure for this dissertation report is as follows:

1.4.1.1  Chapter 1 introduces the research and outlines the background of the dissertation. It discusses the research aim and objectives, the approach and structure, and then finishes by presenting the significance of the research outcomes.
1.4.1.2 Chapter 2 presents the methodologies used in the research. The chapter explains the questions asked within the research and sets the survey questions out in detail. It explains the design, the processes and the data analysis techniques utilised to draw the conclusions of the research. It covers the assumptions and known limitations of the research and details how this knowledge could be used to make better and more informed project choice decisions.

1.4.1.3 Chapter 3 covers the literature review. This chapter looks at the definition of the PPP model and the history of PPPs both in Australia and overseas, dating back to what was considered the first type of privately funded government infrastructure model. There is a comparative review of traditional procurement models, and a description of the current situation of PPPs within both mature and less mature markets. Key success factors and typical failure mechanisms are reviewed. The chapter also contains a detailed examination from government and private perspectives. Finally, there is a review of some of the trends that the PPP model is moving towards, including the need for greater emphasis on environmental and social value-adds within the project.

1.4.1.4 Chapter 4 contains the data analysis, the findings from the questionnaires, the response analysis from the interviews and the conclusions of the case study analysis. The analysis is considered from the perspective of the three constituents within this research; the
government, the private sector and the researcher. Triangulation is used to identify common threads. The results obtained through this research are drawn together to identify opportunities to assist in good project management decisions and to attempt to guarantee project success for all parties within the PPP market; these parties include the government, the private sector and the end user of the service, the general public. The general public is considered specifically as there have been many allegations of project failure due to the fact that the public did not have the necessary buy-in to the project. This negative effect can be turned on to government, and because of this government, and its agencies, tend to distance themselves from the failed project, in essence leaving the private sector stranded to defend itself. This effect is discussed in the Cross City Tunnel case study.

1.4.1.5 Chapter 5 concludes the research by presenting the derived framework for project success. It highlights some of the failure mechanisms that can be used as a checklist or early warning system for project change. The chapter discusses a possible new model that the researcher presents; it also contains highlights of the major aspects of the research and presents future research opportunities that were identified during this dissertation.
1.5 **Significance of Research**

1.5.1 The PPP model is still an evolving model and best practice has still yet to be realised. Within Australia, Great Britain and Canada, which are considered the mature markets, there has been significant success in delivering large-scale infrastructure projects to the end user. However, there is still a need to identify the key success factors that improve the opportunity to meet or exceed the stakeholder’s expectations. Within the PPP model there are three stakeholders and their needs are quite different; this makes this project delivery model very complex. That said, it has been demonstrated that these projects can be successful. Some overseas markets are less mature, and for this reason the publication of research materials offers opportunities for these markets to come down the learning curve faster than would be possible with project experience alone.

1.5.2 Within Australia, the PPP model still focuses to some extent on the lowest initial cost option rather than the best value for money option; this is still one of the reasons why projects fail. This focus is not surprising as the analysis of the bids would inevitably be reduced to one single sheet of paper, and the bottom line would be a figure that would stand up to justification. It is not as easy to argue the softer benefits that the partnership could offer such as brand recognition, engineering expertise, quality of finished product, etc. Further research in the area of whole of life value will help improve understanding of this topic. Lowest cost options are still a considerable driver in large scale
projects, especially ones that have significant project duration. Governments may find it difficult to omit this as a consideration in a project decision that may still be under construction long after they are subject to an election. This factor can affect the viability of the true value that can be realised through the use of PPPs.

1.5.3 This research should help in the understanding of what constitutes an opportunity to consider whether or not a project should be a PPP project or a traditionally procured project. Australia’s benchmark for PPP cut off is much higher than it is in Great Britain or Canada.

1.5.4 There are many new and evolving processes and policies that have come about specifically to cater for PPP contracts (Broadbent & Guthrie 2008). The modernisation of economic relationships between the public and private sector has occurred through necessity, due to the new style of contract model opportunities that have arisen from the Public Private Partnership. These economic changes have not come without some pain being felt by both parties, and policies and processes have adapted to meet the demands of both parties when changes occur. It has been questioned as to whether the changes have occurred efficiently and effectively and that the intended objectives of change have been met (Pollitt & Bouckaert 2000).

1.5.5 State and federal legislations also play a part in the effectiveness of the PPP model. This has been seen within Australia, where there are potentially nine
different forms of government within the one country (English & Guthrie 2003). This effect is also clearly seen in America, as each state has been left to devise its own policies and procedures to deal with the PPP model. The effect of this is that learning curve opportunities are missed if there is not a centralised approach to meeting the needs of both the private and public parties. This is not to say that there must be a totalitarian view of government contracts; however, there is an opportunity to derive the best of all worlds if this approach is considered. It could be reflected that value for money opportunities are missed due to the complex nature of both state and federal policies conflicting with the outcomes. This is not to suggest in any way that practitioners of PPPs are not able to access vital information to improve the success rate of their project but only to suggest that a centralised knowledge centre assists in achieving this goal in the shortest possible time. Federal PPP units should be able to offer the centralised data storage and thereby help reduce start-up costs for the states.

1.5.6 The nature of the PPP contract is such that the general public must have significant buy in to achieve project success. However, by the very nature of private enterprise, intellectual property laws and general business practice, this is rarely achieved. The government is also typically tight lipped in regards to the decision makings processes that it uses. Furthermore, the public sector comparator (PSC) calculation that assists in the project decision has also been questioned on occasions when it is necessary for the government to
add additional financial assistance to the concessionaire (Watson 2004). This research looks at the negative effects of the general public on PPPs and the benefits of good communication.

1.5.7 The PPP project is still in its infancy in many countries. Public opinion is generally not favourable about these projects and the failure rate is high; up to 12% in Australia (Regan 2011). This can be seen as significant as Australia is a mature PPP market. Increased costs (Curnow, Jefferies & Chen 2005) and project failures have not helped buy approval from the general public. Because of government involvement, the ability to generate a one best practice seems to be restricted on a country-by-country basis. The aim of this research is to historically review the global use of PPPs, analyse some of the misgivings that have created issues in the current climate of PPP projects, and to begin identifying the common threads and patterns of success that can be applied across countries and projects to ensure that the opportunity for success is improved. It is anticipated that the results of this research can be used to propose a ‘world’s best practice’. Further, this research is expected to result in a model allows for further empirical study to be conducted. The development of this model would be based on the patterns for success that have been experienced globally and the transferability of the patterns to different styles of projects at different levels of maturity to ensure a better opportunity for success (Hodge & Greve 2007).
1.5.8 The PPP style of project is on the increase globally (Jamali 2004). Although still in its infancy in many countries, there is evidence that its evolution is consistent as most countries’ governments see the benefit of establishing relationships with private partners to access capital and divest themselves of risk (Scott 2009; Raisbeck, Duffield & Xu 2010). From a private perspective, having a strong, financially well backed customer who is willing to enter into long term contractual arrangements is typically well received on the stock market. Qualitative research in this field will continue to add both scholarly and business related value as the market continues to mature, utilising this style of procurement for large infrastructure.

1.5.9 The Public private partnership has gone through much iteration and is still evolving as new legislation (Sheil 2003; Gaffey 2010); historical evidence moulds the next generation of this style of project. It goes without saying that this model for infrastructure growth is here to stay, and thus it is necessary to focus on world’s best practice to ensure the repeatability of critical success factors that can be implemented on a global scale. There have been and will continue to be project failures related to poor risk management and poor partnership synergies. Inevitably the public suffer because of this, as governments are forced to step in and take over projects that they were ill equipped to manage in the first place. Evidence of this within Australia includes the Lane Cove Tunnel which fell into receivership even with subsidised tolling. The public had to face several increases in the cost of the
toll and changes to traffic flows which forced users onto the road to increase utilisation.

1.5.10 It is evident in the research to date that shared vision is the first step in partnering and this trust building exercise is critical for project success (Ahadzi & Bowles 2004; Bing et al. 2005). Risk ownership and management are critical in providing the public element with the protection it needs to make better use of its funds, and in enabling the private sector to deliver the project in a profitable manner. Community involvement is also seen as both a ‘must have’ and a ‘rarely achieved’ element in a successful PPP (Crouch 2003). For this reason, better management of this task is required and once again best practice must be investigated in this area to ensure on-going project satisfaction.

1.5.11 The World Bank defines the public sector comparator (PSC) as a tool "used by a government to make decisions by testing whether a private investment proposal offers value for money in comparison with the most efficient form of public procurement" (Kerali 2012). The results of the surveys can be used as a probability checklist to determine the potential success of the project; if the attractive factors outweigh the negative, this could give a measure of the opportunity for success of the pending project. This could be used as the initial go/no go project identifier. Further to this, carrying out this work prior to PSC analysis could save valuable cost and time in relation to PPP project
definition; it could also help with risk identification and more importantly risk allocation, as this is still one of the most contentious issues in the PPP area.

### 1.6 Assumptions and Limitations

1.6.1 The main assumptions of the paper were the understanding that PPP projects operate under similar philosophies around the world; that is, PPP projects are typically run under a special vehicle that is privately financed and repaid over an extended period of time via the provision of infrastructure or service, and that the essence of contract law and partnership is transferrable throughout the projects.

1.6.2 Limitations of the research include the identification of failure mechanisms within the project. Currently, failure is seen as extreme deviation from the plan. Regardless of how they are funded, all projects start with a goal in mind and issues such as scope creep, engineering change and variances in the macro environment are concerns for every project manager. Changes in the financial vehicle used, unexpected outcomes for the end user (increase in tolls) or greater than expected involvement from the public partner (buy out, financial support etc.) are significant deviations from the original outcome. Whilst the general public may still get the road or hospital, having the construction company go into liquidation, paying more for a service that was previously free, or having the government buy out the project even at a reduced price is a project failure; that is, the original outcomes of the project were not met. The consideration is how far from the expected outcomes did the project finish and can these attributes be
classified as standard project changes or be specifically attributable to PPP projects.

1.6.3 Risk within projects will never be stable or predictable; the change in risk quite often has a dramatic effect on the way projects evolve. The public portion of PPP projects adds a significant portion of this risk, as a change in government may also equate to a change in policy regarding PPP projects.

1.7 Summary

1.7.1 This chapter outlines the structure of this dissertation by identifying the framework used to carry out this research. The chapter has identified the background, the research aim and objectives, the research methodology and the significance of the research carried out. Finally, this chapter has set out the rationale of the research by detailing the background, objectives and significance of the project, and providing the reader with an insight into the nature and purpose of this type of contract.
CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

2.1.1 Public Private Partnerships (PPPs) have been in use for a number of decades. Britain, Australia and Canada are seen as mature markets for these projects, having used PPPs since the 1980’s. Many other countries have since adopted Public Private Partnerships; however, they can be described as laggards. As these projects have significant tenure (10 – 30 years), mature countries had a ‘head start’ of approximately a decade as they moved from traditional BOOT (Build Own Operate Transfer) to the more complex DBFO (Design Build Finance Operate). Numerous governments now integrate PPP policies to deliver infrastructure and services. From a government perspective, some of the main attractions of these styles of project include access to technology, divestment of risk, price competitiveness and the freeing up of public debt by a reduction in capital investment. This allows governments to increase their focus on the delivery of essential services. From a private perspective, market share, longevity of contract, profit margin, and a strong, financially-backed clientele are key drivers for a market presence. The right to associate a company brand name with a large government project is also seen as a driver for entering into these projects.

2.1.2 Nevertheless, failure rates in these contracts are quite high and there is evidence that the advantages of these styles of procurement contract are not always
realised. It can be said that true partnerships are rarely achieved, risk management is carried out poorly and community involvement is not communicated in a way that creates buy-in from the stakeholders. Evidence of these failures is not limited to the PPP model used or the country in which it is used. However, the research carried out in this chapter shows all the failures exhibit common elements. These include weaknesses in the risk assessment and in the integration of risk management strategies which were utilised in the contract makeup, limited use of stakeholders, scope creep during feasibility studies and failure to fully utilise the information gathered from all of these activities. In addition, it can be seen that business was impacted by changes in the macroeconomic environment that were realised during the construction or through life support phases of the contract.

2.1.3 The (modern) version of the PPP can be loosely attributed to the UK, where the Private Finance Initiative (PFI) model was established in the 1990s. Australia has taken this model and, through its own experience of delivering full public services through the private sector, established the Partnerships Victoria model and the Working with Government Guidelines for Privately Financed Projects (KPMG 2010). Since then, many other countries have developed policies along similar lines.

2.1.4 The PPP model is an ever evolving procurement contract that has and will continue to be subject to significant change, as legislation adapts to suit macro
and micro economic climate changes, both locally and globally. This is driven by
governments that recognise the advantages of this style of project, and also by
the private sector that focuses on global opportunities to maximise return on
investment in an increasingly constrained market place.

2.1.5 The PPP model is under constant review by academia and private enterprise
alike, as patterns for both success and failure are analysed in order to manage
risk and ensure that failures of the past are not repeated. Private enterprise is
looking at changes in the economic climate to free up capital and improve
debt/equity leverage from the banks. From a government perspective, legislation
is under constant review to ensure that opportunities are capitalised to off-load
infrastructure construction. Less mature markets are reviewing the successes of
the more mature markets, to ensure that whatever benefits are available are
transferred into their legislation to open up opportunities for private investment.

2.1.6 The PPP model is still typically used less than the traditional procurement
process of government funded infrastructure growth, and this may be due to the
fact that the stigma of failure is still associated with the PPP model. However,
there is evidence to show that in mature markets the tide is turning. The research
shows that Canada allows all contracts that meet certain criteria to be made
available as a PPP opportunity. Globally though, it can be seen that this is still a
rarity. That said, there is review of the increased trend towards the use of a PPP
model, as the benefits to the government and to society by default, outweigh the
negative implications of capitalist involvement. The growth of the PPP model in
third world countries will be reviewed to show significant societal changes; here the Public Private Community Partnership model has been implemented successfully in projects such as water treatment, hospitals and land management. This type of corporate social responsibility means that, although the returns to private enterprise may not be as high, societal changes take place where the government may not be in a position to carry out the work with the resources they have at their command.

### 2.2 History and Definition of a Public Private Partnership (PPP)

2.2.1 Large scale Public Private Partnership (PPP) procurement projects come under scrutiny from both government and the public, seemingly the day after a contract has been entered into. They also have a high failure rate, around 12% (Siemiatycki 2010; Regan 2011). This is despite of the fact that PPP project numbers are on the increase (Jefferies & McGeorge 2009). Since the 1980s there has been steady and evolutionary growth in the PPP model, where once they were simply viewed as public access to private capital. These projects are evolving to becoming a main-stay option for building public infrastructure, and are now being driven by large equity investment consortiums looking for long term project success.

2.2.2 Evidence of PPP-style projects has existed over a long period of time. These partnerships have always been present in social systems in some form, such as in
the Ancient Olympic Games, which although held for hundreds of years, was first recorded in 776BC and lasted through to 394AD. Although the Greeks publicly funded the games, they still welcomed donations from private investors to provide assistance. By the time the Romans were in control (around 3rd century BC) the games had moved to an entirely privately financed model (Potter 2012). The Modern Olympics, which began in 1896, now utilises the modern version of the PPP with stadiums, hotels and even transport infrastructure delivered under this model.

2.2.3 In sixteenth and seventeenth-century France, drivers crossing roads and bridges were charged tolls in return for maintaining the routes. Canals were built and water was collected and distributed under concessions. By the 1820s, there were six private water companies operating in London. Three hundred and fifty years ago, the Massachusetts Bay Company incorporated the private Water Works Company to supply drinking water to Boston. At the beginning of the nineteenth century, nearly all of the waterworks in the USA were private. Electricity utilities in nineteenth century Brazil, Chile, Costa Rica and Mexico were private entities. In Argentina, Brazil, and Uruguay, private developers from Britain, France, and the United States built and operated many of the early railways in the nineteenth and twentieth centuries.

2.2.4 These projects began as simple models such as the BOT (Build-Operate-Transfer) and BOO (Build-Own-Operate) and were motivated by the public
sector’s need to access private sector money and to transfer the project risk away from the government. Today the modern version of the PPP project is more aligned to the Design-Build-Finance-Operate (DBFO) and the Design-Build-Finance-Maintain (DBFM) styles, increasing the overall responsibility of the private financier and focusing more on the ideology or value for money outcomes.

2.2.5 It is universally agreed that a Public Private Partnership (PPP) is a complex relationship between a government and private entity that is both time and cost specific. Its definitions vary from country to country; however, within mature markets such as Australia, the UK and Canada, the available PPP literature is relevant in its context. Therefore a definition of a classical PPP is offered by the Canadian Council for public private partnerships as:

A co-operative 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. (CCPPP 2001).

A further definition from the New South Wales Government states:

The term “public private partnership” (PPP) is used by the Review to mean an arrangement for the provision of assets or services, often in combination and usually for a substantial or complex ‘package’, in which both private sector supplier and public sector client share the significant risks in provision and/or operation. Privately financed projects (PFPs)
involve provision by investors of equity capital and debt capital to fund what might otherwise be wholly publicly funded projects financed from NSW Government borrowings and/or budget revenue. (Richmond & New South Wales. Premier’s Dept. Infrastructure Implementation 2005).

This last definition emphasises the risk sharing aspect of the PPP. However, in reality there is not equal sharing of risk; rather, each party endeavours to place the ownership of greater risk onto the other party.

2.2.6 A report by the OECD ranked Australia as the world’s most mature PPP market (OECD 2007). Within Australia, the PPP can be further classified into two main types of project; the economic infrastructure project (e.g. roads, tunnels, bridges) and the social infrastructure project (e.g. hospitals, schools, prisons)(Argy et al. 1999). These project types have also been referred to as line and point infrastructure respectively (Koppenjan 2005).

2.2.7 Typically, a consortium of private enterprise will create a special vehicle to deliver an infrastructure based service. This special vehicle is responsible for the financing, design and construction (or refurbishing) of the infrastructure to enable the profitable use of the service. The vehicle then provides the service and receives a revenue stream that is used to repay the debt, maintain the business stream and offer return on investment to the stakeholders.
2.2.8 A key factor of a PPP project is the transfer of risk from public to private entities. Whilst it has been stated that the risk should be transferred or held by the entity that is in the best position to manage that risk (Abednego & Ogunlana 2006b), in practice this does not always happen. In exchange for managing the risk, the private sector demands compensation which may be in the form of tolls, tariffs, lump sum payments etc.

2.2.9 Typical characteristics of PPP projects include:

- Efficiency gains through appropriate sharing of risks and responsibilities. The public sector retains mainly sovereign tasks and the private sector bears those for implementation;
- Lifecycle and private investment as crucial elements of PPP’s incentive structures;
- A long term contractual relationship; and
- Innovation, in particular through output specification, service levels and payment mechanisms, as a new way of describing the services to be supplied (Alfen et al. 2009).

2.2.10 As stated, the projects are typically quite complex, with special purpose vehicles (the concessionaire) normally applied to the project throughout its lifecycle both in construction and through life support phases. An example of this is the Waratah train project for RailCorp New South Wales, and the project matrix is presented here in graphical form, Figure 2.2: Project Matrix showing relationships between Government, Concessionaire, Finance and Manufacturing entities. Source: (Railcorp 2012). This graphic shows the relationships to the key
stakeholders from the government to the concessionaire, and the sub contract relationships to the manufacturing and through life support companies. There are nearly forty prime contract relationships in existence, with hundreds more at lower levels.
Figure 2.2: Project Matrix showing relationships between Government, Concessionaire, Finance and Manufacturing entities. Source: (Railcorp 2012)
2.3 **Comparative Review of Traditional Procurement**

2.3.1 Although not the focus of this research, it is worthwhile to review traditional methods of procurement for large scale projects in order to provide context. Regardless of the project, the client department instigates the initial stages and takes the lead; this would typically begin with the design or definition of service requirements. PPP contracts fill a space between traditionally procured government contracts and full privatisation (Grimsey & Lewis 2007). It is fair to state that traditional procurement methodologies typically use the delivery of assets as a measure of performance. As such, the timeliness and cost of delivery are applied at the commissioning stage of the project and few projects are ever re-evaluated throughout their service life. By contrast, the whole of life measurements are taken into consideration within the PPP model.

2.3.2 After planning approval is obtained in a traditional project, there is a call for tenders from private contractors for the design, construct or both, whereas in a PPP venture a specification is developed to allow the consortium or private contractor to provide output-based measurable indices that ensure the success of the contract. In this instance, the government dictates the quantity and quality of the service that is required from the private consortium.
2.3.3 Typically, both approaches require consultation with public and legislative council panels for further approvals and financial endorsements. Within a PPP, this would likely also include public interest tests and public sector comparator tests. Within traditional procurement projects, success is measured by technical expertise, quality, time and cost considerations. However, within a PPP service delivery, project life cycle and value for money considerations are also considered. Quite often there are performance payments due for the delivery of ongoing services. Conversely, there are generally liquidated damages also connected to the contract should the private sector not perform in accordance with the contract terms and conditions. This can also be linked to defect rectification work. Project completion in a traditional project is usually managed by the government works department, but within a PPP there is normally a third party verification process that occurs to ensure that there are fit for purpose considerations before payment is made.

2.3.4 Interestingly, traditional procurement commences after budgetary approval and allocation of capital, whereas in many countries PPP models follow a debt-fund model that does not require the delay that is ordinarily associated with traditional procurement methods. Essentially, this is the ability to raise the capital (traditional) versus the ability to pay for the service (PPP) (KPMG 2010). In some PPP models, the traditional approach of proceeding only after the money has been allocated to the government department still exists;
Australia is an example of this method. This is a significant constraint within the Australian system, often causing lengthy delays to much needed infrastructure.

2.3.5 The PPP funding model has been criticized for not offering value for money and being merely a means of removing capital expenditure from the government ledger. However, this view is not shared by governments who have successfully implemented projects (Duffield, Raisbeck & Ming 2008). The PPP cost advantage has been found to be economically and statistically significant. A recent study into the Australian PPP versus government contracts showed that on a contracted $4.9 billion of PPP projects the net cost over-run was only $58 million – not statistically different from zero. However, for $4.5 billion of traditional procurement projects, the net cost over-run amounted to $673 million (Duffield et al. 2008).

2.3.6 Innovation is typically an additional requirement of PPP projects that does not always show up in traditionally procured projects. This drive for innovation comes from both the public sector, which forces the use of the latest technologies or improvements in safety and environmental impact, and from the private sector, as it strives to drive cost from the project to ensure best practice in regards to manufacturing or material selection and use.
2.3.7 Within traditional procurement in Australia, there is typically a separation of the design, project management and construction tasks. It would also be reasonable to say that traditional procurement focuses on the lowest cost provider rather than the lowest overall cost; that is, value for money opportunities are not scrutinised as much as they would be under the PPP model. Known issues raised include the opportunity within traditional projects for the contractor to capitalise on the incomplete specifications, thus allowing the contractor to gain financial benefit from re-quoting works on variations to the specification. The contractor by default will try to maximise margins, driven by the fact that the lowest tender is usually the one chosen. This is obviously countered by the principal’s drive to minimise variation and deliver on time, and on budget. This type of conflict is typically manifested into both costly and lengthy dispute negotiations at the completion of the project. Other risks for traditional procurement, especially in regards to long term services contracts, include the contractor’s perspective of building quality into the product. This in essence is one of the cornerstones of the PPP model. The traditional contractor’s view is myopic in the fact that they build for the here and now. This is because they are not responsible for the long term success of the infrastructure as they would be under the PPP model (Regan 2009).

2.3.8 Typical traditional procurement projects are budgeted and driven by the government agency that requires the infrastructure e.g. RailCorp, Road...
Transport Agency etc. However, under the PPP model there are other agencies that are also involved e.g. Infrastructure Australia and Partnerships Victoria. These agencies carry out the analysis of the project to identify the value for money opportunities that would be available if the project was implemented under the PPP model. Furthermore, they also determine the viability of running the project under this model by utilising tools such as the Public Sector Comparator (Regan 2009).

2.3.9 Whilst traditional procurement is still very popular, there is strong international evidence to suggest that it performs below the standard that is achievable with the PPP model. This is based on the higher levels of risk transfer, technology, value for money, innovation and improved service delivery provided by the PPP. It is these and other incentive based indicators that drive PPP success, which is due to the fact that return on investment remains high, with the further opportunity for return on over performance. This is also encouraged by penalties for under performance. It has been found that incentive based procurement outperforms that of traditional procurement; that is, alignment of contractor payment mechanisms to delivery performance has been found to be successful (Regan 2009). A comparison of typical differences is highlighted in Table below:
Table 2.3: Typical differences noted between the financial considerations of traditional and PPP approaches for the procurement of large scale projects

<table>
<thead>
<tr>
<th>Traditional Procurement</th>
<th>PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Usually only direct incremental costs are assessed.</td>
<td>□ Estimates of the whole life costs of the facility/service will be developed for both the PSC and by the private sector using the same period of time to ensure a common comparison basis.</td>
</tr>
<tr>
<td>□ The government does not always have an accurate assessment of the likely full costs of providing services over the lifecycle of a facility.</td>
<td>□ The PPP partner is committed to the costs he submits in his bid, which are then included in the signed contract.</td>
</tr>
<tr>
<td>□ In any event, the estimated cost is only an estimate, and cannot be assured unless a binding contract for its provision has been let.</td>
<td>□ Costs are expressed on a Net Present Value (NPV) basis to enable comparison between options with different cash flow profiles.</td>
</tr>
<tr>
<td>□ Subject to budgetary and management control, the costs of a new facility/service are open-ended.</td>
<td>□ The bidder’s price will normally incorporate a formula to take account of inflation/deflation.</td>
</tr>
<tr>
<td>□ The funding of the capital and recurrent costs would normally come from a range of different sources within the government.</td>
<td>□ The government would normally pay the winning bidder only after the facility was operational, and then payments would be only for services provided according to the contractual specifications.</td>
</tr>
<tr>
<td>□ The capital costs of construction works would be met from the Capital Works Reserve Fund (CWRF).</td>
<td>□ Payments would incorporate elements of amortised capital costs paid out of the CWRF and monthly recurrent costs.</td>
</tr>
<tr>
<td>□ The costs of the preparatory design and supervisory work for the construction contracts would normally be met by the project vote.</td>
<td>□ Payments would be subject to satisfactory performance in the provision of services on the part of the private partner.</td>
</tr>
<tr>
<td>□ The operational costs would be met from the client department’s Recurrent Account.</td>
<td>□ Payments could include incentive elements where performance targets are set.</td>
</tr>
<tr>
<td>□ Occasional expenditure on replacement plant and equipment would come under the department’s Capital Account.</td>
<td>□ If the private partner fails to meet performance standards by delivering the services as specified in the contract, or fails to rectify defects at its own expense within specified timeframes, the payments will be reduced, deferred, or halted in accordance with the terms of the contract.</td>
</tr>
<tr>
<td>□ Similarly, in works departments and GPA, expenditure under various departmental subheads would take place over the life of the facility.</td>
<td></td>
</tr>
</tbody>
</table>

Source: (Serving the Community By Using the Private Sector An introductory guide to Public Private Partnerships (PPPs) 2003).
2.4 Situation in Mature Markets

2.4.1 There are three main players in the Public Private Partnership; the people, the government and private enterprise. Although people play an active part in private enterprise, it is the government who is the controller of their public funds and for this reason, the people generally lobby the government when projects do not follow on-time or on-budget models of project management. Furthermore, successful projects add greater value than construction alone. The increase in local employment and entrepreneurial growth in the region of the project are key success factors (Bing et al. 2005). Evidence of this can be seen in Sydney’s M4 motorway, a toll road linking Parramatta with Penrith. Since the opening of the tollway, there has been substantial growth along its route, including the construction of one of Sydney’s largest industrial parks. With good transport infrastructure available, business has capitalised on cheaper real estate that was previously considered too remote. For example, McDonalds has established itself on the M4 to capture the business of commuters that now stream east and west.

2.4.2 The ability to effectively galvanise public opinion is critical to project success. Concerns expressed by the end-users of the project can affect the ability of the consortium to provide ongoing service in an efficient manner, and will in all likelihood have a negative effect on their earnings capability. Financial institutions will also be drawn to consortiums which have mitigated the possibility of disruptions (Ahadzi & Bowles 2004). Private companies often
consider the public partner to be a multi-headed monster with contradicting strategies (Koppenjan 2005). It has also been said that a PPP is among the most challenging and interdisciplinary approaches of all procurement methods (Jefferies & McGeorge 2009).

2.4.3 PPPs can be a valuable contributor to a country’s wealth. Through the PPP, governments experiencing budget deficits, ageing infrastructure and growing demand for improved public services can access capital, intellectual property, technical skills and competitive efficiencies. A good example of this is the Chicago Skyway, leased under PPP for ninety-nine years. The revenue from this project was used to pay off existing city debt and the remainder was used as a revenue generator to fund various social services (Gaffey 2010). PPPs are also valuable in providing opportunities for governments to gain access to global markets, where domestic skill shortages in developing countries may be a barrier to growth (Ahadzi & Bowles 2004).

2.4.4 Ahadzi and Bowles (2004) have identified a list of attributes for the tendering process in PPPs. The relative significance index and the ranking of the attributes relating to the consortium and to the public sector procurer were identified. The projects covered included schools, hospitals, civil engineering projects, fire stations and office buildings. The list of attributes included:

- Early involvement of other stakeholders
• Ability to understand what the public sector wants.
• Organizational nature and strength
• Ability of consortium members to work harmoniously.
• Open/frank communication during the negotiations.
• Appointing a dedicated bid manager
• Readiness to accept risk.
• Ability to persevere during protracted negotiations.
• Previous experience in PPP procurement.
• Personal attributes of the champion within the consortium.
• Willingness to commit to earlier negotiated terms.
• Reputation enjoyed by the consortium.
• PPP being a strategic business interest
• Ability to tie equity into the project for a long period.
• The multidisciplinary nature of consortium team.
• Experience of previously working together as a team
• Ability to obtain planning permission timeously.
• Taking proactive role in initiating the project.
• Current job holding of consortium members.
• Experience of previously working with the public sector procurer.
• Quality of technical proposal
• Clarity of submissions and responses to queries
• Robustness of outline technical proposal.
• Provision of sound technical guarantee.
• Innovative technical solutions.
• Quality of the financial proposal
• Levels of tariff/tolls proposed
• Credibility of financiers
• Level of exposure of the public sector organisation to financial risks
• Level of financial guarantees provided/proposed by the consortium.
• Payment mechanisms proposed
• Level of government funding/guarantees required by the consortium.
• Length of concession period proposed.
• Level of financial returns to the public sector organisation.
• High Equity/debt ratio so as to drive commitment.
• Level of third party revenue to be generated.

Of interest is that a key objective of PPP projects – encouraging innovation in design solutions – is ranked rather low. This ranking was based on a series of workshops and questionnaires delivered within the UK market, but as Canada, Britain and Australia are also regarded as mature markets this could be regarded as transferrable knowledge. Innovation has previously been seen as a key driver in the success of the PPP, as private enterprise is intentionally sought due to the very nature of the way it operates, i.e. lean and profitable. Private enterprise seeks out and implements new technologies that add value to their processes. They also bring to the table their corporate experience, involvement in the
planning process, tight employee management and the need for return on investment for the consortium (Siemiatycki 2010). However, it must be noted that innovation and technical complexity add to the condition of project uncertainty and make the division of risk among stakeholders less clear than when negotiations focus on project objectives and deadlines alone.

2.4.5 The identification of risk at the beginning of the project is an area that is typically captured by contract law and is usually associated with liabilities. It has been suggested that risk should be managed proactively and as such become part of the corporate governance of the consortium. The consortium needs to develop specific measures to recognise that risk has a potential to incur liability and from there put in place mechanisms to manage potential future risks. Some proactive risk management tools include tailored contract clauses, insurances, securities and guarantees (Tieva & Junnonen 2009). It must be recognised that risk management will not result in the elimination of risk, and by definition entering into a PPP involves purposeful risk acceptance.

For many consortiums, the high profile nature of the project is justification to accept these known risks, and the case is put forward for how the project can be profitably exploited and how the financial trade-offs between profitable and non-profitable parts are achieved. Due to the competition for these projects and the “contract culture”, it could be argued that there is a promotion of self-interest rather than public interest and as such low trust relationships are produced (Trafford & Proctor 2006). This enthusiasm for project ownership is a common
cause of PPP project failure around the globe, and in many cases, significant long term risk has been transferred back to the government after relationships between the parties deteriorated. This has also been the cause for further unplanned investment by the government, which ironically was their reason for entering into the partnership in the first instance (Koppenjan 2005; Siemiatycki 2010).

2.4.6 Risk control is key to project success and these risks have been summarised by India’s Ministry of Finance (Promoting Infrastructure Development Through PPP’s - A compendium of State Initiatives 2009).

- Risk Identification – where all risks associated with the project are identified.
- Risk Assessment – risks are then categorised based on both their likelihood and consequence, should the risk be realised.
- Risk Allocation – assigns the risk to the party that is in the best position to manage it.
- Risk Mitigation – control measures are put in place to ensure that the likelihood of the risk is minimised.

Risks may be unique to the project or unique to the region where the project is located, and for this reason it would be unwise to generalise what the risks could be. Each project should be treated individually and there are many methods for risk assessment. These should all be considered to ensure risk coverage is maintained. For the private contractor, it is vital that risks associated with their capacity to realise revenue from the project are mitigated, and these may range from errors in design through to force majeure (Alfen et al. 2009).
2.4.7 It should be noted that risk for the private sector is typically different from that of the government sector, even though the outcome requirement is the same for both parties. The private sector is typically concerned with delays brought on by public bureaucracy and cost overruns, whereas the government is typically focused on delays to provision of the service and value for money considerations, based on the public sector comparison evaluations that have been previously conducted (Alfen et al. 2009).

2.4.8 Within many large scale projects, whether they are public, private or PPP, the main concern for the parent entity is risk and the management of that risk. True value for money opportunities such as innovation and efficient private sector management practices, which lead to reduced project management costs, stem from superior risk management (Lapsley 2001a). Within a PPP, complexity is increased as there is not always a clear line of ownership of risk, nor a balance of price premium for the private sector to carry public risk. The viability of these projects for the government is based on the acceptance of private sector risk management and the resultant value for money opportunities that are presented (Maguire & Malinovitch 2004). The risk exposure for private enterprise in a volatile economy may be seen as too high and for this reason some PPP projects have failed before they began (Ahadzi & Bowles 2004). Reporting on value for money for the taxpayer has become a mainstay in the contract negotiations in many PPP contracts, and the governments of most mature PPP markets have a framework for this. The framework may include but not be limited to:
• Project outputs
• Whole-of-life costing
• Identification of risks
• Allocating risks to the appropriate party to manage
• A public sector comparator (PSC)

The emphasis on this is governance; reporting to the public in a way that communicates value in the government’s decision. “The underlying rationale of PPPs as a tool of governance is that both the public and private sector have specific qualities, and if those qualities are combined, then the end result will be better for all.” (Vaillancourt Rosenau 1999). However, it needs to be noted that although project outputs are considered, the amount of forthcoming information which can be shared to attain public buy-in (which is an essential ingredient in PPP project success) is often criticised as there is a considerable amount of information released “commercial-in-confidence.” This and other high levels of intellectual property associated with PPP contracts prevent visibility in these projects, which is often one of the criteria for allowing the project to go ahead. Coupled with this is the fact that, because these projects have longevity, it is all but impossible to change reporting requirements once the project is let. Contractual terms dictate the reporting requirements and if new requirements are identified, e.g. environmental issues or trend analysis, these are difficult if not impossible to attain. Research has shown that community involvement and consultation in large scale infrastructure projects is critical (Flyvberg, Bruzelius & Rothengatter 2003; Innes & Booher 2004). However, in reality the transparency required is rarely achieved in PPP projects.
2.4.9 A Public Sector Comparator (PSC) compares the proposed PPP with the cost of the public sector undertaking the project. To ensure the analysis of the two alternatives is comparable, there must be a benchmark that includes proper accounting for quality of services, price, time frame, risk apportionment and certainty.

PSCs take into account the value for money from the government but they do not focus on the cost to the private sector. There has been significant research into the additional costs in both time and money borne in tendering these large projects (Lapsley 2001a; Andon 2009; Curnow et al. 2005; KPMG 2010). Another criticism is the cost of finance; it has been argued that the private sector cannot borrow capital to finance projects as cheaply as the public sector (Bing et al. 2005; Siemiatycki 2010). Furthermore, PSCs do not take into account the increase in internal and external consultants and the increase in legal representation required to interpret the ever growing legislation and regulation associated with PPP projects. They note that legal costs are excessively high and this may act as a deterrent to many bidders. In contrast, previous studies from worldwide PPP projects have found that the public partners pay high transactional costs associated with both the structuring and monitoring of partnership agreements (Garvin & Bosso 2008). This difference is due to what they describe as the “double whammy effect”, where bidders see not only reduced financial rewards but also an increase in the complexity of operational demands (Jefferies & McGeorge 2008).
2.4.10 Historically, large-scale traditionally procured projects have suffered from a range of inaccuracies in regards to budget and time considerations and payback periods, etc. It is argued that through private financiers these risks would be better managed (Siemiatycki 2010). A recent PSC has been undertaken by the National PPP Forum, an Australian government supported entity. The study was carried out by the University of Melbourne and significant findings supported the use of PPP projects. These findings included:

- Actual final costs were 31.5% better than traditionally procured contracts.
- PPPs had lower cost escalations than traditional projects, thereby providing greater cost certainty.
- Risk allocations are one of the significant delays to projects during construction phases, typically adding an average of 25.9% to the timeline (Duffield et al. 2008).

These and other conclusions emphasise the opportunities that PPP projects offer.

Demand for these projects is on the increase worldwide and yet the failure rate still remains high. Many of the failures seem to be attributed to excessive promises regarding delivery and on the availability rates of concession, taking into account such things as congestion of traffic, and customer buy-ins that are essential if these projects are to succeed. One possible reason for this is the lack of a clear and comprehensive regulatory framework governing the use of PPPs. This is being addressed in an ongoing fashion within Australia. Each state and territory has developed its own guidelines for the procurement of these projects and this has also been implemented at a national level. There is now a push to rationalise these regulations across the country. In other countries this need for
comprehensive regulation has also been recognised and many developed countries are implementing regulation in one form or another. Furthermore, in order to combat the potential inexperience of many governments in managing these complex projects, oversight committees have been formed to ensure compliance. For example, Victoria and New South Wales also require that all PPP contracts be reviewed by the state Auditor General. In order to increase accountability and public oversight, New South Wales even requires the publication of both the project proposals and the Auditor General's review (Gaffey 2010).

2.4.11 Lack of experience in both the public and private sectors has been seen as a significant cause of the unattractiveness of PPP projects. Even in mature markets the depth of experience is limited, as typically the consortiums associated with the private sector are special vehicles pulled together in order to bring the project to market. The experience gained through the project is either maintained in the through life support phase or disseminated through natural causes of project completion, and when the next PPP is undertaken the opportunity to reclaim these experience resources is slim. Further to this is the inexperience of the private sector in managing the life cycle of some of these contracts. A construction company may have had little exposure to financing, maintaining and operating infrastructure, and in some cases is ill prepared for the learning curve they need to experience once the expertise of the construction phase is realised. From a government perspective it may even be more difficult, as
governments can have as little as a four year life span and the project construction phase may not be completed before the government is changed (Bing et al. 2005). Within government departments, bureaucratic inefficiencies may also hinder the transfer of technology and experience as those working in the Department of Roads would not easily be recognised by the Department of Railways if both teams were operating under a large scale PPP project. This may well mean that both projects struggle along, making no use of the experience available in both teams.
2.4.12 In recent times the global financial crisis has also taken its toll on the PPP project, with one report stating:

Fewer infrastructure projects with private participation are reaching financial closure in developing countries. The investment represented by projects reaching closure in July 2008-March 2009 was down by 15 per cent compared with the same period a year earlier. More significantly, projects that had been delayed or were at risk of being delayed over the same period accounted for investment amounting to US$ 54.5 billion. (Editorial 2009).

However, it also recognises that strong fiscal policy learned from previous crises places the PPP project under less threat today that a decade ago.

2.4.13 The news is not all bad though for PPPs. As stated previously, they are still on the increase and are rapidly becoming the preferred choice for large infrastructure projects. The then Prime Minister of Great Britain, Tony Blair, previously stated, “The days of the all-purpose authority that plans and delivers everything are gone” (Trafford & Proctor 2006). Perhaps surprisingly, America is a laggard in the area of PPP projects, but is increasing its use of PPPs in both size and volume. Although still typically limited to federally funded projects, the recognition for state and council legislation to cater for PPPs is growing. There are many services now available to companies and governments in the USA, and the success or failure of PPPs depends on the public and private entities knowledge and use of these services (Schuster & Lundstrom 2002).
2.4.14 In essence, the PPP project is designed to be a success for both parties. An upfront, open relationship should mean very few surprises and the benefit to both parties is clearer, as in many cases the return on investment is calculated to consider the longevity of the project (in most cases greater than ten years). This allows the private enterprise to count on a long term cash flow. A focus on cash flow creates problems when governments choose the lowest bidder and when private enterprises go in cheap for construction and expect to make their money back through life support. Greater emphasis must be placed on best value rather than best price. The term ‘best value’ can be described as:

A procurement process where price and other key factors are considered in the evaluation and selection process to minimise impacts and enhance the long term performance and value of construction. (Agrawal, Gupta & Gupta 2009)

What effect will this have on the overall price of the bid? Realistically, it may mean that the bid price is inflated, but this is better management of the risk profile. By taking into account tangible, intangible, intrinsic and extrinsic factors, a more informed decision is made and allows for trade-offs between the price and no price factors of each party to better cater for their constraints. This therefore encourages the selection of a higher priced proposal and the justification of the benefits of the additional cost.
2.5 *Situation in Other Markets*

2.5.1 PPP projects have played a significant role in infrastructure development in developing countries; there is evidence for this from World Bank data, as shown in 2.5.1 below.

*Figure 2.5.1: Total investment in PPPs in developing countries.*

Total investment commitments to infrastructure projects with private participation in developing countries, by

![Diagram showing total investment in PPPs from 1990-2000 and 2001-2008 with breakdown by region.]

**1990–2000**
- Middle East and North Africa: 3%
- Latin America and the Caribbean: 51%
- South Asia: 5%
- Sub-Saharan Africa: 3%
- Europe and Central Asia: 10%
- East Asia and the Pacific: 28%

**2001–08**
- South Asia: 17%
- Middle East and North Africa: 6%
- Latin America and the Caribbean: 28%
- Sub-Saharan Africa: 9%
- East Asia and the Pacific: 17%
- Europe and Central Asia: 23%

**Total: US$797.3 billion (2008)**

Source: World Bank and PPIAF, PPI Project Database.

**Total: US$843.3 billion (2008)**

Source: (Private Participation in Infrastructure Database 2008)
The graphs reflect a steady growth in the number and geographic dispersion of PPP projects and that these projects are at various levels of maturity with regards to the type of PPP offered. Types of PPP include:

- Operation and Maintenance (O&M) – this type of PPP is popular where governments hand over existing infrastructure to private consortiums to run on their behalf, and the asset remains under the ownership of the government. This PPP is common in countries such as China and Russia, where policies dictate that The State provide all the essential services. By relinquishing the need to provide operational employees, the government has freed up significant cash flow in order to grow much needed areas of infrastructure.

- Build Operate Transfer (BOT) – Perhaps one of the oldest styles of PPP, BOT is mainly used for infrastructure rather than services. The infrastructure is built and operated under a contract term and at the end of that term the infrastructure is handed back to the government.

- Build Own Operate (BOO) – A variant of BOT which was common in the early stages of Australia’s PPP growth.

- Build Own Operate Transfer (BOOT) – Similar to BOT but typically has a longer contract period.

- Design Build Finance Operate (DBFO) – A more mature version of the PPP where government retains all titles to land etc., but leases the right to it to the private consortium under a concessionary agreement (Levy 1996).

2.5.2 These projects are becoming more common worldwide, due to the need for industrialisation in developing countries and the burgeoning infrastructure demands of countries like China and India. Governments with limited budgetary resources are turning to private enterprise for capital intensive projects in order to meet the demand-supply gap that currently exists.
2.5.3 Within each of these types there is an agreement that risk sharing is required for successful project completion. The more mature the country, the more the risk is borne by the private entity. This is tempered by the expectation that return on investment will be higher for the private entity (Jacobzone 2008, p. 66.). As the government works with PPP projects, partnerships grow stronger and greater focus from both parties centres on through life benefits, sometimes adopting an ‘open book’ approach to the project and capitalising on innovation and lean controls that private sectors maximise, thus allowing true benefit to both parties.

2.5.4 Many of the ‘not yet mature’ markets are still developing their measurements for PPP based contract decisions. For example, in many Asian countries there is no PSC. Decisions are based loosely on the belief that the private sector by definition will be more efficient than the public sector (Alfen et al. 2009).

2.5.5 An additional consideration in ‘not yet mature’ markets is the potential for corruption within the public sector. Klitgaard (1998) states:

\[
\text{Corruption} = \text{Monopoly} + \text{Discretion} - \text{Accountability}
\]

Corruption can be represented into a formula where Corrupt = Monopoly + Discretion – Accountability, therefore it requires a transparent administration and honest officials in order to minimise if not prevent corruption in these kinds of projects.

Of paramount importance in emerging PPP markets is the need for complete, accurate and non-misleading information regarding the use of tax payer money, as this quickly leads to greater trust in the system. Due to the fact that PPP
projects have life spans that go into the decades, mistrust through non-disclosure can be catastrophic for the concessionaire and also for the government, particularly when the people voice their opinion with their votes (Bloomfield 2006).

2.5.6 As globalisation becomes a greater focus throughout the modernised world, governments must turn their attention to core business. The management of commercial entities can be seen as a distraction and may bring overall government performance into question. Furthermore, the government’s ability to compete with the private sector is difficult to justify when compared with the world market, as agency costs within the government sector are typically higher (Officer 2004).

These issues are compounded by the fact that benchmarking and accountability are employed differently in the public sector than they are in the private arena. Nevertheless, there are still similarities throughout most PPP decision making processes, and these go beyond country specific needs and take into account legal, institutional, political, administrative and economic frameworks.

A ‘toolbox’ containing these is shown in Figure 2.5.6 below:
In immature markets the initial decisions can at times lead to PPP projects which are less than successful. Examples of this were realised in the first German F-Model projects. Legislation within the German system was insufficient and inappropriate to meet the demands of these projects. In 2005 the PPP Acceleration Act was introduced to assist in the changes required to help realise project success (Alfen et al. 2009). This view is captured by Wettenhall who notes, “there is often little precision in how “partnership” is used, and belief that what it refers to as “a good thing” seems much more a matter of faith than of science” (Wettenhall 2003 p80).
This highlights the necessity of ensuring that systems and procedures are in place which maximise the possibility of success. As with any good project management philosophy, building blocks are essential for a stable base.

2.5.8 The growth of PPP projects throughout the world follows the philosophy that value for money exists within the expertise of the private sector and that by risk transference the government can better utilise its scarce resources. However, a key requirement to the achievement of this philosophy is that the risk is managed within both mature and immature markets. This is still not at a level to predict a successful outcome.

Risk is typically managed through the contract and one measure of the success of this would be a re-contracting process or market reassessment process (Broadbent, Gill & Laughlin 2008). This process would assist in reassessing value for money within the project by identifying changes in the parameters of the contract, such as variations in transactional costs.

2.5.9 However, it must be noted that transactional costs are but one portion of the value for money drivers which exist within a contract. There are proponents that have identified weaknesses in using transactional costs as a measurement (Tomkins 2001; Mouritsen & Thrane 2006). They contend that the hybrid model which exists in a PPP, where simple metrics are applied in transactional cost measurement, is too complicated to be of true value.
This assumption is also backed by Cooper and Slagmulder (2004). Broadbent et al (2004) also challenge this theory, postulating that there is a need for the development of ‘relational contracting’ which focuses on goodwill and trust. That said, in practice this is rarely seen, true partnership is difficult to achieve or measure and the master-servant relationship of contract management remains.

2.5.10 The ability to eliminate or allocate the residual risk is a major limitation within the contracting environment. Because of this, the control of this uncertainty within the relationship is paramount (Froud 2003). This may fly in the face of the PPP model, which is in essence touted to be a relationship based on trust and open negotiation for the greater good. Within the contract there is always the possibility that opportunistic behaviour could be realised by one or both of the partners.

Relational contracting assists in setting the boundaries for this type of behaviour. Within the maturing market, there is still a greater focus on cost driven outcomes rather than overall service delivery or value for money, and this may have a direct influence on the limited success of relational contracting.

2.5.11 Adopting mature PPP legislation and policy requires change from the public sector. Typically change does not flow freely in government, and the time lag between recognition of need and action may significantly impact the adoption of PPP projects. Within this legislation, government must recognise that although their cost of capital is typically lower than the private sector, the public buy-in of
increased taxation is less than favourable; this recognition, which is seemingly obvious, will take longer in some countries where government ownership is very high, such as the BRIC countries (Brazil, Russia, India, China). In these countries, the value of recognising opportunity cost is still in its infancy as the government comes to the realisation of the burgeoning needs of aging populations and social infrastructure.

2.6 *Studies of Success Patterns*

2.6.1 There is no ‘World’s Best Practice’ for PPP projects, and research to-date focuses predominately on the interaction between the public and private portion of the relationship. However, very few ground rules are offered to ensure the maximisation of the partnership.

2.6.2 As with any project, the ‘on time, on budget’ model remains the standard and any project that meets these requirements is deemed successful. However, as there are typically more stakeholders in PPPs than in traditional projects, a third consideration called ‘stakeholder management’ can be critical for success. There are a number of projects that have met the time and budget requirements but are still considered failed projects because they did not engage adequately with the required stakeholders. The Cross City Tunnel would be a good example of this. A significant emphasis must be placed upon managing these stakeholders (Bain 2009).
2.6.3 The government typically concerns itself with the ‘how’ of the contract. This can be limiting to the private sector by placing onerous restrictions and constraints on the consortium, in essence preventing some of the creativity the private sector needs in order to maximise return. Whilst the government should maintain regulatory control and be prepared to step in should the private sector default, it must not stifle the private sector’s ability to add value (Prieto 2009).

2.6.4 Transparency has been mentioned previously as a key success factor in PPP projects. The ability for the private sector to communicate with stakeholders is fundamental for success, as very few projects go according to plan, and change typically brings fear and anger from those who do not understand. Open communication allays fears (Public-Private Partnerships Version 1.0 Reference Guide 2012). This may be questionable in the face of what is considered normal for corporate business, as the protection of intellectual property still must be taken into consideration. However, open communication with stakeholders has the ability to assist in alleviating the poor press that can follow PPP projects throughout the construction and handover phases.

2.6.5 Emphasis should be placed on ‘whole of life’ contracting, not just on initial contract price. The price quoted rarely reflects the cost of carrying out the project, both from a government and private perspective. Changes to legislation, engineering and client mindset all add to the cost of the project overall. The value for money option focuses on a strong consortium that is in a position to
meet the needs of the project from construction to through life support, and seeking the right partnership puts the government in a strong position to realise the value option in the long term (Jefferies & McGeorge 2009; Li et al. 2005).

2.6.6 The stability of the political and social environment is another key indicator for project success. There have been instances where governments have over-compensated the private sector due to instability in the macro environment (Phibbs 2008). This has led to both failed and cancelled PPP projects and is difficult to foresee in many cases (Editorial 2009).

2.6.7 A stable project has strong financial backers and a consortium that is in a position to carry the burden of the construction period through to handover, which by definition of cash flows is the most volatile period of the contract. For this reason, the government should assist these types of projects with taxation laws that do not add undue constrictions to the project. The cost of finance should also be considered by the government, which typically can access cash flows at a lower cost than that of the private sector. These benefits should be made available to the private sector to ensure the maximum return on investment to the consortium, thereby making PPP projects more attractive (Jefferies & McGeorge 2009; Li et al. 2005).
2.6.8 In order for PPP projects to be successful, the framework surrounding the project must be robust and mature enough to support the outcomes of the project. The framework required is multi-faceted but should include as a minimum:

- A legal framework: Legislation that meets the requirements of the PPP project is essential for project success. Many countries are still in a position of evolving legislation and this is being driven by the need to further embrace the PPP as a method of project delivery. The long term requirement of these contracts is a key driver in the process towards changing legislation. The transfer of risks is also associated with the need to change, as many countries have taxation laws and ownership laws that do not meet the requirements of the current contract environment and therefore need to be reviewed. As these projects are inherently complex, the structure of the legal framework must be such that there is an attractiveness for private enterprise to involve themselves in PPP contracts (Alfen et al. 2009).

- Regulatory framework: Most government infrastructure is highly regulated and this has come about in order to protect people from unjust pricing, thus ensuring that essential services are within everyone’s grasp. Pricing and service levels from the private sector may impact on these regulations and should be balanced to ensure that the private sector has an adequate return on investment. The company then is in a position to service the contract for its life. This must be tempered with the fact that the government may create monopolies or oligopolies through the PPP scheme (Alfen et al. 2009).
• Administrative framework: Most if not all governments need to re-evaluate the way they provide services if they are to adopt a PPP model. Governments will move away from using a contract manager and instead adopt a contract administrator. Bureaucracy within the government will struggle to achieve this quickly, and it is expected that the learning curve on these types of projects will be steep. Procurement practices are required that reflect the type of contract which is synonymous with PPPs. These would typically include both infrastructure and service type contracts, and should also consider the duration of the concession (Alfen et al. 2009).

• A contractual framework: PPP contracts are complex entities containing many players, some of whom will be integral for the life of the contract. For example, the concessionaire and the government entity are lifelong participants, whilst other players such as legal advisors are of value in the creation of the contract only, and the construction contractor (if not the concessionaire) and suppliers are involved only in the construction phases. The interactions of these entities can involve several contractual relationships. These contracts must reflect the risk associated with long term concessions which have been enabled by the private sector raising capital. This risk of long term private sector debt in order to provide the infrastructure or service is countered by government risk to repay the debt under a user pays, or payment for service, consideration. There are many considerations for these contracts that are usually both debt and equity based, and whilst there is an agreement for payment, there is also typically a penalty
associated with poor service both during the construction period and throughout the concessionary period (Alfen et al. 2009). An example of the high level contractual relationships is depicted in Figure 2.6.

**Figure 2.6: Contractual Relationships**

[Diagram showing contractual relationships]

Source: (Abednego & Ogunlana 2006a).

2.6.9 Success factors focus on the effective utilisation of the advantages that PPPs offer and these advantages have been summarised by Askar and Gab-Allah (2002):
- The use of private-sector financing to provide new sources of capital, thus reducing public borrowing and improving the host government’s credit rating.
- The ability to accelerate the development of projects that would otherwise have to wait for scarce sovereign resources.
- The use of private-sector capital, initiative and know-how to reduce project construction costs and schedules and to improve operating efficiency.
- The allocation of project risk and burden to the private sector that would otherwise have to be undertaken by the public sector.
- The involvement of private sponsors and experienced commercial lenders, providing an in-depth review and additional assurance of project feasibility.
- Technology transfer and training of local personnel and development of national capital markets - examples of other substantial benefits of BOT projects!
- In contrast to full privatization, the government’s retention of strategic control over the project. This is transferred back at the end of the contractual period.
- The opportunity to establish a private benchmark to measure the efficiency of similar public-sector projects and thereby offer opportunities for the enhancement of public management of infrastructure facilities.

2.6.10 It has been noted that there is now significant depth of experience in Australia due to the high number of previously successful or uneventful PPP contracts. This experience could be used to minimise risk by allowing a project team to access skilled teams within the PPP market to help ensure project success. This could be achieved by recruiting and further developing high calibre government project teams or at least retaining senior people like project directors (KPMG 2010).
2.6.11 A strong PPP pipeline of projects has been seen globally and is a key success factor in reducing barriers to competition. It enhances support from financial institutions and solidifies the model being used by government to go to market (KPMG 2010). However, caution should be used to ensure that the selection criterion for determining the most appropriate procurement model is implemented.

2.6.12 It has been identified by Abednego and Ogunlana (2006a) that good project governance is a key to project success. They have identified key components for project stakeholders to focus upon which will guarantee governance assurance. This information is presented in Table.
### Table 2.6: Governance Key Components.

<table>
<thead>
<tr>
<th>Category</th>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fairness</strong></td>
<td>Project design &amp; planning document</td>
<td>Identification of expert(s) responsible for project design and planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project design and planning development process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Administration process for design/planning/schedule</td>
</tr>
<tr>
<td></td>
<td>Contract document</td>
<td>Contract document development process</td>
</tr>
<tr>
<td></td>
<td>Government regulations / laws / policy</td>
<td>Existing government regulations related to private sector participation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Existing legal system and laws related to private sector participation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Existing policies related that influence construction projects with private sector participation</td>
</tr>
<tr>
<td></td>
<td>Project procurement</td>
<td>Private sector selection process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proposal evaluation method</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evaluation/assessment criteria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project procurement strategy/method</td>
</tr>
</tbody>
</table>

| **Transparency**          | Information Management      | Information management system                                                                     |
|                           |                             | Information classification                                                                        |
|                           |                             | Means of communication                                                                            |
|                           | Financial Management        | Financial status                                                                                  |
|                           |                             | Project financing/investment strategy                                                             |
|                           |                             | Incentive/compensation program                                                                    |
|                           |                             | Payment mechanism/procedures                                                                      |

| **Accountability**        | User & community participation | Public participation process                                                                       |
|                           |                             | Project demand analysis                                                                           |
|                           |                             | Economic and social impact analysis                                                               |
|                           | Quality assurance            | Construction supervision                                                                           |
|                           |                             | Sub-contractor selection process                                                                  |
|                           |                             | Value engineering application                                                                     |
|                           | Management capability        | Project management training system                                                                |
|                           |                             | Company’s experience level                                                                        |

| **Sustainability**        | Stakeholder management      | Infrastructure development plan                                                                   |
|                           |                             | Stakeholder management approach                                                                   |
|                           |                             | Coordination procedure and implementation                                                          |
|                           | Operational and maintenance management | Conflict resolution approach                                                                      |
|                           | Organization structure      | Infrastructure operation strategy                                                                 |
|                           |                             | Infrastructure maintenance program                                                                |
|                           | Effectiveness and Efficiency| Organization’s decision-making approach                                                            |
|                           | Project monitoring and control system | Organization’s hierarchy system                                                                   |
|                           | Project administration      | Progress report system                                                                            |
|                           |                             | Project review process                                                                             |
|                           |                             | Documentation process                                                                              |

Source: (Abednego & Ogunlana 2006a, p13)

2.6.13 Research conducted by Bing et al (2005), identified eighteen Critical Success Factors (CSF) and analysed questionnaire responses to explore the
significance of these factors. Using factor analysis, five elemental areas were identified within UK construction projects. These included effective procurement, project implement-ability, government guarantee, favourable economic conditions and available financial market. The research determined that these critical success factors represented about 70% of the overall variance between factors. From this analysis, it was determined that these factors were critical to both the public sector in regards to policy development and the private sector in regards to project management.

2.6.14 Cunha, Marks and Berg (2011) have stated the principles critical to successful project implementation. A summary of the outcomes of these principles are presented here.

- Design tender documents with great care: As with all contractual documents, poorly worded requirements or misinterpretation is an opportunity to invite failure into the system.

- Establish accountability to an external regulator: External regulators are the reality checkers of the PPP, to ensure that design is understood and that the municipality can make informed decisions regarding project implementation.

- Prepare baseline studies: Within Australia we use the Public Sector Comparator and whilst this may be seen as an acceptable tool, this type of analysis is not commonly used internationally.
- Prioritise selection criteria: Using the correct weighting to ensure that the critical success factors of both the project and the PPP are well understood will assist with the opportunity for success.

- Facilitate competitive bidding: Assist in the reduction of the high cost of bidding to ensure that maximum competition is available to the bidding of the contract.

- Allocate risks in an explicit manner: The correct allocation of risk is a vital ingredient for success and in essence is one of the main drivers behind the PPP model. Independently scrutinised risk matrices will assist in the correct allocation.

- Simplify monitoring and sanction procedures: The reduction of red tape which is generally associated with the PPP model will again assist in the opportunity for success of the project. Again this should be balanced against risk and reward and should be independently audited.

- Ensure transparency: It is well established that transparency within the project assists in project success. This enables a higher level of public buy-in and ensures that all stakeholders have a more complete understanding of the project and its processes.
2.7 **Typical Failure Mechanisms**

2.7.1 Because of a number of high profile project failures, there is a growing reluctance from industry to become involved in these projects, due to higher bidding costs, unequitable risk distribution and reduced return on investment. At the same time, there is a growing push from government to make more of the projects available to private enterprise, either because governments have become more risk adverse or may not wish to fund large scale projects through taxes. Furthermore, because governments are already heavily indebted they would prefer the PPP project. However, it has been noted through research in this area that private funding of large scale projects does not contribute to a reduction in public debt (Hodge & Greve 2007). This view is tempered with success stories of governments better utilising freed funds for social services. Further research into this area is required to fully understand the value added to governments through the use of PPP projects.

2.7.2 Public opinion is a key driver in project success and emphasis on image should always be a consideration in PPP projects. It is important that the general public stakeholders be heard. Knowing that their voice counts and that their views are considered will add value once the significant changes brought about by the project have come into effect. However, the general public must understand that all possible objections to a project cannot be removed while at the same time feeling that they can influence the course of a project. This is achieved by open communication such as making them
aware of the project plans at the onset of the process and engaging in ongoing consultation with them throughout the project. These factors will increase the likelihood of support and generally more public buy-in for the project.

2.7.3 Berg, Pollitt and Tsuji (2002) listed several aspects of PPP projects which they believe are disadvantageous and these include:

- The lengthy bidding process – the initial phase through to the signing of contracts may take several years. The processes involved are complex and procedural with much iteration needed before the successful bidder is underway.

- High bidding costs – by definition the lengthy and complex nature of the bid naturally implies increased transactional costs. These costs are then reflected in the costs of the contracts signed.

- Small number of bidders – because of the complexity and nature of the style of business, there may be only 2 or 3 potential bidders in the final stages. Support services for these bids are also small in number. Furthermore legal, commercial and technical support may be limited.

- Cost overruns – cost risk in the final stages of the bidding process typically remains with the government and this may leave considerable scope for cost inflation. The initial evaluation of the project may be based on cost projections that can be exceeded throughout the bidding process. Again, the
time taken from project identification to contract signing can significantly affect this.

- Excessive risks – because the risk allocations are rarely clear in large scale PPP projects, it is sometimes unclear as to what extent the government can shift the risk. The government may end up paying for the risk of the private investor due to the fact that its own policies can affect the returns of the investor.

2.7.4 Risk allocation comes from many sources such as economic, political, technical, social, and environmental. Poor management of these risks adds to the complexity of the project and in turn raises opportunity for failure (Koppenjan 2005; Chan et al. 2010; Li et al. 2005). Inequitable allocation of risks essentially puts the management of that risk beyond the capacity of the party concerned.

2.7.5 Because of the limited number of bidders in the mix, the government must ensure that the successful bidder has the capacity to meet the requirements of the project, both in the construction stage and in the through life support stage. Although PPP projects have been common practice for a seemingly long time, they have continued to evolve and this does not necessarily mean that there are a number of experts in these styles of projects worldwide. There are still a large number of first generation players in the market who are managing projects which have a life span of decades and as such are still
in their infancy. As PPP projects typically have substantial lives (20 – 30 years), there are very few consortiums that have that depth of experience. With changing government and economic pressures over the past decade or so, it would be fair to say that there are no companies that have weathered all the storms of their project as yet. In order to participate competitively, a company must develop a team with both core competencies and specialist knowledge, and the establishment costs to do this can be seen as a barrier to competition (KPMG 2010).

2.7.6 The financial competency of the consortium must also be considered to ensure that the private sector has the ability to manage the project throughout its life. Challenges such as the global financial crisis (Editorial 2009) significantly affect the investment planned during that time. Companies that were not financially strong enough suffered significantly with projects in play. Whilst this was unforeseen and difficult to plan for, it highlighted significant weakness in risk management in some very large companies, and put many government social infrastructure plans at risk. There has been concern from the private sector that government favours those consortia with traditional investment bank financial support. Because of the limited number of large financial institutions in Australia, that is, we are limited to ‘the Big 4’, those bidders that are attempting to provide a solution but don’t have the underwriting support from a large bank may not be shortlisted (KPMG 2010).
2.7.7 The high bidding costs associated with these projects also add to the opportunity for failure. These costs are imposed both by the government and the financial backers to ensure that competencies are realised. However, these costs must then be recouped by the project prior to any financial gain being realised (Chan et al. 2010; Li et al. 2005; Jefferies & McGeorge 2008; Curnow et al. 2005). Increased bidding costs can be associated with poor quality documentation and processes in respect to the possible lack of clarity in the requirements. Support services associated with these negotiations, such as legal support, further drive up these costs.

2.7.8 Social objection to the project is also another risk that needs to be managed. It has been identified that without buy-in from the public sector, otherwise known as the general public, projects are doomed to fail (Flyvberg et al. 2003; Innes & Booher 2004). The public sector, who will be the end users of the new infrastructure, will be the providers of the capital required to sustain the project into the future, and for this reason the public needs to understand the benefits of the projects so that they drive up the usage. Typically, projects will require some form of land allocation, create changes in town planning or perhaps impact on some heritage listed infrastructure. All these aspects can be quite emotional and need to be managed as such; consultative committees and support groups must be established to ensure the benefits of the project are communicated in such a way as to ensure that general emotions are satisfied.
2.7.9 Of the project affects aspects of employment, then the industrial relations associated with the change must also be managed well. Most countries have unionism in one form or another, and when government and private sectors work closely it is inevitable that unions will attempt to flex their muscles. This may come from driving the local content of the project or from training and apprentice intakes (Con Walker & Dr Walker 2005). Ironically, it could be suggested that the decline of manufacturing in some countries is linked to the drive from the unions for better conditions for their workers.

2.7.10 Tariffs are another consideration for the project. The public are always less than complimentary when tariffs are raised to cover the costs associated with changes during the life of the construction phase. Private companies must provide return on investment in order to stay viable for the through life support phase, and whilst this puts pressure on the private sector to be more innovative and drive cost savings through the project, evidence suggests that tariffs do rise through the initial stages of the contract and continue to change because of changes in the macroeconomic environment (Li et al. 2005; Zhang & Jia 2010; Cross City Tunnel a rip-off, says NRMA 2005; Now there’s proof: drivers dodge tunnel 2005).

2.7.11 The ever-evolving legal framework that governs the PPP project is another risk that is difficult to manage, mainly due to the fact that even in mature markets there is differing legislation between state and federal governments.
Disputes will be inevitable, as without a clear and concise framework there is always the opportunity for misinterpretation of events (Grimsey & Lewis 2007).

2.7.12 The government itself also provides a risk that may be difficult to manage. That is, political stability, interest rates and current debt may make private investment an unattractive opportunity. As with all financial backers, the ability of the government to show strength is often a key driver for project investment.

2.7.13 From the private sector’s perspective, the government’s commitment to both the PPP model and the project, as well as the level of expertise available to the government team managing the procurement process, are key drivers required for private sector buy-in. Research suggests that the PPP model should be the default model for major infrastructure projects unless there are specific factors which favour an alternate procurement method (KPMG 2010).

2.7.14 Governance structures which do not allow for timely decision making, streamlining of process, and an empowered project management team will endanger the success of the project, especially where whole of government decisions are required (KPMG 2010).
2.7.15 Other inefficiencies include: insufficiently developed project briefs; significant changes in scope; the submission of bids with material, technical or commercial issues that require resolution despite the interactive tender process; and a desire to resolve outstanding issues while maintaining competitive tension. In this instance Australia lags behind Canada, whose model is very similar to our own. On average, Canadian PPPs close four months faster than Australian PPPs, have little or no scope creep and rarely use further bid stages. Inconsistency in tender documentation from project to project impacts on both the efficiency in the bidding process and the ability of bidders to realise efficiencies in the non-project specific elements of bidding (KPMG 2010).

2.7.16 A report from UNISON ‘Public risk for private gain?’ (Unison PFI 2011) illustrated that the risk transfer of PFI (Private Finance Initiative) and PPP schemes is often illusory. They note that on too many occasions failed PFI and PPP contracts have been rescued by the public sector bailing out a failing private sector contractor. Whatever the terms of the contract may say, with essential public services it is the government (or other public body) which remains the guarantor. There is evidence of this rescue package in many PPPs, both in Europe and Australia. This means that the public sector is potentially caught out paying the price twice, once for the profits that the private sector has contracted for and once for bailing-out the failed contractors.
2.7.17 Other risks have been identified by Savas (2000). Firstly, that the public partner fails to properly specify the full dimensions of a service to be purchased from contractors, which inevitably leads to misunderstandings and disputes. Secondly, they fail to monitor the performance of a private provider, thereby abdicating their responsibility and leaving an opening for an unscrupulous provider to cut corners and lower service quality. Thirdly, they fail to penalise poor performance, perhaps because of a failure to monitor properly or because of a cosy relationship between the monitor and the provider (Savas 2000).

2.8 Government Perspective

2.8.1 The obvious benefit for the public entity is the access to infrastructure without the need to raise the required revenue through taxes or other available but already allocated public money. This infrastructure, which essentially remains an off balance sheet asset for the duration of the concession, allows the public entity to concentrate more on social issues which require regular cash flow, such as social security. This view has been questioned as an intentional ploy to make the PPP transaction invisible in the public financial reporting process (English & Walker 2004; Hodges & Mellett 1999), therefore hiding true and life cycle costs (Lapsley 1999). This raises questions around the primary reasoning for the PPP project and whether the primary focus is upon the infrastructure or on the management of the financial risk by allowing the government to acquire
infrastructure through borrowings that are not recorded in balance sheets as national debt (English & Walker 2004; Walker 2003; Lambert & Lapsley 2006).

2.8.2 The Government sees PPP projects as opportunities for efficiency gains and these can include:

- Removal of the responsibility of investment funding from the government’s balance sheet
- Introduction of competition
- Adoption of private sector managerial practices and experience
- Restructure of the public sector service by embracing private sector capital and practices
- Achievement of greater efficiency than traditional methods of providing public services (Alfen et al. 2009 p.11)

2.8.3 This last point is a key driver, as stated in Alfen et al. (p.11), “In the UK, the treasury estimates that the use of PPPs has produced average savings of 17% to 25% over all sectors during the past 10 years”. Based on the value of projects during that time, this is no mean feat.

2.8.4 Grimsey and Lewis (2007) argue that the value for money opportunities for the public partner are realised in three key areas. Firstly, the division of agency issues “due to the divergence between ownership and control of assets ... are easier to manage in the private sector through managerial incentive and market
disciplines”. Secondly, transferring risk, including the maintenance risk, to the consortium provides opportunity for the maximisation of efficiencies throughout the life of the project as an incentive for return on investment. Finally, efficient allocation of resources occurs, which is where the public entity may retain the rights and risks to the property and where clear and unambiguous contractual rights cannot be established in the transference to the private entity.

2.8.5 Political risk can never truly be offset. Initial contract documentation may contain risk allocation tables to ensure that knowledge ownership of nominated risk is communicated (English & Guthrie 2003). However, due to the fact that it is the government that is ultimately responsible for the delivery of the service, the private entity may find opportunities for profit if the risk transference is not calculated correctly in the value for money considerations of the project, simply because the government will still have to provide the service. This political risk is managed and measured through the use of a Public Sector Comparator (PSC). The PSC is used to determine the Net Present Value (NPV) of the project should it have to be managed from the public perspective. It is calculated using only quantifiable financial costs and benefits (Grimsey & Lewis 2007).

2.8.6 PSC calculations have been criticised for not providing considerations of non-financial qualitative factors (Broadbent et al. 2008). These considerations, such as both positive and negative changes to the macro economic outlook, may have a significant impact on the value for money calculations originally forecast; that
is, future uncertainty is not considered. It is reasonable to assume that, due to the length of most PPP concessions, these factors will change.

2.8.7 The Australian Council for Infrastructure Development maintains a database for current, upcoming and ongoing PPP projects. The information available here shows that there are 55 current projects, 10 projects in the final stages of contract negotiation and 24 upcoming projects (*Australia’s Public Private Partnership Pipeline* 2010). This database, however, does not appear to keep records of failed PPP projects.

2.8.8 One of the most significant benefits from the perspectives of the different levels of government is cost certainty. This is more easily achieved in PPP projects and also forms the basis for the contract. Private enterprise bears the risk of cost escalations in many cases, and therefore there is pressure on the private enterprise to perform at a premium to ensure that profitability within the construction period does not adversely affect profit maximisation during the concessionary period. Due to economic pressures, there is cause for lean processes and innovation within the private sector, as bid prices are scrutinised more effectively from the PSC process. The focus on new products and methodology is a natural benefit to the government, who may not be as innovative as the private sector since the drive for competitiveness does not impact in the same way (Li et al. 2005; Serving the Community *By Using the Private Sector An introductory guide to Public Private Partnerships (PPPs)* 2003).
2.8.9 Projects are also generally completed on time if not ahead of schedule. As there is the opportunity for the consortium to commence revenue collection upon completion, the ‘on-time, on-budget’ model is well suited to PPPs. The ability to start paying back the investor and achieve profit maximisation is a strong driver (Grimsey & Lewis 2007; Li et al. 2005). Typically, within a PPP there are milestone achievements based on schedule as well as liquidated damage penalties associated with lateness.

2.8.10 In any business it can be said that ‘cash is king’ and this is no different for the government. Freeing up large lump sum payments for regular periodic service payments allows governments to concentrate on key areas of concern such as education, healthcare and community services. This allows for certainty in cash flow and helps with stability in the economic management of the country or State.

2.8.11 Whilst the benefits of balance sheet clarity are evident, this is tempered by the locking-in of long term risk and uncertainty. Donahue noted; “Even when the private sector enjoys an overwhelming technical edge, in short harnessing private energies to public purposes can be a difficult exercise in contractual architecture” (1991 p.218). Due to changes in the macro and micro economic conditions over time, it is highly unlikely that all the necessary contingencies will be catered for.
2.8.12 The key to success from the government’s perspective is transparency for the people, as voter pressure to understand how the government is managing its funds is expected and therefore PPP projects are normally available for the general public to peruse. However, because of the complex nature of the documents both from a technical and legal perspective, laypersons who are untrained in these areas do not gain the understanding required to ensure that transparency exists. It is the government’s responsibility to guarantee that consultative groups are established to communicate with the general public and remove any complexities in order to increase the level of transparency. The media is typically used to fulfil this role as it is the media's responsibility to provide an effective and reliable channel between government and the people. That said, due to the nature of these contracts, government and private sector willingness to report the budgetary consequences and the risk mitigation strategies is low, and this in itself represents a barrier to transparency (Bloomfield 2006).

2.8.13 It would be reasonable to assume that there are many government agencies which are still in the infancy stage of understanding the PPP contracts, and for this reason government emphasis must be placed on the employment of experts in this area from either a contractual, engineering or liaison perspective. Specialists are required who will protect the public entity and assist the government in making informed unbiased decisions, in the same way as specialists are utilised in the private sector. As Kettle states, “Government's
relationships with the private sector are not self-administering; they require, rather, aggressive management by a strong, competent government” (1993 p.6).

2.8.14 This should be the case throughout the entire government system, inclusive of Federal, State and local governments, and requires legislation that is uniform and applicable to all. However, at this stage it is rare that this occurs; even in the mature Australian market there is no uniform legislation that drives the one approach. The Federal legislation that currently exists overarches State and Territorial legislation and adds another level of complexity to the contract management process. In essence there may be legislation that directs the incumbent to override another piece of legislation written at a different level. Typically, this is countered by the employment of a larger legal and contracts team to interpret these areas. This makes it more difficult to improve the transparency of these contracts and creates unforeseen risks to the fiscal stability of the community.

2.9  **Private Perspective**

2.9.1 Private companies have come under fire because of cost over runs. However, whilst research and PSC evaluation has shown that PPPs are competitive (Duffield et al. 2008), significant evidence demonstrates that there are costs not clearly shown in the comparisons, such as the cost of risk transfer and the increased cost of legal representation. There are a number of direct and indirect
costs, including the social cost of obligations prior to project start-up, that are also not captured well, and inevitably these add bottom line costs to the project (Garvin & Bosso 2008; Bing et al. 2005; Siemiatycki 2010; Jefferies & McGeorge 2008).

2.9.2 Private companies are drawn to the risk/reward relationships of these projects, whilst the government typically employs a PSC style decision making process. The private sector also has a number of tools that can be utilised to determine the financial viability of a project and these have been summarised by Walker & Smith (1995):

- Return on investment
- Return on equity
- Net present value
- Payback period
- Debt service coverage ratio

Further to this is the economic value of the project. Considerations such as the green impact of the project, the social impact and other ethical measures all come into play beyond the financial returns available to the private sector. The private sector also needs to understand the timeline associated with these contracts, as the period from project identification to financial closure may take several years (Alfen et al. 2009). There is a need to re-evaluate the project risks several times throughout the bidding, as risk and return metrics can vary amidst prolonged bidding times due to changes in the macro and micro environment.
Figure 2.9, construction and concession periods and risk profiles, shows the effect of value over time.

**Figure 2.9: Showing relationship between construction and concession periods on cash flow risk.**

![Typical value curve for a concessions project](image)

Source: (Hochtief 2007)

2.9.3 Private companies take on PPP projects based on the information supplied by the government in relation to usage levels or ‘traffic’. These numbers have not always rung true after completion of the project, and because of this the private consortium has had to renegotiate tolls or terms. In some cases this has led to a breakdown of the concessionary terms of the PPP and Government has had to step in to take on the risk of the project. The Cross City Tunnel and the Port Macquarie Base Hospital are examples of this.
2.9.4 Because of negative publicity, the Victorian government has introduced the Public Interest Test. This test is used by both the private and public sector to ensure that the project meets the needs of the community and is in the best interest of the people. Also, this test assists in gaining purchase from the community and so improves the chances for project success. The public interest test considers the eight elements of public interest:

- **Effectiveness**

  Is the project effective in meeting government objectives?

- **Accountability and transparency**

  Do the partnership arrangements ensure that the community can be well informed about the obligations of government and the private sector partner, and also can these be overseen by the Auditor-General?

- **Affected individuals and communities**

  Have those affected been able to contribute effectively at the planning stages, and are their rights protected through fair appeals processes and other conflict resolution mechanisms?

- **Equity**

  Are there adequate arrangements to ensure that disadvantaged groups can effectively use the infrastructure or access the related service?

- **Consumer rights**

  Does the project provide sufficient safeguards for consumers, particularly those for whom government has a high level of duty of care, and/or those who are most vulnerable?
• **Public access**
  
  Are there safeguards that ensure ongoing public access to essential infrastructure?

• **Security**
  
  Does the project provide assurance that community health and safety will be secured?

• **Privacy**
  
  Does the project provide adequate protection of users’ rights to privacy?

* (Partnerships Victoria 2010)

2.9.5 Private companies come under pressure for transparency in their dealings with public money. Whilst the principle of this is sound, it does not consider the intellectual property utilised to enable the private sector to achieve its commercial outcomes. Partnerships Victoria (Partnerships Victoria 2010) have developed a series of policies and guidelines to ensure transparency exists in their contracts.

2.9.6 There is evidence that concessionary terms are not always fully understood by the bidders and that this may lead to financial loss for the private consortium. It may also lead to the withdrawal of financiers, predictably towards the end of the bid, as new information comes to light during the already mature bidding process (Felsinger 2008).

2.9.7 It has been noted by Mols that:
The government can become more locked into the partnership that the supplier, a phenomenon described in the transaction cost economics (TCE) literature as ‘asymmetric lock-in in favour of the supplier’ (2010 p.230).

This has led to the assumption that the PPP project is too heavily relied upon and has thus made some governments wary of PPPs in order to appease public opinion. The opportunistic behaviour of some private sector players has not helped this. Because of their experience in the market and their ability to deliver the large scale contracts that typically follow the PPP route; they do not necessarily follow the competitive requirements associated with tendering of large scale projects. Market forces and limited competition has led to this asymmetric lock-in phenomenon. The UK has already recognised this as an issue, and since the release of the 2003 Kelly report an over reliance on a narrow supply base has been identified (Mols 2010).

2.9.8 Legislation has been developed in many areas to combat or add transparency to the contracts that may suffer from this type of lock-in. Ethics based analysis leads the way, and anti-corruption or collusion investigations are commonly utilised in large contracts in today’s mature markets. Immature markets still suffer from this lack of transparency but are typically undergoing changes in this area. Hopefully, this means that the private sector has the ability to win contracts on its own merit; however, this does add an additional level of bureaucracy to contracts which the private sector must endure.
2.9.9 From a private sector point of view, emphasis is on the ability to capitalise on the synergies of design, and to build and service operations through a focus on innovation, avoidance of over specification, use of new materials and the exploitation of assets (Lilley & De Giorgio 2004). This is a risk mitigation strategy available to the private sector which can allow the consortium to be better prepared to deliver the on time, on budget promise of the project; when coupled with better placed private sector management skills; this creates a suite of tools that assist in project success.

2.9.10 Within Australia and internationally, policy development has continued to better allocate risk where it is better managed. This can be seen in the development of toll road financing in Australia, and in situations where there has been a steady shift in risk management onto the private contractor. With the possible exception of the Cross City Tunnel, which suffered through a range of issues including lower than expected patronage, risk allocation has matured to a point where the division of risk is being managed by the party best suited to that task. Patronage and revenue risk are still seen as the most significant issues in the development of transport infrastructure (Lilley & De Giorgio 2004).

2.9.11 The private sector has shown itself to be a willing participant in the management of core services (Lilley & De Giorgio 2004). Within Australia, the requirements for a project to be considered as a PPP are more stringent that in Canada and the UK, and whilst the decisions for this are beyond the scope of this research there may be
opportunities for this to change in the future, thereby broadening the scope of private participation. PESTEL analysis of the environment demonstrates the ability for the government both at the State and Federal levels to be more flexible, whilst at the same time justifying to voters the conservative use of public funds, which is an onerous task. There may be an opportunity for better marketing of the PPP model to the general public to garner further buy-in for these types of projects. There appears to be a tension between the state owned facility showing good business practice in running their facility effectively, and at the same time offering the possibility of showing how it could be run more economically by bringing in a private partner.

2.10 Trends

2.10.1 There is significant research underway on PPP projects worldwide, and recent study has shown that the majority of research is currently published in the United Kingdom followed by the United States, Singapore, Hong Kong, China, Australia and Germany (Ke et al. 2009). Limiting factors as to why publishing is not higher in other countries include the economic strength of the country, the maturity of their construction capabilities and the level of government support for the PPP process.

2.10.2 PPP projects enhance the Value for Money (VFM) opportunities that come with inviting the private sector into the partnership. Value for money comes from the
whole of life focus of the project and this has led to the Public Sector Comparator (PSC). In recent years, significant effort has been placed on the PSC to establish opportunities that are available to the public sector in risk management, life cycle costs, time, quality and delivery in the project (Chan et al. 2010; Li et al. 2005; Foward & Aldis 2009).

2.10.3 As the PPP model is based on ownership of risk, there has been suggestion that a new risk sharing model is called for. This model, which questions the paradigm of risk allocation, focuses on the alliance of equal public and private partners rather than the master/servant relationship. Arguments for this paradigm shift stem from changes in the financial markets of today; access to capital is becoming scarcer as investors look towards lower risk ventures. Evidence of this comes from the recent write-down of large infrastructure projects, such as in the case of the Cross City Tunnel. Furthermore, some history now exists of large scale infrastructure projects experiencing a few years of operational success or struggle, and of long term service providers, and this has helped identify opportunities for improvement in the current PPP model. In a report by Evans & Peck it has been suggested that the risk sharing model could contain the following four elements for success:

- Unbundling the various components into a partnership between a long term operator and government
• A government owned model, whereby the government operates the asset, borrows to finance the asset and outsources the construction to the private sector

• A risk sharing approach for infrastructure procurement, whereby features of alliance contracting are applied to a new PPP paradigm

• The establishment of an Infrastructure Bank to channel funds, for example, from superannuation savings to infrastructure investment (Foward & Aldis 2009).

2.10.4 The PSC utilises government knowledge to cost the project from the public sector’s perspective, which is funding through the traditional model of publicly funded project delivery. This information is then used to compare the private sector bids. Typically, the cost of funds is cheaper on the public side as their agency costs are lower; however, the increased hierarchical structure of the government makes the whole of life costs higher for the public sector. Furthermore, the incentive from private enterprise for profit maximisation may even drive these costs lower again (Li et al. 2005). The private sector gains efficiency through innovation by designing the project with maintenance in mind, thereby lowering the maintenance costs, exploring the better use of materials, and utilising lean manufacturing techniques. These strategies focus the private sector on lowering overall costs whilst maximising return on investment.
2.10.5 In recent times the shift of greater risk management onto the private sector has caused the private sector’s costs to escalate, predominately due to increases in legal expertise and the time required to become a successful bidder. These increased costs have reduced the market, perhaps allowing for a price premium for those bidders in a position to offer the single point management of these projects. These higher transactional costs have come under scrutiny in recent projects and put projects at risk of offering true value for money incentives (*Now there's proof: drivers dodge tunnel 2005; Cross City Tunnel a rip-off, says NRMA 2005; Curnow et al. 2005; Johnston 2010*).

2.10.6 It has been suggested that government does not always effectively procure some projects that would be suited to the PPP model. This may be due to a number of reasons, both bureaucratic and public, and affects the pipeline certainty. Improvements in tools such as the PSC will improve this process. Evidence of this improvement has been seen in Canada, where projects of a certain value can be assigned as PPPs if specific criteria are met (KPMG 2010).

2.10.7 Canada has also lowered the bid costs of infrastructure projects by focusing less on design and reducing the information required through the bid process. Further to this, they have a bid cost reimbursement scheme, which several other countries have adopted. Australia has also used this model in certain situations but it is not normal practice. This scheme allows losing bidders to reclaim a portion of the costs associated with the bid, thus lessening the blow and enabling
smaller or emerging players to access the PPP market. It has been noted that it is a key challenge for governments to obtain buy-in to the PPP model from client agencies, and whilst there has been some success in the UK and Canada in using the model for projects that have proven to be value for money, Australia is still a laggard in the respect that governments still look at each project individually (KPMG 2010).

2.10.8 In recent years there has been a focus on quantitative explanations of success and the development of predictive tools. Evidence of this is contained in research carried out recently in Hong Kong (Ng, Wong & Wong 2010). As confidence grows in predictive modelling through the longevity of projects, so will the opportunity of success as patterns can be more readily recognised and decisions for change carried out more expeditiously.

2.10.9 In a volatile economic climate, good project governance has been the subject of discussion in recent times (Hayllar 2010; Flyvberg et al. 2003). Project governance has come under scrutiny due to the failure of some projects, both from a cost and project overruns point of view, and from a return on investment perspective.

2.10.10 There is now a focus on the Public Private Community Partnership model. This model is being used in developing nations and shifts the focus from profit achievement to target achievement. There is evidence of this type of model in
many corporate social responsibility activities, from fair trade coffee to the manufacturing facilities that Nike use to make their clothing. It is the shift from ‘business for business’s sake’ to ensuring that something is given back as a legacy. This model is not new by any means but is more likely to be espoused by a company to ensure that they are seen to be doing the right thing. This is not mere lip service, but rather a directed approach by companies to drive for a return on social investment. This model is not merely an extension of the PPP idea, but a precondition for ensuring that a PPP with a social goal:

- both assures and implements the public aims, agendas and tasks in the sense of community benefit, welfare, etc.;
- adheres to and sustains the aims and agendas of social responsibility in the mid- and long-term;
- plans and suitably applies the necessary conditions and resources (e.g. financing) to ensure sustainability (*Introduction to PPCP*).

2.10.11 It seems evident that newer styles of PPP contracts will have better risk sharing methodologies, and some of these may include the use of financial intermediaries and partial risk guarantees (*Public Private Infrastructure Advisory Facility* 2010; Mariño 2010). Some of the opportunities in these new risk markets can stem from the fact that countries with more mature PPP methodology are looking at offshore investments in order to move away from the very competitive local markets. This is happening to capitalise on the new or enhanced investment opportunities that may be available in less mature markets,
and will assist in the growth of PPP projects within these regions (Grambas 2010; Regan, Smith & Love 2009).

2.10.12 Other changes in the promotion of the PPP model can be viewed in South Korea, which offers a minimum revenue guarantee (Public Private Partnerships in Infrastructure in Korea 2011), whereby the government may pay the amount of shortfall when the actual operation revenue is less than the share of investment risk by the government. This type of payment is calculated to ensure that the government does not continuously bail out a poor performing private equity supplier. However, this can be deemed as a fair risk management tool for the private sector should the government’s initial expectations not prove to be as accurate as originally scoped in the project brief. Further to this was the establishment of the Korea Infrastructure Credit Guarantee Fund (KICGF). This institution was established by the PPP Act to provide credit guarantees for concessionaires who obtain bank loans from financial institutions or issue infrastructure bonds for PPP projects (Public Private Partnerships in Infrastructure in Korea 2011).
2.11 Literature Gap

2.11.1 Previous research in this area has focused on the following elements, as identified by Petersen (2011):

*First, a policy sector approach*, which studies PPPs within specific policy sectors, often with an aim of evaluating existing partnerships and facilitating policy-learning (Rosenau 2000; Hurst & Reeves 2004).

*Second, a governance approach*, which views the upsurge of partnerships in line with a more general shift from government to governance (Rhodes 1996), in which various actors at local, national and above-state levels need to collaborate to achieve joint decision-making (Van Ham & Koppenjan 2002; Teisman & Klijn 2002; Johnston & Gudergan 2007).

*Third, a classification approach*, which examines the various meanings of the PPP concept, and attempts to make mainly descriptive categorizations of the PPP literature. Hodge and Greve (2005), for example, draw a distinction between PPPs with loose and tight organizational and financial structures, whereas Weihe (2008) makes a distinction between four different PPP approaches, based mainly on the empirical context in which they are used.

*Fourth, a local regeneration approach*, which is concerned with partnerships between local authorities and corporations as regards local development projects.
such as urban renewal plans, joint commercial and public use of land, combined housing and office projects, etc. (Pierre 1998; Klijn & Teisman 2003; Ysa 2007).

**Fifth, a third-world development approach**, which focuses on partnerships between various national and international donor organisations and public authorities in third-world countries in regard to economic and institutional development, medical programmes and humanitarian aid (Buse & Waxman 2001; Jamali 2004).

**Sixth, a financial infrastructure approach**, which has its roots in the UK Private Finance Initiative (PFI), which was launched by the Conservative government in 1992 and was subsequently adopted by the Labour government as PPPs (Flinders 2005; Spackman 2002).

**Seventh, a historical approach**, which examines partnerships in a broader historical and public sector reform context (Linder 1999; Wettenhall 2005; Savas 2000).

2.11.2 Australia has been recognized as a mature market for PPP projects (Siemiatycki 2010), and the overall growth and success of these projects in Australia can be used as a benchmark for less mature markets. However, there are still lessons to be learned from a global review of common practice.
That said, limitations are identified in the current model used in Australia relating predominately to the method in which the government body responsible for the project implements the contract. Typically, the government project owner has the technical expertise in the development of the end product but often possesses very little contract management or PPP-specific experience. There is an opportunity to present a different model that improves this contracting process and enables a better project delivery than under the current schema.

### 2.12 The Research Question

2.12.1 The aim of this review is to determine the current practices in the market and determine whether there is the opportunity to develop a model of world’s best practice for the management of these large scale procurement projects. This review focusses on the core issue of project failure and the resultant negative publicity, as well as patterns of success that have emerged locally and internationally in the PPP arena. As there are currently many versions of the model, it is hoped that the identification of patterns in these areas will offer the opportunity for success in future projects.

2.12.2 Research Question 1) Is there an opportunity to develop a model for world’s best practice for the implementation of Public Private Partnership agreements? This model could be utilised by less mature markets to assist in accelerating the
learning curve, or by mature markets to ensure the maximum opportunity for success for the project.

**Sub research questions 1)** Regardless of ‘Commercial-in-Confidence’ and intellectual property restrictions; is there an opportunity to develop a model to improve reporting requirements and communication to garner better public buy-in? Based on the negative general public sentiments surrounding failed or struggling PPP projects, this can be seen as a unique opportunity in current markets.

**Sub research question 2)** Are there causal patterns in previous failed projects in Australia, England and Canada, such as the Lane Cove Tunnel project, that can be recognised to offer immature markets the opportunity to achieve a better success rate and to assist them in getting through the learning curve?

**Sub research question 3)** Do these practices need to change? The PPP financial vehicle (the concessionaire), although contractually sensible, can be a detriment to the success of the contract by being too distant from the project to own or strategically contribute to the success of the project. Concessionaires are typically investment companies that have very little experience in the PPP market and look at the project as simply a Return on Investment opportunity rather than the construction of an actual product.
**Sub research question 4)** Should the project be run from a public entity that is not directly related to the outcome of the project, i.e. rail projects should not be managed by RailCorp, road projects not run by the RMS etc? There is a prospect for a State or Federal bank of PPP experts that could be seconded to the project as part of the government approach to ensure that contractually the project has the best opportunity for success and to somewhat divest technical experts of the day to day running of the contract.

### 2.13 Conclusions

2.13.1 The Public Private Partnership has gone through much iteration and is still evolving as new legislation and historical evidence moulds the next generation of this style of project. It goes without saying that this model for infrastructure growth is here to stay, and because of this it is necessary to focus on world’s best practice to ensure the repeatability of critical success factors that can be implemented on a global scale. There have and will continue to be project failures related to poor risk management and poor partnership synergies. Inevitably the public suffer because of this, as governments are forced to step in and take over projects that they were ill-equipped to manage in the first place.

2.13.2 The PPP model appears here to stay regardless of the negativity; there is significant evidence to support this type of contract over the more traditional form of government funded infrastructure development. That said, the greater
portion of government funds still goes to traditional contract delivery methods, and in less developed countries the proportion is higher. However, this tide is changing, with many countries planning to develop more PPP projects.

2.13.3 Qualitative research in this field will continue to add both scholarly and business related value as the market continues to mature and utilise more of this style of procurement for large infrastructure. Research to date identifies that shared vision is the first step in building the partnership and this trust building exercise is critical for project success. Risk ownership and management are key elements which provide the public element with the protection it needs to make better use of its funds and enable the private sector to ensure that the project can be delivered in a profitable manner. Risk is seen as the key to both parties. Community involvement is also seen as both a ‘must have’ and a ‘rarely achieved’ element for a successful PPP. For this reason, better management of this task is required and again best practice in this area must be investigated to ensure on-going project satisfaction.

2.13.4 We can see that due to global economic factors the PPP model is still a valuable project tool which is available to both developed and developing markets. However, there is still a need to identify weaknesses in the legislation of many countries, and to improve this legislation to maximise both the return on investment in this project model and to ensure that the maximum returns in regards to profitability, timeliness and social impact are felt. Private sector
involvement should not be stifled in any way to ensure that the maximum number of private equity investors are realised.

2.13.5 Globally the PPP model is still in a state of flux, as changes in financial modelling open new opportunities in capital risk management. These new models are being exploited by the more mature end of the market, where access to capital is more competitive and the need to return better margins on long term projects forms a greater part of the risk management strategy.

2.13.6 There is still a stigma associated with these contracts, due to the well-publicised failures of some of the larger projects. This is not unique to Australia and has also affected projects in Canada, the UK and America. All of these players operate in a mature or significantly experienced market. This market has been beset by a number of issues including optimistic feasibility studies, poor risk management and global financial impacts. There has been much change within the model, on the part of both public and private sectors, to combat these variables, and whilst still not where the model could be, greater emphasis is now placed on these variables to ensure the project’s success. Legislative changes to PPP laws in order to combat macro environmental changes are an ever-evolving process, and private equity firms are forced to cater for increased due diligence by the financial institutions to guarantee success and return on investment.

2.13.7 South Korea has led the way with innovative changes designed to help government and private sector alike and ensure the opportunity to maximise project success. This is achieved by including guarantee of returns and opening
access to finance by providing government credit guarantees. Coupled with a legislative framework that supports the PPP model, this has instilled confidence in their PPP market and their pipeline numbers several hundred projects either underway or under tender (*Public Private Partnerships in Infrastructure in Korea* 2011).
CHAPTER 3: RESEARCH METHODS

3.1 Introduction

3.1.1 This chapter outlines the methodology utilised in this study. Qualitative and quantitative analysis was conducted on data gathered using a combination of collection methods. A description is given of the research methods considered within the research and the paradigms that were utilised. This includes the steps for the design of the research, the methods of data collection, the analysis techniques that were utilised, and the hypotheses that were investigated by the collected data. This leads into the limitations and assumptions of the research model and its contributions to the body of knowledge.

3.2 Research Methods

3.2.1 The research followed a pragmatic paradigm, including a literature review, case study review, interview and detailed questionnaires. The analysis of this information led to the development of a model of world’s best practice for the implementation and management of Public Private Partnership projects. The adoption of this practice will lead to a strategic competitive advantage for the partnership.
3.3  Research Design

3.3.1  The development of a research stance begins with the intended paradigm the researcher follows. Today the two most commonly used research paradigms are positivism and interpretivism (Neuman 2000). A paradigm can be explained as “a set of basic beliefs (or metaphysics) that deal with ultimates or first principles. It represents a worldview that defines, for its holder, the nature of the ‘world’, the individual’s place in it, and the range of possible relationships to that world and its parts” (Guba & Lincoln 1994 p. 107).

3.3.2  Positivism, more often associated with quantitative data, is derived from statistical evidence from experiments and surveys. The researcher’s view of the world is external and objective, such as in the position adapted when reviewing the natural sciences (Ticehurst & Veal 2000). It has been described as “an organized method for combining deductive logic with precise empirical observations of individual behavior in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity” (Neuman 2000 p. 66). Deduction “begins with a theoretical proposition and then moves towards concrete empirical evidence” (Cavana, Delahaye & Sekaran 2001 p. 35). The positivist paradigm has also been described as manipulative in its experimental nature. This is derived from the following: “Questions and/or hypotheses are stated in propositional form and subjected to empirical test to verify them; possible confounding conditions must be carefully
controlled (manipulated) to prevent outcomes from being improperly influenced” (Guba & Lincoln 1994 p. 110; Maykut, Morehouse & Morehouse 1994).

3.3.3 In contrast, interpretivism is often linked to participant observation and field research. It has been described as a “systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds” (Neuman 2000 p. 71). The interpretivist paradigm involves induction to “observe certain phenomena and arrive at certain conclusions” (Cavana et al. 2001 p. 36). Other terms used to describe interpretivism are qualitative, phenomenological, interpretive, reflective, inductive and ethnographic or action research hermeneutical (Welman, Kruger & Kruger 2001). “The variable and personal (intramental) nature of social constructions suggests that individual constructions can be elicited and refined only through interaction between and among investigator and respondents” (Guba & Lincoln 1994 p. 110).

3.3.4 This study is of an interpretivist nature. Qualitative methodology is concerned with the generation of theory rather than the testing of hypotheses or proving established theories (Bryman & Bell 2007). “Qualitative researchers do not search out data or evidence to prove or disprove hypotheses they hold before entering the study; rather, the abstractions are built as the particulars that have been gathered are grouped together” (Bogdan &
Biklen 1998 p. 6). Epistemology is concerned with ‘what’ should be the accepted knowledge according to the principle of natural science (Bryman & Bell 2007). Ontology is the objectivity of the subject, whether it be an external reality (objectivism) or an internal perception constructed by the social players within the research (constructionism) (Bryman & Bell 2007). Because of the type of research intended in this study (constructionism), inductive reasoning was used to collect detailed observations and data, analyse the data, and develop the relationships and the findings (Cavana et al. 2001). This was carried out to ensure that the data was valid. To test the validity of qualitative research, both internal and external validations are required (Malterud 2001).

3.3.5 Denzin and Lincoln (2005) have suggested five sequential steps for the selection of a research design. These include:

- Phase 1: The researcher as a multi-cultural subject
  - History and research traditions
  - Conceptions of self and the other
  - The ethics and politics of research
- Phase 2: Theoretical perspectives and paradigms
  - Positivism and post positivism
  - Interpretivism, constructivism and hermeneutics
  - Feminism
  - Racialised discourses
  - Critical theory and Marxist discourses
  - Cultural study models
  - Queer theory
• Phase 3: Research Strategies
  - Design
  - Case study
  - Ethnography, participant observation, performance ethnography
  - Phenomenology, ethno methodology
  - Grounded theory
  - Life history
  - Historical method
  - Action and applied research
  - Clinical Research

• Phase 4: Methods of Collection and Analysis
  - Interviewing
  - Observing
  - Artefacts, documents and records
  - Visual methods
  - Auto ethnography
  - Data management methods
  - Computer assisted analysis
  - Textual analysis
  - Focus Groups
  - Applied ethnography

• Phase 5: The Art, Practices and Politics of Interpretation and Evaluation
  - Criteria for judging adequacy
  - Practices and politics of evaluation
  - Writing as interpretation
  - Policy analysis
  - Evaluation traditions
  - Applied research
This forms the basis for the “Grounded Theory” approach and the iterative approach to analysis, whereby the researcher becomes more and more “grounded” in the data collected which by definition allows for richer concepts and models to be developed (Denzin & Lincoln 2005). The collection of unstructured or semi structured data allows the researcher to develop unbiased data, and from this the patterns or consistencies in the data emerge naturally through Grounded Theory analysis (Cheung 2009).

3.3.6 Pragmatic paradigms lend themselves to the epistemology of grounded theory. This study was well suited to the model of grounded theory. However, as stated in (Easterby-Smith, Thorpe & Jackson 2008, p. 102), this type of research has limitations in gaining access to the data required to make a substantial contribution. Because of this fact, delimiting assumptions may need to be made. For example, in the current review of literature it was noted that there is a wealth of knowledge written from the point of view of the private sector but only a limited amount written from the public sector perspective.

3.3.7 In contrast to this approach, Crotty (1998) suggests there are four questions that must be understood in order to define the research:

- What methods do we propose to use?
- What methodology governs our choice and use of methods?
- What theoretical perspective lies behind the methodology in question?
- What epistemology informs this theoretical perspective?
Crotty suggests that the researcher start with the question of epistemology. He defines this term as “the theory of knowledge embedded in the theoretical perspective and thereby in the methodology” (Crotty 1998 p.3.). Crotty suggests that this step will lead to the theoretical perspective by giving the researcher the appropriate “philosophical stance” (Crotty 1998 p.3.) to continue with. From here the methodology can be chosen; that is, the “strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and the use of methods to the desired outcomes” (Crotty 1998 p.3.). Finally, the researcher chooses the methods of data collection and analysis in response to the research questions or hypothesis.

Crotty suggests that ontological issues (“what is”) and epistemological issues (“what it means to know”) tend to merge together, suggesting that writers in the research arena have trouble keeping ontology and epistemology apart conceptually. He states that “to talk of the construction of meaning is to talk of the construction of meaningful reality” (Crotty 1998 p.10.). Epistemology involves “what is regarded as acceptable knowledge in a discipline” (Bryman 2008 p. 13).

3.3.8 All research suffers from pros and cons and this in itself is also subjective, as “the investigator and the investigated ‘object’ are assumed to be independent entities, and the investigator to be capable of studying the object without influencing it or being influenced by it” (Guba & Lincoln 1994 p. 110). Quantitative research has long been criticized as lacking richness and depth that
can only be perceived by the human touch, especially in matters that are, "complex, messy, and involve a range of stakeholders with different concerns and perceptions" (Skinner, Tagg & Holloway 2000 p. 163). Conversely, the epistemology of the interpretivist paradigm has been labeled subjective at best; “the investigator and the object of investigation are assumed to be interactively linked so that the ‘findings’ are literally created as the investigation proceeds” (Guba & Lincoln 1994 p. 111). Although it is recognized that knowledge is generated following the interaction of researcher and respondent, it can lead to epistemological and methodological confusion (Prasad & Prasad 2002; Denzin & Lincoln 2005). Bryman (2008) believes that the researcher and respondent interaction is difficult to replicate, impossible to generalize, lacks transparency, and can be overly subjective.

It has been suggested by Laughlin (2004 p. 271) that ontology is “the foundation for all other choices that need to be made”. Bryman describes it as “the nature of social entities” (2008 p. 18). The ontology of the positivist has been described as “an apprehendable reality that is assumed to exist, driven by immutable natural laws and mechanisms” (Guba & Lincoln 1994 p. 109). The aim of quantitative research is to test hypotheses in the constitution of universal laws of causes and effects (Draper 2004).

The ontology of the interpretivist paradigm can be described as relativist; “realities are apprehendable in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature (although elements are often shared among many individuals and even across
cultures), and dependent for their form and content on the individual persons or groups holding the constructions” (Guba & Lincoln 1994 p. 110).

3.3.9 This research followed Laughlin’s Figure 1 (2004 p. 272) middle range approach in that the patterns of research are skeletal. He articulates this type of approach (2004 p. 268) as follows:

There are skeletal rather than full or no theories which can explain accounting in practice or, more generally, any empirical phenomena. However, these ‘skeletal’ theories need the richness of the empirical detail to make them meaningful in particular situations. There are structures that underlie social situations but not ones which fully capture the diversity and details of the situations. For instance it is possible to say something about different levels and pathways of organisational change... that applies to every organisational setting. Yet such theories are not all-encompassing. They provide a language that allows researchers to interrogate the empirical site being analysed. They guide and structure the way actual organisational settings can be viewed, but they also need the detail from these settings to make these ‘skeletons’ live. Equally, where the empirical data provides a basis for extending and/or reforming this framework. In this sense the ‘skeletal’ theory guides the discovery process but in such a way that can be reactive to the ‘fit’ or the detailed ‘flesh’ that is being added.

Although Laughlin’s paper has an accounting ‘bent’, the theoretical importance is easily transferrable. Laughlin discusses the importance of empirically rich, heavily descriptive case study analysis, which allows for analysis that will naturally lead to derived conclusions.
Following on from this is the change dimension that inevitably arises from the gaining of knowledge. Laughlin says of this change: (2004 p. 267)

It is only after some level of understanding is achieved, under the assumptions that follow from the theory and methodology dimensions, that it is possible to decide what should be done about what is discovered. My view is that this change decision is of key importance for our research endeavour.

3.3.10 Previous research in this area appears to have focused on only one or two case studies to verify the research question. It was hoped that enough case study material would be obtained to understand:

- The reasons behind the failure of large scale PPP projects.
- The methodology of reporting structures used and their limitations.
- The critical success factors used in assessing PPP projects from the view of both the public and private entity.

3.3.11 It is fair to assume that the perception of the realities of the PPP models differ amongst the major stakeholders within the project; that is, the view from the government would differ from the view of the private sector, and this would not be unique to the PPP model but would also exist within any major infrastructure project. The needs of the buyer and seller will always have unique differences. In this way, qualitative research allows the researcher to understand and interpret the opinions of the participants and to react to the emotions and feelings
presented. As a result, an understanding of perceptions and dynamics of decision making within the stakeholders in PPP projects, in both the public and the private entities, will be gained.

3.3.12 A detailed survey of both the public and private stakeholders in mature and not yet mature markets was conducted, in order to understand the knowledge gap that exists today. In essence this utilised an interpretivism paradigm through a qualitative approach, which used a combination of literature review and interviews. This method has been seen as very effective for the collection of large sample sizes for quantitative analysis. This survey targeted those public and private practitioners who have recently been involved in large scale PPP projects. Further to this, researchers were also targeted to ensure that the latest thinking and current research in the field was captured.

3.3.13 Case study research was undertaken to verify the results of the questionnaires. This qualitative content analysis added value to the interviews, and improved the reliability and replicability of the study (Yin 2009). Replicability means that the findings of a study can be repeated in other settings (Bryman & Bell 2007). This also determines if what is said during the interview process can be verified by what has happens in real world scenarios. It was expected that this empirical study, which uses multiple sources, would identify the boundaries of the context between the interviews and the case studies (Yin 2009). This is not to say, however, that the results of the questionnaire would be easily replicated in case
study research; it was not the intention of the writer to simply point out that case studies have revealed the results of the questionnaire to be true or otherwise. It was hoped that patterns could be verified by the use of case study research. This recognition must allow for a model that is independent of influences such as culture, politics or project maturity.

3.3.14 This cross sectional design method linked the benefits of both qualitative and quantitative research methods via the use of triangulation. Triangulation is a method which attempts to “cancel out the limitations of one method by the use of another in order to cross check the findings” (Bryman & Bell 2007 p59), in order to have an ability to fill in the gaps left when using one dominant approach alone. Triangulation sources used in this research include legislation, PPP policies, academic literature, parliamentary reports and to some extent the media.

3.3.15 Inductivism studies conclude that “knowledge is arrived at through the gathering of facts that provide the basis for laws” (Bryman & Bell 2007 p16). This study has led to new knowledge. Due to the fact that there are many countries at different stages of maturity in relation to PPPs, an interpretist view was required that recognised differences in the social actions of people. This in itself answered some of the questions that have arisen in regards to the leaders and laggards of PPP projects (Bryman & Bell 2007).
3.3.16 In essence, this study had both a qualitative and quantitative aspect and therefore followed a pragmatic approach. Understanding the role of the paradigm in the research was key to breaking down the dichotomy between qualitative and quantitative methodology, thereby adding to the total value of the research as it was intended (MacKenzie & Knipe 2006).

3.3.17 Easterby-Smith et al. (2008, p. 53) compare the viewpoints of validity, reliability and generalizability against the positivist, relativist and constructionist paradigms. This comparison indicates that this research project was a relativist/constructionist format type, and for this reason great care was taken to ensure that it was robust enough to withstand scrutiny. This was achieved by utilising both the existing body of procurement management knowledge and real world practice.

### 3.4 Questionnaire Design

3.4.1 According to Burns and Bush (1986), there are six defined functions of a questionnaire:

a) It translates the research objectives into specific questions that are presented to the respondents;

b) It standardizes the questions and response categories so every participant responds to identical stimuli;
c) By its wording, question flow, and appearance, it fosters cooperation and motivates respondents throughout the interview;

d) It serves as a permanent record of the research;

e) It speeds up the process of data analysis;

f) It contains the information upon which reliability assessments such as test-retest or equivalent-form questions may be made, and they are used in follow-up validation of respondents’ participation in the survey (Streufert & Swezey 1986).

These functions confirm that the use of questionnaires is a rational method for data collection and a good fit for this type of research.

3.4.2 There are three possibilities for the collection of data in a questionnaire: person-administered questionnaires, computer assisted questionnaires and self-administered questionnaires. Person-administered questionnaires are the least attractive option due to the increase in both time and cost. Computer-administered surveys are generally faster and more accurate, with the added advantage of the ability to attach video etc. However, they lack privacy control and are high cost. Self-administered surveys present a number of advantages. They are typically the lowest cost option and entail no interviewer-evaluation apprehension unlike person-administered surveys. They can be administered to large numbers simultaneously, saving time. Standardized instructions and wording produce uniform results which produces results that are far more valid (Streufert & Swezey 1986). The correct method of questionnaire application
should be matched with the researcher’s aims and objectives, their access to resources and the research budget. It is a balancing act between the requisite research outcome and the availability of the resources required. Self-administered surveys typically have poor response rates and this also must be factored into the outcome required.

3.4.3 Twelve questions were constructed for the questionnaire, and these were separated into two groups; one consisted of seven statistical information responses relating to the respondent’s industry and experience, and the other group included five Likert response questions that aimed to garner information about the subject matter.

3.5 **Data Collection**

3.5.1 At the core of any research design is the data collection methods. The administration of the questionnaire, and the interviews and observations carried out, are all methods of data collection. Questionnaires obtain data quickly and efficiently, and have the advantage of low researcher output in regards to time and cost. However, they do not possess the richness of the personal interview, which has the advantage of allowing the researcher to tailor the questions depending upon the answers they receive (Sekaran & Bougie 2009).
As stated previously, data collection is limited to the time and resources available to the researcher, but there are other limitations, such as the expertise of the researcher and the time span allocated to the study itself.

Questionnaires are seen as most advantageous when large numbers of data need to be collected from disperse areas. Data can be obtained rather easily and responses are easily coded (Sekaran & Bougie 2009).

The questionnaire used in this study was adapted with permission from that used in previous research by Dr Bing Li and Professor Akintola Akintoye.

3.5.2 Questionnaire design included the opportunity to pretest the design prior to its release to the respondents.

The pretest for the questionnaire used in this study involved conducting a trial run on a small representative set of respondents, to determine if there were errors or bias of any form written into the questions, and to ensure that the question flow and language used were easily followed and workable.

One hundred and thirty five questionnaires were distributed and data was collected for analysis.

3.5.3 The questionnaire for this study consisted of five sections based on the research questions raised (the variables). Each variable was covered by up to seven questions.

The First section contained questions relating to the seven key principles required to ensure project success, from both from the public and private perspectives.
Section Two focused on the reporting methods used to communicate the project with the general public.

Section Three focused on failure mechanisms of other projects, the pattern in which they are identified and the counter measures employed.

Section Four focused on the concessionaire’s role within the project and opportunities for change.

Section Five focused on the contractual arrangement from the public perspective and the opportunity for changing the way governments implement these projects.

Some of this research has been carried out by others previously, and where possible and with permission these previous questionnaires were considered during the questionnaire design. Previous studies also provided input into the design process (Cavana et al. 2001).

3.6 The Scaling Sequence

3.6.1 Seven-point bi-directional Likert scales and attitude statements were the scaling techniques used in this study. Although there are many other scaling techniques available in the social sciences, these two are considered the most widely accepted (Churchill & Iacobucci 2005; Hawkins, S & D 1993).

3.6.2 Attitude statements are comments by respondents (Cavana et al. 2001). An attitude statement is a single sentence that expresses a point of view, a belief, a
preference, a judgment, an emotional feeling, a position for or against something (Oppenheim 1992).

3.6.3 The Likert scale has been defined as a bipolar scale method, used for measuring either positive or negative responses to a statement (Hinkin 1995). Put simply, respondents are asked to indicate their agreement, disagreement or neutrality in relations to a proposition, or how important / unimportant they consider a factor. This scale can be easily constructed and administered as a questionnaire and has been shown to be simple for the respondents to interpret and understand (Hawkins et al. 1993).

3.6.4 Some of the questions in the survey included a scale which was of the seven-point Likert type (Hinkin 1995). In some cases, a series of answers were provided and could be rated based on a seven point rating, such that the attitudes of the respondents to certain questions could be garnered so that these could be scored appropriately.
3.7 **Sampling Method**

3.7.1 According to Sekaran (2009), the two most common sampling designs methods are non-probability (or judgmental) sampling and probability (or representative) sampling.

Probability sampling is often associated with survey and experimental research strategies. Research such as case study analysis is usually associated with non-probability sampling (Saunders, Lewis & Thornhill 2009).

The sampling frame should be unbiased, current and accurate (Saunders et al. 2009). This research employed a mixed methods approach utilizing probability, through the use of surveys and non-probability, through the use of case study and interview.

3.8 **Sample Size**

3.8.1 There are many and conflicting statements regarding sample size. Ewing and Carauna (1999) suggest that a minimum of five hundred questionnaires should be utilized; the expectation is that a minimum of one hundred and thirty five usable responses should be returned to allow for effective data analysis. Foreman (1991) recommends a sample size of two hundred or more; Anderson and Gerbing (1988) suggest a sample size of one hundred and fifty, which they say has an error factor small enough to be of practical use; and Hair and Anderson (2010) suggest that the minimum sample size should be one hundred, with at least five observations for each estimated parameter. Other research conducted
suggests that successful analysis can be carried out with observation numbers ranging from one hundred and twenty to three hundred and fifty (Anderson & Narus 1984; Ganesan 1994; Morgan & Shelby 1994). As this particular study was narrowly focused, the emphasis was on respondent quality rather than quantity. High level, senior respondents were targeted to bring real value and deep understanding to the research.

3.8.2 After the final version of the questionnaire was agreed upon, one hundred and thirty five copies were sent out as planned. Twenty copies were completed and valid. No questionnaires were deemed to be invalid due to errors or incomplete responses. Although some respondents chose not to answer all of the questions, the information provided overall was fit for analysis.

3.9 **Data Analysis Techniques**

3.9.1 Data Collection Assumptions

Responses from surveys were analysed to determine both positive and negative agreement to the arguments presented. It was assumed that the respondents had an adequate knowledge of PPP principles as they apply to their roles, and that they possessed recent hands on PPP experience. This could be through project related experience or research experience.
3.9.2 Qualitative Analysis

A definition of data types is given by other researchers (Saunders et al. 2009; Lang & Heiss 1998; Bradley 1999). Primary data has been described as information obtained firsthand by the research on the variables of interest contained in the study, whereas secondary data refers to information gathered from sources that currently exist in the public forum such as previous research, libraries, databases, internet, newspapers, and other publications.

Whilst primary data can be seen as ‘richer’ in its content, it is not freely available and there is a time and cost constraint, which means collection of the data can take a long time and be costly (Ghauri & Grønhaug 2005). In addition, it has been noted that it is also difficult to get access to this type of data, such as finding respondents, organisations or other target groups who are willing to cooperate and answer the surveys (Sekaran & Bougie 2009; Saunders et al. 2009).

Ghauri and Grønhaug (2005) note that significant savings in both time and money can be achieved using secondary data that currently exists in the public forum. The researcher can use the resources available at a library or from an internet database search to make use of reliable sources of data from which definitive conclusions can be drawn (Ghauri & Grønhaug 2005).
Secondary data enhances longitudinal studies due to the historical information that is available in most cases. That said, care must be taken in the use of secondary data, as there are drawbacks with this type of research, namely that the original research was collected for a different study with different objectives and the conclusions initially drawn may not have suited this study. Even if both studies start out with the same objectives, the terms of definition may differ (Saunders et al. 2009).

Qualitative content analysis is one of the research methods for the subjective interpretation of the content of textual data, which uses a systematic classification process of coding to identify themes or patterns (Hsieh & Shannon 2005 p. 1278).

Qualitative content analysis is useful for the classification of large amounts of text by ‘chunking’ it into a number of categories that represent similar meanings (Weber 1990). Further to this, content analysis is one of the methods that aim to describe a phenomenon by describing trends in the communication content.

Dependant upon the opportunities presented throughout the research, a range of data collection methods was adopted. These included telephone interviews, mail questionnaires or face-to-face interviews (Saunders et al. 2009).
The data collection methods are determined both by the nature of the data that needs to be obtained (from primary or secondary sources), and the availability of the data sources (Ryan, Scapens & Theobald 2002).

Content analysis was employed on both the case studies and literature review. This type of analysis aims at focusing the researcher on six questions which, when answered, will allow for structured analysis (Price 2010; Krippendorff 2004; Krippendorff 1980):

1) Which data are analysed?
2) How are they defined?
3) What is the population from which they are drawn?
4) What is the context relative to which the data are analysed?
5) What are the boundaries of the analysis?
6) What is the target of the inferences?

By following these steps, the researcher is logically drawn to choosing the correct form of content analysis to be used; qualitative, quantitative or structural.

The analysis of the case studies highlighted patterns of success and failure as well as typical problems that arose in the course of such projects.

These qualitative research methods were chosen over a variety of others, such as ethnography and participant observation, due to the fact that they allow capture of both the cognitive thought processes and the emotive feelings of the participants, which may not be as easily recognized if other alternatives were to be employed (Cavana et al. 2001).
Observer bias was also recognized as a concern for this type of research and this methodology ensured that the information was taken from the participant’s verbatim responses, thereby reducing the risk of bias in the reporting of information (Cavanaugh et al. 2001).

Another justification in the use of more than one research method is that this enables any emergent issues to be addressed (Hill & Wright 2001), assists in verifying that the research accurately reflects the evidence discovered (Cavanaugh et al. 2001), and enhances the trustworthiness or credibility of the findings (Bryman & Bell 2007).

3.9.3 Quantitative Analysis

The quantitative data collected was analysed using the Statistical Package for Social Science (SPSS). The techniques that were used included the mean score ranking technique, as well as a regression analysis.

The mean score ranking technique was used to identify the relative importance of the questionnaire responses.

The seven-point Likert scale (Hinkin 1995) (1= Least Important and 7= Most Important) was used to calculate the mean score for each response, which was then used to determine its relative importance. The mean score can be computed using the following formulae:

\[ MS = \frac{\sum fxs}{N}, \hspace{1cm} (1 \leq MS \leq 7) \]
Pearson’s Correlation was used to identify relationships within the respondents’ answers to the questionnaire. Correlations are useful because they can indicate a predictive relationship that can be exploited in practice.

\[ r_{xy} = \frac{\sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n} (x_i - \bar{x})^2 \sum_{i=1}^{n} (y_i - \bar{y})^2}} \]

3.10 Case Study Analysis

3.10.1 Case studies can yield deep but narrow results (Fellows & Liu 2003). Case studies such as the Sydney Cross City Tunnel and Brisbane Airport Rail link were reviewed as they show that lessons learned in particular areas are not always transferred, even within the same country. Queensland was one of the last Australian states to actively adopt the PPP model and this gave them the advantage of hindsight, based on all the previous work carried out by Partnerships Australia and the Victorian model.

3.10.2 The Sydney Cross City Tunnel – This high profile project was seen as a failure due to the concessionaire folding and significant capital investment by the New South Wales government. The company entered receivership and the maintenance and operating contract was sold to a new investment
concessionaire. The road remains in use today and is currently undergoing significant expansion, so from that perspective the project itself did not fail. Initial traffic forecasts, the redirection of traffic flows and the change in toll prices were contributing factors in the demise of the company (Chan et al. 2008). Whilst this is obviously a tragedy for the private concern, the public (or government) face of the project also came under scrutiny. There was little public support for the project, as the people felt that the government had let them down by simply forcing another toll road onto them. This public embarrassment cost the government in time and money as it tried to recover from the damage (Cheung 2009; Dahdal 2010).

3.10.3 The Brisbane Airport Rail Link – This was a relatively small project in comparison to others carried out in Australia. This AUD $233M contract was for a rail link between Brisbane Airport, Brisbane and the Gold Coast. The rail link commenced operations in 2001. However, actual occupancy rates were approximately 6000 per week, less than the expected 58000 per week (around 10%). Due to the financing mechanisms created to fund the project, the concessionaire financial Special Vehicle (SPV) is still in existence because the infrastructure bonds allow depreciation to be sold to bond holders for cash. The Queensland case study has been chosen mainly due to Queensland being a laggard in the adoption of PPP projects, as many toll roads and parts of the electricity market remain under the control of the government. Another reason for this is the fact that Queensland has not suffered from the budgetary crises
other states have been subjected to (Cheung 2009; Townsend 2004). Queensland has remained almost self-sufficient for a long time, whereas Victoria can be seen as an early adopter, borne from the necessity of the demand for infrastructure development which simply could not be funded by the state.

3.11 Ethical Implications of the Research

3.11.1 As this research involved human participants, approval from the University Ethics Committee was required. In addition, the research topic involved sensitive business information from the participant companies; as such the researcher displayed high personal integrity in processing the raw data throughout the stages of collection, transcribing, analysis and presentation of the results. This research complied with all ethical implications as set out by the University of Newcastle, including respecting the dignity of the respondents, and avoiding any form of harm to the respondent during the research such as legal, career or income harm, anxiety, discomfort, stress, or loss of self-esteem (Neuman 2000; Kumar 2005; Cavana et al. 2001). No respondent has nor shall receive any form of reward or reimbursement of any kind in relation to this research. Care was taken to ensure that honesty and transparency were maintained throughout the research so that no misinterpretation was observed (Bryman & Bell 2007).

The research contained an information statement that outlined the academic purpose. The researcher sought written approval from the organisations and the interviewees. Implied consent was emphasised in regards to the online
questionnaire, detailing that implied consent was confirmed once the respondents submitted the completed online survey.

The respondents were reminded that they could voluntarily exit the survey at any time until the questionnaire was completed.

The information statement contained details of the access, storage and disposal of all data collected from the respondents. It also included contact information for the researchers and relevant persons at the University of Newcastle, should the respondents have any inquiries or complaints in regards to the research. All data collected has been stored securely either on the researcher’s password protected personal computer or on a compact disc as a backup, and is locked away in the primary researcher’s safekeeping for a period of at least five years after the thesis has been successfully accepted by the University. Upon expiry of this period, all data collected (soft and hard) will be destroyed either by a shredder or by permanent deletion. On completion of the research, the researcher sent the respective interviewees and their organisation a summary of the research findings if they so wished.

Research ethics play an important part in the planning, design and conduct of research projects (Saunders et al. 2009). Ethical considerations such as plagiarism and honesty are paramount in all research; however, there are always additional issues when the research involves human subjects.
The general principles usually invoked in this study were, firstly that no harm should befall the respondents, and secondly that all respondents should participate in research projects freely, based on informed consent.

3.12 Conclusion

3.12.1 The Public Private Partnership has gone through much iteration and is still evolving as new legislation and historical evidence moulds the next generation of this style of project. It goes without saying that this model for infrastructure growth is here to stay, and because of this it is necessary to focus on world’s best practice to ensure the repeatability of critical success factors that can be implemented on a global scale.

This chapter has provided a detailed account of the research methodology employed. The concepts have been introduced and were followed by an explanation of both the qualitative and quantitative techniques used. Qualitative techniques were utilised because they are capable of determining the feelings associated with the subject matter; that is, they allow the participants to express their opinions and for the researcher to query those opinions in order to determine the dynamics of decision making within PPP projects. Quantitative analysis was used to determine the patterns within the responses, to ensure that patterns of failure and success were evident and not just as a result of researcher bias. The results of the empirical survey carried out could be used as a
A ranking tool to identify the attractive and negative factors that potentially affect project success. From this, informed decisions can be made during the feasibility stages of project design.

In this research, data was collected through several sources including case study analysis, literature review, unstructured conversations with stakeholders within the PPP market, survey data collected from both public and private stakeholders, and semi-structured interviews. The culmination of this data is presented in the next chapter.
CHAPTER 4: DATA ANALYSIS

4.1 Introduction

The prime objective of the study is to develop a model of effective Public and Private Partnerships, primarily in the initiation, planning and delivery of community services and substantial infrastructural assets such as bridges, tunnels, major roads, ports, railways etc. In order to develop a model of effectiveness, the reporting data from a variety of professional practitioners was analysed to elicit key factors for success and failure in such projects.

A survey, designed to be responded to anonymously, was sent to 135 companies within 21 different countries utilising the online data collection services of “Survey Monkey”. The survey was aimed at senior stakeholders within the PPP arena. These stakeholders were in positions such as policy writer, project manager, procurement manager, contracts manager, chief financial officer and chief operating officer. A total of twenty responses were received, giving an overall success rate of 15%. Information gathered from the questionnaire was analysed using NVivo software and SPSS to look for patterns and correlations within the results.

Respondents were also supplied with contact information inviting them to undertake a one-on-one interview. Two of the respondents took up this option.
Subsequent in-depth interviews were conducted with one government and one private expert within the PPP arena.

Case study analysis was undertaken on several successful PPP projects. These were reviewed based on the critical success factors identified in the literature review. Most of these cases were based on projects delivered within Australia. This was due more to the fact that Australia tends to promote its successes very well within this market and there was good information available for research.

The case studies identified that in situations where sound structured process is applied the success of the project is enhanced. Structured process has been defined through previous research and case study and is available in the open market, (Infrastructure Partnerships Australia - Case Studies 2012; Cheung 2009; Cuttaree 2008; Walker 2003; Raisbeck et al. 2010). In this instance, structured process includes the contracting process used to initiate the project.

In addition, failure mechanisms that were identified in the research could also be seen within actual projects that had not performed as well. Even relatively innocuous factors had significantly adverse effects on otherwise effective projects. For example, the communication regimes employed between the government and general public and between the private entity and general public had a detrimental impact on the Lane Cove Tunnel project.
The results from this analysis were used to present a new model that can be utilised in the delivery of these projects. These results also present the key areas for concentration to ensure the opportunity for success is maximised. This information can be utilised by countries operating in less mature markets to assist them down the learning curve.

### 4.2 Survey Results

4.2.1 Likert scales were used in the survey where (1) represented little importance in the positive outcome of a project and (7) represented significant importance. The survey responses provided the following information about the respondents:

<table>
<thead>
<tr>
<th>Position held within the business</th>
<th>Procurement</th>
<th>Senior Management</th>
<th>CEO / Director</th>
<th>Consultant</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The nature of the business</th>
<th>Transport</th>
<th>Infrastructure</th>
<th>Financier</th>
<th>Concessionaire</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Australia</th>
<th>Americas</th>
<th>Europe</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business type</th>
<th>Private</th>
<th>Central Government</th>
<th>Academic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PPP Experience</th>
<th>1-5y</th>
<th>6-10y</th>
<th>11-15y</th>
<th>16-20y</th>
<th>&gt;21y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of projects involvement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>&gt;4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 4.2.1 Summary of survey respondents
Figure 4.2.1 Nature of business involved:

Figure 4.2.2 Types of projects the participants have been involved in:
Figure 4.2.3 Years of PPP Experience:
**Research Question:** Is there an opportunity to develop a model for world’s best practice for the implementation of Public Private Partnership agreements?

**Figure 4.2.4 Key Themes identified for successful Public Private Partnerships**
Table 4.2.2 Key Themes identified for successful Public Private partnerships

<table>
<thead>
<tr>
<th>Likert Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk allocation balance is vital</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Losing bidders should be compensated</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public support and interest is vital</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Positive media reports</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Minimise tendering / transaction costs</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure partnering spirit / commitment / trust</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government commitment to the project</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All processes should be transparent</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processes should be streamlined</td>
<td>1</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure good governance and reporting</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government should give private sector free hand to drive innovation</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct a thorough and realistic review of the costs and benefits</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure an efficient and mature financial market</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KPI’s and performance assessment needs to be realistic and balanced</td>
<td>5</td>
<td>10</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure timelines are realistic and reviewed in the face of engineering change</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Favourable legal framework</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strength of the private consortium</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive procurement practice</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well organised and committed public agency</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Macro-economic conditions</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key themes identified include; the allocation of risk, the governments support, governance structures and the KPI’s used to measure success. These areas have been identified as crucial in the delivery of these projects.

**Sub Research Question 1:** Regardless of ‘Commercial-in-Confidence’ and intellectual property restrictions, is there an opportunity to develop a model to improve reporting requirements and communication to garner better public buy-in?
Figure 4.2.5  Key themes identified in reporting and communication to achieve better public buy-in.
Table 4.2.3 Key themes identified in reporting and communication to achieve better public buy-in.

<table>
<thead>
<tr>
<th>Likert Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>True transparency is not achievable</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>It is the government’s responsibility to ensure public buy in</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The private enterprise should be able to communicate openly with the public</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>The public need to understand the financial model</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Political debate harms the project</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Poor partnering harms public trust</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Early acceptance by the public ensures project success</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Good governance is paramount</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Reporting should be made publicly available</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Evaluation criteria needs to be clearly understood</td>
<td></td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The reporting structures used to communicate the project are seen as the key driver in achieving transparency. However, that said, the evaluation criteria used to determine project success and failure must be clearly understood by all.
Sub Research Question 2: Are there causal patterns in previous projects in mature markets, such as the Lane Cove Tunnel project, which can be recognised to offer immature markets the opportunity to achieve a better success rate and to assist them in getting through the learning curve?

Figure 4.2.6  Identified patterns that can facilitate a better success rate in immature markets
Table 4.2.4  Identified patterns that can facilitate a better success rate in immature markets

<table>
<thead>
<tr>
<th>Likert Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstable macro-economic environment</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non favourable legal framework</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Unsound economic policy</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited access to capital</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objectives that don’t benefit both parties</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate risk allocation or risk sharing</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The commitment and responsibility of the public and private sectors</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The strength of the concessionaire</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Poor governance</td>
<td>1</td>
<td></td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Project technical feasibility</td>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Shared authority between the public and private sectors</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Poor political support</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor social support</td>
<td></td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>The organisation of the public agency (plant owner)</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncompetitive procurement process (number of potential bidders)</td>
<td></td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Transparency of the procurement process</td>
<td></td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambiguous government guarantee</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor assessment of cost and benefits</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government legislation and regulation are significant indices of project failure</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

The commitment of the public and private entities during times of project stress is paramount to success. Appropriate risk sharing eliminates the need for entities to insure against risks that they cannot control.
**Sub Research Question 3:** The PPP financial vehicle (the concessionaire), although contractually and financially sensible, can be a detriment to the success of the contract by being too distant from the project to own or strategically contribute to the success of the project. Concessionaires are typically investment companies that have very little experience in the PPP market and look at the project as simply a Return on Investment opportunity rather than the construction of an actual product. Does this need to change?

**Figure 4.2.7  Optimum role of concessionaires in successful projects**

![Bar chart showing the optimum role of concessionaires in successful projects.](image)
Table 4.2.5  Optimum role of concessionaires in successful projects

<table>
<thead>
<tr>
<th>Likert Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concessionaires need to be champions of the project</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>9</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Concessionaires need to understand the PPP process</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Concessionaires need to be PPP experts</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concessionaires need to be intimately involved in the project construction</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concessionaires need to be expert in government legislation</td>
<td></td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Concessionaires need to report progress transparently</td>
<td></td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

The concessionaire is seen as the expert of the PPP; as such, they must be leaders of the process. There is risk in the project if the concessionaires do not have the required level of expertise. This risk is manifested in the concessionaire’s inability to adapt to macro and micro economic change in a timely manner.
Sub Research Question 4: Should the project be run from a public entity that is not directly related to the outcome of the project, i.e. rail projects should not be managed by RailCorp, road projects not run by RMS etc.?

Figure 4.2.8 Identified success factors related to the availability of a “bank of experts”
Table 4.2.6 Identified success factors related to the availability of a “bank of experts”

<table>
<thead>
<tr>
<th>Likert Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public enterprise can stifle innovation</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Contracts should be managed by contract managers not technical experts</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would support a PPP contract expert who was not affiliated with the public enterprise</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once a technical specification is agreed upon, the public entity responsible for the spec should step out of the project.</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>I would not care if the PPP contract expert were state or federally based. It is about getting the right person.</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public entities should be mentors for the project, enhancing the delivery</td>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Specifications need to be more detailed prior to project commencement.</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>There is still too much bureaucracy within the PPP model limiting true value for money outcomes</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
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<td>There is a disjointedness between local state and federal legislation</td>
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<tr>
<td>I would be happy to adopt a national procedure towards PPPs</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>9</td>
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<tr>
<td>Lack of PPP contract management experience adds to contract cost</td>
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The public entity plays an important role within the project. Identifying the right public entity to control the aspects of the project that need it has been lacking in the current model. This has been seen to add cost and risk.
4.3 **Interview Results**

4.3.1 An interview was carried out with one respondent from the private and public sectors respectively. Their responses are summarised below. The information was analysed with the use of NVivo software. The full transcripts of their interviews are contained in Appendix 1.

4.3.2 **These questions were directed to the private sector.**

**Research Question**

1) Do you document your successes?

The successes of the project have been communicated in a variety of methods. This has resulted in the winning of several awards, especially relating to the financial model that the project utilised.

2) How is this information communicated?

The use of newspapers was employed throughout the project to communicate openly with the general public. This entailed a monthly column in the local press, press articles in the regional area, etc. This did cause some negative press for them and during the change of government from Labour to Liberal resulted in the project being used as a political tool, giving rise to negative feedback about the project.

3) Is your company active in these projects overseas?

The company itself is not active in overseas projects; however, the financiers are all active in overseas PPPs. This project is being used as a
marketing tool to promote the growth of these projects for the investors in the overseas market.

4) How do you guarantee success in these countries?

As this is the first project of this type for the overseas investors, this has not been realised as yet.

5) Are the lessons learned in your area teachable to other areas?

The interviewee recognised that this was a difficult task. The company was active at conferences, published technical papers etc. It supported the contractors and constructors within the project in allowing them to also publish papers regarding the project. Financial information was communicated regularly with the bankers and investors to be utilised on other projects. Due to the transparency of PPPs, information was also openly communicated with the state government. The interviewee mentioned that an area where the lessons learned seemingly failed is in the inability or unwillingness for the States to ‘talk’ to each other in regards to the large scale projects. Victoria would be Australia’s most mature market area in regards to PPPs; however, the New South Wales government does not have a collaboration regime to learn from Victoria’s experience. The interviewee suggested that a group not dissimilar to COAG (Council of Australian Governments) could be set up for PPPs to assist in the distribution of knowledge.

6) Has innovation been stifled because of the public entity?
The interviewee was convinced that innovation had been stifled and cited two instances where this had happened. Firstly, the detail required to meet the environmental impact statement and the legislation surrounding these projects ended up restricting the type of project that could be delivered. Secondly, the rigidity of the process once construction begins means that innovation cannot be introduced into the project unless significant time and cost are also applied to implement the change. Therefore, most constructors who are typically operating on reduced margins in the construction process do not look to introduce change. It was noted that the financial and contractual structures of these projects and the number of stakeholders involved limit the change that can be realised, and that there are opportunities for change when performance specifications are used rather than technical specifications. This approach is not common at this stage but is becoming more evident as governments continue in their attempts to divest themselves of risk in PPPs. Performance specifications detail the output requirements of the plant or infrastructure rather than being prescriptive in the construction techniques that need to be used. This allows the private entity free reign in developing the technical scope and should allow for innovation in the design process. This does not, however, assist in the environmental conditions and approvals that are placed against these projects.
4.3.3 Answers to Research Questions

4.3.3.1 Sub research question 1)

1) At what point should the project schedule be communicated with the public?

   a. Project feasibility 
   b. PSC 
   c. Contract signing 
   d. Design finalisation 
   e. Beginning of construction 

The interviewee recognised that the correct time to communicate to the general public was at the project feasibility stage. It was noted that the project champion should be the consistent face of communications and that this was a government position, typically the minister in charge of the project. The interviewee went on to say that the project also requires communication throughout the process and that this should continue through to the start of operations of the plant or infrastructure.

2) How would you change the way in which the public was involved?

As stated in the previous question the ‘project champion’ was not evident on the project and the interviewee believed this was a weakness. There was no high level government entity promoting the project which left it open to criticism by both the general public and opposition.

3) Have you been limited in your ability to communicate with the general public?
The interviewee had mentioned that they had been significantly limited in their ability to communicate openly and believed that private industry should refuse to enter contracts with such caveats in them. It was noted that the risk to equity was enormous with such contracts.

4) What would you have done differently?

The interviewee would have taken responsibility for the communication train whilst still relying on higher level support from the project champion.

5) Is the responsibility for communicating to the public balanced?

The opinion was that the communication was certainly not balanced and that this was a source of tension in the project.

4.3.3.2 Sub research question 2)

1) Have you been involved with a ‘failed’ project, that is, one that did not meet its contractual agreement?

The interviewee noted two projects they had been involved in that failed in the financial sense. That is, they were delivered to the general public and are currently being utilised as a PPP; however, financially the construction company or special purpose vehicle did not realise the completion of their contract. The first contract, which was a rail infrastructure project, failed in the interviewee’s opinion because there was conflict between State Rail and NSW Transport and this tension flowed through the delivery methodology.
The buy-in from State Rail did not exist so there was no support for the project. The second failed project was a toll road where errors in forecasting methods resulted in a significant reduction in road usage, meaning that the concessionaire was unable to meet its fiduciary requirements. It was further noted that this forecasting process had since been replaced with a more balanced approach.

2) Did you know prior to failure that this was going to happen?

The interviewee noted that none of the outcomes had been foreseen prior to project completion. Modelling had been carried out based on the results of the forecasting provided in the feasibility stage. Poor usage rates of the service were not anticipated and therefore not catered for.

3) What did the company do about it?

The company continued to operate the service and worked with the financiers to reduce concession rates to improve usage. However, this was a short term solution and eventually the concession period was sold at a loss to new investors.

4) What does your company do to ensure this doesn’t happen?

As stated previously, the forecasting model changed and now allows for an availability calculation whereby forecasting is based on the number of hours the service is available per day rather than the number of people who will use the service. This seems to be a much fairer method for the concessionaire.
5) At what point do you know that change is required?

Due to the rigorous nature of the contracts employed, change was not an option in these cases.

6) Do you think the responsibility for failure was adequately apportioned?

The interviewee noted that the responsibility for failure seemingly always falls on the lowest common denominator in the contracts, which is typically the construction arm. This is a weakness in the PPP model, where the ‘partnership’ is rarely realised when projects go bad, and shows a weakness in correctly apportioning risk to the entity that is best suited in carrying that risk.

7) Do you believe there is ‘one best way’ to implement these contracts?

The interviewee noted that due to the unique financial structures and revenue streams that are employed in these contracts, the ‘one best way’ may be difficult. However, it was noted that there are many areas such as risk sharing, government involvement and partnership where what is ‘best for the project’ can be realised.
4.3.3.3 Sub research question 3)

1) Have you been limited in your ability to influence the construction activities?

The interviewee noted that where an operating concession company is utilised rather than an investment concession company, there is much more influence in the construction activities. This relates to the company’s buy-in. An operating concessionaire has a vested interest in achieving the service that will be offered by the plant or infrastructure whereas an investment company will more focused on the return on investment of the project.

2) Have you been limited in your ability to influence the public entity?

Similarly, the interviewee believed that an operating concessionaire has more influence with the public entity simply because they are typically larger, they are more intimate with the project, they have agreed outcomes in regards to through life service and they assume the role of project champion in the absence of the government entity.

3) Have you had dealings with the concessionaire that were detrimental to the project?

The interviewee noted that if the concessionaire was not a project champion then this could be detrimental to the project, as they are the ultimate owner of the project and its delivery.

4) Has the concessionaire been a barrier between construction and the private entity?
Not on the projects that the interviewee had been involved in.

5) Within your projects are you represented by a PPP expert?

The team within the project was experienced in areas including construction, finance, legal, communications etc. It was noted that this was a must for project success.

6) How much of a difference does this person make to your contractual dealings?

The interviewee believed that this had been a huge difference as they are the facilitators of the contracts. Their performance is the difference between project success and failure.

4.3.3.4 Sub research question 4)

1) Has the public entity limited your ability to deliver the project?

The interviewee noted two similar projects: one in Queensland, where the public entity was ill-prepared and ill-informed in PPPs; and one in New South Wales, where the public entity was much stronger in this area. The projects operated very differently through the construction phase and the New South Wales project then utilised a different model for through life support. It was noted that the New South Wales model has been classified as a success whereas the Queensland model will more than likely not be repeated by the government. The interviewee went on to say, “The biggest problem is that organisations don’t understand when they don’t have the capability.”
2) What level of engineering change driven by the public entity has affected your project?

Almost none.

3) Was the variation approved for this commensurate with the change?

No response required.

4) Would you support an independent PPP expert?

The interviewee indicated total support this type of role and thought that this was currently lacking in the government delivery model.

5) Even if this person came at an additional cost to the project?

The interviewee believed that the cost of this person would be minor in the scope of the project, infinitesimal almost. The interviewee also believed the return on this person would be a hundred fold or more.

6) Should this person be state or federal or doesn’t it matter?

The interviewee would support this person whether they were state or federal, public or private.

7) Should the public entity divest itself of ownership of the contract?

The interviewee noted a project within New South Wales that was jointly funded by the government and private enterprise during the construction period, which is typically the highest risk period. This through life support concession was then sold as a PPP, giving a much better return to the entities from financiers, who are more risk adverse and not willing to undertake construction risk. The interviewee
believed this was a model that was not utilised well in the current market but allowed the government to apportion risk and return better than some of the models currently used. It was noted that the interviewee’s project had used this somewhat in regards to the government underwriting the contract and then selling the government security upon financial close of the project. This worked well for the project as it was carried out during the GFC (global financial crisis) and many lenders were risk adverse during this time.

8) At what point should this divestment occur?

   a. Project feasibility
   b. PSC
   c. Contract signing
   d. Design finalisation
   e. Beginning of construction

   The interviewee noted that this approach would typically happen after around one year of operation.

9) What do you think the main barriers to this type of approach would be?

   The interviewee believed the main barrier to this type of project financing was state treasury departments, noting that they were notoriously conservative and that Australian projects were suffering because of the unwillingness to consider this type of two-faced financing.
10) What do you think the benefits would be?

The interviewee stated, “When you get to sell the product you will have a much wider investment market and you will have a much lower cost to finance, which in a sense gives a far greater return.”

4.3.4 These questions were directed to the public sector.

Research Question

1) Is your department active in any overseas PPP projects?

In this instance the interviewee had only been involved in the current PPP within Australia.

2) Do you communicate your success and failures with overseas counterparts?

Similarly there had been papers presented at conferences but no specific communication in regards to success or failure. Information is available in the public domain but no entity had sought information to replicate past successes on future projects.

3) Do you garner knowledge from overseas on what has worked/not worked for them?

The interviewee had used the knowledge of the State Government and Department of Treasury and Finance, who had their own research knowledge but did not specifically source new knowledge on similar projects. They also had
access to a specialist unit who played an ‘overseer’s’ role in the project and they had expertise in PPP projects.

4) Have you changed your delivery model to suit information gathered from other projects outside your current jurisdiction?

The interviewee had not sourced any information that would allow this to happen.

5) Do you believe you have stifled the innovation of the private entity?

The interviewee did not believe they had stifled innovation in any way.

6) Why?

They had allowed the private entity the flexibility to develop their preferred method of technical delivery. This was part of the risk transfer for the project. When technical difficulties were realised the public entity was protected from financial burden. This was carried solely by the consortium.

4.3.4.1 Sub research question 1)

1) Do you believe the communication carried out by your department is fair to both the public and private parties?

The project communication was predominately carried out by the public entity. During the feasibility stage there was a consultative committee formed and they were responsible for assisting in the development of the project specification and setting of the performance requirements in regards to environmental issues. Prior
to the commencement of construction, they suffered from delays due to the intervention of environmental groups. This action was heard in two courts and required more work with the Environmental Protection Agency. This resulted in an eight month delay. It is unknown as to whether better communication would have prevented this from happening. The private consortium was not involved in the communication process until after construction had commenced and at no stage led the communication process.

2) Do you feel stifled by the communication by other departments about your projects (e.g. state party)?

The interviewee believed that they had not been stifled in the communication process. They had very little intervention from other areas of government during the process, but they had been present during the opening ceremony.

3) At what point should the project schedule be communicated with the public?

   a. Project feasibility
   b. PSC
   c. Contract signing
   d. Design finalisation
   e. Beginning of construction

The interviewee discussed the amount of information that was available online during the project feasibility stage. Although this was significant in regards to the detail that was available, e.g. schedules, costs, project contract methodologies and commercial arrangements etc., there was little information in
regards to the specific benefits of the project being discussed with the general public. The overview and high level benefits of this type of plant were discussed but not necessarily the benefits to the community that the plant affected. This may have been a contributing factor in the ongoing delay that the project suffered due to the involvement of the environmentalists.

4) How would you change the way in which the public was involved?

The public sector interviewee was of a similar view to the private interviewee in regards to the amount of detail that can be shared and understood by members of the general public. In this regard it seems that the type of information shared needs to be reviewed to ensure better buy-in by the end users of the service. The level of understanding required to comprehend the finance and project risk models that are used in the development of a PPP is beyond the majority of the general public who have not been exposed to this before, and this needs to be considered when sharing information.

5) Is the responsibility for communicating to the public balanced?

The interviewee believed that this was balanced after contracts were awarded, with the private sector normally taking on the position of ‘silent partner’ and the public sector being the voice of the project. The interviewee recognised that this creates some tension but believed it had not adversely impacted the project.
4.3.4.2 Sub research question 2)

1) Have you been involved with a ‘failed’ project; that is, one that did not meet its contractual agreement?

The interviewee had not been involved in a failed project but had recognised that the project had come close to failure on a number of occasions. It was noted that the financiers, who were ultimately responsible for the decision to close the project, required the strongest relationships in regards to communication. The interviewee also noted the balancing act in regards to committing government support to the project to allow the project to run late without the financiers putting it into default. This was tempered with the ability of the constructor to continue their activities whilst losing money due to schedule slippages affecting milestone payments. This required open and honest communication from all entities in the project. This was really the only evidence of the ‘partnership’ happening in the PPP. That said, the parties were still protected legally by their contractual relationships and the real loser in the project was ultimately the constructor.

2) Did you know prior to failure that this was going to happen?

They did not foresee or mitigate against the delays for the project other than push the risk associated for this on to the constructor.

3) What did the government do about it?

Government worked with the financiers to ensure that the project was allowed to continue.
4) At what point do you know that change is required?

As this was not foreseen, they could only work in the timeframe when issues became apparent.

5) Do you think the responsibility for failure was adequately apportioned?

From the Government’s viewpoint, the risk was apportioned to the private entity and they were aware of their adopted risks prior to contract signing. For this reason they believe the responsibility was adequate.

6) Do you believe there is ‘one best way’ to implement these contracts?

Like the private interviewee, this interviewee believed that the principles of the model are similar in most contracts; however, the nuances of the detail need to be specifically tailored to each contract.

4.3.4.3 Sub research question 3)

1) Have you been limited in your ability to influence the construction activities?

The interviewee believed that this had not been the case. They sighted the fact that they had deliberately tried to disengage themselves from the construction activities to ensure that the risk remained with the constructor. This prevented the opportunity of a claim raised against the government for delay or scope change.
2) Have you been limited in your ability to influence the concessionaire?

The interviewee sighted that their relationship had commonality of interest, so therefore the ability to influence was shared. This was due to the delays that the project suffered due to the constructor.

3) Have you had dealings with the concessionaire that were detrimental to the project?

They noted that there were tensions that were raised due to the fact that people were losing money due to delays and that this was not to be unexpected but that there were no detrimental effects to the project because of this. They believe their relationship was professional throughout the construction phase.

4) Has the concessionaire been a barrier between you and the private construction entity?

The concessionaire was present during all meetings with the constructor and the government had tried its best to keep at arm’s length with the constructor so as not to impede progress.

5) Within your projects are you represented by a PPP expert?

In Victoria, all Government representatives are required to undertake a course conducted through a local university in order to manage a PPP. They also had the support of the PPP department within the Treasury. So in this case they had support even though it was in an advisory role only.

6) How much of a difference does this person make to your contractual dealings?
As this was the first PPP that the interviewee had been involved in, it is difficult to understand the effect of not having this support. It was noted there were a significant number of experts within the support group in areas such as legal, contractual, engineering etc. and that the interviewee’s role was to be the ‘glue’ that pulls it altogether. It was noted that this came at a significant cost to the project and this was a transactional cost. It was also noted that it was unlikely that this would reduce on future projects due to the ever increasing complexity of risk management on these large scale PPPs. This was countered by the cost of project overrun which is typically around 10%, on a billion dollar project; this is a significant number and if it can be reduced to 3 or 4% is a significant saving.

4.3.4.4 Sub research question 4)

1) What level of engineering change have you driven after the signing of the contract?

They had done their best to assign the engineering risk to the constructor so in this instance they did not impose change. They had assisted the constructor with interface issues but this did not come at a penalty to either the public or private entity.

2) What were the main reasons behind these changes coming late?

This did not affect the schedule.

3) Would you support an independent PPP expert?
Not surprisingly, there was little buy-in for the support of an independent PPP expert as this would put another level between the public owner of the facility and the project. The interviewee believes that the interest of the expert would be different to the interests of the government agency responsible for the project and that this would cause tension. That said, it was recognised that they utilised the support of the PPP experts but kept them at arm’s length from the project, not dissimilar to the use of consultants. It was noted that the ultimate responsibility for failure would still rest with the government owner of the facility and that accountability would be questioned with another party in the mix.

4) Even if this person came at an additional cost to the project?

   No response required.

5) Should this person be state or federal or doesn’t it matter?

   No response required.

6) Should the public entity divest itself of ownership of the contract?

   No response required.

7) At what point should this occur?

   a. Project feasibility
   b. PSC
   c. Contract signing
   d. Design finalisation
   e. Beginning of construction

   No response required.
8) Why do you say that?
   
   No response required

9) What do you think the main barriers to this type of approach would be?
   
   No response required.

10) What do you think the benefits would be?
   
   No response required.

4.4 Qualitative Analysis

Is there an opportunity to develop a model for world’s best practice for the implementation of Public Private Partnership agreements?

4.4.1 In reviewing the results obtained from the survey, it was noted that respondents’ opinions rated highly against the issue of whether the method of risk allocation is vital in securing optimum project outcomes. This area is still evolving as the PPP model is used in projects that were previously delivered under traditional procurement contracts. This includes social infrastructure projects such as schools, hospitals and correctional facilities. Areas of risk allocation were previously untested and therefore there is no one best method for risk allocation. As more of these projects are delivered, improvements in risk ownership and mitigation strategies will become more apparent. Responses were coded in relation to aspects of the current model and the feeling of the respondents towards the new model (Figure 4.4).
4.4.2 Government commitment to the PPP project rated very highly. As this study included responses from both public and private respondents, it is interesting to note that the risk of failure is borne by the private entity, with the government stepping in only after the failure has occurred. Further academic study is required to identify the meaning of commitment to each of the parties and to add further clarity to the partnership approach that is required for these projects.

4.4.3 The responses to good governance and reporting showed this area to be vital in the delivery of projects. The ability to communicate to the stakeholders adds clarity and transparency to the progress of the project. It allows for
informed decisions to be made and allows the stakeholders to identify areas of inadequacy in the project, enabling them to enact changes in the project prior to events that may have a negative impact on the project.

4.4.4 The responses revealed that KPIs and performance assessment must be realistic and balanced. This is in line with the governance and reporting regime. The measurements of the project need to show the project in its true light and add real value to the reporting structures that the project uses. This means that the information provided can be used to make accurate and timely judgments to keep the project on time and within budget.

4.4.5 Strength of the private consortium rated very highly. Changes in the macro-economic environment have a significant effect on the private consortium, which typically consists of large investment institutions such as banks and superannuation funds. These institutions require return on investment throughout both the construction phase and through-life support. As the construction period contains the most risk, changes in economic policy may have an adverse effect on the consortium which may reassess the returns which will be delivered through this time. A strong consortium will have a better chance and larger risk appetite to weather these storms.
Regardless of ‘Commercial-in-Confidence’ and intellectual property restrictions, is there an opportunity to develop a model to improve reporting requirements and communication to garner better public buy-in?

4.4.6 Interestingly, the responses in this area were polarised; this may be attributable to the mix of public and private responses or to the varied experiences of the participants. There was not a definitive view of how much information would be required to balance the participation or buy-in of the general public. Furthermore, private enterprise is not always amenable to the general public understanding the financial models that were used to identify the profit margin required to undertake these projects. These contracts are also very complex and detailed, and the untrained general public may not be able to understand the negotiations that have taken place to arrive at a final contractual model.

4.4.7 What was evident was that the majority of respondents agreed that poor partnering harms trust, although this is tempered by the lack of clarity as to what true partnership looks like. These projects are still managed contractually and within this relationship there will always be a master-servant relationship.

4.4.8 Once again good governance and evaluation criteria were paramount in this area. Therefore, there needs to be considerable thought and effort put into what these are, who will use them and the balance of information required to
ensure that the buy-in from the general public is maximised. Project success can hinge not only on the utilisation of the service that will ultimately be provided but also on support of the project during the construction phase as this is typically the time of greatest risk.

Are there causal patterns in previous projects in mature markets that can be recognised to offer immature markets the opportunity to achieve a better success rate and to assist them in getting through the learning curve?

4.4.9 Not surprisingly, risk allocation was identified as a significant issue within projects. The ability for the participant to manage the risks placed on them is a key to project success or failure. Within these projects there is a tendency for the private entity to absorb a greater amount of the risk in an attempt to secure the project from their competitors. In most cases the government will allow this to happen, as it secures their position in a more risk free environment and assists them politically. It is possible in cases where the partnership model is stronger for joint management of risk to occur, where it has been identified that regardless of ownership the risk will have a significant impact on the project. This can be achieved by insuring the risk to a manageable level. The financial burden of this insurance is shared between both entities, minimising the impact.

4.4.10 The commitment of both the private and public sectors was identified as a significant opportunity. As PPPs are quite politically sensitive due to the cost
and life of the projects involved, it is necessary for the government to be committed to the process. This is evident in Victoria, where over the past 20 years or more PPPs have played a vital role in infrastructure development. Through several government political party changes, the Treasury has still maintained its support for the project delivery method and the state has benefitted financially because of this. The private sector has also embraced the PPP delivery method, with many large companies self-funding large portions of the project to ensure better return on investment.

4.4.11 Project technical feasibility was identified as an opportunity. Whilst this may seem logical, it has also been identified that lower than anticipated usage numbers of services, especially in toll roads, were not identified during feasibility studies. There is a unique opportunity to improve this process and develop better models for utilisation. This will ensure that risk factors surrounding these issues are identified and better mitigation strategies are employed.

4.4.12 Transparency within the procurement process, again within the definition of true partnership transparency, was identified as extremely important. It is likely that this rated highly due to the fact that transparency is rarely achieved. Lack of transparency increases the risk of failure to the project.
The PPP financial vehicle (the concessionaire), although contractually and financially sensible, can be a detriment to the success of the contract by being too distant from the project to own or strategically contribute to the success of the project. Does this need to change?

4.4.13 Evident here was the need for concessionaires to not only understand the PPP process but to be champions of the project. Both these areas rated very highly. As stated previously, concessionaires can commonly be investment institutions, banks or superannuation companies. They may be based locally or overseas, but they are driven by returns to shareholders and stakeholders and to ensure that investments by the company are managed securely. These entities are vulnerable to changes in macro-economic conditions and typically react quickly where possible when downturns in markets occur. As the construction phase is generally the time where most risk occurs, these institutions need to be engaged at a level that is deeper than the investment made. This will enable them to weather the storm of construction so as to reap the returns that are available in through-life service.

The investment models must cater for the greater risk periods. There is an opportunity to identify two separate financial models. The first financial model is highly leveraged and risk-managed to cater for the lower than required margin return that is typically associated with construction contracts. The second model is enacted through the concession period and provides greater return on investment with a much lower risk profile. Championing the
project also leads to better general public buy-in and greater government support for the project.

**Should the project be run from a public entity that is not directly related to the outcome of the project?**

4.4.14 There was polarisation regarding this question (Figure ). It is not surprising that public technical entities believe they are capable of running these projects as this is the current model used. From the results, however, it can be seen that the majority of respondents want the projects to be run by contract managers rather than technical experts. There was also evidence that there would be support for contract managers whether they were associated with the public entity or not, provided they possessed the expertise to deliver the project.

4.4.15 The majority agreed that the government entity must take on a mentoring role in project delivery, utilising their vast resources of experience to assist in ensuring project success. All supported the fact that lack of PPP contract management experience adds to contract cost. This cost manifests itself throughout the PPP, beginning with the cost of tendering these projects, through to the transactional costs associated with the legal and statutory requirement of managing a PPP.

4.4.16 Finally, there was recognition of the disjointedness between the state and federal PPP legislation. There was also strong evidence to support the adoption of national legislation regarding the utilisation and implementation of PPP projects.
Figure 4.4.1: Polarisation between Public and Private Sectors
4.5 **Quantitative Analysis**

4.5.1 The results of the survey were analysed using basic statistical analysis and by utilising the SPSS software program. Firstly, the number of results greater than the mean versus the number of results less than the mean was reviewed to determine the respondents’ degree of positivity or negativity towards the questions. Secondly, the responses were multiplied by their respective Likert values to determine the overall value of the responses in regards to the mean (the lowest value being 18, the highest 126, and the mean 72). Finally, correlation analysis was conducted to look for the relationships between the current aspects of the PPP model (Q-1) and the responses to the sub questions (Q-2 – Q-5).

4.5.2 Question One looked at the current model and the academic research into the aspects of the PPP model’s success. Respondents were asked to rate these aspects by their importance to the successful delivery of a project. Overall, 89% of respondents rated these factors positively with only 4% rating negatively, and the remainder sat on the mean. The overall value of the Likert responses showed that respondents valued government commitment to the project, good governance and reporting, and balanced risk allocation as the three top criteria for project success. They were less supportive of compensating losing bidders, positive media reports and macro-economic conditions.

4.5.3 Question Two looked at the communication required for balance and success. Here only 67% rated positively, with 19% respondents rating these factors
negatively. This is not surprising; currently, communication is often managed by the public enterprise and it is unlikely that they would wish this model to change too dramatically and thus lose control in the balance. The Likert response values showed that understanding the evaluation criteria and reporting were paramount but were not as supported as transparency within the project or the understanding of the financial model by the general public. Analysis of the responses for good communication against the model shows a strong Pearson correlation of $r = 0.97$ ($n=7$, $p<0.01$, 2 tailed), rating it significantly important to the success of a project.

4.5.4 Question Three looked at some of the macro and micro-economic influences as causal factors for project success. 79% of respondents rated these positively and 11% rated them negatively. Micro-economic factors rated higher than macro-economic. Likert responses here showed that commitment and responsibility of the public and private entities, followed by risk allocation and the technical feasibility of the project were the highest rating, with unstable macro-economic environment and unsound economic policy factors ranking much lower. There was a strong Pearson correlation of $r = 0.971$ ($n=7$, $p<0.01$, 2 tailed) in the responses for government commitment to the project against the model. This is not surprising as there are many projects that do not proceed due to the government withdrawing support.
4.5.5 Question Four focused on the strength and capability of the concessionaire. Here the results were 82% positive versus only 8% negative. This is another unsurprising result as the concessionaire is the delivery mechanism of the project. However, in practice the required strength is not always seen. According to the Likert responses, concessionaires need to understand the PPP process and champion the project. There were no responses lower than the mean. As there are no specific areas of the model that solely concern themselves with the concessionaire, the correlation between the strength of the private enterprise, the partnering spirit and the concessionaire was reviewed. A very strong Pearson correlation of $r = 0.993$ (n=7, p<0.01, 2 tailed), was shown to exist.

4.5.6 The last question related to the government’s contract management and their role in construction. Results indicate the government’s reluctance to relinquish control, with a positive number of only 73% and a negative number of 15%. Likert responses showed that lack of PPP contract management added cost to the project. Respondents do not care if the contract management expert is state or federally based. However, they seem to agree that the public entity should assume the role of mentor within the project in order to enhance delivery. Coming in below the mean was support for the public entity stepping out of the contract once the technical specification is agreed upon and the recognition of disjointedness between state and federal legislation. Finally, for the relationship between the support of semi-independent contract management principals and the model, the Pearson correlation was unsurprisingly weak at $r = 0.770$ (n=7,
This is primarily due to the fact that this model is not currently used in PPPs within Australia, which is where the majority of the respondents came from. The positive/negative relationship is shown in Figure 4.5.

![Figure 4.5 Positive / Negative Responses to Questions](image-url)
4.6 Case Study Analysis

This section includes a series of reviews of relevant case studies, which highlight areas of success and failure from both mature markets and emerging markets within the PPP arena. This is followed by a review of the implementation processes offered by leading proponents of the PPP, including the PFI system of the UK, Partnerships Victoria in Australia and the Canadian Council for Public Private Partnerships, to determine the similarities and differences between these three offerings. The analysis of the data collected from this research dissertation is then compared to these case studies to understand how they are translated to real world activities, and to further develop the guidelines for the implementation of a successful project. As these projects have evolved it stands to reason that there should be similarities as to how they are implemented around the world. The evolution of the regulatory and commercial environment has seen the successful systems and processes from one country utilised in the legislation of newer markets; this is shown graphically in Figure (Orr 2008).
Figure 4.6: Relationships of PPP units worldwide
4.6.1 Case studies can yield deep but narrow results (Fellows & Liu 2003). In the review of these case studies, emphasis was placed on the projects that idealised the Critical Success Factors (CSF) that previous research had identified (Jefferies 2006). These include:

- Developed legal and economic framework (Tiong 1990)
- Favourable inflation, exchange and interest rates (Tiong 1990)
- Financial capability and support (Tiong, Yeo & McCarthy 1992)
- Technical innovation (Tiong et al. 1992)
- Appropriate risk allocation (Grant 1996)
- Avoiding delays and cost overruns (Tiong & Alum 1997)
- Comprehensive feasibility study (Keong, Tiong & Alum 1997)
- Existing infrastructure (Keong et al. 1997)
- Political stability and support (Keong et al. 1997)
- A well prepared Environmental Impact Statement (Tiong & Alum 1997)
- Expertise (Salzmann & Mohamed 1999)
- Local partner(s) (Salzmann & Mohamed 1999)
- Shared authority (Kanter 1999)
- Transparency (Jefferies, Gameson & Rowlinson 2002)
- Commitment (Bing et al. 2005)
- Strong private consortium (Bing et al. 2005)
- Developing a culture of partnership (Duffield 2005)
4.6.2 **The Sydney Cross City Tunnel** – This high profile project was seen as a failure due to the concessionaire folding and significant capital investment being made by the New South Wales government. The company entered receivership and the maintenance and operating contract was sold to a new investment concessionaire. The road remains in use today and is currently undergoing significant expansion, so from that perspective the project itself did not fail. Initial traffic forecasts, the redirection of traffic flows and the change in toll prices were contributing factors in the demise of the company (Chan et al. 2008).

Whilst this is obviously a tragedy for the private concern, the public (government) face of the project also came under scrutiny. There was little public support for the project as the people felt that the government let them down by simply forcing another toll road onto them; this public embarrassment cost the government in time and money as it tried to recover from the damage (Cheung 2009; Dahdal 2010).

This project and the government received so much poor publicity that the government was forced to form a joint select committee to independently review the errors that arose during the project. This committee was also tasked with a further investigation into the Lane Cove Tunnel, which followed closely in the footsteps of the Cross City Tunnel project (Lane Cove Tunnel Third Report 2006). From the initial investigation, the committee made seventeen (17) recommendations to the government, which were accepted. Nine further recommendations were made in the second review which were subsequently adopted, and in the final version of the report seventeen (17) further
recommendations were given to the government. In total, forty-three (43) changes were recommended by the inquiry (Tiong et al. 1992). This would seem to be significant in any project but goes to show how this project suffered from poor planning and procurement strategies. The outcomes of this inquiry were all accepted by the government, and it could be speculated that this blanket acceptance was given to assist the government in redeeming itself in the face of the ongoing negative publicity of this project (Cross City Tunnel 2006).

The Cross City Tunnel remains in doubt as there is new controversy around the financial viability of the roadway. Recently, the Sydney Morning Herald announced that there was an outstanding debt on the project due to unpaid stamp duty on the purchase (Salzmann & Mohamed 1999). This type of poor publicity keeps at the forefront of people’s minds that PPPs are about private enterprise and capitalist ideals rather than the provision of desperately needed infrastructure by duly elected governments.

This view is not uncommon as PPPs become larger and more complex. Similar attitudes arose in relation to the troubled Waratah train project, where the state government committed to pay an additional $175 Million into the project to take ownership of the Reliance Rail consortium when the trains are delivered in full in 2018, rather than let the project fail and have the private firms go into receivership (Tiong 1990).

4.6.3 The Brisbane Airport Rail Link – The (BARL) Project, which commenced in February 1999, covered the design, construction and commissioning of a new
rail service linking new stations at Brisbane Airport's Domestic and International Terminals with the city. The project required the construction of a new electric rail service upon an 8.5km elevated viaduct and two new stations.

The unique nature of the BARL project was that it was a BOOT (Build, Own, Operate and Transfer) infrastructure project and as such was underpinned by over 100 deeds and agreements, each one yielding differing stakeholder expectations (Garrett 2001).

This was a relatively small project in comparison to some carried out in Australia. This contract was for $233M for a rail link between Brisbane Airport, Brisbane and the Gold Coast. The rail link commenced operations in 2001; however, occupancy rates were approximately 6000 per week down from the expected 58000 per week (around 10%). Due to poor performance and reduced cash flows to the project, Moody’s Investors Service stepped in rather quickly and downgraded the credit rating of Airtrain Citylink Ltd. to CAA1 from B2, Outlook negative (Grant 1996). Airtrain incurred negative operating margins during its first four years of service. It lost $205 million in the first four years, including $125 million in write-offs, and was financially restructured in April 2005. Due to the financing mechanisms created to fund the project, the SPV is still in existence because the infrastructure bonds allow depreciation to be sold to bond holders for cash.

Leighton Holders was a major stakeholder in this project and they were forced to order a write-down on the project. Coupled with the cost overruns they suffered
on other PPP projects, the company was hurt significantly. Leighton deputy chief executive Bill Wild said the PPP economic model needed to evolve:

In particular, there needs to be greater sharing of risk in order to increase the willingness of the private sector to participate in PPP projects (Keong et al. 1997).

Options to reduce risk included larger upfront government contributions, wrapped funding to underwrite liquidity, partial underwriting at the bid's close, and sharing of the economic risk (Keong et al. 1997).

Whilst this project could definitely be seen as a failure due to the unforeseen changes in its funding and the fact that it very nearly forced the consortium into liquidation, the project did achieve an operating profit in 2006 and continues to grow. There was controversy in the fact that the project should have been at no cost to the government, and it seemed at the time that the government would have to step in and take over the project. It could be argued that the risk transference was not fair and the private sector should have carried out more research into the public’s willingness to take up this service. It may be a case of project optimism, which is a typical factor in PPP style projects, where usage figures are always on the high side, or it may be a simple case of Caveat Emptor, where the private sector did not carry out robust due diligence on the project before the undertaking.
4.6.4 Stadium Australia, Sydney Olympic Park, Sydney – This was a design and construct project with $465M for the stadium construction and an additional $70M post-Olympics for further construction activities, making the total financing value $615M. The stadium was designed to seat 118,000 spectators for the 2000 Olympics held in Sydney. The stadium was then converted into an 83,500 seat venue post-Olympics and is still in use. The stadium consortium used an innovative approach to financing by offering 30,000 ‘Gold’ class seats in a fully underwritten venture, giving Gold members entry to every Olympic event held at the stadium. This upfront financing provided sufficient funds to enable the delivery of a world class event arena and minimised the contributions required from the New South Wales state government (Infrastructure Partnerships Australia - Case Studies 2012).

Innovation also existed in the design by allowing the seating arrangements to be reconfigured to suit different events such as the change in playing field size required by Rugby League and Australian Football, two very popular spectator sports.

As this project was a BOOT (Build, Own, Operate and Transfer) project, the stadium will be handed back to the government at the end of its 30 year project life (Jefferies et al. 2002). For this reason a significant part of this contract involves maintenance; up to $140M will be spent in maintenance activities to ensure that the stadium is handed back in good order and will remain a viable
concern for the government (*Infrastructure Partnerships Australia - Case Studies* 2012).

In real terms this PPP was brought to a close quickly. Expressions of interest (EOI) and tendering were carried out in 1995 and the preferred tenderer was announced in the same year. Financing and public involvement occurred in 1996 and construction commenced in September 1996. The stadium was completed in March 1999. This may have been due to the fact that this infrastructure was required in order to meet the commitments necessary for the Olympics, but in PPP terms this project was very efficient (*Infrastructure Partnerships Australia - Case Studies* 2012).

This project is now in its 13th year of operation and is still running profitably despite a slow start post-completion. It remains one of the few stadiums in the world that can be reconfigured to support different sporting codes (*Infrastructure Partnerships Australia - Case Studies* 2012).

The project demonstrated good aspects of the ‘partnership’ model of the PPP and the public and private entities continued to show good cooperation well after project completion (Jefferies et al. 2002). The stadium has won over 15 major engineering and construction awards both within Australia and internationally. The International Olympic Committee (IOC) recognised it as the best ever Olympic stadium (*Infrastructure Partnerships Australia - Case Studies* 2012).
4.6.5 **Sydney SuperDome, Acer Arena** – This stadium was another BOOT (Build, Own, Operate and Transfer) style project for the Sydney Olympic Games in 2000. The PPP was the second largest contract value awarded by the Olympic Co-ordination Authority (OCA). It was based on an AUD$280M construction value over 25 months with a 30 year concession operation period. Challenges for the concessionaire were to meet the initial needs of the Olympic Games and to then ensure that the stadium was flexible enough to cater for a number of different sporting and entertainment opportunities in the future (Jefferies 2006).

As well as the obvious attraction of the stadium, the concessionaire identified the opportunity for business diversification by creating a number of eating and drinking establishments that operate independently of the stadium, thereby generating a revenue stream even when there are no events occurring within the stadium.

The Sydney SuperDome project further highlighted the maturity of the New South Wales Government in working with private enterprise to deliver large scale projects. Similarly to the Victorian government, NSW has released guidelines to assist in capturing the opportunities and to address the issues that may impede private enterprise delivering world class projects (Government 2001).

The BOOT style project is ideal from the government’s perspective as it removes the operational maintenance cost of the infrastructure, as the concessionaire remains responsible for the upkeep of the infrastructure throughout the life of the project.
contract. For the private sector the emphasis is on innovation in design to deliver a cost effective end product whilst also minimising long term maintenance costs (Jefferies 2006).

In the financing of these projects the projected operating cash flows and assets are used to structure the finance product without the need for additional sponsor guarantees (Jefferies 2006). This preferred method helps to alleviate the investment risk as well as minimise the cost of investment, thus making the project more attractive to both the private entity and the investor. In the case of the Super Dome, the private entity contributed approximately 25% of the construction finance but carried the full debt of the construction period.

The contractual process used on the SuperDome was carried out shortly after the contract for Stadium Australia had been awarded. Because of this there were many lessons learned from Stadium Australia that assisted in stream lining the processes used for this project. With the government experience gained from the previous negotiations the process was streamlined significantly.

The tendering experience for the SuperDome was unique in the fact that two tenderers were identified and negotiations remained open until the very end, with the losing tenderer paid a generous reimbursement for the tendering costs. This created a healthy competitive spirit in the process which benefited the government (Jefferies 2006). The success of the concessionaire was ultimately due to the fact that their risk profile closely matched the government’s preferred outcome.
Success for the construction of this project was ensured by the fact that the issue of bidding risk was mitigated by the Government financing the losing bidder’s costs. This enabled the bidders to remain in the tendering process all the way to the end, ensuring that competition was maximised with minimal capital costs to the private entities.

The overall process was very streamlined due to the fact that this was in essence a back-to-back tendering process. That is, the Government entity had just gone through a very lengthy process on Stadium Australia and had learned many lessons which it used to improve the process.

The project focused on delivering its core business, namely as a sporting and entertainment venue, but also capitalised on business diversification with the inclusion of the eating and drinking establishments, thus allowing maximum usability returns for the venues.

The SuperDome utilised a streamlined finance process with equitable participant risk sharing. The concessionaire’s appetite for risk exceeded that of its competitor and this led to a successful bid.

Currently it appears that the SuperDome is a successful PPP; it competes against the Sydney Entertainment Centre and in 2005 generated over AUD $50 million in ticket revenue.

4.6.6 **The TransMilenio BRT** This project was designed for operation by private contractors under government oversight. The delivery of this PPP required
detailed technical, legal, and financial design. Like more mature PPPs, there was also the creation of a new public entity in charge of system (a consortium). New features in planning, development, and control were also required. The project was not without its issues either; there was the need to overcome resistance to change from traditional operators and small bus owners. The development of new infrastructure, letting contracts and starting up the operation as well as earmarking local and national funds for system expansion added to the complexity of the PPP and required innovative solutions to ensure success (‘Bogota Columbia: TransMilenio BRT’ 2001).

The BRT system in Bogotá is an example of one city leveraging the experiences of another to implement a new initiative; utilising one PPP structure to increase maturity into a country that recognises the value of the PPP model. The structure for this system largely mimicked those of Curitiba, Brazil and Quito, Ecuador. Bogotá learnt from its peers and implemented an organised structure based on a previously proven business plan (‘Bogota Columbia: TransMilenio BRT’ 2001).

Factors affecting the BRT system included:

- Ensuring equity within the system remained a high priority.
- Establishing coordination mechanisms and adequate institutional arrangements.
- Allocating sufficient technical and financial resources for the preparation and execution of the project.
- Including stakeholders in the process to garner support.

- Thinking long-term, but including specific short-term actions that have an immediate demonstrated effect.

- Assuring financial sustainability by using measures that reinforce this principle even if they are unpopular (gas tax, use of general revenue, private vehicle restrictions).

- Providing adequate incentives for private sector operation (performance based contracts for defined periods of time and competitive tendering).

- Connecting with existing road transport systems.

- Creating awareness of the system and its upgrades through information campaigns to gain public buy-in. *(Bogotá, Colombia Bus Rapid Transit Project - TransMilenio Case Study (Transportation) 2009)*.

### 4.6.7 Trans African Concessions (TRAC) -

In 1996 the governments of South Africa and Mozambique signed a 30 year concession to build and operate the N4 toll road from Witbank in South Africa to Maputo in Mozambique. After the 30-year period, control and management of the road reverts to the governments. The contract was worth R3 billion at 1996 estimates *(Farlam 2005)*. Finance for this project was made up of 20% equity and 80% debt and comprised of equity funding from three major construction companies who formed the concessionaire and debt fund from a series of banks, including the four largest in South Africa. The governments of South Africa and Mozambique guaranteed
both the debt and equity of the project jointly and separately. This spread of debt and supportive government guarantee gave a solid base for the project. This in itself did not give any indication to the success of the project as there was no guarantee of traffic volumes as vehicles could still use non-tolled but poorly maintained routes. The continued use of the non-tolled routes was mainly due to the poorer communities on the Mozambique side who were both unable and unwilling to pay the higher tariffs, so there was still significant risk associated with the undertaking. To attempt to combat this, TRAC cross-subsidised the Mozambican portion of the road with higher revenues from the South African side. It also provided substantial discounts to local users and public transport on both sides of the border (Farlam 2005). However, the project has not been free of criticism, with some attacking the negative effects on small businesses and on hawkers, who are unable to afford the tolls to assist in their businesses competing against larger, more affluent companies who can afford to use the road regularly. This has been countered by the concessionaires and the government through the provision of training to communities along the route. This has enabled those people to diversify their previous business to capitalise on the new business opportunities that were created as a result of the new road, as well as increasing the number of small businesses that have opened along the route thus creating more jobs. The road has also facilitated further private sector investment in Mozambique, which in turn has raised traffic volumes (Farlam 2005).
4.6.8 These case studies have highlighted that successful PPPs can be achieved if proper process is observed. These cases are now operating in their through life phase and are still considered successful despite the issues they suffered during their construction phases. With hindsight, projects such as these may have been undertaken quite differently. However, we can see now that these projects will continue to provide much needed service to the general public. Patterns of success within these projects include:

- Conducting a thorough needs analysis of infrastructure and basic services and considering all possible options for meeting these needs. This needs analysis must consider the requirements of the general public beyond the provision of merely basic essentials in service delivery and must also reflect the humanitarian needs of the people.

- Carrying out a thorough feasibility study that:
  - Compares public sector provision with private sector provision and takes into account affordability, value for money and risk transfer
  - Considers the rate of return on equity which is acceptable to both parties
  - Uses accurate information in its calculations and projections
  - Avoids unnecessarily high design specifications
  - Considers all the financing options before committing to one model
  - Involves all the necessary stakeholders, and importantly, understands how the management structure will impact the project.
o Develops a detailed plan as to how the stakeholders will be managed and their accountabilities

o Identifies all the risks of a particular project, allocates them to particular parties and devises risk mitigation strategies

o Ensures good governance through strict treasury approvals at key stages of the project preparation process and ensures transparency in the reporting structures. Where the relevant agency exists, it must ensure transparent, credible and effective regulation is adapted to suit the needs of the project and the country, and where it doesn’t exist must ensure the creation of an independent agency which has sufficient resources to undertake the task at hand.

• Understanding the financing framework, cost recovery, the public sector comparator and the impact of these on both the government and the general public for the life of the contract.

• Providing political guarantees to investors where appropriate, to ensure the maximum take-up of project opportunities and ensure competition.

• Ensuring that the maximum benefit from competition and innovation is achieved through the bidding process.

• Pre-empting public complaint and suspicion by:
  
o Preparing the ground for private sector participation by making structural reforms and raising tariffs to approach cost recovery levels (where appropriate)
o Communicating decisions around PPPs to the public to build consensus and transparency. This may take many forms but is vital to ensure that general public buy-in is garnered throughout the process to ensure project success

o Providing policy clarity in the areas of free basic services in concession areas

o Considering the extent to which a project or particular bidder will contribute to the local socio-economic environment

o Assessing the political commitment to a particular project from government institutions

• Ensuring that the risk and return options of the contract are fair and equitable to both parties (Farlam 2005).

4.7 Conclusion

4.7.1 This analysis has used survey, interview and case study analysis in order to utilise across sectional design method which links the benefits of both qualitative and quantitative research methods via the use of triangulation (Bryman & Bell 2007). The numbers of responses collected from the survey were lower than expected. Initially, in-principle interest from over 135 entities had been garnered. Therefore it was expected that the number of responses would be greater than 40 rather than the final 20 participants. That said, the range of responses covered
private, public and academic entities, and the respondents were global in nature with significant depth of experience in the delivery of many PPP projects. For this reason, analysis of this data applies to a broad range of project types globally and within the PPP genre.

4.7.2 Analysis focused on the patterns of success and the respondents’ views of areas of significant risk in the development and delivery of these projects. By default this also covered the key performance indicators in the successful delivery of projects and the failure mechanisms that have caused projects to not meet their contractual obligations. This may be in the consortium falling into liquidation or by the government financially propping up the project in order for the service to be delivered to the general public.

4.7.3 It was evident from the research that the area of partnership within the PPP could still benefit from a better definition and from better buy-in from both public and private entities. The public entity will in all cases be the holder of the contract and for this reason always holds the position of ‘master’ within the relationship. These contracts are behemoths in nature with concessionaires, special financing vehicles, government entities, contractors, sub-contractors, underwriters etc. all having intertwined relationships and responsibilities. For this reason the PPP legal model has continued to grow, adding more and more transactional cost to the project. Although appearing to be transparent in their dealings, the private entity is still reluctant to be completely open in their financial needs and wants
for project return. This transparency should not be confused with business
integrity. Corruption in business and in dealings with governments, especially in
third-world or less politically mature countries, must be completely eliminated.
Transparency assists in this cause. There are many agencies around the world
that are working to identify this; within Australia this agency is Transparency
International Australia (*Transparency International Australia*. 2013). Transparency operates in such a way that it is easy for others to see what
actions are performed. However, as projects are communicated reasonably
openly with the general public, these facts and figures can be misleading to the
average shareholder and may negatively impact the private entity’s business.
Furthermore, the private entity contractually performs the ‘servant’ role in the
PPP relationship. Once contractual risk has been assigned, it is unusual for any
re-evaluation of risk ownership; for this reason an entity could stand idle as the
other suffers managing risk they were ill equipped to manage in the first
instance.

4.7.4 The initial feasibility study is an opportunity to identify the risk within the
project. Risk identification rated as very important within the survey. However,
instances of failure noted that in some cases even after a seemingly successful
feasibility study, usage rates of the service were much lower than anticipated,
leading to increased financial burden on the concessionaire. This could highlight
an area where the feasibility study has either been too optimistic or not used
adequately to assess the risk in the utilisation numbers. Mitigation strategies
were not determined to cater for poorer than anticipated buy-in from the general public.

4.7.5 Governance has been criticised as "the discretionary space left by the lack of a clear well-defined scope for what governance encompasses, allows users to choose and set their own parameters" (Agere, Management & Division 2000). It is essential that a clearly defined scope is agreed to through the feasibility study. Scope creep and engineering change add complexities of ownership to the project. Again, it was evident here that the private consortiums suffer from the onerous change that is associated with these projects.

4.7.6 The themes that emerged through the research show common patterns in regards to the areas of importance within the PPP model (Figure ). Not surprising are the recurrent aspects of risk, contract, people, government and the model itself. These areas require ongoing scrutiny and improvement for the next generation of PPP contracts.
Figure 4.7: Common Themes
CHAPTER 5: CONCLUSIONS

5.1 Discussion

5.1.1 Sub research questions 1) Regardless of ‘Commercial-in-Confidence’ and intellectual property restrictions; is there an opportunity to develop a model to improve reporting requirements and communication to garner better public buy-in? Based on the negative general public sentiments surrounding failed or struggling PPP projects, this can be seen as a unique opportunity in current markets.

Within the research it was evident that the information currently made public may not comprise all of the data required to add real value to the end user. There is the perceived need that transparency is predominately met by releasing the details of the complex financial models used in the project analysis. This information is important to a small percentage of the general public and so must be released, even though it is typically beyond the understanding of the majority of end users. It can also be used to answer the questions of why private enterprise is a more cost effective solution than the government, but does little to allow the general public to understand the implications and benefits of the project overall. Presenting this information will allow the general public to be better informed about the effects of a project on them personally. However, this approach needs to be tempered by a government tendency to generally announce a number of projects that do not ultimately materialise. This feeds into the governance of the project; overwhelmingly the commitment to good governance
was seen as paramount by both the public and private respondents in the survey.

Good governance as proposed by Al-Rodhan (2009) has eight minimum criteria:

1) Participation, equity, and inclusiveness;
2) Rule of law;
3) Separation of powers;
4) Free, independent, and responsible media;
5) Government legitimacy;
6) Accountability;
7) Transparency; and
8) Limiting the distorting effect of money in politics.

Each of these aspects must be considered in the communication strategy adopted by the project.

5.1.2 **Sub research question 2)** Are there causal patterns in previous failed projects in Australia, England and Canada, such as the Lane Cove Tunnel project, which can be recognised to offer immature markets the opportunity to achieve a better success rate and to assist them in getting through the learning curve?

The research showed that inappropriate risk allocation was a significant cause of project failure. This should not come as a surprise, however; as more and more projects are being delivered with risks allocated to questionably the wrong party. Failures are still occurring as a result of this. Governments continue to abrogate risk by transferring it to the private entity under contract which needs to insure against it, thereby driving transactional costs further and further upwards. Risk allocation requires a re-think and in this case needs to at least follow the well-
established model that has been developed by previous academic and empirical research. That is, risk must be assigned to the party that is best able to carry it. This can be managed somewhat through the use of performance specifications rather than technical specifications.

The organisation and commitment of the public entity is another area where failure occurs at the project level. Disharmony within governments adds little value to the general public’s buy-in of the project. Lack of true ‘partnership’ in the more traditional master-servant relationship of contracting is still prevalent.

The strength of the concessionaire was also identified as a major risk. This again is not surprising as these special vehicles are typically formed as joint ventures (JVs) and are protected through corporation law to ensure that their risk levels are not exceeded. Whilst there is still a significant amount of financial pain for these JVs, if the project fails they are not obligated to ensure the project continues when it is deemed financially not viable. The risk for the project continuance ultimately falls back to the government and no concessionaire would be in a position to be responsible for this. However, if the business is not capable of carrying the cost of construction risk and the slow uptake of the new service or infrastructure, the project may be placed in jeopardy.

5.1.3 Sub research question 3) The PPP financial vehicle (the concessionaire), although contractually sensible, can be a detriment to the success of the contract by being too distant from the project to own or strategically contribute to the success of the project. Concessionaires are typically investment companies that
have very little experience in the PPP market and look at the project simply as a return on investment opportunity rather than the construction of an actual product. Does this need to change?

Overwhelmingly the responses here identified that the concessionaire needed to understand the PPP process and to be champions of the project. This flies in the face of the communication strategies that are currently in place, where the government entity is typically the only party that communicates openly with the general public. The concessionaire must adopt the position of PPP expert to drive success in a multi-faceted approach. Firstly, at the construction level they need to be intimate in the delivery of the project. This does not require managing the constructor whom they have contracted as an expert in their field, but does require management of the contract and the deliverables within. Secondly, the concessionaire must manage the public entity to ensure that there is a balanced information flow both within the project and externally to the general public. Lastly, within industry the concessionaire must ensure that the challenges and successes of the project are communicated openly and transparently so that others benefit from the knowledge. The concessionaire is the beginning and the end of the project and must adopt an owner’s position.

5.1.4 **Sub research question 4)** Should the project be run from a public entity that is not directly related to the outcome of the project, i.e. rail projects should not be managed by RailCorp, road projects not run by the RMS etc.? There is the prospect for a State or Federal bank of PPP experts that could be seconded to a
project as part of the government approach, to ensure that contractually the project has the best opportunity for success and to somewhat divest technical experts of the day to day running of the contract.

Within the responses to this question it was evident that a lack of PPP contract management experience added real cost to the project. Most respondents were of the opinion that the contract itself should not be managed by the technical experts but by an independent contract manager. There was no strong opinion as to whether this person should be a state or federal employee as long as they were an expert in the field. National procedures in the delivery of PPPs would assist in the bank of experts being better suited to the role of manager/mentor for projects. This would be a paradigm shift for the current model and a change in the way most governments deliver these types of projects, and thus it is recognised that it would be a significant hurdle to introduce this new model.

Reducing the bureaucracy of the systems and improving the detail of the specifications for the project were also seen as major areas for improvement in delivery. It was also identified that innovation was stifled under the current schema. Although performance based specifications are helping to improve this, technical specifications currently make up a significant portion of these projects and in conjunction with the bureaucracy and compliance issues faced by the private sector, can contribute to a loss of innovation. As this has been identified as one of the advantages of the PPP model, it is recommended that greater emphasis be placed upon performance specifications, thus allowing a free hand for innovation. As the private entity bears the risk of performance of the service
or infrastructure on these contracts, there is little risk to the government for supporting this. Performance guarantees can be developed during the feasibility stage of the contract.

5.1.5 **Research Question 1)** Is there an opportunity to develop a model of world’s best practice for the implementation of Public Private Partnership agreements? This model could be utilised by less mature markets to assist in accelerating the learning curve, or by mature markets to ensure the maximum opportunity for success for the project.

The responses here identified key areas for consideration. It was identified that these contracts are typically very unique in their financing and payment streams through the life of the contract. For this reason, financing in mature and stable markets allows the risk through the construction periods to be managed more effectively when return on investment is much lower. Of key importance are the government’s commitment to the project and the ‘partnership’ model that is established. Reducing transaction costs, setting realistic performance criteria and having streamlined processes for the private sector were all viewed as major drivers for success. Overall, good governance and reporting and the allocation of risk ranked very highly for all respondents, although this should not be surprising as these factors are still regarded as major risks to projects. There is an opportunity for projects to improve in these areas. Risk allocation can be improved if the partnership model is also improved, thereby reducing the effects of the master-servant relationship where the stronger party (government) pushes
more risk onto the weaker party (private). This model is unsustainable and will continue to increase transaction costs as the private entity insures against risk that it is not best suited to manage.

It is evident from the survey and interview results that respondents feel there is an opportunity to improve the current model and although the delivery of these projects will always be unique, the overarching methodology of the model can be standardised so that both entities can enter into the partnership on a more level playing field. A summary of the findings from the research is presented below in Table 5.1.5

| Risk Allocation | Much more research is required in this area as macro-economic risk changes regularly and risk allocation methods still remain untested. Poor risk allocation was noted as a determining factor in most failed PPP projects. Risk and return options need to be assigned to the correct entity and they need to be balanced. |
| Government Commitment | Stronger commitment is required from the government to ensure the Partnerships’ success. Political guarantees should also be considered. |
| Private Commitment | Economic strength of the private consortium is always a risk to long term projects. |
| The Concessionaire | It was identified that the concessionaire needs to be the project champion and have a deep understanding of the PPP model in use. |
| Governance | Transparency and reporting are key drivers for success; however, temperance is required as too much information adds no value to the general public who are not trained in contractual agreements. Most respondents believed communication strategies were biased towards the government. |
| Project Key Performance Indicators | These need to be balanced, achievable and fair to ensure neither party is disadvantaged. |
Feasibility Study | Opportunities are available by reviewing previous projects to improve modelling and utilisation processes thereby reducing risk. Financial modelling should also be considered at this stage.

Legislation | Respondents agreed that the disparity between State and Federal legislation added confusion and risk to projects and that they would adopt a higher level of national legislation if it were available.

The running of the project | The majority of the respondents would prefer to have a contractual expert over a technical expert as the owner of the contract, with project management cost being the main reason.

Micro and Macro-economic Factors | Whilst micro-economic factors rated much higher in regards to determining project success, macro-economic factors were the reason why many projects did not progress passed feasibility studies.

Bidding Process | The cost of the bidding process for PPP projects is extremely high, for this reason not all companies are willing to outlay the funds to bid; this reduces the talent pool and may not achieve the required outcome. These costs need to be mitigated to open the market to new bidders.

Socio-economic and Humanitarian Return on Investment | The overall value that the project adds to society needs to be considered. A toll road becomes much more if livelihoods are reduced due to the reallocation of traffic.

Table 5.1.5 Summary of Research Findings
5.2 Limitations

5.2.1 The PPP is a complex, multi-faceted model which operates across a variety of delivery streams and a range of different projects. It operates under varied political models that utilise a range of financial markets. This research has focused on the procurement of the contract itself and the subsequent delivery of that contract. This research has attempted to identify the success and failure mechanisms for the delivery of PPP contracts that are currently used around the world today. There needs to be consideration of political, economic, social, technological, environmental and legal (PESTEL) variations and PPP maturity levels around the world, as well as within countries themselves, as states and territories continually adjust their individual systems and processes.

5.2.2 Success and failure measures can be seen as the same for both traditional and PPP delivery methodologies, with the exception that the PPP contract has a life far beyond that of traditional project delivery models. Changes in both the macro and micro environments can have adverse effects on the PPP contract over time and sometimes due to this cause and effect scenario, deviations from the original plan will cause failure to the project. This failure may come in many forms. It may be catastrophic, such as in the case of concessionaire bankruptcy and the subsequent government buy-out of the project prematurely, or may be a variation to the user pays charges, such as tolls, which cause both public and political unrest. In some cases the changes may cause more subtle variations to the
original plan, such as government funded top-ups to the concessionaire due to poorer than expected usage of the new infrastructure. Whilst this does not affect the general public per se, it still causes political unrest and does damage to the PPP model.

5.2.3 Success has been more difficult to measure due to the fact that the PPP model has really only gained momentum since the 1980s. This means that older PPP delivery models are yet to achieve their full project life, as most of the projects have 20 to 30 year life expectancies, and thus have not yet been handed back to the government. Success in today’s market is typically measured by the construction success that the project has already achieved and the ongoing good management of the concessionaire in the delivery of the service expected. This is not to take anything away from this success, as project failure can also occur during this time.

5.2.4 The PPP project looks to assign the risks of project financing, construction and management over what is seen as an extended life time of greater than 10 years and up to 30 years. As an incumbent government has a life span of only 4 years in many countries, a PPP project could experience up to 7 or 8 changes in the political environment during its lifetime. There is significant risk in this area, in addition to the original risks, that require management in this project delivery model. The inappropriate allocation of risk is one of the areas of project failure. It has many dependencies, such as the appetite for a private contractor to take on the risk in order to hopefully guarantee that they will be seen favourably in their bid. The government will also try and move the risk onto the private contractor
to ensure that they remain protected. Although common, this process rarely works for the betterment of the partnership. The risk environment is typically never stable and nor is it predictable; the Asian financial crisis and the Global economic crisis are testament to this.

5.2.5 The response rate to the questionnaire was only about 14%. This in itself may mean that there was insufficient data collected to draw conclusions accurately; however, the analysis of the data was detailed and the researcher’s own experiences on large scale projects both financed traditionally and through the PPP model add value to the assumptions.

5.2.6 There is a limitation in the amount of detailed project information available from some of the less mature countries. This has made it difficult to understand the level at which they are using mature market models in their creation of legislation and in the implementation of the changes required around their financial markets.

5.2.7 Within the PPP arena, whether it is in relation to more mature or less mature markets, there is still conjecture about what ‘partnership’ truly is and how to measure value for money (VFM) within a project. This presents a dichotomy
which is both stifling advancement and enriching knowledge. Persistent questioning of the meaning of project partnership limits the ability to achieve a true VFM option for both parties. However, the ever-changing face of economics and government legislation means that projects need to be unique in their approach, since what was acceptable or achievable yesterday may not be so today.
5.3 Recommendations for Further Research

5.3.1 The marketing of the PPP model has more often than not been unsuccessful in regards to the public buy-in. This may also be hindered by opposition governments capitalising on the spin doctoring of in-government challenges. There is an opportunity to review the marketing models that are currently used by both public and private enterprise in order to identify critical success factors for project support. This is especially important for newer and more socially responsible projects in underdeveloped economies, such as those that bring water supplies and sanitation to remote areas. The key triggers that governments utilise worldwide to identify the need to engage the PPP model are disparate, and there is an opportunity to research these triggers to understand the level of maturity required to enact them. There is a difference in the triggers used in Australia, Canada and the UK, even though these countries are seemingly of a similar maturity level. However, the reasons for this are not explained by this research. The ability to broaden the overall use of the PPP may be realised through further research.

5.3.2 PPPs are moving rapidly into the Public Private Community Partnership model. This social improvement space is a different model and is aimed at improving the lives of the impoverished, unlike the typical ‘pay for service’ paradigm that has previously fed the PPP (Ke et al. 2009; Introduction to PPCP ; Public Private Partnerships in Research 2009). This model also focuses on environmental and sustainability issues that are facing both business and the
government. Recently there have been three PPCPs sanctioned in Europe; 1.2 billion euros have been committed to the Factories of the Future project, 1 billion euros to the Energy-efficient Buildings project and 5 billion euros to the Green Cars campaign. These projects are a new generation of PPP and the information gathered from these could change delivery models around the globe. These new initiatives particularly hold many advantages for the manufacturing, construction and automotive industries, notably:

• Renewed confidence to invest in long-term research, even when faced with short-term economic problems;

• A central role for industry, including SMEs, in the development of the strategic roadmaps and in the implementation of the research projects;

• A multi-annual integrated work programme with a pre-defined budget, ensuring continuity and allowing industry to make long-term investment plans;

• A cross-thematic approach which moves from basic and applied research through to validation and large-scale demonstration, with an increased emphasis on impact and exploitation;

• Increased opportunities to support innovation in SMEs;

• Single-stage submission of proposals leading to a faster evaluation process and time to contract.

Interestingly, India has introduced a method of ensuring that projects continue under the PPP model, even if they are not commercially viable for the private consortium. The Viability Gap Funding (VGF) scheme has been introduced
whereby the government will contribute up to 40% of the project costs. The projects are still tendered competitively, with the lowest VGF being the criteria for award (Adair et al. 2011). The notion of this risk sharing partnership is not new and has been presented in previous research by Forward & Aldis (2009). The research suggests that some of the principles of alliance contracting can be adapted to all elements, including financing. This means that in the provision of infrastructure in a partnership between the private and public sector, the risks are shared rather than allocated. Under the risk sharing partnership approach, gains and losses are shared between the parties of the partnership within the normal range of operations. Above an agreed internal rate of return (IRR), governments collect super normal profits or share them with the private sector on an agreed basis. Losses below an agreed IRR are underwritten by government. This arrangement provides a strong incentive for government to actively review the patronage forecasts and other risks that may impact on the IRR.

5.3.3 The continuing movement of risk between the entities has been a significant area of concern and where incorrectly apportioned has led to the failure of some PPPs (Johnston 2010; Ke et al. 2010; Broadbent et al. 2008). There is an opportunity here to identify the limitations of poor risk placement (Fischer et al. 2010). There is the need to further develop the model to ensure the maximum chance of survival for a project. This can be achieved through a structured and shared risk ranging process to identify the correct owner of risks and to develop a mitigation
strategy to ensure that risk doesn’t impact other areas of the project (Public Private Infrastructure Advisory Facility 2010; Mariño 2010).

5.3.4 There has been some research carried out to develop predictive tools which could be used to ensure project success (Ng et al. 2010; Ng et al. 2007). Further investigation and use of these models, as well as future development of these theories, could benefit tools such as the public sector comparator. Eventually these tools could be used as a go-ahead or no-go gauge for the use of the PPP.

5.3.5 Within Australia, one of the largest projects undertaken to-date is modelled under a PPP, namely the National Broadband Network. This is an AU$42 billion dollar project which will be established over 8 years with an initial government capital injection of AU$4.7 billion. It employs private corporations to construct the network, and private companies are invited to invest and provide technical expertise and resources and the issuance of government bonds (Adair et al. 2011). This project has been controversial since its inception, with the opposition vocally opposing the project due to the overall cost. There has been significant press around this to-date, and the project should be followed closely to identify the benefits and failures of such a large scale undertaking. There is an opportunity for a real ‘lessons learned’ approach to this project for other countries to capitalise upon.
5.3.6 Value for Money (VFM) in PPPs needs to be explored further; there are a number of projects that are seemingly limited in their approach to maximising the profitability of the project. They typically accomplish this by raising tolls or user pays charges; however, there is a potential to supplement income through other means such as advertising revenue or lease rentals from commercial space. The capitalisation on these softer opportunities needs to be thoroughly investigated in future projects to ensure the viability of some projects for private sector investment.

5.3.7 True partnership is difficult to achieve and difficult to measure. This can be seen in the private sector in the number of unsuccessful joint ventures (JVs). That is not to say that JVs don’t work, but they typically require a new paradigm for both entities. It has been noted that nearly one in two JVs fail (Park & Russo 1996; Kogut 1988). The relationship between the government and a large private entity is at least as tenuous as a JV and requires significant cultural change to ensure success. There is an opportunity to study the key requirements for this partnership. Today’s PPPs, even in mature markets, still resemble a master-servant relationship; this may be detracting from the value that is possible if this partnership were improved. The identification of a model that shows what true partnership looks like within a PPP would be valuable and could be used as a key performance indicator (KPI) measure for projects.
5.3.8 Legislation around the world is evolving to cater for the PPP delivery model; there is an opportunity to understand the level and rate at which this is happening. There is also an opportunity to identify a stage-gate timeline that previous mature countries have experienced, in the hope of assisting current non-mature countries in achieving success. This must take into account the current financial markets of the countries under study, as this would have a significant influence on the change and/or possible rate of change that was available. Changes to both legislation and the financial markets in which governments operate are costly in terms of time and money. The ability to circumvent at least some of these expenses by possibly identifying future required changes and implementing them earlier should be seen as attractive to governments.

5.3.9 It was noted through the research that government commitment to the projects was of paramount importance to the respondents. However, what this means to the respondents was not evident, as the risk of failure of PPPs is still borne entirely by the private entity. Government typically only steps in once the consortium has failed contractually and the project requires a new delivery mechanism for either completion or through life service. The majority of the risk within these contracts occurs through the construction phase and it is through this period that the defaults occur. Normally the government must step in to enable the project to continue. However, their commitment does not always reflect the partnership model that is required; therefore further research in this area may add clarity to this area.
5.4 Recommendations for Improving the Current Model

5.4.1 Observation and anecdotal evidence suggests that the current model in mature countries has the ability to work and work well; there is certainly enough evidence to show this globally. However, that does not mean that it will work every time. There is enough evidence to suggest that there is still room for improvement. The model that exists within the less mature countries shows unfavourable risk transfer and weak protective legislation around competitive behaviour and the betterment of the public infrastructure. There are a variety of reasons why this still occurs. From the private side, there are the seemingly never-ending increases to the transactional costs associated with managing the legislative behemoth that is a PPP. There is also the typical scope creep driven sometimes by the public enterprise and sometimes by the general public; occasionally this is simply because the communication and transparency required for these contracts was never realised and an appeasement process is undertaken to ensure that the project still progresses. The access to competitive financial markets for funding can also limit the successful concessionaire as macro-economic challenges impact the projects even after negotiations have been completed. Innovation, which is a key driver for the realisation of these projects, can be stifled by the public entity, thereby impacting the private enterprise in their ability to deliver world class infrastructure with a minimalist maintenance requirement whilst still maximising return on investment. The public entity itself suffers through loss of face when innovation is not delivered
in a previous promise. On the public side there is the obvious bureaucratic complexity that accompanies the management of the contract and perhaps also the presence of contractual immaturity which hinders the process. During the extended construction time the public entity will continue to struggle to develop the expertise required for such a complex contractual arrangement, only to possibly realise their potential at the end of the construction/manufacturing period. This newly gained knowledge is then lost as the ‘experts’ move into an operational role or return to their previous public posts.

5.4.2 The ability for these experts to remain within a bank of PPP contract practitioners should be seen as a priority for the state and federal PPP bodies. There is an opportunity to continue to utilise these people in the supply chain of potential PPP projects that are under consideration. This will ultimately lower the cost to the government and by definition assist in lowering the transactional costs to the private entity. This can be accomplished by having contractual experts deliver the contract. This may sound out of place and probably should not need to be said; however, even in mature markets the public entity tries to realise its contract delivery through the use of technical experts. This in itself can lead to improvements in safety and systems and so should not be discarded for its value, even though it adds little to the success of the project itself. The public sector should have a dedicated team for PPP projects or programs. This unit should be involved from conceptualization to negotiation, through to final monitoring of the execution of the partnership. This unit should develop requests
for proposals (RFPs) that include performance goals, not just design specifications. Consideration of proposals should be based on best value, not on lowest prices or on technical expertise isolated from overall ability to deliver the project. Thorough, inclusive VFM calculations provide a powerful tool for evaluating overall economic value.

5.4.3 This view represents a real paradigm shift in the current delivery model worldwide. From the research, there was no evidence that this model existed under any infrastructure system. PPPs are seen as an extension of the private entity’s capabilities in the delivery of projects. Whether it is rail, road, hospital or school, the public entity is the government department that will hold the overall responsibility for the infrastructure. This seems to be a legacy unique to governments. Private enterprise will allow the business unit best capable of delivering the project to take the lead e.g. a company’s rail division will manage rail projects, and their civil division will manage civil contracts. However, this doesn’t happen in the government. Federal and state governments have PPP units but do not utilise this to manage contracts; they are simply legislative bodies that develop process and systems, and in most cases don’t even enforce the legislation. To become effective will require a relinquishing of responsibility for the delivery of the project within the government entity. There is no evidence to suggest from the research that this is under consideration in any of the government departments currently delivering PPPs. The model for this, presented in Figure , shows a bank of federal and state PPP experts that are
assigned to projects around the country in a supporting project management/contract management role that sits equally with the concessionaire. Their specific role is to deliver the scope of work to the public in accordance with the contract. Below them sit the technical experts from the government department that are ultimately responsible for the end result. This is a concept that requires the responsible public entity to recognise that the contract management experts are better equipped to deliver the project than they are. This logic already exists within the PPP model, which is the assigning of risk to the entity that is best suited to manage the risk; therefore, this concept is similar to the risk management paradigm.
Figure 5: Proposed Model
5.4.4 The benefits of this model would be a significantly flatter management structure for the delivery of the project from the government’s perspective, as there would be a very limited learning curve for the government. In contrast, much effort is currently required to bring technical experts up to a level where they are capable of managing the complexity of the contract. In this model, the PPP experts would already be at that level; therefore there would be a reduction in the number of persons required to manage all aspects of the contract. The technical experts would still be able to concentrate on their own primary form of employment, which is the delivery of a world class service, rather than the construction of a project.

5.4.5 From a private perspective, the ability to communicate at a contract level would be seen as an advantage by minimising the scope creep and variations management which is commonly associated with these contracts. This focus should significantly assist in the on-time, on-budget delivery of the project. Having an equal voice in the partnership allows contractually for better management of complex risks and removes departmental challenges and bureaucracy. At a federal and state level, the marketing of the project could be seen as more unbiased than that delivered by an infrastructure entity. Even though current delivery of these projects is at this level, the general public buy-in is sought by the public entity, such as the road transport department and not the higher state government entity.
5.4.6 This process will enhance the harmonisation of the legislation surrounding PPPs within the country, as there will be more emphasis placed on delivery by the contract manager at a federal level, where there is greater opportunity to corral the bank of experts. The ability to utilise these experts on any project within any state will require legislation to minimise the differences between states. This approach will work in the UK and Canada and should also work in the USA, where each state is currently developing their own unique PPP legislation. This is not to say that the harmonisation of legislation would be an easy task; Australia has struggled with the harmonisation of occupational health and safety legislation for nearly two decades and is now only just starting to bring all the states into line. Even after all this time, Western Australia and Victoria have yet to agree with the national changes. The overall costs to national businesses in having to ensure that they meet the unique requirements of states and territories is a significant burden (WHS Harmonisation and Due Diligence 2011).

5.4.7 The model used in Canada allows for all projects to be considered a PPP if they meet certain criteria (What Can PPP Canada Do For You? 2013). There is an opportunity to expand this internationally. This will put emphasis on projects to show true VFM as a PPP regardless of the procurement style. This consideration should take into account the lower management cost on the public side, and allow for the potential increase in the use of the PPP. The reduction in costs, the streamlining of the management process and the improvement in project delivery will all add to the number of PPPs delivered to the public. The reduction in costs
should be seen by both the public and private entities. From the government’s side it would be easy to realise this as there would be a significant reduction in the management needed for the delivery of the project. Experienced contract managers would be assigned to the project with the sole responsibility of presenting the scope of agreed works; technical experts would be called in on an ad-hoc basis to settle technical disputes. From the private side, a smaller management structure would be utilised for handling the client and the legislative requirements surrounding the contract, as over time these legal variations would diminish due to the harmonisation in the delivery of PPPs.

5.4.8 Innovation in construction, maintenance and safety could be maximised as the government entity responsible for the infrastructure would be unable to negatively impact the PPP with impediments that have hampered these projects in the past. The scope of work would set the benchmark for innovation and the private enterprise would be able to meet these requirements at a minimum, but also be free to improve on them. The risk of these issues would lie with the private enterprise, which would be required to demonstrate how these requirements have been met whilst also being allowed to use innovation to deliver world class infrastructure that enables them to maximise return on investment. From this apparent ‘free hand’, private enterprise would be able to follow research and development opportunities in driving cost from projects, whilst at the same time ensuring that ongoing maintenance costs are mitigated in through life support.
5.4.9 The implementation of this process would allow mature countries to realise true savings in project delivery. Logical steps from this process would be to look for the next area of value that governments could concentrate on; this could lead to a new cycle of cost savings in projects and may well lead to changes in legislation to assist this. The end goal of this would be to ensure that the tariffs and user pays charges implemented in these contracts are minimised to the general public.

5.4.10 As this style of project is implemented successfully, there would be an opportunity for not yet mature countries to make use of the experiences of those governments that have delivered multiple projects. This would assist in the development of one model of delivery. This does not mean that all governments would need to change the way they value projects, even if they could afford to implement projects in this way. What it would mean is that they could make use of a bank of experts that they themselves had trained on previous projects to ensure that the learning curve is minimised in project delivery. This would ensure a lean approach to projects and allow governments to look at further areas of opportunity.

5.4.11 The government entity’s involvement in a PPP contract is currently funded through its own capital expenditure budget; therefore there would be no extra expense whether they use a state or federal team of experts. This could be charged back to the project on a cost neutral user pays system and the team could adjust in size to meet the requirements of the project. While there would be questions around who would fund the team when they are not actively engaged
on a project, it is unlikely that they would be idle for extended periods. Currently most state and federal governments have PPP units that work on assisting both the public and private entities in project selection models and legislation; these units would also take on the role of project delivery. It must also be understood that there are many PPP contracts currently in the feasibility or delivery stages, so it is unlikely that the utilisation of the units would be poor.

### 5.5 Conclusion

5.5.1 This Research has focused on the PPP as a model for the delivery of large scale infrastructure projects. It has been reviewed against the more traditional procurement model involving government capitalisation and tax-revenue funding. As the PPP has several forms depending on country maturity, financial situation, macro-economic conditions and legislation, there has also been a review of this project model globally. There was an emphasis on reviewing the lessons learned through project failure and on the key success factors that can be applied globally to increase the likelihood of project success.

5.5.2 Several factors were evident within the research in identifying good project delivery:

5.5.2.1 Detailed Feasibility study – It was shown that a poor feasibility study increased the likelihood of failure; this was evident in toll roads, especially where usage rates were significantly underestimated.
Feasibility studies, when carried out successfully, consider all of the aspects of the project delivery, from capital and operating expenditure to risk, schedule, and the micro and macro financial environments. A strong feasibility study does not ensure project success but should mitigate the risk of failure through increased knowledge.

5.5.2.2 Partnership – It seems obvious that partnership should be here as it is one of the Ps in the PPP; however, it is rarely seen in the true sense. Good examples of where this has occurred are in the PPP projects used for the Sydney Olympic Games in 2000. The government worked very closely with the bidders to minimise the contractual effort required in the bidding stage, there was compensation for the losing bidders and efficiencies from the first contract were rolled into later contracts to ensure that delays were abated. The projects were finished on time and generally under budget; thirteen years on and Sydney Olympic Park is still a revenue-generating concern which has ongoing general public support.

5.5.2.3 General public buy-in – This is paramount as increases in tolls or user pays charges are never well received. The government must do everything possible to ensure that the general public understands the value of the project and the efficiencies that will be gained. This needs to be tempered with the value of the charge that is levied against the users of the service. User pays charges can be minimised if the usage of the
service is kept near maximum; if the service suffers from poor patronage the toll must increase to ensure the concessionaire does not suffer financially. As these projects are generally funded by debt the concessionaire must repay its debts and return profit to the investors.

5.5.2.4 A strong concessionaire – Many of these projects are funded by banks, superannuation facilities or capital investment firms. Whilst these companies are strong financially, they focus very narrowly on return on investment. Whilst this may seem obvious for an investment company, it does not necessarily cater for the type of long term investment that is required during the life of a PPP. As these projects have life cycles typically in excess of fifteen years and possibly up to thirty years, it is optimistic to believe that a stable macro-economic environment will exist for this length of time.

5.5.2.5 Contract Management – It was evident that scope creep and technical innovation impacted PPP projects. One of the issues that contributed to this was that in most PPP projects the government body responsible for the delivery of the project was the entity that would ultimately be responsible for the service; that is, a toll road project was run by the government roads authority, a rail transport project was run by the government rail authority, and so on. Whilst there is real value in ensuring that technical compliance and safety in the delivery of the
project were paramount, this did detract from the contractual obligations of both parties. There was limited evidence that true PPP contract management expertise existed; as these projects came online the government project team that had led the construction activities would then be absorbed back into their previous roles and their experience would be lost on the next project. The next contracts would go through the same learning curve, with limited efficiencies gained from the lessons learned previously. The private enterprise’s opportunity to provide innovation was stifled somewhat through the bureaucracy of the technical government agency. Innovation is seen as one of the reasons that PPPs are attractive, so this needs to be addressed to ensure that the opportunities are capitalised in regards to the project savings that true innovation can supply.

5.5.2.6 Government Support – As these projects often have significant construction times, there is a chance that a change of government will occur during this time. It is also highly likely that there will be a change of government during the through-life support phase of the contract. There are always opportunities for opposition governments to attack the expenditure of the current incumbent or for the current incumbent to attack the previous seat holder. This detracts from the original need identified for the contract and the value that the PPP intended to offer. Whether this is simply spin-doctoring or the genuine need to assist the
project due to macro or micro-economic changes or challenges, this does little to put the general public’s mind at ease. The infighting and criticism that government generally employs, especially at election times, places significant pressure on the private entity to maintain the expected return on investment that shareholders demand for the use of their capital. Many contracting companies’ share prices have suffered during construction periods, as shareholders moved their investments to a seemingly less risky option. These are long term contracts that have been utilised by both sides of the government, and governments must realise that it is likely that they will be in the position of ownership of the contract at least at one point during the life cycle of the contract. They need to provide unified support for these contracts in order to maximise the opportunity of success.

5.5.2.7 Legislation – Although linked to government, it must be recognised that the legislation supporting PPPs must reflect the current economic conditions that prevail in the market place. Globally, financial markets are changing at ever-increasing rates as new economic zones are created or previous ones are replaced. Globalisation has opened up opportunities for companies to compete within the world market and deliver their expertise to areas previously restricted. If the legislation within the countries where companies have their head-quarters and in the countries where they operate does not support PPP activities, then these countries
become less attractive than areas where this does exist, thus placing at risk the ability to achieve the true value these projects offer. Although it is recognised that changes in legislation in most developed countries require significant effort and time, it is not to say that the correct due diligence procedures should not take place and that policy favouring private enterprise should be paramount in the government’s mind. However, if the government wants to maximise the opportunities for success by utilising these project methodologies, then concerted effort must take place to ensure that the procedures for change are stream-lined and that there is enough support both at the federal and state level to act in a timely manner to address policy change. Finally, within the legislation space there must be the recognition that lack of harmonisation of PPP policy and procedure across federal and state governments harms project delivery, by adding significant layers of bureaucratic and legalistic review and management. Private enterprises must arm themselves with senior, experienced legal representation to ensure compliance at both levels. The ultimate cost of this is borne by the user of the service. There is a real opportunity for both capital and operating expenditure savings through the streamlining and harmonisation of PPP legislation.

5.5.3 This review of PPP contracts has identified opportunities for improvement in the current model and areas of risk of failure that private and public enterprise alike
can learn from. It is hoped that ongoing effort and research within this area leads to the greater delivery of infrastructure and services through an improved Public Private Partnership model.
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APPENDICIES

Appendix 1.1  List of Interview questions for Private Enterprise

Transcript of Interview with Private Enterprise

Appendix 1.2  List of Interview questions for Public Enterprise

Transcript of Interview with Public Enterprise

Appendix 2  Correlations
### Transcript of Interview with Private Enterprise
5 May 2013

<table>
<thead>
<tr>
<th>Interviewer</th>
<th>Do you document the success of your projects?</th>
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<tbody>
<tr>
<td>Speaker</td>
<td>Well I guess the first success we documented was financial close for the prime year rendering all of the sorts of things to get financial awards and the project won something like a dozen financial awards. It’s all published and gets around the world, I think.</td>
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<td></td>
<td>That would be sort of number one.</td>
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<td></td>
<td>I think part of the answer to that question is, in this particular project, we have had a lot of active communication strategies. The strategies are more about documenting progress and issues and things like that rather than just successes. An example of that would be a monthly; what we call a CEO column, in the local Newspapers down in the general area of the project. You know towns within 50 or so kilometres, newsletters to locals; all of that type of material, press articles in the local press, ignoring pretty largely the Capital City medium. It’s more about the politics of desalination and the reality of the plant and the impact on the people in the local region.</td>
</tr>
<tr>
<td>Interviewer</td>
<td>So have you had any negative feedback from the government entity in regards to that sort of open communication?</td>
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</table>
| Speaker     | A lot of negative feedback because this particular project was a baby of the state Labour Party and the Liberal National Party used that when they got into government as a political tool. And it’s still being used a political tool and will be up until the next State election which is in November 2014. So the current government you get all negative stuff, the previous government would promote it at every opportunity. Probably had half a
dozen visits from the Premier in the first twelve months, at least I think. Every opportunity the Premier would be there about the economic benefits of one thing or another that was happening on the project. Change of government – just criticisms and no involvement from the government, so very politicised.

<table>
<thead>
<tr>
<th>Interviewer</th>
<th>Question 3 you are not active in overseas projects?</th>
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<tbody>
<tr>
<td>Speaker</td>
<td>No, we have overseas ownership and we have overseas banks’ lending to us quite a lot so, it could be you might say yes, it’s just simply related to our financial investors overseas.</td>
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<tr>
<td>Speaker</td>
<td>But you know international journals or just the general promotion of the project and getting a reputation. You know, marketing, in a customer’s sense, I mean a key stakeholder sense.</td>
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<tr>
<td>Interviewer</td>
<td>Your investors are they looking at similar projects overseas that you are aware of?</td>
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<tr>
<td>Speaker</td>
<td>We have a pretty broad span of investors, one for example of our investors operate globally around the world and look at all sorts of different things. In Australia they are in coal, they’re in food manufacturing, they’re in forestry products. Yeah, I think they’re all pretty global. We have one financial arm as an investor out of the UK and their in PPP’s. Their name keeps popping up; there are a few of them in Australia. So I think that’s probably a big answer, yes our investors are pretty much international business.</td>
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<tr>
<td>Interviewer</td>
<td>Are lessons learnt in your area teachable to other areas?</td>
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<tr>
<td>Interviewer</td>
<td>How do you get your lessons learnt out?</td>
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<tr>
<td>Speaker</td>
<td>That’s a very difficult task. One of the best ways is actually when one gives a presentation, an industry type conference. One I participated in was in Canberra was sort of an annual water industry conference and talked all about the community relations</td>
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</table>
and how we went about that, building up our reputation, so that’s at a conference.
Papers in technical magazines. Many papers written by various people on the project all promoting their own aspects of the project. Now whether a specialist contractor, or design firm or a material supplier, so a lot of information goes out about that. That’s not necessarily lessons learned.
For the financial community lessons learned we communicate regularly with all our bankers and that’s very important so that they then learn from that, as distinct from us, for other projects. So that’s an important part of lessons learned.
And probably the State in our lessons learned because of the public nature of this project. The Liberal National Party certainly wouldn’t go about a project like this based on this one ever again I would have thought.

| Interviewer | That’s something I’ve been thinking about a lot because I guess I’ve been involved in a few PPP’s and I don’t know whether we are sort of getting ahead leaps and bounds as far as lessons learnt, I think that the government still seems to go down a model that was flawed previously and they sort of try and look at subtle changes. |
| Speaker      | I guess a very good example of how lessons haven’t been learned because I’ve done a fair bit of work in NSW, and the NSW team basically, whoever they are, won’t go South of the Murray to talk with their Victorian counterparts. |
| Speaker      | I’ve even made the suggestions myself over the years, they don’t do it. The Victorians they’ll travel, they’ll discuss with colleagues, so my view about, I guess the answer to 5 is yes, the best way is; the most important lessons learnt I think for the success of a project, are how the whole thing is structured at the |
beginning. You know, the rest becomes relatively more important as you go along the timeline. And the best way to do that either the promoters of them, or the proponents which are the state entities so they’ve just got to go as much as possible and communicate with others that are doing it. Not just the other proponents but somebody looking at a new project the best way to learn is go and talk to others that have done it. You know the proponent, the financiers, the contractors, everybody learns as much as they can.

Some States are good at that; mostly Victoria is reasonably good at that. Some States are very poor at it.

I have actually written about and not just the legislation differences between States as far as PPP’s go but also Occupational Health and Safety.

Quite frankly the legislation in the state doesn’t really matter. It’s the business case behind it and what’s the best way to deliver it, and what’s the best way to finance it, none of that’s got to do with legislation because legislation, whether it’s OH&S or environment pretty broadly across the country is all the same. Some of it is a great impediment on the cost of projects but that’s the same Australia wide. So I don’t think legislation is quite frankly a key factor.

More so from the fact that there’s sort of disparate skeletons in different states, which means you sort are not on a level playing field and then, that sort of adds to that lack of interstate or country orientated view of how to deliver large projects.

Yes, certainly differences do. No question about that. Yeah I agree with that.

But it’s certainly not an impediment for learning a lesson.

So maybe you have national forums with government agencies...
| **Interviewer** | over this sort of thing you know like there is COAG and the equivalent of a COAG in government agencies and PPP’s. You know a couple of day’s conference, all that sort of stuff, every year, they all might learn heaps. |
| **Speaker** | As you say, we’re not doing anything new or spectacular. The projects we are delivering today are no different to the projects we were delivering 30 odd years ago. Especially in toll roads, I find the biggest, seemingly still the biggest blunders that we’re having are in toll roads and yet we have been delivering them for decades. |
| **Interviewer** | Yes, that’s right. However I think the model will certainly change there. |
| **Speaker** | Has innovation been stifled because of the public entity? |
| **Speaker** | I think the answer to that is absolutely stifled because for a couple of reasons:  
1. To deliver a project you have got go through sort of an environmental planning EIS approval process and the legislation for those means the proponent gets down to too much detail then the approval is sort of stuck to that detail and you get a whole lot of approval conditions and environmentalist boasts, you know you always get environmental ministers boasting about how many approvals they put on the project. All of that stifles innovative.  
2. The other thing that stifles innovation is once you’ve actually got the project sort of locked down is the absolute rigidity of the PPP process. You can’t make a change. There are just too many players and too much at stake, you know the financiers, the contractors, the concessionaires, government and you’re pretty much stuck with what you started with so innovation is pretty limited then. |
If you look at the academic work on PPP’s, innovation is a core deliverable in the attractiveness of a PPP because private enterprise can bring innovation to the board but as you say by the time you get to the board all that ability has been taken away from you.

Pretty much, yes, it’s very limited then what you can do. It’s almost the normal construction stuff because all your financial structures locked down, and your contract structures locked down and the products locked down.

I’ve found even from the technical specs where we were sort of forced to adopt the government entities technical specs rather than research what was in the market place currently.

Yes, now there have been some moves from that because at least down on my project and to a reasonable extent the one that preceded it, the EastLink project, they were more performance specifications, performance requirements.

Whereas NSW toll roads for e.g. were absolutely RMS specs right down to the last letter of the law. Victoria - very much performance specs and the model here is you actually bid the specifications so you put your own spec in with your bid. Now, there’s some innovation opportunity there. That’s something I would certainly recommend is used and enhanced on.

Well, it makes sense because you know the private enterprise is responsible for the maintenance and upkeep of the plant or road so there’s no downside from the government’s perspective if the performance spec is X then that’s what they need to achieve.

And to leave the private sector to do it, they have got to do it.

I had worked with a lot of RailCorp people before and they said “Well we didn’t get what we wanted with the millennium train,
we’re going to make sure we get absolutely what we want this time” and they had a team of something like 130 on their checking process. Absolute disaster.

<table>
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<tr>
<th>Speaker</th>
<th>No, other than say “I want a train x metres long, and so many passengers like project X that was carried out in this area</th>
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<tr>
<td>Interviewer</td>
<td>You need to move 1000 passengers an hour and you need to do it 24/7….over this distance</td>
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<tr>
<td>Speaker</td>
<td>Yes…and we want these service standards you know, comfort levels, so many people sitting or standing, all that sort of stuff.</td>
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<tr>
<td>Speaker</td>
<td>At least down here when they wanted a desalination plant they almost said we just want it this size.</td>
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<tr>
<td>Speaker</td>
<td>A lot more than that but that was more the concept and the project approval was reasonably broad even though we were hampered by the EPBC Act, the project approval was reasonably broad. So that was a good step in the right direction.</td>
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<tr>
<td>Interviewer</td>
<td>Certainly there’s still a significant maturity level difference between Victoria and the rest of the country.</td>
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<tr>
<td>Interviewer</td>
<td>At what point should the project schedule be communicated with the public?</td>
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<tr>
<td></td>
<td>a. Project feasibility</td>
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<td>b. PSC</td>
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<td></td>
<td>c. Contract signing</td>
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<td></td>
<td>d. Design finalisation</td>
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<td></td>
<td>e. Beginning of construction</td>
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<tr>
<td>Speaker</td>
<td>Absolutely. You are 100% correct in that statement.</td>
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<tr>
<td>Interviewer</td>
<td>It’s just that what I have seen is there hasn’t been a lot of</td>
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research into what that means for a project. In hindsight, again in the lessons learnt, when people go “Oh, I’m, not going to pay $2.20 to go on a road that I used to get for free” and then all of a sudden usage rates go from estimated 50,000 a week down to 5,000 a week. The government steps in a does something about it but there doesn’t seem to be evidence of where this is measured prior to project approval.

| Speaker | You know in answer to the question, in a descending order of effort, the biggest amount of communication and effort has got be in project feasibility. You’ve got to get the community to understand what the project’s about and why, and on side to have a successful project. That’s all got to be done at feasibility stage. And then lesser amount of effort as you go down the chain. And the final one of course is when it’s…I put an “f” in there at the “start of operations”. You know it’s pretty obvious, we celebrate, here it is, a whole journey that we and the community have been on and is now ready to be used by the public. If I could just go on which is sort of part of Question 1 and 2 together, when and how, is the project champion, the scheduled communicator that’s got to be by the highest level of whoever the proponent is which often is the Minister. Do you remember back in the days of Carl Scully and, Laurie Brereton who was the Minister for Public Works that built everything back in the Darling Harbour days. He was out spruiking everything about every project. You didn’t get the disagreement with them in those days, everybody knew about it. |
| Speaker | And the public, you know how reluctant are they to totally accept the cost of providing the service on all of those things. The only downside of communicating the project feasibility |
stage is the governments, NSW in particular, have announced so many projects over the years that never get off the ground.

**Speaker**

I think it’s the feasibility of the project that’s going to go. Otherwise maybe when you get cabinet approval, it’s somewhere up that front space, right up front depending on the likelihood of the project.

Lane Cove Tunnel was just a typical example because I was involved in that project. But they just get groups of people together and they consult on the quiet or commission to do the design, to speak to a local community group about the project. Not the RMS guys themselves. But the RMS guys totally control what the consultants could deliver. And so there was no general consultation. No answering of questions, no considering options, none of that sort of stuff. It was just like an information session.

Involvement has to be a lot more. There has to be genuine consultation and I think maybe if you put project feasibilities up on the web and all that sort of stuff. And on line they get people to give their inputs. When they have their inputs you sort of consider them and respond to what has been accepted and what hasn’t been accepted. You get buy-in that way. People will understand, for example, why you can’t have a lane here or an off ramp there or a noise wall over there, that sort of stuff. It’s been looked at and answered.

**Speaker**

You have to get the balance right. I just can’t stress how much importance to place on just consulting and communicating with the general public at that early phase, before the parameters of the project are locked down.

With these other ones there are sort of locked down and you are
<table>
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<tr>
<th>Interviewer</th>
<th>Have you been limited in your ability to communicate with the general public?</th>
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<tr>
<td>Speaker</td>
<td>I think that’s one of the things I think the industry should take up and refuse to enter contracts that have that caveat in it. I have that in my project. Everything we say has to go through the government and get approved before we say it. You can imagine if there is any issue, with the government saying one thing and you have no opportunity to say the opposite. An issue arises, you’ve lost all that time. You can’t get on talk back radio when something’s “hot”. It’s a terrible restriction.</td>
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<tr>
<td>Speaker</td>
<td>I don’t think that anybody should ever enter a contract with that restriction. The risk to equity is enormous.</td>
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<tr>
<td>Interviewer</td>
<td>With regards to Questions 4 and 5, I’m gathering that you would have done things a bit differently in regards to your ability to communicate</td>
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<tr>
<td>Speaker</td>
<td>Yes, right back in the beginning when you are negotiating the contract terms, that’s when it’s got to happen. Not that I would have any influence over doing it again but the whole industry, you’ve got to have that government champion at feasibility stage. Which then transfers to either the concessionaire or the constructor through the primary requirement for communication. I believe government can have its “big picture” making its statements but the whole communication train should change from the proponent across to the deliverers.</td>
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<tr>
<td>Interviewer</td>
<td>Have you been involved with a ‘failed’ project; that is, one that did not meet its contractual agreement?</td>
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<tr>
<td>Speaker</td>
<td>Yes, two of them. If we talk financial failures. Two of them. I’ve carried out a similar role with the Airport Rail Link in Sydney. And I was the bid director and interim CEO for the Lane Cove Tunnel. They’re on the failed side. They were only financially failed, in an infrastructure sense they were fantastic products.</td>
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<tr>
<td>Speaker</td>
<td>Now they are totally different modes, but interestingly the Airport Rail Link suffered commercially from the fact that it didn’t have government buy-in from the State Rail Authority who run the trains and pretty much control all of the passenger communications etc. And the SRA didn’t buy into that because they didn’t like PPPs. It was a NSW Transport initiative. So you didn’t get the buy-in. It was very difficult. It’s a good product now financially, ten years on. Particularly as the government has taken over the station fare at the two off airport stations. So it did lack the agency support. Otherwise it would have taken its time but been a financial success. It certainly moves a lot of passengers and it’s a great bit of infrastructure. Lane Cove Tunnel, the story is the same as in on all toll roads. It was simply about traffic forecasting.</td>
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<tr>
<td>Interviewer</td>
<td>Who did the forecasting?</td>
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<tr>
<td>Speaker</td>
<td>Private enterprise sub-contractor</td>
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<tr>
<td>Interviewer</td>
<td>Did the government also carry out forecasting?</td>
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<tr>
<td>Speaker</td>
<td>The government sort of did its forecast independently, then in the bid process, the bid teams have their own forecasters. Essentially they all work on the maximum number of vehicles you can get in a lane per hour; say 2,200 or 2,100 vehicles or...</td>
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Perfecting Procurement Practices of Public Private Partnerships

### Appendix 1.1

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<thead>
<tr>
<th>Interviewer</th>
<th>Are they still using the same model?</th>
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<tr>
<td>Speaker</td>
<td>No. That’s dead. The two Brisbane ones; you know the Clem Jones Tunnel and the Airport Link, the same model process as Lane Cove Tunnel and Cross City Tunnel, there’s four expert modelling failures. In all of those, it’s not just equity. In all of those, the banks had to take a haircut. So nobody would do that again. Which is why on Peninsular Link, down here, to get that up, that was the government paying on a lane availability charge. It’s not a tolled road. PPP, but not a tolled road. Assigned to future ones there will be some completely different model where the concessionaire will somehow or other be incentivised to get more traffic on the road. But he won’t be carrying full traffic volumes. And that model, as I say, is dead.</td>
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<thead>
<tr>
<th>Interviewer</th>
<th>Did you know prior to failure that this was going to happen?</th>
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<tr>
<td>Speaker</td>
<td>No, unfortunately only knowing once you start to get out into the…you know you have opened your project. You know, it’s how many customers irrespective of what you are selling, whether it’s seats on trains or cars on motorways. And then you’re stuffed. What can you do about it? Very little. You just manage your way through the disaster. Usually the banks put in receivers. They did on Airport Link. They did on...</td>
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whatever it is. 1,900 depending on the circumstances. And the number of equivalent hours per day. So you might run morning peak and work on three hours, and then they have sort of expansion factors. The next hour might be 0.7 of that, and then the next hour 0.5. That’s the way they sort of do it based on the time value of money. Well the model just doesn’t work. Time value of money might work for some people. It doesn’t work for 80,000 motorists.
the Clem Jones Tunnel. They had just a month or so ago, 6 weeks ago, on the Brisbane Airport Link.

| Speaker | That’s what happens.  
| | Then the banks run it for a period of time, it sort of stabilises, then they just sell it and you know maybe they get 60 cents back in the dollar or something like that. |
| Speaker | What the concessionaire can do is give a toll free period; give a concession for a period, they have done that in Brisbane as well, to try and entice the motorists, build it up, and then they take it off when the motorists drop back again. So they’re the sort of incentives the concessionaire can do to try and get traffic on the road. I.e. lower the price for a period.  
| | But if it’s all going according to oil like a Trans Urban down here or now an EastLink, it’s all done by formula. The concessionaire is always at liberty under order of the project deed to charge less but can’t charge more than what’s in the deed. |
| Interviewer | So even if there was risk of this financial failure the government wouldn’t allow you to recoup some of those losses? |
| Speaker | Some governments might renegotiate terms but typically that’s a private sector problem. The only one that’s supposed to have been renegotiates like that, to my knowledge, is the Ararat Prison.  
| | You know here in Victoria where the concessionaire and the company and everything went broke, the builder went broke. That’s the first case where a builder’s gone broke or contractor and subbies weren’t paid and all that sort of stuff and local politics demanded that the government went in and did something. But otherwise it’s just been that the private sector has carried the financial loss because the product, whatever the
A piece of infrastructure is, it’s just continued to operate. Just those equities lost all its money and the banks have taken a haircut. The government doesn’t care about that. The only problem for the government is future projects, the next project is not going to get off the ground on that model.

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<tr>
<th>Interviewer</th>
<th>At what point do you know that change is required?</th>
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<tr>
<td>Speaker</td>
<td>You can’t change it - you are stuck with it.</td>
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It seems that all this does is add that risk management cost to the project. You then end up putting in more due diligence, more legal, more management of process to ensure that this doesn’t happen, which drives up your bid cost.

<table>
<thead>
<tr>
<th>Interviewer</th>
<th>That can happen.</th>
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<tr>
<td>Speaker</td>
<td>I think we have probably got to the stage where actually forces a change into the way these projects are structured. If you were continuing on with the same ones then I’d agree with you. But we’ve got to the stage now where actually it just forces a change and how they are put together. Because the old model, as they say is broken, and people won’t invest in it anymore.</td>
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Coming up with a new model in a new financial market may mean change to the legislation of the skeleton that you’re operating.

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<tr>
<th>Interviewer</th>
<th>Well certainly there have been many attempts to try to get uniformity in the PPP market in Australia but while ever we’ve got, all the states we’ve got I don’t think that will ever happen. And for the reasons we spoke about earlier, they don’t talk to each other enough, they don’t get together about it enough, you know all the states one way or another are pretty parochial, you know, “we’ll do it our way” types.</th>
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It is a significant cost to us individually as tax payers to manage such a massive yet disconnected system.
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<tr>
<th>Speaker</th>
<th>Yes, it’s inefficient isn’t it? And we haven’t seen the efficiencies as you said earlier. There have been enough PPP’s we should start to see efficiencies in them.</th>
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<tr>
<td>Speaker</td>
<td>It seems to be going the other way, doesn’t it?</td>
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<tr>
<td>Interviewer</td>
<td>Yes. In my research, here in NSW the Sydney Olympic Park, added some real value to PPP’s. The first PPP contract that was let was quite onerous and rigid but the teams moved from project to project and really tried to get rid of those layers that caused them grief on the first project. So by the third or fourth PPP; the time, the bid analysis was halved, the time to get contracts signed and out the door, it’s a pity this didn’t continue.</td>
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<tr>
<td>Speaker</td>
<td>So, what hasn’t changed though are things like joint risk sharing between public and private sector, you know the partnership, there isn’t a partnership. It’s a public/private. There’s no partnership involved in this model.</td>
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<tr>
<td>Interviewer</td>
<td>Yes, that’s exactly as I’ve written it.</td>
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<tr>
<td>Interviewer</td>
<td>Yes, it’s all very much master and servant relationship. Do you think the responsibility for failure was adequately apportioned?</td>
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<tr>
<td>Speaker</td>
<td>Yes and absolutely hard-nosed contracts. Very hard-nosed contracts.</td>
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<tr>
<td>Speaker</td>
<td>Definitely not. Those that cause the failure get their fees and disappear, and I’m referring to people like, in toll roads, traffic modellers, particularly the investment banks, they get their fees, push it, do everything they can, the lawyers, you ever had a lawyer taken responsibility for a stuff up in his contract documents? No. The responsibility for failure is either a contractor or a concessionaire they are the one that carries it. They may have...</td>
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only been part of the cause. The risk sharing needs to change.

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<tr>
<th>Interviewer</th>
<th>Do you believe there is ‘one best way’ to implement these contracts?</th>
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<tr>
<td>Speaker</td>
<td>We could do better but I don’t think we could ever get to “one best way” probably because they’re all just so different in their characteristics. You know, the revenue streams are different...because it all gets to about how do you earn the money to pay for it I think, and that has to be what’s best for the project. But I think upfront you can have a best way to implement them, a smart client team for example are the things you think about later, proper risk sharing, proper government involvement, and the use of third P word (Partnership) would be a big way of getting that part of it the best way. But then they’re after how you earn the revenues and all of that, I think that’s unique to every project.</td>
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<tr>
<td>Interviewer</td>
<td>Have you been limited in your ability to influence the construction activities?</td>
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<tr>
<td>Speaker</td>
<td>I think there are two answers here, there’s type A and there’s type B. Type A is concessionaires that are purely investment companies. You know, just a sort of skeleton staff. The other type is the concession company is the business itself and are fully staff and smart, experienced people and all that sort of stuff. An example of that - Trans Urban, EastLink, Brisbane Airport Link, my project where the concession company really is very strong, fully staffed, understands managers, government managers, contractors, understands the business, all that sort of stuff. Completely different to the investment companies and you’ll typically find those in the social infrastructure. The</td>
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I’ll just quickly answer the questions, with respect to the operating concession company, if I use that, versus the investment concession company. On the operating concession company the real role of the concessionaire there, and we do it a lot in this project, is to facilitate everything to get the contract to deliver it to, whatever the requirements are, whether you are building trains, or in our case, water plants or toll roads and put a lot of effort in there and it works. A lot of those sort of impediments and the genuine bridge between the State, on one hand and the contractor on the other, right in the middle of doing everything.

So, that’s a positive sort of doing roll that’s all about assisting the project as distinct from detrimental to it.

When you get to the other side if you have got a sort of a silent type investment company or concession company, the risks are then that they’re not involved enough to ensure that the asset will do what it’s supposed to do because the contractors are gone, but if you don’t have a concession company that really knows what they want and is not a smart concession company you’re only going to get no more than basically what’s in the specifications.

I mean there can be a lot value added without the cost in the process. So I think the investment company model has basically no influence on the construction activity because it’s too small and it’s not smart enough, or you know or experienced enough. I think it’s the same thing in the public world, you know it just doesn’t have enough influence in government because it’s not big enough, the contractor or the deliverer, the train builder is the one who has all the influence there. It’s clearly detrimental to the project because the concession company has to be the real hospitals and the like.

| Speaker | I’ll just quickly answer the questions, with respect to the operating concession company, if I use that, versus the investment concession company. On the operating concession company the real role of the concessionaire there, and we do it a lot in this project, is to facilitate everything to get the contract to deliver it to, whatever the requirements are, whether you are building trains, or in our case, water plants or toll roads and put a lot of effort in there and it works. A lot of those sort of impediments and the genuine bridge between the State, on one hand and the contractor on the other, right in the middle of doing everything. So, that’s a positive sort of doing roll that’s all about assisting the project as distinct from detrimental to it. When you get to the other side if you have got a sort of a silent type investment company or concession company, the risks are then that they’re not involved enough to ensure that the asset will do what it’s supposed to do because the contractors are gone, but if you don’t have a concession company that really knows what they want and is not a smart concession company you’re only going to get no more than basically what’s in the specifications. I mean there can be a lot value added without the cost in the process. So I think the investment company model has basically no influence on the construction activity because it’s too small and it’s not smart enough, or you know or experienced enough. I think it’s the same thing in the public world, you know it just doesn’t have enough influence in government because it’s not big enough, the contractor or the deliverer, the train builder is the one who has all the influence there. It’s clearly detrimental to the project because the concession company has to be the real |
champion of the project, they’re the owner, they’re the financier, it’s their product.

Look it ought to be the bridge between the two, promoting everything between the two so, I remember some of the early toll roads, M4 for example, and I think the concession company was one person and so they almost weren’t there between the State and they’re just a post box. It’s not a barrier but like I said they’re not facilitator under that model.

Within my projects the answer to that is, yes and they have been fully experienced construction, finance, communications type teams versus the other model and you know you have just got to…. concession companies have to be, and this is just simply done at the bid time, just resourced and costed, what does it need to be a standalone organisation and stand up and do its job?

And that experience makes a huge difference because one of the biggest things, as I said earlier, are roles - the concession companies to facilitate everything to enable a contract to perform. And you do a lot of discussions, debates, negotiations with the States, get approvals, all this sort of stuff and you can really enhance things if you sort of were negative in that space I would have thought the project would fail and you would end up with delays and people suing each other and that sort of stuff.

Has the public entity limited your ability to deliver the project?

Very interesting.
The Gold Coast desalination plant as an example

It was sort of put together by Gold Coast, the State government, that sort of stuff, and what I call a very ill-informed, not informed, not a smart client, and the project really, really suffered. It suffered from a quality sense, you know, not sure that the brief was right. It was just a poor project. Compared to
Sydney desalination plant delivered by Sydney Water, very smart organisation in working out what it wanted, how to deliver it, being involved, not that that was a PPP but the same sort of project, if did one half by an alliance, one half by Design &Construct. It was involved on a daily basis, in everything. And at the end of the day it was sold off as a PPP. A huge success.
So that’s the difference between a smart client and a dumb client. You have got to have a smart client.

Then if the organisation lacks the branches of the government department and isn’t the sort of organisation to be a smart client you’ve got to get other people in from other entities, whether they’re a core of specialist government people or whether they’re a COAG type federal group, it doesn’t matter.
The biggest problem is that organisations don’t understand when they don’t have the capability.

That leads to my point, they’re technically proficient, know how to run a road, a train, a water delivery system, but are they capable of running a large construction contract?

And the State Rail is a classic example of where they are not capable. They think they’re capable, but if you look at the history of everything they delivered, the previous Millennium train contract, they’re bloody shockers! Yet they believe they’re experts. That’s the biggest challenge.
So in NSW under the Premier’s Department when Iemma was there, there was a small group under Professor David Richmond, basically the people that delivered the Olympics and they sat on the steering committees on all this sort of stuff, all of these major projects, Sydney desalination plant, Southwest rail, Liverpool Hospital etc. Highly experienced people were put input into the agencies to make sure they got it right. Very, very successful.
model. It disappeared under Rees who took over from Iemma, because Richmond used to sit in on cabinet meetings as chief advisor to Iemma and the other Ministers hated it because they’re all fiefdoms in NSW, that’s the problem. But this was very successful; every one of these projects was a huge success because you have that expertise at the highest level.

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<tr>
<th>Interviewer</th>
<th>I think we’re still lacking contractual PPP expertise.</th>
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<tr>
<td>Speaker</td>
<td>And experience. It’s not just contractual, it’s how to deliver, how do you make sure you have the business case right, what is the product we’re delivering, but don’t make stupid mistakes like when the Cross City Tunnel was opened and local traffic in the Eastern suburbs couldn’t get into the tunnel because they cut off this particular way to promote extra traffic in the tunnel. Now, that sort of stuff. So, one of the first things Richmond did in this group was do a quick study on that sort of thing and just changed what they did. And that’s just highly mature outside of the agency experience to come in.</td>
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<tr>
<td>Interviewer</td>
<td>So as you stated earlier, it puts more emphasis on these performance specs rather than the technical specs.</td>
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<td>Speaker</td>
<td>Yes. You’re correct you know. You have to make sure it’s got to achieve what the standards are all the time, or 99% of the time, or whatever you want to put it down to. In Victoria they use lane availabilities and if the lane isn’t available for whatever periods of time, sometimes you are allowed to take say one lane out at night times and that sort of stuff but there are abatements if the concessionaire doesn’t conform. So it’s a highly motivating method and that’s a performance spec. But there are ways to manage it. Back to your questions – in my particular project we had a very</td>
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Perfecting Procurement Practices of Public Private Partnerships

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<th>Speaker</th>
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<td>smart client again, like the Sydney desalination model. They put together the project, the feasibility, the business case, very smart team, experienced people in delivering PPP’s, the whole delivery was as good as it could be. The product is as good as it could be, etc., this was a smart, informed client.</td>
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<td>So, no change due to the rigidity of PPP. So 3 is not applicable. But there was one, the Orange Hospital, about 4 years ago delivered as a PPP and I don’t know what went wrong but when they went to open the doctors all kicked up a stink and the government had to step in and force variations to enlarge things like operating theatres. On the face of it you would say pretty much a disaster because they didn’t go through some sort of design approval process and that was a case of a variation, very few of them in PPP’s, one of the few I know of actually. Now, independent PPP expert….you know my comment earlier about, the like of that group in the Premiers Department, I think that’s really valuable and the cost, absolutely minor in the scope of things. Infinitesimal almost. And it doesn’t matter, private sector, public sector, state, federal, but if there was a pool of these people that were recognised as experts and it was part of the policy that every PPP there would sit on the steering committee to help formulate it or part of the project team, it’s got to be of huge value, it would return a hundred fold or more. So, that’s sort of 1 to 6. Number 7 which is really interesting. If you look backwards at the Sydney desalination plant, as I mentioned that one part was D&amp;C Contract, the other was an alliance, all done, finished, commissioned, etc., paid by public finance and then the Liberal Party came to power and sold it off, as a PPP. They got a much</td>
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greater return from that had it been a PPP at the beginning for the very simple reason that the problem with the PPP model we have got at the moment, fully funded upfront over the whole of the concession period, the investors that are prepared to take construction risks are very different investors who would pay a lot more the equivalent being to taken a much lower rate of return during the operational phase. It’s a very inefficient financing model so I think the answer is the model’s got to split between the construction and say the first twelve months of operation and then a completely different finance structure thereafter so the government, the public entity should be heavily in there in some form of supporting the funding through to that stage then put it on the market and they will get much higher value for it.

Now, we partly did that on the VDP because this project was financed in the worst possible time, in 2009, the middle of the GFC. We had 16 banks in our facility to raise the amount of funding we needed for the big process and that got to just half the funding. So the basis was the government underwrote the other half. In other words we raised two billion dollars and they underwrote the balance. Then as soon as we got financial close, all the banks that were supporting the other team became available to us so they were able to basically take up the rest of the debt and so we on sold the government underwrite. Now without that government underwrite the project would never have got off the ground so if we extend that sort of concept through to the end of construction, you know first twelve months of operation, a bit like the Sydney desalination plant, it wasn’t designed that way but it just happened at the end of the day, is a far more efficient model than the one we do at the moment.
But my answer is that the public entity should have like QIC equivalent type things investing in these things for the whole delivery phase and then divesting them to the market. It would be far more efficient.

They’re right in at the beginning and they’re out, say, after twelve months operation. So that’s the broad thing for the most efficient way, particularly with equity. The people that want to invest in equity during construction are completely different, you’re really limiting your market and they want a big return on it. The trouble is they want that return to continue for the whole 27 years, it’s okay to take a big return during construction because that’s a risk phase but then it should drop way down, 13 or 14 percent should become 7 or 8 percent in operations. You’re losing all that when you have the construction equity owning it all the way through so we’ve got some real warts that need to be tidied up there.

The barrier to that: Treasury Departments. I’ve heard the NSW Treasurer absolutely stating that we would not take the risk that Victoria took on the VDP.

What risk did Victoria take? They underwrote seventeen hundred million dollars, half the thing, for three months or so. We went to the market and were oversubscribed. That’s what governments have got to do to get these projects off the ground.

So you have to get the terribly conservative, treasury type people to…they’re the biggest barrier…you need the David Richmond’s of the world in there saying this is the way things have got to be done.

The benefits are enormous two faced financing, that’s what they call it. When you get to sell the product you will have a much wider investment market and you will have a much lower cost to
finance which in a sense gives a far greater return. The government could sell a project like Sydney that cost them seventeen hundred million, sell it for two billion and then in 35 years do it all over again.

So there are a few things in there, one of the other things to that I think needs to be looked at by governments in these things, they give concession terms for say 30 years, something like that.

Roads, …. You know, my desalination plant for example, which will last 100 years. So the project sort of pays for itself, in our case, in 27 years. It should be, say spread over 100 years. Our concessions can be 27 years but say we should just pay a quarter of it in that period because if they’re being financed like that the current generation has to pay for the whole infrastructure that future generations will benefit from.

When you get a road it will last forever, all you have to do is resurface it.

So there’s a lot of financial reduction, cost reductions can come in as they start to look at it in those sorts of terms.

| Interviewer | I really appreciated your time. |

-End of Interview-
## Transcript of Interview with Public Enterprise

### 5 May 2013

<table>
<thead>
<tr>
<th>Interviewer</th>
<th>Is your department active in any overseas PPP projects?</th>
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<tr>
<td><strong>Speaker</strong></td>
<td>No. We have done only one PPP and that’s physically located in Victoria</td>
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<tr>
<td><strong>Interviewer</strong></td>
<td>Would you class that project as a success?</td>
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<tr>
<td><strong>Speaker</strong></td>
<td>From our point of view, yes, because the project has reached commercial close. It is operating in the way that was intended. It is providing us the service that was intended and the original financial model in terms of what we are paying for the service has remained unchanged. But it was delivered late and there were some pretty significant problems during the construction phase but because of the PPP as opposed to the more traditional design and construct project, the pain and the cost of those delays and technical problems were not borne by us.</td>
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<tr>
<td><strong>Interviewer</strong></td>
<td>In regards to those delays or the issues that were faced, as you say, you weren’t responsible for the outcome of that but were you responsible for the issues that were raised or were they solely on the private side?</td>
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<tr>
<td><strong>Speaker</strong></td>
<td>Not at all. When I say not at all...a little bit. This goes to the risk transfer that was set up in the contract and the allocation of risks between public sector and the SPV that was established to do the project. I could explain that the delays to the project were in two parts; there was a delay at the front end after the contract was signed but before works approval was obtained from the Environment Protection Authority. The way the project worked, although a significant amount of design was done by the tenderers to put their offers into the tender box, the final application to the EPA to get the works approval couldn’t be</td>
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made by the public sector. It had to be made by the successful proponent for the project because it relied on the details within the design and there is a statutory period for the EPA to respond to applications for works approval and the EPA took longer than that statutory period. So that delay was at the public sectors’ cost. And there was a further delay when a community protest group organised itself to object to the granting of that works approval and took the public sector to the Victorian Civil and Administrative Tribunal.

VCAT dismissed their claim so they then went to the Environment Defenders Office and got Legal Aid to take us to the Supreme Court. So we had to go through that protest before the project could really get started and that caused an eight month delay at the front end of the project so the costs of that delay were to the public sectors’ account but that was by no means the most significant cause of delay on the project because once things got going there were two main technical issues that caused problems. One was to do with the core process componentry for the project which was imported from Europe from a company that manufactured the equipment from Belgium, were found to have some serious welding faults in the important components within the machines and this meant that everything had to be stripped down and dismantled and there was a lengthy remediation process which delayed the job for about a year and a half.

That was one cause of delay. Another significant cause of delay was the transport system to convey the input material just didn’t work. So that technology was replaced by a different technology and that caused a further delay of about nine months. So the costs associated with all of those delays, they were to the project
proponents account, not the public sectors’ account. So the public sector was responsible for probably less than 20% of the delay.

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<tr>
<th>Interviewer</th>
<th>Do you communicate your success and failures with overseas counterparts?</th>
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<tr>
<td>Speaker</td>
<td>To the wide world? I presented at a number of conferences. The most recent one was in Sydney just two weeks ago, so yes. We are pretty open and honest about it all. As I said the project is a success and actually people who are keen on PPP’s or even undecided about PPP’s could look to this project as a great example of how risk is actually transferred and how a project can still get to a successful end even though it runs into difficulty.</td>
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<tr>
<td>Interviewer</td>
<td>So, risk comes up a little bit later, but do you believe that the risk allocation was successful, adequate?</td>
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<td>Speaker</td>
<td>Yes, we put a lot of thought into this before the project commenced and basically the formula was the old one, that the risks should lie with the party most able to control them, and if they are uncontrollable risks well, let’s look at whether they are insurable or not, and how the risk can be shared. In the case of insurance, the insurance costs were shared. In the case of uncontrollable, uninsured risks, there are provisions in the contract to deal with that, such as ……… courses.</td>
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<tr>
<td>Interviewer</td>
<td>Okay, so during the construction period there was … no moment where, in hindsight, you would have reflected a different allocation?</td>
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<td>Speaker</td>
<td>In Victoria we are in a very favourable position because we had the State Government, Department of Treasury and Finance, that was quite experienced with PPP models, and had done that research themselves and had a lot of guidance documentation for</td>
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agencies to follow. They also had a specialist unit to oversee these projects so we were constrained but also guided by that process.

**Interviewer**

When you say oversee the project, is that oversee the contract or oversee the delivery of the project?

**Speaker**

Oversee from a distance. They didn’t take responsibility for the contract, they didn’t administer the contract, they participated as members of the project steering committee and when the project ran into difficulties that could potentially put it commercially at risk they provided us with some advice mainly to ensure a consistent approach between our project and other Victorian government PPP projects.

Mind you they trusted us to run the project properly and in fact had some assurance that we knew what we were doing because they have an education program through Melbourne University which is compulsory for anybody who puts themselves in the place of a project director or manager of one of these projects in a government agency so if you haven’t done the training you don’t manage the project.

**Interviewer**

Do you believe you have stifled the innovation of the private entity?

**Speaker**

It was totally driven by the private consortium. The drying technology was successful. The problem was really…couldn’t have been foreseen…because it was just a manufacturing defect in a factory in Spain that provided some componentry. So it wasn’t that the technology wasn’t good, it was just poor quality control.

The conveyor…That was poor design. But we didn’t stifle the innovation at all. One of the features of the project was to open it up to any technology and we went through an expression of
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<th>Speaker</th>
<th>interest stage and some contenders actually tried different technologies, in a pilot mode, with small pilot plants and decided to not proceed.</th>
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<tr>
<td>Speaker</td>
<td>One of the reasons we didn’t do this project in-house as a conventional project was because we were aware of a number of different technologies. We had no experience with it so we wanted to throw that back to the private sector. That was the main benefit and the main risk transfer was technology risk.</td>
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<td>Interviewer</td>
<td>Do you believe the communication carried out by your department is fair to both the public and private parties? The communication that was carried out…You mentioned there that you had that group that prevented you from moving forward for a period of time, do you believe that that was possibly the communication was not as good as it was, or that this group was just adamant in preventing this type of plant from moving forward?</td>
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<td>Speaker</td>
<td>I think the latter because we set up a Community Consultancy Committee to steer the project through the early development, well before it went to the market and we developed a project specification with this community committee, set the performance requirements for the project, like no dust, no visible smoke plumes, no odour, got to look architecturally good, not to look like a chemical treatment plant, all those sorts of criteria were arrived at in conjunction with our community liaison committee.</td>
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<td>Interviewer</td>
<td>If they were previously turned down once why do you suppose they had the ability then to step above that ruling?</td>
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<td>Speaker</td>
<td>The leader of this group was extremely enthusiastic about pursuing their case. They were able to get Legal Aid. They turned it into an environmental symbolic fight and they also got</td>
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some assistance from other non-government organisations that were promoting clean ocean, no sewerage treatment, effluent discharges to the ocean.

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<tr>
<th>Interviewer</th>
<th>During that consultative committee time, were the private parties involved in this at all?</th>
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<tr>
<td>Speaker</td>
<td>No. It was just the public sectors’ officers and members of the community. We didn’t involve any private parties because we didn’t want to establish a conflict of interest as the project moved forward into the tendering phase.</td>
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<tr>
<td>Interviewer</td>
<td>And then during the construction phase did the private party have a voice?</td>
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<tr>
<td>Speaker</td>
<td>Yes. During the construction phase we regularly met with the community group and the private party attended all of those meetings so they actually got to know people quite well and presented a consistent face. Yes, I think that was important and an example of how that worked was the early architectural concepts for how the plant would look physically were rejected by the committee and some changes were made. So they felt that they did have some input.</td>
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<tr>
<td>Interviewer</td>
<td>Do you feel stifled by the communication by other departments about your projects (e.g. state party)?</td>
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<tr>
<td>Speaker</td>
<td>No, not at all. This project crossed both sides of government, started with a Labour government and ended up with Liberal. Very little difference between the two. Both support PPP projects. The unity and treasury finance that I spoke about before was substantially unchanged by the change of government so, perhaps also because it’s a water project, and at the dirty end of water as well, governments tend not to get too closely involved in these projects. They just have to come down and cut the ribbon when it’s finished.</td>
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Interviewer | At what point should the project schedule be communicated with the public?
---|---
| a. Project feasibility  
| b. PSC  
| c. Contract signing  
| d. Design finalisation  
| e. Beginning of construction  
You stated that this was during the project feasibility, is that correct?

Speaker | Yes, that’s right and your question; …was the project schedule? I took that to mean the details for the project timeline and details; the Victorian Government’s policy was that once the project reached Financial close. A summary of the project with quite a lot of detail was published on the government’s website so in that sense there was quite extensive and broad communication of the project at that time. Prior to then the communication was run by the public sector and just to our local people here. Particularly the project reference group.

Interviewer | How would you change the way in which the pubic was involved?

Speaker | I’ve thought about this. It’s a bit sort of pretentious how much information do you publish about the cost of the project and the commercial arrangements. I think that the Victorian Government initially was a bit sort of reticient and thought this was all very commercially sensitive but then they opened up. It’s all pretty detailed and I don’t know whether the government would have the appetite to actually put as much information out now as they did then.

Speaker | I think there is a real difficulty here because to understand how
these projects compare with conventional government procurement requires quite a level of sophisticated understanding about finance and project risk and it’s just…honestly it’s beyond the average punter to understand.

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<tr>
<th>Interviewer</th>
<th>Is the responsibility for communicating to the public balanced?</th>
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<tr>
<td>Speaker</td>
<td>Yes, well this question comes up after the contract is awarded and how do you balance the responsibilities for communication between the project sponsor and the ultimate owner…the government agency…in our case it was always a joint arrangement. When we had open days the cost of those were shared and there was a good presence from the private party. Going forward it’s really going to be more on the private operator to communicate to the public about what they are doing but the public sector will make sure that they do that adequately. I suppose there is a tendency for private parties to communicate as little as possible and there is a tendency for government agencies to communicate more, so there’s a little bit of tension there, but so far it has been going alright.</td>
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<tr>
<td>Interviewer</td>
<td>Have you been involved with a ‘failed’ project; that is, one that did not meet its contractual agreement? Your project obviously did not fail but you said you had some issues. I guess, in hindsight when you look back at it were there moments where you thought ‘we should have acted here and not left it?’</td>
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<tr>
<td>Speaker</td>
<td>…well…we had to do a lot of work to keep this project going…to prevent it collapsing because it was in danger of collapse. Ultimately the party that provides the finance has got the greatest power and once the project gets into a condition that potentially triggers default, you know, the bank has got their</td>
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</tbody>
</table>
finger on the trigger, so it’s paramount if the project gets into that difficult condition where it is in default or likely to default under the various contractual documents and arrangements, you have got to have good communication with the parties and communication between the public entity and the project financiers was really important because the financiers were wanting to know that the public entity was going to support the project and allow it to run late without putting it into default. And by the same token the public entity, having decided that that was the best course of action, wanted to make sure the banks didn’t put it into default. And you also need to know whether the parties that are losing the money, which is the constructor, can bear that loss. So there are a whole lot of judgements to be made that can only be made if you have got a pretty intimate knowledge of the parties involved in the project. So, communication between those parties during the project is really important. They have got to know each other.

Interviewer

That’s part of that partnership regime that the PPP is based on.

Speaker

Well, yes, it’s not a partnership in any shape or form in a legal sense but for the project to be successful everyone has to cooperate with each other and of course you expect people to deliver on their obligations. It’s when things happen that prevent people delivering on their obligations that things get into difficulty and sometimes this can happen without any intention that it happen through no-one’s fault. But, you know, risk are risks and sometimes they get ugly and it’s really important that people who go into these project understand that if things don’t go well they have to have the financial strength and fortitude to keep going. It’s no good entering into a PPP with a party just because they are the cheapest if they have got no strength behind
| Speaker | them.  
So, in this case we were relying on parent company guarantees from international parties that...you know...this project was insignificant as far as their balance sheet was concerned. |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Speaker</td>
<td>The special purpose vehicle and the project facilitator, they suffered even though in that they put equity into the project and that took a hit. But they were somewhat or largely protected, by the contractual arrangements between themselves and the constructor.</td>
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<tr>
<td>Speaker</td>
<td>I mean a feature of this project was with the party doing the construction was also the party doing the operation of the 20 years concession period and I think that really helps because even though they lost money during the construction phase they can look forward to making some of that money back over the operating phase.</td>
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<tr>
<td>Speaker</td>
<td>All the risk is in the construction phase. So what commonly happens with these projects is the project finance is provided at a particular rate of interest bearing in mind the risk at the construction phase and once it gets beyond the construction phase that debt is then often sold at a profit because of the lowering of the risk once the project enters the operating phase.</td>
</tr>
<tr>
<td>Interviewer</td>
<td>Do you believe there is ‘one best way’ to implement these contracts?</td>
</tr>
<tr>
<td>Speaker</td>
<td>Well, no, every project has to be tailored because there are physical aspects of projects that make them unique. So you’re never going to be able to have one suite of documents that will do for every project. But the principles behind the model are the same.</td>
</tr>
<tr>
<td>Interviewer</td>
<td>Have you been limited in your ability to influence the construction activities?</td>
</tr>
</tbody>
</table>
| **Speaker** | In fact, we deliberately kept out of it. Because how can you influence the construction activity if all of the risks associated with the construction activity are with the constructor? There’s a danger that if it’s the owner, you interfere with their construction then you might end up with a claim against you if things go wrong. 

I mean the thing about PPP’s is that there is a huge amount of work done up front to get the documents right and once you reach financial close it’s like clicking the button on a big automotive machine. You basically press the button and it runs and you don’t interfere, you don’t put yourself in the shoes of the other parties, all you do is facilitate as much as possible. We had a situation where there were some industrial relations issues on this project that had the propensity to spill over to other projects in a negative way and we were concerned about that but we couldn’t interfere with the processes that the construction entity was employing with. |
| **Interviewer** | Have you been limited in your ability to influence the concessionaire? |
| **Speaker** | The buyer concessionaire, the special vehicle. A very close relationship. I suppose when things started to run into delay and the problems with the construction, the concessionaire and the public entity had some commonality of interest. So our relationship with the concessionaire was really quite close. |
| **Interviewer** | Have you had dealings with the concessionaire that were detrimental to the project? |
| **Speaker** | No, nothing detrimental. I mean things got as bit tense because when people start losing money, they come up with all sorts of reasons why someone else should chip in and support them. So, we had a few discussions along those lines but no we maintained |
very professional and close relations throughout the whole project.

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<thead>
<tr>
<th>Interviewer</th>
<th>Has the concessionaire been a barrier between you and the private construction entity?</th>
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<tbody>
<tr>
<td>Speaker</td>
<td>I was never as close to the construction entity as we were to the concessionaire. We never met with the construction entity without the concessionaire being present.</td>
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<table>
<thead>
<tr>
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<th>Within your projects are you represented by a PPP expert? You mentioned that you were trained and that you had the support of this department within the treasury?</th>
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<tr>
<td>Speaker</td>
<td>That’s correct, yes.</td>
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<table>
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<tr>
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<th>And how much difference do you think it made to the project?</th>
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<tr>
<td>Speaker</td>
<td>It’s a bit hard to answer that question because I don’t know how it might have gone otherwise.</td>
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<td></td>
<td>I think, look, with these projects you have a lot of experts to help you and you pay a lot of money for them. You have specialist legal advisors, you have specialist commercial advisors and you have technical advisors, you know, on the engineering side. So the only gap there is the glue that pulls it all together and that’s really the job of the project director or manager and it’s really important that that person understands how the project works, the responsibilities and obligations of the parties, how the legal documents all work together and how the project financial model works. So that’s a pretty tall ask and you need people who have got skill or ability to learn in all of these areas. So it’s really important to have those people steering the project whether they are in house or whether you hire them in will depend upon the entity and just the availability of personnel.</td>
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| Interviewer | Just on that; you mention that you have a lot of people involved in these and it costs a lot of money to have them. You see these |
teams are just getting bigger as contracts get more complex, and it’s not just, you know it’s on the public and private side to have this massive team of experts to support the document behemoth that exists in a PPP. Can we see an end to this do you think or do you thinks it is just going to keep getting bigger and bigger? Because that’s probably going to start representing a significant portion of the cost of the contract soon.

Well, to answer your first question, no, I don’t see it ending because each project has to be tailored. I think perhaps some of the early costs in developing documents can be avoided because you don’t need to completely reinvent the wheel but there is a danger in always taking historical documents from previous projects and sort of incrementally tailoring them and adding to them because you can end up with a piece that’s got a lot of irrelevant stuff in it that might not work very well. So I think every project needs its own set of documents and experienced people, experts, making sure that everything’s right. As far as the teams go, look, you don’t need huge teams but you need very skilled teams. I mean typically you would be involving people at partner level of top tier advisory firms, and some of their best people. This is a high degree of difficulty sort of area for people practising in projects. But you know there are plenty of people around who have done it and know how to do it. The transaction costs are high and that means for a PPP project to be considered it really should be of a value that can bear that transaction cost but when you consider that an average project might typically run over budget by 10%, let’s just say it’s a $100,000,000 project, which is not big, 10% cost overrun is $10,000,000. So if you can avoid $10,000,000 cost overrun with a PPP structure and a very good set of documents and risk transfer, your PPP is

<table>
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<th>Speaker</th>
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Well, to answer your first question, no, I don’t see it ending because each project has to be tailored. I think perhaps some of the early costs in developing documents can be avoided because you don’t need to completely reinvent the wheel but there is a danger in always taking historical documents from previous projects and sort of incrementally tailoring them and adding to them because you can end up with a piece that’s got a lot of irrelevant stuff in it that might not work very well. So I think every project needs its own set of documents and experienced people, experts, making sure that everything’s right. As far as the teams go, look, you don’t need huge teams but you need very skilled teams. I mean typically you would be involving people at partner level of top tier advisory firms, and some of their best people. This is a high degree of difficulty sort of area for people practising in projects. But you know there are plenty of people around who have done it and know how to do it. The transaction costs are high and that means for a PPP project to be considered it really should be of a value that can bear that transaction cost but when you consider that an average project might typically run over budget by 10%, let’s just say it’s a $100,000,000 project, which is not big, 10% cost overrun is $10,000,000. So if you can avoid $10,000,000 cost overrun with a PPP structure and a very good set of documents and risk transfer, your PPP is
starting to look more capable because your transaction cost on your PPP for a $100,000,000 project are probably going to be $3 or 4 million.

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<tr>
<th>Interviewer</th>
<th>What level of engineering change have you driven after the signing of the contract?</th>
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<tr>
<td>Speaker</td>
<td>None. I mean we had to help, in that, the interface to our plant had to change as a result of a design change so we had to be reasonable about helping that in a practical sense, but we didn’t impose any of our costs on them and they didn’t impose any of their costs on us.</td>
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<thead>
<tr>
<th>Interviewer</th>
<th>Would you support an independent PPP expert?</th>
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<tr>
<td>Speaker</td>
<td>I would be against that.</td>
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<table>
<thead>
<tr>
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<th>Why do you say that?</th>
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<tr>
<td>Speaker</td>
<td>Because it imposes another party into the mix of relationships and that other party, being the government commercial manager, doesn’t have the same interests as public entity. So it not at that level of complexity and there could develop tension between the government agency and the central government contract manager over the sort of compromise that is often made to keep these projects going. So it suited us, and I think it is best, if they stay at arm’s length, they were on the steering committee, so whenever any issues came up we brought them in and we had a regime of monthly summary reporting to them, so they were basically there as a safety net. And I think it’s important that the accountability for these projects is very clear so that if it all went horribly wrong it’s the public entity that’s responsible for that, not the State government or the Commonwealth government.</td>
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| Interviewer | Alright, well that kind of covers us on that question because either you support it or you don’t and probably in Victoria what I have seen is that the maturity of the PPP contracts have allowed |
that…As you say there’s training at a University level, there’s support groups behind you, you don’t seem to suffer as much as I have seen elsewhere.

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<thead>
<tr>
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<th>I appreciate the time you have given me.</th>
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<tr>
<td>Speaker</td>
<td>There’s one other party that you haven’t mentioned. The independent reviewer.</td>
</tr>
<tr>
<td>Speaker</td>
<td>The independent reviewer in our project was employed by both the public agency and concessionaire, jointly. And reported to both of us and he became a very important person in making judgements about whether the project was in default or not.</td>
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-End of Interview-
# Appendix 2 — Correlations

## Notes

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**. Correlation is significant at the 0.01 level (2-tailed).

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### Descriptive Statistics

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### Correlations

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**. Correlation is significant at the 0.01 level (2-tailed).
## Correlations

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**. Correlation is significant at the 0.01 level (2-tailed).

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**H ratio** 30%

**G&H ratio** 63%

**positive** 89%

**negative** 4%
Question 2

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Sum | 4 | 19 | 10 | 23 | 36 | 47 | 33 | 172 |

Q1 (reverse scored) | 0 | 18 | 15 | 8  | 12 | 2  | 2  |

Q2 Comms | 0  | 0  | 0  | 0  | 10 | 60 | 42 | 112 |

H ratio | 24% |

G&H ratio | 47% |

positive | 67% |

negative | 19% |
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**Sum**

| 1 | 2 | 2 | 10 | 30 | 70 | 123 | 56 | 312 |

**Commitment**

| 0 | 2 | 0 | 4 | 10 | 36 | 49 | 101 |

**H ratio** 18%

**G&H ratio** 57%

**positive** 80%

**negative** 11%
## Question 4

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- H ratio: 27%
- G&H ratio: 62%
- positive: 82%
- negative: 8%
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H ratio 30%
G&H ratio 53%
positive 73%
negative 15%